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Foreword

This publication presents around 30 papers and work-in-progress papers submitted to the 6th Living Knowledge Conference in Copenhagen, April 9-11, 2014. The publication supplements the Book of Abstracts with around 200 abstracts submitted for the conference.

The papers are organized in alphabetic order according to the family name of the first author. Authors of the papers are referred to by their institution. If you need further contact information on an author for a given paper, then please look at the delegate list available on

<http://www.livingknowledge.org/lk6/delegate-information/>

We hope you will enjoy reading the papers.

With kind regards from the Conference Organizers

Michael Søgaard Jørgensen



Søsster Brodersen



Jens Dorland



Developing the knowledge base for university public engagement: work in progress

Emma Agusita, Sophie Duncan, Keri Facer and Paul Manners - UK's National Coordinating Centre for Public Engagement

Abstract

This brief paper describes the work of the UK's National Coordinating Centre for Public Engagement (www.publicengagement.ac.uk) to develop a stronger knowledge base for public engagement. It explores why embedding a robust theoretical and strategic commitment to engaged research within UK Higher Education Institutions (HEIs) is critical to the ongoing process of culture change in UK higher education. It then describes three of the activities which we have initiated: a project to review the current knowledge base, the launch of an 'engaged practice learning exchange', and ideas we are developing for the launch of a new open access journal. The paper draws on a scoping study conducted by the NCCPE, Professor Keri Facer (University of Bristol) and Dr Emma Agusita. The study involved a literature review and consultation events, and we are grateful for the many contributions from the participants in this work.

The National Coordinating Centre for Public Engagement was set up in 2008 to promote culture change in UK higher education institutions. Our funders recognised that there was a growing 'gap' between the public and the researchers based within universities: a gap made evident in crises of public trust, like that triggered by public protests about Genetically Modified Organisms in the mid-2000s, and by growing pressure from politicians and other societal stakeholders to see universities more clearly evidencing their social relevance and accountability.

The first four years of our project (2008 – 2012) saw us focusing much of our effort on building networks between practitioners and advocates for engagement within the sector; and identifying some of the key cultural factors which encouraged or inhibited universities in building effective support for engaged practices. We were greatly helped in this process by working closely with six 'beacons for public engagement' – university-based partnership projects which were funded over a four year period to 'embed' support for public engagement in their systems and processes. We have provided a fuller account of the lessons learned, and some of the tools developed as a result of this process in the 2012 book 'Higher Education and Civic Engagement- Comparative Perspectives' (McIlrath et al) and on our website .

The NCCPE secured continuing funding to progress the process of culture change in higher education (HE) and more recently

we have become increasingly preoccupied with the need to explore the theoretical basis for engagement. This has been motivated by various factors.

- Increasingly, attention is focusing on the dynamics of effective engagement. Engagement serves a variety of purposes for the sector, from inspiring young people to consider research careers, to creating a fertile ground for impact. An increasingly high priority for research funders, there is an urgent need to describe and evaluate the dynamic processes of engagement if its 'promise' is to be realised;
- In order to win 'hearts and minds' in the HE sector (many of who have some scepticism about the value of engagement) we need to be able to provide robust evidence of its value and impact, and to show how it can lead to genuinely excellent outcomes.

Both these factors led us to seek funding in 2012 to conduct a scoping study to review the current state of the knowledge base for public engagement in the UK. Commissioned by the Arts and Humanities Research Council, we undertook a 6 month project in partnership with Professor Keri Facer at the University of Bristol, which was designed to address four key questions:

- 1) How and where is public engagement currently being theo-

rised and researched?

2) What are the key questions that might frame a future research agenda for university public engagement?

3) What methods and practices would allow the research community to make substantive progress in addressing these questions?

4) What are the distinctive implications for the Arts & Humanities?

These questions were addressed through a rapid literature review and interviews and events involving around 90 leading researchers and practitioners from within and beyond higher education, and was summarised in *Towards a Knowledge Base for Public Engagement in Higher Education* (Facer, Manners and Agusita, 2013).

The review proved a tremendous opportunity for researchers and professional staff who have been working in the field for many years to come together and share their expertise and knowledge. It revealed how rich and diverse the knowledge base was – but how dispersed. The final report (*Towards a Knowledge Base for University-Public Engagement*) identified four key challenges to building a more robust knowledge base, namely:

- The area is currently poorly resourced, especially compared with practice and research into university-industry engagement.

- We need to move beyond advocacy and evaluation, which characterised many of the papers reviewed: there is a lack of rigorous, robust studies that are able to withstand sustained scrutiny.

- There are tensions between theory and practice exacerbated by the tight resources.

- Research in the field is highly dispersed – scattered across multiple disciplines, adhering to different values, using different methods and mobilising different research traditions, making it hard for people to discover and draw upon each other's work (1)

We suspect that these challenges will be familiar to colleagues in other countries.

The report also identified a set of recommendations to inform how policy and funding might address some of these challenges.

The first suite of recommendations focused on the principles which should inform any future investment and activity to build the knowledge base. We wanted to emphasize how important

it is to respect the diversity and dynamism of the field, and to strike a balance between investing in stand-alone research with the challenge of supporting embedded critical reflection as an integral part of research activity.

The second set of recommendations focused on the vital role of networks – and the need to tackle the disconnection between practitioners, research partners and academics in the field. We argued that networks should be strengthened by interventions to improve knowledge sharing and learning, in particular by:

- Creating conversations and meta-networks (but not inventing a new ‘field’);
- Enabling action research – to draw out the extensive tacit knowledge informing practice and policy;
- Addressing the language issue – confusing terminology bedevils the field;
- Creating a resource bank- to make content easier to find;
- Ensuring users/beneficiaries of the research are actively engaged.

We were concerned not to turn public engagement into another silo – but to frame it instead as a ‘meeting point’ where people with different kinds of expertise and commitment to

collaborative research practice could come together to share their knowledge and build deeper insight into their practice.

The final recommendation argued that investment in the creation of new knowledge was urgently needed. It would not be enough simply to ‘connect up’ existing practitioners and researchers to better share what they already knew. We argued that there was an evident need for significant new investment from research funders, focused in the following areas:

- Funding for new research
- Understanding public perspectives
- Investing in scholarly infrastructure
- Capturing international perspectives

From our review of the literature and our conversations with people working in the field, we developed three broad themes which we felt would be particularly productive areas for investment in new research.

The first of these concerned our understanding of the processes of engagement. We argued that we need to deepen our understanding of the dynamics of university-public engagement, and we spell out below some suggestions we had about how this might be progressed. As part of this, we also foreground-

ed the particular need to research changing understandings and influences on the role of the 'public university' in the 21st Century.

The second theme centred on an exploration of the terms quality, value and impact, terms which increasingly dominate the discourse about the engaged university. We argued that there was an urgent need to deepen our understanding of the 'public value' of university engagement, and its distinctive social, cultural and economic logics.

The third theme we identified concerned the management of engagement. How are universities re-thinking how to manage their relationship with society and to develop appropriate governance arrangements to underpin these evolving relationships? How can we better distinguish between good and bad reasons for decision-making, and foreground issues of power and accountability?

Each of these areas is explored in more depth in the final report. We have chosen to take just one of the themes to flesh out the kinds of research questions which we identified: the first theme, understanding engagement processes. This threw up challenges and questions in a number of domains, including questions about the role of students (and how far one can or should 'teach' social responsibility), and about the ethics of engagement. What constitutes ethical engagement

activities? How can ethical practice be developed? How do different disciplines approach ethical issues? A final challenge identified under this theme was the need to better understand 'what is going on' in the dynamic and diverse encounters when researchers and communities encounter each other. Our review of the literature revealed particularly interesting questions being opened up about:

- How knowledge develops – deepening our understanding of the connection between researchers and publics in the creation of new knowledge, insights and ideas
- How people make meaning – understanding communicative processes and learning, and interrogating how different groups and individuals interact, getting to grips with how such interactions are shaped by wider social contexts, whether patterns of culture and taste or institutional frames
- How democracy works and publics are constituted – exploring relations of power and the institutions, relationships and different forms of knowledge that might be understood to unsettle or reproduce them. How can research be held democratically accountable, and how can research processes be used to equip citizens better to produce public and democratic spaces?
- How change happens – addressing the dynamics and wider implications of encounters between researchers and publics,

and understanding wider systemic effects of engagement. Exploring this topic involves theorising change and draws in resources from fields such as complexity and systems theory

- How knowledge-based institutions develop – understanding how institutions such as universities, schools, museums and galleries in particular are changing, in the light of changes to the relationship between researchers, knowledge-producers and ‘society’. This speaks to the wider debate on the future of the university and is intimately concerned with questions of changing identities for scholars and researchers

Next steps

Our report was published in 2012. Since then we have progressed a number of the recommendations, and will now briefly describe two of the activities we are developing.

The first concerns the recommendation that there should be greater investment in ‘scholarly infrastructure’. We are currently exploring the potential of an open access journal dedicated to the topic of public engagement with research, in partnership with the Institute of Education at the University of London, and led at the Institute by Professor Sandy Oliver.

We are keen to develop a journal which models innovation in how different kinds of expertise can be shared and which chal-

lenges some of the norms of conventional academic publishing. At the same time, we are aware that if such a journal is to have credibility with the research community it has to conform to many of the established conventions for such publishing. Some of the ideas we are exploring include:

- Publishing papers about public engagement with research linked to papers published elsewhere, possibly in discipline specific journals, which report the substantive research findings. The papers we publish should make explicit links between the engagement processes deployed during the research and the research outcomes published in the substantive papers.
- Conversations, which are short pieces, between academics and other partners.
- Articles on a specific theme published in parallel by and for academics, practitioners and engaged publics.
- Inviting multiple articles as a single submission: an academic paper, a practice paper and a ‘spotlight’ commentary. We have looked carefully at how other journals (for instance the US journal ‘Gateways: International Journal of Community Research and Engagement’) integrate academic and practice perspectives.

A second innovation that we are piloting is what we have called

‘Engaged Practice Learning Exchanges’. This idea arose from conversations with colleagues in Canada, including the Community Based Research Canada network and colleagues in the Institute for Studies and Innovation in Community-University Engagement at the University of Victoria. We realised that there was tremendous value to be unlocked in finding ways to link up researchers and community partners working in this area across national contexts.

We are planning to run these exchanges at a series of international conferences and gatherings over the next 18 months, and held the first at our Engage 2013 conference in Bristol. The exchanges involve both face to face meetings and a linked online space. The sessions are designed to provide an opportunity for those engaged in practices and programming around public engagement and other forms of community-university activity to have some time and space to stimulate innovation in what they do by:

- Sharing knowledge: drawing on both practical and theoretical dimensions of engagement;
- Developing our practice: considering what skills and methods will enhance practice;
- Networking and connecting: linking up to discuss the ways and means engaged practice is developed in different local and

global contexts.

The exchange (both in person and virtual) is a committed but informal space, with a real emphasis on sharing. It is aimed at and will be facilitated at different times by both university and community based practitioners, and is designed for people:

- Who are an engagement practitioner from inside or outside higher education
- Who have several years of experience of engaged practice
- Who are keen to reflect on how other perspectives and knowledge might influence their own practice
- Who have the appetite to join an online and face to face network to stimulate innovation in engaged practice
- Who are keen to share and reflect on their own work

Conclusion

We sense that we are at a ‘tipping point’ in the embedding of social engagement within higher education in the UK. To fuel this transformation, and to ensure that it is as critically informed as possible, we are convinced of the need to galvanise a similar step change in the interplay between theory and practice.

We are also very aware of the huge international expertise and insight in this area. We need to find effective ways to connect what is happening in the UK with this wider international context to maximise the two-way flow of experience and expertise between people working in this area. We would welcome comments and conversation about the ideas we have shared in this brief paper.

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Cities Without Hunger: How urban agriculture changed the urban landscape and the lives of hundreds in São Paulo

Thiago Soares Barbizan - São Paulo Housing Secretariat
Hans Dieter Temp - Cities Without Hunger

1 - INTRODUCTION

Increasing urbanization rates coupled with irresponsible management and governance of land for agriculture are main causes for food shortages and rising prices lately. Food security in urban areas, where more than half of the worldwide population lives, is one of the greatest challenges of our time, nevertheless, land is a scarce resource in urban environments where is threatened by informal urban growth.

The global food and agriculture sector is facing several challenges fostered by global change (FAO 2009). Global change is a collective term that according to the U.S. Global Change Research Act of 1990 encompasses “changes in the global environment (including alterations in climate, land productivity, oceans or other water resources, atmospheric chemistry, and ecological systems) that may alter the capacity of the Earth to sustain life.”

One of the most powerful drivers of global change is rapid urbanization, tied to socioeconomic and technological transformations as, for instance, informality, demographic and dietary changes, bio-energy development, natural-resource constraints, environmental unbalances through climate change, food, water and energy insecurity and the complex interactions of urban

areas with their physical environment (UAC 2010a, p.8).

Rising food prices and the economic crisis contributed to a considerable reduction in effective purchasing power of poor consumers, who spend a substantial share of their income on basic foodstuffs, 60- 90% according to Mougeot (1994, p.2). It is known that extreme hunger can occur even in conditions of regular production due to the absence of adequate distribution mechanisms that could allow access to food by all, and even when distribution is assured, sometimes the quality provided does not comply with minimum nutritional standards leading to malnutrition or even obesity related diseases.

This work-in-progress paper describes the NGO Cities Without Hunger and Community Gardens project which introduced a sustainable alternative in connection with food production in informal settlements in São Paulo by implementing farming activities in vacant land having dwellers as its main source of workforce while acting positively on issues of social, economic and environmental relevance for a metropolitan region.

The project’s objective is to implement, through a participatory process, farming nucleus that could generate opportunities, capacity building for the participants and their dependents,

systematic income generation from selling valued added processed goods and social integration of communities with their environment.

2 – URBAN LAND AND AGRICULTURE

Competition for land in urban and rural areas is an intrinsic issue arising from the ongoing urbanization phenomena, hence, availability, accessibility and usability of land for agricultural purposes is a relevant issue to be discussed (Quon 1999). According to the United States Department of Agriculture (USDA) and the International Development Research Centre (IDRC), 15% to 20% of the world's food is grown in urban areas, as city and suburban agriculture takes the form of backyard, roof-top and balcony gardening, community gardening in vacant lots and parks, roadside urban fringe agriculture and livestock grazing in open space (IDRC 2010; USDA 2010).

Cities are socio-ecological systems and in long term urban sustainability is challenged by a number of threats which can undermine the resilience of citizens. Rapid urbanization process goes together with increasing urban poverty and urban food insecurity. In the current developmental processes of emerging megacities, the foundations are being laid as to whether open spaces can be preserved within cities or urban regions, and therefore contribute in the long term to the attractiveness of cities and quality of life in them (UAC 2010b).

Many of the complex challenges encompassed by rapid urbanization have a clear land dimension: unequal access to land, insecurity of tenure, land use competition, unsustainable land use, weak institutions for dispute and conflict resolution, etc (Wehrmann et al. 2009, p.3). These land issues cannot be arbitrarily separated into rural or urban, since these distinctions create artificial boundaries, which can impede a more holistic approach to the conceptualization of the problem.

Agriculture and urbanization are commonly viewed as conflicting activities. However, there are considerable land and flooding areas that are available for agricultural use. For Mougeot (1994), urban and peri-urban agriculture also adds value to urban land, bringing unused land into production, reversing degradation and improving urban growth. The author points out the relevance of city farming in providing a viable land use and protecting it against pests, thieves, squatters, garbage dumping, and vandals; reclaiming service and improvements, thus raising use and rent value of land.

The open space concepts (central parks and green belts) were conceived in response to urban growth in the 19th and 20th century and nowadays different development dynamics revolves around the scarcity and competition for resources, such as land and water (Giseke et al. 2009, p.76), thus securing and allocating agricultural land in peri-urban areas today could be a possible approach to face this problematic in the future.

An open space system that promotes sustainable, climate-optimized development of future megacities must be productive and should create multiple synergies between urban and rural areas as well as between city and agriculture. On the one hand, as productive green infrastructures, these areas are devoted to food production. They thus make a direct contribution to urban food supply and to ensuring a livelihood for urban farmers. What is more, depending upon where they are situated, these areas can provide the city with further urban ecosystem services, for example by contributing to integrated flood protection, flood management, energy production and mitigation of urban heat island effects. As multifunctional green infrastructures, they also provide opportunities for rest and recreation within the city (UAC 2010b).

For this to happen, urban and peri-urban agriculture should be considered an integrated factor of a comprehensive strategy for achieving long-term food security and long-term economic growth. A better understanding of the benefits and risks attributed to it by governmental authorities and support institutions (public, non-profit, private), as well as the contributions it can make to some of their policy goals, is necessary in order to facilitate the development of urban and peri-urban agriculture by means of pro-active policies and intervention strategies that enhance its benefits while reducing the associated health and environmental risks (Zeeuw et al. 2007, p.5).

In 2007 a survey organized by the Ministério do Desenvolvimento Social e Combate à Fome (MDS) the Brazilian Ministry of Social Development and Fight Against Hunger, was conducted aiming to identify and characterize urban and peri-urban agriculture initiatives in the Brazilian metropolitan regions, in which more than 600 initiatives were recognized. These initiatives were destined both to self consumption as for marketing, many were federally funded, or promoted and financed by state and local governments, civil society, academia and also the private sector. From the experiences included in the survey, 75% were located in metropolitan areas, which represents an important feature of urban and peri-urban agriculture in Brazil, due to the fact that major capitals presents high rates of urbanization, a concentration of urban poor in informal settlements and lack of available land (Santandreu and Lovo 2007).

3 - SÃO PAULO AND URBAN AGRICULTURE

São Paulo, capital city of the state of São Paulo (Brazil), is home for approximately 11.037.593 inhabitants, while its metropolitan region- São Paulo Metropolitan Region (RMSP)- reaches 19,9 million people (IBGE 2009a) within a 39 municipalities urban network.

Intense flows of goods, services and capital, and significant population displacements seeking for jobs, study, access to services and leisure, occurs between cities located within a radius

of approximately 150 km around São Paulo in such way that, based on these strong economic and demographic ties, one can identify this set as a macro metropolis or a metropolitan complex, where about 70% of São Paulo's state population lives (IBGE 2009a).

Therefore, São Paulo is a privileged case study as it offers the densest urban area in Brazil, as well as a strong interaction between remaining rural areas and urbanization. Whereupon, rural areas are mixed and joint to the urban network without changing its characteristics completely, thus presenting diverse ways for using its space (Fernandes 2008, p.25).

São Paulo has been trying to consolidate a municipal policy in recent years for promoting and fostering urban and peri-urban. Integrating urban agriculture into the city of São Paulo policies and normative framework by including theme-related clauses in the Strategic Master Plan (PDE) legitimated the activity as it was embedded into a municipal development strategy. The creation of the Urban and Peri-Urban Agriculture Program (PROAURP) regulated this practice and generated a space for debating urban farming's regulatory framework, leading to the formulation of different tools to promote the agricultural use of land.

The enactment of Municipal Law 13.727 of 2004 established the program in São Paulo and provided its guidelines, which includes a public policy of social relevance to the city and its

metropolitan region. There are, among the goals of the program, both measures related to promotion of social inclusion and to principles of agro ecology.

Urban and peri-urban agriculture in São Paulo is an important instrument for social and economic inclusion, involving a large number of people in productive activities and income generation. It is also an activity to promote local development based on socially and environmentally sustainable practices.

As an inter-secretarial program PROAURP faces the important challenge to support and encourage, among other activities, the organization of urban agriculture product markets, the organization of craft producers, promotion of activities that provide qualification of manpower and organization of groups that generate jobs and income. The legal framework provided by the Strategic Master Plan (PDE) and the activities related to PROAURP allow, potentially, the use of idle and underutilized areas, used as garbage and debris dumps, since these lands serve as breeding sites for diseases and illegal occupation.

“According to the Strategic Master Plan law and seeking the inclusion of a significant portion of the population, the municipal government should encourage the transfer of not used private and public land for partnership programs of social inclusion to fight hunger, promoting practical productive and supportive activities, and creating mechanisms that allow urban agriculture.”

The program can also maintain environmentally protected areas and upgrade agricultural areas located in RMSP through the use of low impact technologies (one of the goals the PROAURP is to support and stimulate the conversion of conventional farmers to the production system of agro-ecological base), setting the farmers in their properties and preventing new settlements and squatter settlements in these areas.

Another relevant aspect of urban agriculture institutionalization in São Paulo was the inclusion of the Zonas Especiais de Produção Agrícola (ZEPAG) Special Zones for Agricultural Production, in the Strategic Master Plan, Chapter II that deals with human development and quality of life.

The ZEPAGs are zones of the municipal territory in which continued agricultural or reforestation activities are of public interest (SEMPA 2004, p.261), in this sense sub-prefectures from each district of São Paulo are responsible to identify and classify ZEPAGs in their regional plans.

The ZEPAGs occupy 14.75% of the territory and are concentrated mostly in the east and south regions of the municipality. In most cases, properties are located in environmentally protected regions.

Although an important zoning tool, without effective oversight, many of the ZEPAGs have been transformed into informal

settlements. Further, given the lack of interest of the heirs of former farmers, some are abandoned or, at best, transformed into places of leisure or other uses than agriculture production.

Although, according to recent regulation provided by Strategic Master Plan- in rural areas one cannot make real estate occupation, in practice this has been happening for several decades already.

Fernandes (2008) observes that nowadays rural areas of São Paulo no longer presents solely agricultural activities, instead it is heavily occupied by non-agricultural uses that provides a favorable scenario for property speculation, idle vacant land and leisure appealing services to contrast the bustle of the city. In addition to that, changes from the process of rural urbanization can be seen where agricultural production is impaired by transformation, without planning, of farmland into urban lots.

Indeed uncontrolled growth in Brazilian cities is happening at the rural / urban interface based on the informal mode of urbanization described by Ananya (2005), beyond the limits prescribed by official documents and laws. An expansion that has occurred both through low income informal settlements and poor neighborhoods expansion, and the emergence of many high-income gated communities looking for better quality of life in less dense areas away from urban centers. Such process has fostered the emergence of several non-agricultural activities in

rural areas, turning its characterization into a very challenging and complex issue.

4 - CITIES WITHOUT HUNGER AND COMMUNITY GARDENS PROJECT

In 1998, Mr. Hans Dieter Temp, Business Administrator with technical course in Agricultural and Environmental Policies at the Tübingen University, Germany, moved to the East Zone of São Paulo and observed the existence of a great amount of idle private and public land.

São Paulo's East Zone, given the housing concentration and the non existence of job-generating programs for its economically active population, stands out as grim sprawl of poverty and violence in the municipal context. Though located in the RMSP, poor social conditions, precarious road access and low economic activity keep it segregated from the metropolis.

Some 3.3 million people lives in the East Zone (see Table 1), a region characterized by a 0.478 average HDI, a 32-percent child mortality rate and an undesirable crime rate of 76.3 cases per year for every 100 thousand inhabitants (SEHAB 2007).

DATA	SÃO PAULO	EAST ZONE
Inhabitants	19,3 million	3,3 million
HDI	0,841	0,478
Infant Mortality	12/1.000 born	10 to 17,8/1.000 born
Average Income (R\$)	1.358,00	937,00
Unemployed Population over 16 years old (%)	13,23	15,03

Table 1 Socio Economic Profile - São Paulo / East Zone Source: Lira et al. (2009); Nossa São Paulo (2010)

Dwellers of these communities make their living through temporary jobs requiring low or no skills as car washers, house-keepers, mason's hands, janitors, day laborers and so on. However, there is a part of this population that does not have access to these activities and will eventually generate idle manpower, which, combined with institutional weaknesses inherent in the region, eventually gives rise to poverty and violence.

In 1999, residing at the site, Mr. Temp decided to transform some degraded areas close to his house into urban gardens. Some of those were private land involved in matters of inheritance litigation, while others were public land owned by the Municipality, Petrobras, Transpetro, Eletropaulo, Incra, Cohab or other governmental institutions.

The main idea was to improve environmental aspects to the local community. However, the commercialization of products

and consequent income generation turned the project into a self-sustaining activity.

In this early phase, reports published in newspapers and magazines remarking the venture's success together with a favorable scenario for the implementation of public policies to reduce poverty, called the Municipality's attention that was then interested by the project.

During the same period, several gardens were developed in different neighborhoods and PROAURP the municipality's urban and peri-urban agriculture program and its regulation was approved by law. This was a milestone, as it institutionalized and made possible the grounds for legalizing urban agriculture initiatives.

However, budgetary difficulties and inherent problems in bureaucratic administrative procedures of government agencies indicated the need to seek for alternatives to develop the project more quickly and efficiently.

In January 2004, was established the Cities Without Hunger and Community Gardens, an autonomous and nonprofit entity. The NGO aimed to create a sustainable urban development project through the creation of gardens. Communities would be involved in activities through a participatory process, where the creation of job opportunities, vocational training, capacity

building and income generation were the main targets.

Cities Without Hunger has already transformed 21 unused public and private plots of land into useful community gardens together with 115 gardeners and more than 650 people who are benefited directly by the project. Additionally, the NGO has organized 48 professional qualification courses in which around 1.000 people received capacity training in organic agriculture and commerce of goods.

Food production close to the populations that most need it makes it more accessible to those consumers, establishing a healthy and sustainable balance of production and consumption. The community gardens provide food while reducing its cost, especially in crop's seasonal peak.

With regard to population's health, community gardens are supplying organic food to individuals or families that simply cannot afford a daily meal since most of them are all below poverty line. Thus, the garden supplement an individual's basic diet by providing fresh foods of recognized nutritional value (since they contain fibers, vitamins and other indispensable components to an adequate nutrition), reducing the prevalence of diseases largely associated with low organic resistance stemming from an unbalanced diet. Currently, the NGO counts with a nutritionist who provides assistance and courses on food and nutritional education for the households. Food produced by the

community gardens are, therefore, rich in nutrients and necessary to alleviate undernourishment and may thus contribute decisively to a household's food security.

Community gardens reduce food insecurity in that access to food is scaled up –especially to fresh and nutrient-rich food – among the poor and most affected vulnerable groups, benefiting children foremost, whether directly through self-provisioning, or indirectly through the income generation by selling organic agriculture products. further compounded by domestic violence, alcoholism and other malaises.

Jobs and income generated by the gardens also add the potential benefit of reducing food insecurity. The main by-product is self-employment for producers and their families, who are stimulated to seek opportunities to sell their produce either fresh or with added value by processing it, thereby increasing their income.

The Community Gardens Project success has enabled its replication in the small rural city of Agudo in Rio Grande do Sul, the southern-most state in Brazil. This small city which since the 1980's has relied only on tobacco production is now facing difficulties with monoculture. Currently three family farmers are being trained in multiple cropping. The Small Family Farmers project is already using two greenhouses developed with the NGO technology, which is more cost effective than the tradi-

tional method using aluminum and galvanized steel. By using alternative materials the project has saved 50% of the costs while maintaining excellent results. Independent of weather conditions, the greenhouses are able to provide a constant harvest and therefore a reliable income for the families.

These families can also count with the National Program for Strengthening Family Agriculture (PRONAF), a Federal program created in 1995 with the intention of assisting in a differentiated way small scale farmers who develop their activities through direct employment of their families' workforce.

It aims, through financing of individual projects or groups of farmers and agrarian reform settlers, to strengthen family farming activities in order to integrate it into the agribusiness chain, providing income generation and adding value to products and property, through the modernization of the productive system, enhancement of rural producers and professionalization of farmers.

The main actions by this program are: expansion of rural credit assistance to farmers; provision of funding for family farmers in the harvesting period and advance purchase of production.

In order to have access to credit farmers must meet some conditions as: explore the land in rural areas as its owner, leaseholder, tenant, partner or concessionaire of the National

Agrarian Reform; reside in the property or close to it; consider the family work as a base for exploration of the land and have a certain annual gross income.

To assure that these small family farmers production can reach consumers it was established in 2003 the Programa de Aquisição de Alimentos da Agricultura Familiar (PAA) the national program of food acquisition from family farming. Its main goal is to ensure the marketing of family agriculture products - produced by family farmers who are assisted by the PRONAF - through the establishment of minimum prices to be charged with a warrant to purchase, while articulating this production with the institutional food markets or building inventory, taking into account the principles of food security.

The PAA gained a big boost in 2009 when the Provisional Measure 455 required that at least 30% of the funds transferred by the Fundo Nacional de Desenvolvimento da Educação (FNDE) the national fund for educational development and the Programa Nacional de Alimentação Escolar (PNAE) the national school's meals program, are used in the acquisition of food from family farmers.

5 - PROMORAR II COMMUNITY GARDEN

The community garden PROMORAR II is located in Sapopemba, a district of Vila Prudente / Sapopemba sub prefecture region.

The activities began in 2007, the garden has 3500 m², being the only area in the region to produce fresh vegetables, serving directly the community located in a region that has approximately 30.000 inhabitants in its surroundings (see Figure 1).



Figure 1 PROMORAR II Community Garden – 3.500 m² Source: Google Earth (2010)

The methodology used throughout the Cities Without Hunger and Community Gardens project seeks to involve the local community in order to offer them a holistic view of the food chain and to promote autonomy and entrepreneurship by creating self-managed small businesses. The methodology hinges on a four-phase approach: awareness-raising, participatory planning, capacity building and dissemination.

Tenure agreements with the land owners are basically a lease contract for a period of time, in Brazil known as the *Concessão Real de Direito de Uso* (Real Right to Use Concession) in the framework of the “Community Land Trust” model. The piece of land obtained for the PROMORAR II community garden belongs to Petrobras Transporte SA- Transpetro, main company of logistics and transportation for fuels in Brazil, which suits activities such as transportation and storage of petroleum products, alcohol, biofuel and natural gas. Over pipelines it is prohibited any type of building or any other use as recreational, vehicle parking, storage of materials, construction of landfills, transit of vehicles and machinery or any other activities not provided by the current legislation.

According to reports by PROMORAR II residents, before the garden, land over the pipelines tracks that crosses the neighborhood was being used for different illegal functions such as: dump, deposit of dead animals, hideout for thieves and stolen goods, drug dealing and invasions by people who did not find housing in communities nearby, thus, the community leader contacted the NGO to request the implementation of a garden.

Therefore, for Transpetro is interesting and advantageous having a garden established along its plot, so they do not need to worry about maintenance or even illegal occupation over their property. The initiative has improved safety of the surroundings by providing a use for a private owned area to benefit an

entire community promoting the social function of land. After verifying the project’s positive results, Transpetro offered more kilometers of land for future interventions (see Picture 1).



Picture 1 PROMORAR II Community Garden Source: by the author (2010)

The selection of participants is usually done through a socio-economic survey. In such survey, people with a higher degree of social vulnerability are identified and then invited to participate, following some selection criteria as: number of people within the family, number of unemployed people in the family and number of children.

As in some instances there are many families that could partic-

ipate in the project a prioritization criteria of households to be served is used. These criteria are:

- Women living in families in social risk;
- Women who are assisted by social programs;
- Workers who are in poor housing, health and education conditions or on a situation of social vulnerability;
- Employees who are or have already exercised some kind of urban or rural farming activities.

The current team of PROMORAR II community garden comprises 13 people; they are the ones who work in the garden, produce and sell the products. After selecting the area to be cultivated, obtaining permission to use it and choosing the project participants, the garden's deployment begins with fencing and cleaning the area.

Currently the PROMORAR II produces seven or eight varieties of most popular vegetables (See Pictures 2 and 3). Part of the food produced is for self consumption and part is intended for marketing. After this phase it is done the empowerment and capacity building of participants through courses, training and practical activities.



Pictures 2 and 3 Different takes of the PROMORAR II Community Garden.

Source: by author (2010)

A small market was installed in one of the team members' residence (See Pictures 4 and 5), which allowed a suitable space for selling products and offering an opportunity to promote capacity building in administration, accounting and other skills. This market distributes not only the production of this garden but also what is produced in different properties in rural areas nearby. Their production is brought to this market to reach urban consumers.

Nearly all the participants of the PROMORAR II community garden team used to make their living by picking garbage for recycling cooperatives and their average monthly income used to be around R\$ 60,00 to R\$ 80,00 (USD 25 to 35).

Sales reached up to R\$ 8.000,00 (USD 3.400) a month already, increasing the income of each participant up to approximately R\$ 600,00 (USD 256,30). Part of the profit is divided between the team members (according to the number of days each person worked) and some is reinvested in the project to ensure its future self-sustainability.



Pictures 4 and 5 Local market. Source: by author (2010)

In each garden a commission composed of representatives from government agencies, grassroots organizations, NGOs working in the region and representatives of the beneficiaries performs management functions. As time passes, people who stand out in the gardens are invited by the NGO to become the monitors of the existing gardens. With the capacity building of these monitors, through specialization courses, they are able to manage, in an organized and productive way, all actions and areas where the project is developed.

6 - LINKING URBAN AND RURAL – HORTA SETE CRUZES

Around 20 km from the PROMORAR II community garden there is Horta Sete Cruzes, another garden of the project but situated in the peri-urban area of São Paulo along the connection road to Suzano, a municipality of the metropolitan region (See Figure 2).

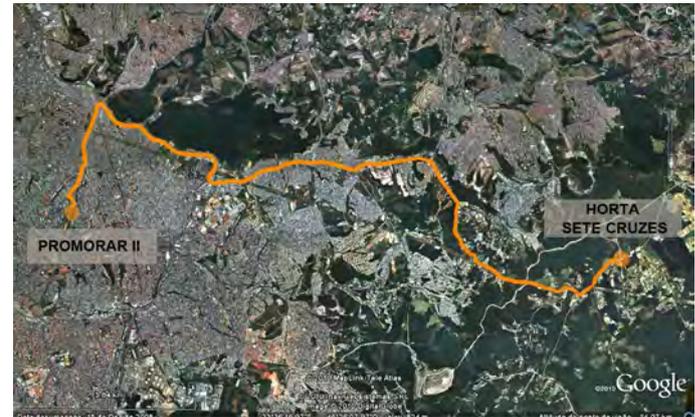


Figure 2 Location and distance between gardens (PROMORAR II - Horta Sete Cruzes). Source: by author based on Google Earth (2010)

For many years the major difficulty for Mr. Francisco was the isolation of his property in an outlying area far away from urban markets and consumers. But now his property became the centerpiece of the Cities Without Hunger project as Mr. Francisco, is the exclusive supplier of seedlings to all other community gardens established by the NGO in the East Zone of São Paulo. Moreover, his property's production is now able to reach the urban consumers in a very efficient and promising microeconomic cycle – all the local markets established in each community garden.

The gardens located inside the urban environment are smaller, due to the size of available land; hence their production is not able to meet the increasing demand, therefore, the bigger gardens in the peri-urban areas helps to supply the outlets located in the informal settlements with the surplus production. These practices structures economic synergies in which employment and income is generated both in rural and urban areas.

The region where this property is located is subject of many discussions regarding its protection on the revision of the Strategic Master Plan (PDE), as many argue it should be an environmentally protected area due to many water springs over this territory (See Figure 3). In the other hand, real estate companies requires that this area should be suitable for developments as it is served by an important connection between São Paulo and other cities in the metropolitan region through the Ring Road. Land is needed and as this region still has large tracts of land used for agricultural production, it is a target for new development ventures. Today the small scale farmers already have to deal with the pressures from the competition for land and there is a fear that this agricultural production will soon disappear.



Figure 3 Horta Sete Cruzes. Source: by author based on Google Earth (2010)

Horta Sete Cruzes is receiving many investments lately. The

idea is to turn this property into a multifunctional space where agricultural production coexists with environmental education projects and workshops. A room is being built and will be equipped with multimedia facilities where visitors and guests will have access to information about the project, workshops will be held and finally capacity training for the farmers will have a proper space.

Besides that, a large tank for fish is being built. The inclusion of fish as a product for the communities is definitely a goal for the next years in order to achieve greater dietary improvements and increase profitability for the farmers, as the fish produced in the Horta Sete Cruzes could reach not only the communities but also the main markets nearby the Road Ring. The Horta Sete Cruzes would then become an experimental field for the NGO new ventures.

Nevertheless, Mr. Francisco's property shows that even in a region that suffers with consequences of the urban sprawl and also from the expansion of large scale farms, family farmers can stay in the fields tending properly the natural resources in a sustainable manner and promoting important urban-rural linkages based on economic synergies (See Pictures 6 and 7).



Pictures 6 and 7 Different takes of the Horta Sete Cruzes garden, cultivation of seedlings. Source: by author (2010)

7 - CONCLUSIONS

This work-in-progress paper explored two important topics within the integration of agriculture into the urbanization process: 1. turning idle and vacant land into productive and resource systems; and 2. incorporating existing agricultural production through the promotion of synergies between urban and rural. Furthermore, the Cities Without Hunger and Community Gardens project in São Paulo's informal settlements demonstrated evidences of a promising initiative. Complementarily, this work highlighted important concepts regarding the institutionalization and systematization of urban and peri-urban agriculture by means of an integrated factor to public policies.

“Urban agriculture tends to define itself as a bottom-up, grass roots movement with no time for the top-down elitism of designers. This is misguided. Environmentalism, in whatever guise, demands both top-down and bottom-up initiatives. Freeing up or reclassifying land for urban agriculture requires more than a desire to hold hands and plant vegetables. It requires top-down intervention by planners and local authorities.” (Viljoen et al. 2005, p.56)

As observed by Lovell (2010) most urban agriculture initiatives have been established through grass-roots efforts inspiring

change on a larger scale, such as the bottom-up approach developed by the Cities Without Hunger and Community Gardens project. To gain and disseminate relevant evidence regarding benefits of urban agriculture encourages its integration as a land use into planning and policies at all levels.

The project experience suggests that a pro-urban and peri-urban development strategy is possible by promoting use of public or private land for implementing and developing community gardens closely related to informal settlements acting positively on issues of social, economic and environmental relevance for a metropolitan region. Therefore, in this context it has to be questioned: “What lessons can be learned from this initiative?”

Within this work-in-progress paper it has been demonstrated that a pro-urban and peri-urban development strategy depends on integrated and overlapping actions in different levels, involvement of different stakeholders and implementation of different measures that should be linked throughout the process. In this sense, some aspects must be considered:

Community organization and empowerment: The creation of job opportunities and income generation through the commercialization of added value products from organic agriculture in informal settlements, having the residents as its main source of workforce, can contribute to overcome food insecurity with environmental and economic sustainability. However, appropri-

ate mechanisms and instruments for capacity building should be created and applied considering local cultural, economic and political contexts. The promotion of training and social empowerment of socially vulnerable groups is essential to not only develop autonomy and entrepreneurship, but also raise awareness, commitment and responsiveness, indispensable elements for supporting such approach. Urban regeneration actions can only be effective and authentic when combined with integrative systems of organization, fomenting community development and resilience.

Conducive policy framework: Accordingly, top-down efforts might create mechanisms to improve the coordination of urban agriculture activities scaling up and enhancing its benefits. In order to promote a pro-urban and peri-urban agriculture development strategy, there should be a cross-cut articulation between public sector, public institutions, private sector, civil society, development partners, among others. These articulations are better enforced, monitored and maintained by public policies that, in one hand, promote transparency in land governance, facilitating the access and use of land for agriculture production while preserving existing agriculture land; and in the other hand, guarantee food and nutritional security by encouraging and supporting sustainable economic development of small scale farmers through their inclusion in the market.

Urban-Rural linkages: The development of economic syner-

gies between urban farmers and small scale farmers in the peri-urban interface can structure urban-rural linkages that are fundamental to assist and secure agricultural use of land within cities. Correspondingly, these linkages are reinforced by the promotion of multifunctional aspects of agricultural use of land, exploring its ecological and cultural potentialities in addition to the direct benefits of production. Such approach is based on new spatial dynamics that apparently are setting trends in the urbanization process of mega cities, where the creation of productive landscapes in intra-urban and peri-urban land could help to improve urban growth.

Although São Paulo presents a level of institutional and policy support which encourages urban agriculture through land use control mechanisms with incentives and restrictions for land owners, there should be further research on constraints that must be overcome in order to maximize and enhance the beneficial aspects of agricultural use of land. Especially those related to profitability and competition with other land uses, the low level of education of target communities, the lack of incentives for donors and sponsors who are interested in providing funding for such initiatives and the weaknesses and conflicts of the existing institutional patterns.

Scientific research also has a relevant role in helping to identify new potentials for Cities Without Hunger actions. While domestic organic waste is already used for composting thereby

reducing the need for land-fills, research may be conducted on building a sustainable plan for reusing and managing urban wastewater and solid waste, while conserving land and water resources. Safe wastewater reuse is still not clearly incorporated into Brazil's national or local policy. Furthermore, the NGO could also benefit from academia's insights from different actors and different lines of research then contributing with better ecosystem services for São Paulo.

So far the initiative not only provided improvements in the quality of life of local communities, but also established a strategy for social inclusion, food security, poverty reduction and local economic development, generating considerable advances both in the intra-urban and peri-urban open spaces by preventing the expansion of informal urbanization and promoting the social function of land.

Among the recent activities there is also a School Gardens Project with 15 gardens in public schools benefiting almost 4.000 thousand children in deprived regions of São Paulo by facilitating access to healthy food and preventing malnutrition. At the same time parents and teachers are involved with teaching their children about organic agriculture and environmental protection.

The land management tools provided by the City Statute, the incentive to family farming through food security policies in

Brazil, and the institutionalization of urban agriculture in the city of São Paulo ensures the consolidation of actions such as Cities Without Hunger and Community Gardens, and seems to favor the replication of this multi level strategy approach as seen in the Agudo municipality in Rio Grande do Sul state.

The initiative has already called the attention of governmental authorities and planning decision makers, as it has proven to be a feasible strategy related to informal settlements redevelopment. The analysis of its strengths and weaknesses could lead to the development of new models for upgrading programs, having positive impact on the built environment and also on community empowerment and organization.

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Hands On!

Mutual learning in co-operation of civil society and scientific community

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Karin Zacharias-Langhans - Mauergarten e.V.

It Is What It Is – A Lack

There is a wide spread discussion about necessary steps towards sustainable conditions in social development of mankind together with planet earth. But the situation is still pressing: There is a tragedy about harmful impacts of climate change and the negative societal outcome of economic activities. There is still a lack of sustainable solutions that tackle and combine the economic and the personal life spheres.

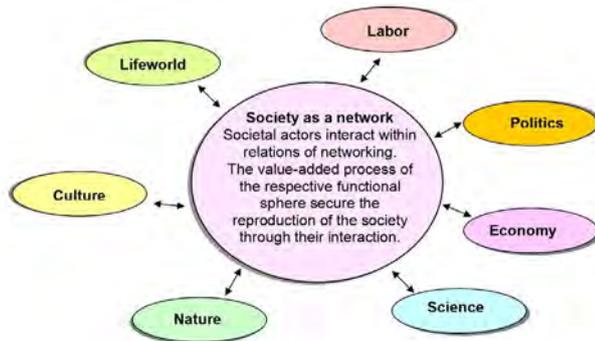


Figure 1 Society as a network

In the society and the underlying spheres of interpretation different logics and languages follow their own rules. (Figure 1) These logics are not completely inter-compatible. As examples, three such logics are briefly mentioned which are particularly relevant in our context.

Science: Scientific expertise and established fields of research and development influence this sector. In the main a “science language” is used, which has many dialects in the various disciplines. A key category for measuring the individual importance of researchers is scientific reputation.

Capital: In this sector, influence is exercised by competitiveness, accessing new markets, value creation, and measures to increase productivity. “Management speak” typically includes many buzz-words and neologisms. Significance is measured in terms of profit. Metaphorically, the “Laws of the Market” rule.

Politics: This sector is characterised by political actors and powerful political concepts, for example in the fields of employment and structural policy. Here too, the language differs considerably from that of the general public. The key measurement factor is the optimisation of the chance of being re-elected.

There is still a lack of groundbreaking solutions expanding to all spheres of our societies, a gap between research and practice. We seem to know many possible roads, technologies and objectives to strive for. But how do we bring “them” to do it ... to buy it ... to live it? “Them” – the consumer, the citizen – you, us, me?

We have constructed an economic system we can't control. We, members of Science Shops were involved in different ways, too. Gregory Bateson (2000) analyzed the “Roots of Ecological Crisis” by seven terms, e.g. “We live within an infinitely expanding ‘frontier’”, “Economic determinism is common sense.”, “Technology will do it for us” and “One against the other, and everybody against the environment”.

That system imposes itself on us, and we become its slaves and victims. For most of us who want to have a house, an environmentally friendly electric car, the latest brand notebook, and so on, we have to sacrifice our time and our lives in exchange. We are constantly under the pressure of time. The same effect occurs in precarious working conditions in some (or most?) non-university based Science Shops. And this infects the way we do our work in Science Shops. In former times we could afford some hours to drink one cup of coffee, enjoying the company of our friends in a smooth even spiritual atmosphere. (Thich Nhat Hanh 2008, pp. 2-3)

We have created a society in which the rich become richer and the poor become poorer, and in which we are caught up in our own problems that we cannot afford to be aware of what is going on with the rest of mankind or our planet Earth. And this infects our activities as Science Shops as well.

“In my mind I see a group of chickens in a cage disputing over a few seeds of grain [maybe like funding opportunities for the next research projects], unaware that in a few hours they will all be killed.” (Thich Nhat Hanh 2008, p. 3)

Many people have started to work on developing these requested solutions and civil society is regarded as producer of relevant knowledge, civil society organisations are partners in research and innovation.

What Is To Learn From Civil Society Initiatives?

Based on experiments and experiences of kubus, the question came up:

What is to learn from civil society initiatives for science shops?

What does “learning on eye-level” mean in practice of cooperation between Science Shops and civil society organisations? And what do Science Shops learn from CSO?

We, as members of Science Shops around the world are

responsible for planet Earth and for to wake up people by our own practice.

The huge challenges that the human society is facing today, such as oil depletion, climate change and social inequality will surely not be solved by business-as-usual practices, which led to status quo.

We observe this for instance in the case of the currently all-around emerging car sharing models like “drive now”, “car2go” and so on. Those so called “sharing” models completely loose their potential to contribute to social welfare by replacing the original ideas of sharing, interchanging and donating by the well known economic market-interactions “to rent”, “to buy”. Instead of reducing the production of cars and consumption of car trips, this concept leads to more cars and more traffic. This is finally not a surprising effect, since those so called “sharing” models have been created by the purpose to increase market shares.

Another example for the lack of scope of business-as-usual practices we find in many small idealist green business concepts like sustainable design shops, fair pepper distributors, vegan shoe providers and so on. Some examples for business models German civil actors are currently working on can be found at the exhibitors list of Heldenmarkt: <http://www.heldenmarkt.de/ausstellerliste/> These business models fail to establish

new, societal preferable exchange models like open source innovation, because the fact of interacting in an environment of individual profit maximization requires the exclusion of external parties from the own knowledge for the simple need to survive economically. Alternative models are not plausible in this environment. The customer or competitor does not believe you will really share. All parties of a deal within this environment are forced yet psychologically into the concept of being opponents.

The business-as-usual practice of individual profit maximization may – in a practical and a psychological sense – be one of the most obstructive social practices for a successful change.

Civil society initiatives in contrast emerge from non-economic purposes in a sense of individual profit maximization. In fact they often aim at economic improvements in a sense of an “economy of the common good” (<http://www.gemeinwohl-oekonomie.org/en/content/20-principles-guiding-economy-common-good>). Hence they particularly offer the chance of creating business-as-not-usual solutions for the challenges the human society is facing today.

Co-creation of knowledge is a “two-way-road”!

What comes up this road to Science Shops?

What we need is a kind of collective awakening.

We can become hands and arms of an “Earth Holder” in order to be able to act quickly [Thich Nhat Hanh 2008, p. 15].

This fact does not at last apply to work of (university based) Science Shops. kubus started a respective internal discussion process three years ago. The strategy developed in the course of this process is called “kubus goes local!” We encourage the Science Shops protagonists to test new, participative methods as an appropriate approach to reach a more ecologically, socially and economically sustainable status of human life on Earth. We encourage the Science Shops protagonists to test further personally the conditions and circumstances, under which they themselves would be able and willing to contribute substantially to a necessary change.

Learning from civil society might improve results of Science Shop’s work.

Understanding the needs of civil society initiatives, and especially bringing to light the alternative economic models they could generate might serve as useful guidelines on this road.

Bringing light to the conditions under which ourselves would substantially contribute to a change, including economic needs and suitable models, might deepen Science Shop’s understanding of practicable solutions.

In order to comply with the understanding of the problem as a multi dimensional challenge, holistic approaches get into the angle of view. “Holistic” means:

- integrating our so called private live and our work live, our job activity
- including as many senses as possible (see, listen, touch etc.) as well as emotional and cognitive elements-> gardening, repairing etc.
- learning as a self preparation
- respect that the line between good and evil runs through the landscape of our own heart
- include doing into the learning process (as we learn what we do)
- making use of inquiry methods as a tool for strategic inventions and novel solutions
- design projects promising economic benefits for all involved parties – in an “economy for the common goods” way

Some Promising Experiences

Concrete activities (understood as learning arrangements =

learning as a self preparation), where these approaches can be implemented include for example:

- invent upcycling products from “waste”
- invent appliances that are easily repairable or components that are easily exchangeable by non-experts (cp. new invention of “PHONEBLOKS” <https://phonebloks.com/en/goals>)
- learn to initiate and participate in activating learning surroundings, that are based on individual opinions and/or societal needs
- organize a party that motivates people to change their electric energy supplier to ecological ones.
- initiate projects designed for being successfully continued by civil actors

kubus has started some promising experiments of co-operation between civil society, researchers and students. We like to discuss new patterns of co-operation and co-creation of relevant results occurring in these co-operations. Aspects of a new self-concept of Science Shops will become visible.

Considerations about adjusted patterns of co-creation of knowledge are illustrated by two examples:

- mauergarten e.V., an urban gardening initiative in the Berlin districts Wedding and Pankow
- COOLMÜHLE e.V., an intergenerational community some 80 km away from Berlin.

mauergarten e.V. – a field report

mauergarten e.V. is an urban gardening initiative in the Berlin districts Wedding and Pankow. (<http://mauergarten.net/ueber-uns/>) It was founded in May 2012 by a handful of citizens who were interested in the concept of “transition towns” (<http://www.transitionnetwork.org/>).

The garden was born from the idea to create a room of practical public participation at the waste land near the former border between East- and West-Berlin, where the districts Wedding and Pankow where in this time still divided by a strip of widely unused land, a former commercial area.

The local administration was just about to negotiate a contract with so called investors, who should receive a suitable land-use-plan in return for the restitution of a defined area of public green space. There were several citizens’ initiatives fighting against a commercial use of this waste land since more than five years. The garden-initiative aimed at creating an urban garden in the future public park, thus proposing a practical

solution beyond the previous conflict-lines.

At this time it was not foreseeable, whether there would ever be a park or when there would result a decision. Yet the initiative started to design a future urban garden at this place.

kubus at this point was not yet officially involved in the project. The only “official” contact was a request concerning scientific expertise with respect to soil contamination. But with Frank Becker a kubus staff member was as private person among the founders of the project, together with his partner Karin Zacharias-Langhans. Both wanted to contribute practically to the necessary changes, gain personal experience with the societal transformation and felt a personal need for touching the soil and see things grow.



Picture 1: mauergarten stamp-action at a local festival (Brunnenviertel, Wedding 2012)

After six months of conceptual work with weekly meetings and networking within the local area and neighborhoods the first round table with neighbours and residents took place. kubus came into play as procurer of expertise and financial resources. The Science Shop organized a round table, provided professional moderation for the world café method and took care of materials like flip charts, facilitator’s toolkit and plots of the area. The members of the garden initiative used this presentation for learning the method “world café” by moderating the tables and participation at the whole event.



Picture 2: mauergarten: visiting the waste land area (winter 2012)

During the further process kubus merely acted as co-operation partner, provided information to financial funding and procured contacts to students and scientific institutes (e.g. Department of Ecology, TU Berlin, <http://www.oekologie.tu-berlin.de/menue/home/parameter/en/>) with related research focuses. Sometimes it was helpful that an “official” institution of Technische Universität Berlin declared its involvement into this

process. This led to inspirations for the garden project, thus did not directly result in practical project design or cooperation between science and the garden initiative.

The initiative nonetheless gave rise to an urban garden shortly after: the mauergarten presented its ideas at the civic participation institution “Bürgerwerkstatt”. The initiative got in contact with the decision makers of the local administration. Due to political decisions to quickly open the new public park while minimizing the investment, an urban garden carried by civil actors resulted to be an appealing option.

In July 2013 the opening of mauergarten took place.



Picture 3 mauergarten: official opening in July 2013 – the first raised beds

kubus' contribution to this project as a Science Shop has been rather small, but in return the project contributed to the experience of the science shop significantly. These experiences were fed into the "kubus goes local!" process mentioned above.

It was an experiment on questions like: How can we integrate our so called private lives with our work? Is there a way to adopt our work as employees to our human wants like sharing time with people we love, being true fathers and mothers to

our children by giving an example of how to live in accordance to our beliefs? Would this fit into the need to earn money and grant our children thus integration in a (still?) consume-driven surrounding – and with other requirements the business-as-usual society imposes on us? Could a garden project add to income via some low cost vegetables and fruits? (We doubted: no.) Would it be a way to a more community-based life, outside the borders and isolation of nuclear family? (We hoped: yes.) How do we combine a family life with social engagement? Is it possible to contribute to the necessary social change while being part of and ruled by the world we try to change? If not so – who else will do this? (...if not us, the more or less middleclass people in the rich northern countries? – we thought).

We began the experiment with high motivation and frequent presence at the weekly meetings. Topics like: project name, area walk, interchange of ideas about sharing concepts, about property and about economic models for future society kept the garden group busy during the first months. We developed visions like a local sharing factory, with vague conceptions of our new jobs emerging from the project. Together with our new comrades we began to contact local networks, visited the local district convention and came to know people from other local civil initiatives. Some of the new contacts converted our weekly meetings into upset discussions. The discussions increased dramatically when it figured out, that our concept of a public

urban garden might come true shortly. Now everyone knew what to do and tried to convince the others to come along his / her way.

From this we learned that a nonhierarchical organization needs time for social processes and that most of us are not prepared to fully respect the needs of the counterpart and the needs of a group.

A peaceful relation to world requires a peaceful relationship to ourselves and to our next, we thought. In parallel to our engagement for the garden, we were therefore working on our relation to ourselves and each other.

Imperceptively the time we needed for unremarkable activities began to increase. Time for talking with each other and our children, for playing, for doing everything more unhurriedly, for precisely feel what really was going on with us in this or that situation. When we felt the necessity to impress others subside, we got more and more involved in supporting our children on their way through life. Homework, presentation, the entrance examination, your music project, a scholarship, your basketball play on Sunday.. Our sons, too, became more involved in their own way into life.

We began to notice, that the time we were able to dedicate to the mauergarten decreased.

We tried to take our 9, 11 and 14 year old sons, too, to meetings at the Mauerpark, but they used to prefer playing football or visiting friends. Gardening is not cool.

We supported the garden as actively as possible during the weeks before the crucial decisions at the local administration and during the preparations for the opening. Our comrades did the greatest part of the work by preparing the founding of the nonprofit registered association and the networking. We contributed ideas, created texts and built a raised bed and a garden chair. But after the successful start we began to retire bit by bit from the garden activities.

We found it too difficult to integrate the garden constantly into our daily life.

Actually we are still members of the society and act as financial auditor, but out of this we are inactive members.

Our findings on the above listed existential human research questions are so far:

Our private lives result unaltered, marginally integrated with our work.

We were not able to shift our work more in direction of an urban gardening project while working as employees like before.

Likewise the project did not offer income perspectives in a pecuniary or natural produce sense in a medium term.

Our human wants actually tend to stay in opposition not only to our work but also to a constant involvement in a civil initiative.

Did the engagement for the project help us to live in accordance to our beliefs?

On the one hand it helped, because we felt doing something concretely.

On the other hand it hindered, because it needed time and led to stressful situations and additional concurrence between family-time and the garden project.

We still miss a more community-based life, outside the borders and isolation of nuclear family. We will work on it later. (Did we really ever work on something important “later”?)

Is it possible to contribute to the necessary social change while being part of and ruled by the world we try to change?

We doubt this seriously.

Could this be the key to the prevailing disability in most of our lifeworld to put major changes into practice?

We ask ourselves: what would it mean “not being part of the world we try to change”?

Apart from this basic question it seems to us, that in this case the most important barrier to our constant contribution to this project was the lack of relevant personal income perspectives in a pecuniary or natural produce sense.

“Public funding” could be a logical answer to this problem. But – later? What are we going to do later, when the funding period has run out?

In most cases, no fructiferous so called “business cases” have been established so far. The project needs additional funding or dies.

Therefore we consider it very important to integrate the economic point of view in any project design. The question: “who could be interested to continue the project after a period of funding, and what would be necessary conditions?”, should be considered seriously in any project design in order to improve the results of science shop’s work.

COOLMÜHLE e.V.

COOLMÜHLE (<http://www.coolmuehle.org/>) is an intergenerational community some 80 km away from Berlin. In the

summer of 2013 residents of COOLMÜHLE asked kubus about the possibility of co-operation between students of TU Berlin and COOLMÜHLE focused on the development of an integrated energy concept for that property.

A first visit of COOLMÜHLE clarified that there is work for the next 3 – 5 years:

- Developing a biogas plant out of a closed septic tank
- Developing a decentralised renewable energy supply
- Thermal insulation of buildings
- Realisation of Low-Tech concepts
- Constructed wetlands for wastewater treatment

An excursion together with 5 tutors of different courses in October brought up serious interest in the development of a complex and long term co-operation.

In March kubus organised a kick-off meeting with members of the COOLMÜHLE association as well as professors, staff and students of TU Berlin:

- The students self organised Umwelttechnisch Integrierte Lehrveranstaltung – UTIL (integrated course on environmental

technology) is located at the Department of Environmental Technology of TU Berlin. UTIL is part of the World Decade of Education for Sustainable Development.

- Another project of the UN World Decade of Education for Sustainable Development is the Energieseminar (seminar on energy). Students work autonomously on topics in the field of Energy, Environment and Society in this interdisciplinary course. The Energieseminar is also involved in the co-operation with COOLMÜHLE.

- In addition up to six students labs are engaged in the COOLMÜHLE co-operation.

- Also three professors (Mechanical and Systems Engineering, Sustainable Engineering and Center for Technology and Society (social sciences) and research staff are involved in the project

In the summer term detailed concepts will be developed. Students and professors are inspired not only by the technological perspectives and the wide range of possible projects but of the concept of COOLMÜHLE and the chance to contribute to the development of an alternative in reality. Again there are people interested in further personal engagement with the COOLMÜHLE association.

There is a demand an interest for the possibility to contribute

to the transformation we need, in practice, hands-on and with a personal perspective.

From Vision To Transition

It is proposed to bridge the gap between vision and reality of a sustainable and resilient living by personal and hands on engagement of researchers, students and Science Shop staff. Civil society organisations, researchers, students and Science Shops are at the key of solving problems of social injustice and environmental damage. They focus on solutions as part of the transition process within society hands on. The Great Transformation will process in small activities.

We want to state that we can identify the need for novel approaches in all areas of societal life:

- Politics: the need for courageous policies that foster cleaner manufacturing, energy production and consumption, equal treatment and life basis of people (independent from birth-place, skin colour, social background, age, sexual orientation etc.)
- Production and consumption: the need for cyclic perspectives that do exclude waste out of its concepts
- Social welfare: the need for ideas and solutions concerning

financing education and training, substitution of money based welfare with participation based wellbeing etc.

This leads directly to questions like: “How do we, as intermediary handle with constellation, e.g. in which our work led to profound participatory results – but the local government for urban planning is not interested in – or better to say: goes the “business-as-usual” way?

What do we do, when developed, e.g. a community garden and a constructed wetland in an informal settlement in a transdisciplinary and participatory way – and at the end house builder and housing enterprises start to build tenements right on the community garden?

It is not easy to go this way. We often forget why we started our endeavour and what we wanted to do actually. So our co-operation with CSO can be a reminder, which keeps us awake. The co-creation of knowledge can result in our shared knowledge that we can become part of Earth Holder (Thich Nhat Hanh 2008, p. 15) and that our own life is our message.

What can Science Shops do?

- Initiating commons, e.g. Repair Cafes or For Free Shops by providing public properties. Johannes Dietrich, staff member of kubus is co-founder of the For Free Shop Ula on the campus of

TU Berlin!

- Offering a crowd funding platform operated e.g. by the LIVING KNOWLEDGE Network

- Design projects promising economic benefits for all involved parties – in an “economy for the common good” way

- Use frameworks provided by civil society for optimization of project design – f. e. “does the project fit with the 20 principles of economy for the common good?”

It is not necessary to change things deliberately – things are going to change anyway. Re-use, Open Source and collaborative technology development designate skills / concepts / measures which will be required – referring to Margaret Atwood (2009) – after the “Great Flood”: The Great Transformation will be fulfilled in small activities! If the Great Transformation will take place in terms of a „destruction“, we should deal with it in a creative manner – as a chance – instead of giving up or becoming resigned.

Shambala Warriors: An Allegory

This is no personal individualistic point of view on the necessary changes, this is how courage arises. What we have to learn is being courageous. Courage acting needs internal emotional sol-

idity as well as skills and competences to use our knowledge in new ways. In other words, what we need are compassion and insight. There is a prophecy that arose in Tibetan Buddhism over 12 centuries ago. One version of the prophecy goes in the following way:

There comes a time when all life on Earth is in danger. In this era, great barbarian powers have arisen. One is in the Western Hemisphere and one in the centre of the Eurasian land mass. Although these two powers have spent their wealth in preparations to annihilate each other, they have much in common: “weapons” of unfathomable destructive power, and technologies that lay waste our world. In this era, when the whole future of sentient life seems to hang by the frailest of threads, the kingdom of Shambhala begins to emerge.

You can't go there, for it is not a place, it is not a geopolitical entity. It exists in the hearts and minds of the Shambhala warriors. Shambhala warriors wear no uniforms, or insignia, and they carry no banners. They do not even have any home turf. Always they move on the terrain of the barbarians themselves.

Now the time comes when great courage – moral and physical – is required of the Shambhala warriors, for they must go into the very heart of the barbarian power where the weapons are kept to dismantle them. The word weapon is used figuratively; think of the economic system we pointed out above. To dis-

mantle weapons, in every sense of the word, they must go into the corridors of power where decisions are made.

The Shambhala warriors have the courage to do this because they know that these weapons are made by human minds, they can be unmade by the human mind. They arise from our own decisions, our own lifestyles, and our own relationships.

So in this time, the Shambhala warriors go into training. They train in the use of two weapons: Compassion and insight. Both are necessary. You have to have compassion because it gives you the juice, the power, the passion to move. When you open your heart to the pain of the world you move, you act. But that weapon by itself is not enough. It can burn you out, so you need the other – you need insight into the radical interdependence of all phenomena. With that wisdom you know that the line between good and evil runs through of every human heart. With insight into our profound interrelatedness, you know that actions undertaken with pure intent have repercussions throughout the web of life, beyond what you can measure or discern. By itself, that insight may appear too cool, too conceptual, to sustain you and keep you moving, so you need the heat of the compassion. Together, within each Shambhala warrior and among the warriors themselves, these two can sustain us as agents of wholesome change. They are gifts for us to claim now in the healing of our world. (Macy 1991, pp. 179)

The “Think Farm” Experiment

Finally we like to show how our considerations and ideas influence new conceptualisation and innovative design of further work of university based Science Shops:

Based on experiences from co-operation with mauergarten and COOLMÜHLE, kubus expects to start a “Think Farm” experiment as a co-evolutionary process over the next two or three years: There is a vital interest on both sides, COLLMÜHLE as well as TU Berlin to join competences: Compassion and insight. COOLMÜHLE is considered as a learning place where students can conduct self-organised seminars and the like. Instead of money reciprocal exchange will be used as offset for using infrastructure.

People from COOLMÜHLE as well as Professors and students of TU Berlin are both interested in exchange of experiences and mutual inspiration. In a midterm perspective some of us may live and work part time in COOLMÜHLE and part time in Berlin. In one part we work hands on in COOLMÜHLE, serve and organise the “Think Farm” by planning, organising and administrating seminars and workshops of student’s laboratories, professors and of kubus or other related organisations. On the other part we do our work in the office of kubus on TU Berlin campus.

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Open Source Hardware - Prospective Engineers as Social Entrepreneurs

Sven Benthin - Grüne Stadt-Planungsgemeinschaft / TU Berlin

Open innovation also works with hardware- a real product has to be developed in a community based manner.

Free/Libre Open Source Software (FLOSS)

Concerning software Richard Stallman (2013), MacArthur-Award-winner, freedom activist, and founder of the Free Software Foundation said: “With software there are just two possibilities, either the users control the program or the program controls the users. The first case is free software. Because in order for the users to control the program, they need certain freedoms. So if they have the freedoms it’s free software and the users control the program. If the users don’t have these essential choice, if any part of them is missing, then the users don’t effectively control the program and the program therefore controls the users. But there is always somebody – the owner – that controls the program. And through the program this entity exercises power over the users. So a non-free program [...] is an instrument of unjust power for one entity over whoever is foolish enough to use it. This is why non free software is bad, why it shouldn’t exist.”

Definition: FLOSS

The definition of Open source software comprises 10 items and was published by the Open Source Initiative (OSI) on the OSI website (2006). In aggregation the ten items are:

- The license is free for sale without any restrictions. No royalty or other fees for this sale are permitted.
- The source code must be included or well-publicized.
- The license allows modifications and derived works.
- Everyone can use the program for anything.

Economic aspects of FLOSS

From the European Union’s point of view the use of free open source software is generally recommended to work more cost-efficient and to make innovations possible in a faster way (Chesbrough 2003).

Use FLOSS

In European Union FLOSS provides opportunities for new

businesses, a greater role in the wider information society and a business model that suits European small and middle sized enterprises; in Europe FLOSS is threatened by increasing moves in some policy circles to support regulation entrenching previous business models for creative industries at the cost of allowing for new businesses and new business models. A cost comparison of FLOSS and closed software solutions is given in table 1(UNU-Merit 2006).

Application	Open Source Software Solution		Comparable Closed Source Software Solution	
	Initial Cost (€)	Total cost over 5 years (€)	Initial Cost (€)	Total cost over 5 years (€)
Operating System	- (Linux)	150K	77K	384K
Email	10K POSTFIX	15K	110K (e.g. Lotus Domino)	175K

Table 1: Cost Comparison of FLOSS versus Comparable Closed Solutions (UNU-Merit 2006)

Produce FLOSS

In many cases at the beginning of open source software productions volunteers worked together for a variety of non-economic reasons, such as intellectual interests, a wish to express their opinions, to contribute to a community etc. (Lindmark

2009).

Nowadays also corporates discovered the advantages of joining a process of FLOSS development. Exemplary only two business models shall be introduced:



Figure 1: FLOSS as a result of co-working communities and companies (Zimmermann 2014)

The company's programmers get paid in foundations, while their knowledge is gathered through the joining the community they get the whole knowledge of the other programmers in the community back, of course. As shown in figure 1, the companies are developing computer programs in cooperation with the community.

To develop Libre Office the community works e.g. together with the companies: google, redhat and intel (Libre Office 2014). A foundation seems to work fine as a business model for this kind of coworking. The advantage of this approach is that you have a constantly working core of people and income is generated via e.g. membership fees (Zimmermann 2014).

Selling services concerning open source software, also can serve as example of source of income. Companies can e.g. offer subscriptions for online accounts, server access or even software and services – to recover computers after a crash might be an example for this (Wikipedia UK 2014)

It becomes obvious that money should be made “because” of offering open source solutions, not “although” solutions are open source.

Due to internet innovation processes increasingly come from outside of the corporate walls, even in case of hardware production (Chesbrough 2003).

Open Source Hardware

Open source hardware (OSHW) is hardware whose design is made publicly available so that anyone can study, modify, distribute, make, and sell the design or hardware based on that design. The hardware’s source, the design from which it is

made, is available in the preferred format for making modifications to it. Ideally, open source hardware uses readily-available components and materials, standard processes, open infrastructure, unrestricted content, and open-source design tools to maximize the ability of individuals to make and use hardware. Open source hardware gives people the opportunity to control their technology while sharing knowledge and encouraging commerce through the open exchange of designs (OSHOW 2013).

Advantages of OSHW

Why? Advantages & Possibilities to win with Open Source →		Less Costs for R&D <i>Open Innovation</i>	Better Products <i>interactive, long-lasting, sustainable, more Features</i>	Ethical bonus for the Brand <i>Community, Education, Sustainability</i>
Less time to market <i>Less legal expenses, Less Ads</i>	Collaboration & Synergies <i>Circular Flow, Standards</i>	Less Costs for Support & Marketing	Better Employees	
		Festivalize it! <i>Events with open Products, Doors, Designs</i>	Funding, Donations, Sponsoring & Crowdfunding	Advertisement & strategic (Product-) Partnerships
Education & Training <i>Workshops, Certificates</i>	SUPPORT <i>Selling Guarantees, Maintenance, Repair, Upgrades</i>	On Request <i>Individual Development, Adaption etc.</i>	Open only for non-commercial use <i>Brand closed</i>	Last Version closed
Open Core <i>OS & CS Parts / CS Add ons</i>	Selling the Service <i>(e.g. Energy, Waste-Disposal) Using OSHW</i>	Produce & sell Products <i>Labor, Ressources, Quality,</i>	← How to make Money €/ Where does the Money come from?	

Figure 2: OSHW Business Model Matrix, vs. 0.1 (Zimmermann 2014)

Like it is shown in figure 2, OSHW reduces cost, which has to be raised for product productions, on the one hand. On the other hand it offers many possibilities to earn money by making processes transparent and allowing people to participate in all stages of production (Zimmermann 2014 –CC-BY).

Therefore Roche Diagnostics, dealing with medical in-vitro diagnostic technologies, is viewed as a good example: “Mix the wisdom of internal and external networks and you might just come up with brilliant and unexpected solutions to apparently intractable problems.” So “basically, in 60 days, Roche was able to solve a problem that it and its partner have been tinkering with and optimizing for the last 15 years” (Crainer, 2009). Roche Diagnostics should have saved much money by using external wisdom from the beginning. Roche’s investment for research and development is about 9 bio US\$- which means about 20% of sales per year (Hartung 2012).

“So, if your idea can be sold, [by anyone – the internet makes it possible], it will be. Where do we go from here? I believe you have a decision to make. Are you going to try to stop every company and every entity that copies your idea? Or are you going to find other ways to create value, that is harder to duplicate?”, Nathan Seidle (founder of SparkFun in an amazing TED talk) asks (2013).

Examples for OSHW

“Protei [Open Source Sailing Drone] is a Shape Shifting, Open Hardware, Sailing robot to sense and clean the oceans. Originally invented to clean up the BP Oil Spill pulling long oil sorbent using wind power by Cesar Harada, Protei is now a platform technology to transport scientific payload and clean-up equip-

ment at sea, developed by an global community of scientists, engineers, makers and sailors” (Protei 2014).

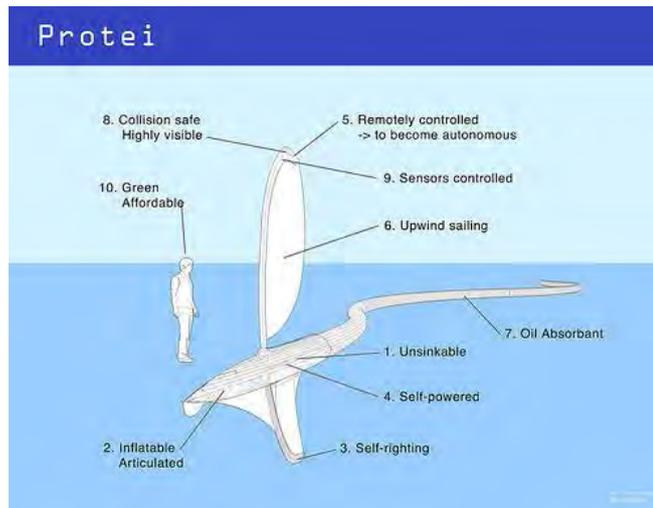


Figure 3: introducing Protei (Protei 2014)

The project follows a similar pattern like the business model, which was introduced before. Like Libre Office- as an open source software – Protei is part of a foundation, where also a company, working on maritime risk management in Norway, participates. Working in cooperation with the community, is of the utmost importance What the team wants “is that this in-

novation process works continuously. [...] What we really want is not a sequential, not parallel development [...]. We want to have a network of innovation. We want everybody [...] to work on the same time. That only can happen if [...] [all people participating] decide to share the information.” (Harada 2012).

In case of XYZ Frames, a bike manufacture whose bikes are constructed with aluminum frames brought in a construction market. Due to availability of all materials, which are used, you can build your own bike. The construction manual for the latest version –currently a cargo bike – cannot be brought. You can pay for a workshop, where you will be supervised how to build your own cargo bike. Otherwise you can buy a kit with all materials listed you will need to buy. The manuals for the earlier versions of bikes (XYZ ONESEATER, XYZ TWOSEATER) can be downloaded free of charge and you are invited to build your own bike.



Figure 4: XYZ ONESEATER; ZYZ EWOSEATER and XYZ CARGO TRIKE prototype (XYZ Frames 2012)

SÖREN is an open Source irrigation system for plants in a bucket initiated by myself. It provides water for plants outside on the balcony or on the terrace, or even inside in front of a window. Like in a toilet the water flow into the toilet tank is made possible by a sloping float valve, the plants open up the float valve to a water cistern due to evaporate water. The maximum of evaporation rate is reached by optimal water supply. Evaporation-based cooling effects might improve climate conditions in inner city situations in summer time.

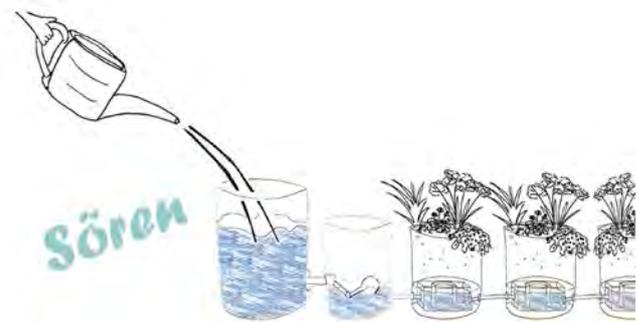


Figure 5: DIY Irrigation system for sideboards, balconies and terraces (own picture)

The SÖREN-project's objective is to experiment and improve the different stakeholder's co-work in community based projects. As a consequence the planning partnership grüne Stadt-Planungsgemeinschaft was founded. It is a spin off from the community-based learning project laboratory Greening in Modules in 2011 at Berlin Institute of Technology which was supported by Science Shop kubus. On the one hand the irrigation system shall be available for everybody to build his or her own system, the manuals are free to download. On the other hand I want to find out:

- What is the optimal form of presentation for an Open Source

Hardware (wiki/blog/homepage/workshops/radio/TV)?,

- How to redact optimally the user's proposals for improvement regarding the construction guide line/ feature list?,

- What is the most promising characteristic (product/ project/ way of production/ kind of material/ effects on environment/ abstraction to other Open Source Hardware) concerning as broad as possible societal participation?,

- What might be the best way to prepare the community for the rethinking of given production conditions, present impairments to the environment, and social aspects of production?.

Currently the business model I am experimenting with is a mixture of selling the component parts from which SÖREN is built, offering services I provide concerning SÖREN – like finding individual solutions for the client's balcony or earning money via working as landscape architect and improving SÖREN's performance in spare time.

To improve environmental conditions in cities, to reduce the time needed to pass product development and time needed to bring it into shops and to reduce the costs for development I want to invite everybody who wants to participate in this project. There is still a lot of work to do.

Conclusion

Let's put reliance into "the maker's bill of rights": www.cdn.makezine.com/make/MAKERS_RIGHTS.pdf.

The risk of bankruptcy of such open-movement businesses is reduced because the fruits of their work remain in the commons and therefore remain as a permanent base for recovering the open business, even in their most critical situations" (Wikipedia UK 2013).

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Urban Agriculture Casablanca: sustainable solutions for a dynamic city development

Ahmed Amine Chahed - ZEWk / kubus TU Berlin

Abstract

The importance of urban and peri-urban agriculture increased in the last years. „Today, around 15 % of the world’s food is grown in urban areas“ (Gerster-Bentaya 2013). Urban agriculture does not have one specific form, but many diverse (e.g. backyard, roof-top, balcony, community gardening in vacant lots and parks, urban fringe agriculture and livestock grazing in open spaces etc.). It contributes to local nutrition and food security especially for the poorer parts of the urban society. Urban agriculture activities are recognized only in a few places and led through policies, planning procedures. Other cities were not interested in this aspect of development until recently Casablanca, Morocco’s economic and industrial capital changed that course.

Urban Agriculture Casablanca

In the framework of the project “Urban Agriculture, Casablanca” which is a German-Moroccan research project financed by the German Federal Ministry of Education and Research (BMBF) within the megacity research program “Research for the Sustainable Development of Megacities of Tomorrow”, it was possible to examine the synergies between urban agriculture and many aspects of urban development and phenomena as such industry, informal settlement, tourism and healthy nutrition through four pilot projects with each topic (Kasper, Rau 2012). They deal with:

- The conceptualization of urban agriculture as an urban development strategy by using the possible positive synergies created through an interweaving of urban and rural spheres.
- The opportunity to improve the living conditions and qualities of life of urban inhabitants in terms of social development and income creation based on urban agricultural activity.
- Creation of green multifunctional spaces in the cities with the 1m² green space per inhabitant (the WHO recommends 12 m² green space per inhabitant for a healthy live condition in sustainable city).
- Awareness raising of the cities dwellers for the risks of conven-

tional agriculture and promoting of organic agriculture in and outside of the cities.

The science shop kubus is involved in the Pilot Project 2 Urban Agriculture and Informal Settlement. In a village, called Douar Ouled Ahmed, situated in the year 2008 in a peri-urban area 5 km south west of Casablanca, a school garden (see Fig.1) was installed to teach children agriculture practices. The idea was that children will transfer the acquired knowledge to their households and disseminate such practice.

Further a solidary farm (see Fig.2) was installed to train the village women in organic agriculture. Behind the school, a plot of land with 1600 m² was provided for the training of twelve women and for them to use it for the production of healthy nutrition in order to improve their livelihood.

Furthermore a constructed wetland was installed to treat wastewater from the nearby Hammam (public bath) for irrigation. The valorization of this wastewater generates a water resource for sustainable production. The treated water was used for the irrigation of the solidary farm and the school garden.



Fig.1: school garden

Economic housing

Since 2012, with the new land use plan, the type of activities in the area in the south west of Casablanca was changed from rural agricultural to urban zone, which is designated for economic and social housing for 300.000 inhabitants(see Fig.3). Especially with the Moroccan program Cities without Slums, thousands of people must be rapidly resettled in the new housing. The Moroccan government gave the real estate developer all the facilities to accelerate the building process. This decision was the starting point of the mushrooming of the economic hous-



Fig.2: Solidary Farm

ing. All the areas, with a good agriculture earth quality became a construction site. Temporary solutions were used to cover the lack in sewage and road infrastructure (for example big tanks were dug out for wastewater stockage).

Further the solidary farm was finally sold for construction as well. To preserve the installations kubus called up all the project partners: universities, institutions, NGOs, etc. to make a statement and to oppose the destruction of the constructed wetland. Through these actions, it was possible to meet many responsible of the region and convince them of the potential

of urban agriculture to create green spaces, which are almost missing in the plans of the new economic buildings as well as to improve the livelihood and the live quality of the inhabitants.



Fig.3: construction of economic housing

Wastewater Problem

In the case of Douar Ouled Ahmed the wastewater of the Hammam was thrown directly into the surrounding area, causing flood in the nearby school. Just a part of this wastewater was

used for irrigating of fodder.

The research project team tried to find solutions and possible synergies between agriculture and informal settlement. It aims at setting up attractive green spaces in order to relieve urban densification and soil sealing.

Tens of cubic meters per day of wastewater were not being used or even treated. These can be transformed, however, into excellent sources of natural fertilizer, irrigation water, and nutritional supplements for animals.

Hence the idea to install a constructed wetland, in order to purify the water of the Hammam and reuse it for the irrigation of a solidary farm and the school garden.

An on-going process for monitoring water quality, soils, and products should be established. It was important to create mechanisms and opportunities for the coordination between the institutions in charge of regulations, the management of wastewater, and the final users who are the local women and the students of the nearby schools.

The project noted that there is a lack of interaction between research institutions and different actors, while the major role of a research university in most countries is to contribute in the expansion of human knowledge and to make the benefits

of such an expansion of knowledge available to society. kubus organized several events, trainings, meetings and round tables for different actors and stakeholders to establish connections between institutions, NGOs, citizens and universities.

The project was presented to the governor of the region. He recognized the environmental aspect of the project and asked the project team about the transferability of this concept for other similar informal Hammam-situations (approx. 200 informal Hammams throw their wastewater in the nearby fields In the peri-urban area of Casablanca and for the new economic settlements where the wastewater problem has yet to be solved. Lot of Hammams throw their wastewater in the nearby fields.

Urban agriculture does not have tradition in Casablanca. The city has been developed since 1907. Before Casablanca was a small village with 20000 inhabitants. Today the city has around 5 Million inhabitants and is still growing on an exponential way. The role of the planers is still limited in finding solutions for acute and urgent problems. An extensive vision for the city is still missing. The UAC project developed a vision for Casablanca in the last eight years with different scenarios and an action plan.

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Nachname, Vorname nur Initialien und dann Jahr, Titel, Ort

Connecting research to agroecological farmers: setting up a research agenda

Leonardo van den Berg , Margriet Goris, Fogelina Cuperus, Floor Hofman, Jannie Atzema - Otherwise

1. Introduction

Agriculture has become disconnected from society, nature and the farming population (Ploeg 2010). Agricultural research and research institutes have played an important role in this. Two related processes. First is the bias towards reductionist approaches. The result is a failure in recognizing the dynamic complexity and variation between and within ecosystems. It has also led to the persistent exclusion of local people, their knowledge, their values and their “ways of doing”. This in turn has led to the imposition of inappropriate practices and management systems which have not only failed to contribute to rural livelihood, but also have had negative impacts on the environment (Caister et al 2011, Pimbert 2011). Through these research approaches EU research and research institutes have contributed to the environmental and societal crisis that agriculture is currently facing (Pimbert 2011).

Second and related is that agricultural research is increasingly shaped by powerful commercial interests. Some have interest in the reductionist approach taken. An agronomic approach that reduces soil quality to the availability of dissolved nutrient to the plant has for instance been supported by and serves

the interests of the chemical fertiliser industry (Visser, 2010). This has neglected other aspects of soil fertility and associated practices. In the Dutch pig sector a continuous flow of scientific reports is pushing for a transition towards large scale industrial agriculture (Duinenveld, 2012). These are one of the discursive strategies used that take problems as a given, present solutions as sustainable and innovative, disqualify and marginalise opponents and by presenting own arguments as rational and others as subjective (Duinenveld, 2012).

2. Reconnecting research

Agroecology has emerged as an alternative to industrial agricultural model. Interest in agroecology, both as a practice amongst farmers in the Netherlands and as a science amongst students of Wageningen University, is increasing. OtherWise is a NGO that seeks to connect students to grassroots and social movements. In July 2013 OtherWise expanded the international research mediation programme with an agro-ecological programme. The main new target group of this program are agro-ecological farmers in the Netherlands.

Agroecology is defined here as the use of local resources and ecological processes to strengthen the farm. When it comes to

finding agroecological innovations two key learning processes can be distinguished. First is in finding what “local resources and ecological processes” are best suited. Second is finding what is understood by “strengthening the farm”. Both are highly dependent on the local context and on the knowledge, values and aspirations of the farmer.

From a research perspective finding a solution entails combining a plurality of actors from different knowledge traditions, particularly that of farmers, to create contextualized and locally relevant knowledge. The co-existence of different forms of knowledge and their associated practices, livelihoods, and way of doing must be recognized and respected. The challenge shifts from finding technical solutions to finding the right set of stakeholders, facilitating negotiations, finding the most appropriate form of participation and creating a suitable environment for participatory processes to take place (Pimbert 2011, Caister et al 2011).

Participation however requires motivated actors from both sides, a safe space where the agenda cannot be captured by a single actor and effective communication that can bridge different forms of knowledge (Abma and Broerse 2009). OtherWise has sought to facilitate and create an enabling environment for this type of research and seeks to include farmers in all stages of the research process to ensure that contextualized and locally relevant knowledge is co-created.

3.1 Spaces for problem setting

Different ways were used to expand our network of agroecological farmers and to gain insight on the issues that play amongst these farmers. For this spaces were created or used where farmers could talk freely about their concerns.

The Farming Systems Ecology chairgroup of the Wageningen University (FSE) organised a meeting on March 28th of 2013 with ten agroecological farmers in Wageningen and surroundings. The annual meeting provides a space for chairgroup staff to meet farmers and collect research question. This in turn is one form of input for their research agenda. OtherWise took up the task of approaching some of the farmers individually and in their own homes for a longer and deeper conversation on the problems and challenges they face and what research can mean for them. From these visits other, more urgent, concerns and different versions of the issue presented in the collective meeting emerged. These included more sensitive issues that were of a political nature. An example is a research question on conflicts of interest that play in the Biohuis, the national organic farmers’ union and the LTO, the national farmers’ union, of which the Biohuis is part of and, mainly consists of industrial farmers.

In August 2013 Foundation OtherWise and Foundation Boerengroep organised a ‘Farm Experience Internship (FEI)’ with the

objective to bring together practice of the farmer and theory of the student. During the evaluations with 9 of the 15 involved farmers research questions of these farmers were collected. Yet students were at the farms to acquire practical knowledge and gain insight on farming matters. Though the FEI can serve as a means to collect research questions. Due to lack of capacity at OtherWise there haven't been yet a follow up on their questions.

At the 'Biovak', an annual fair on organic agriculture, held in Zwolle on January 22nd of 2014 research questions were collected at a stall. As farmers, retailers and others are at the fair to network and to acquire new information few people spend enough time at the stand to talk in depth about their research questions. Therefore direct response was low. On the long term it might be different as visitors of the stand, involved in farmers associations are planning to share the information on the research mediation programme within their network. Therefore it's a promising means to reach those farmers beyond those who know already their way to the university.

At the Food OtherWise Conference on Saturday 22nd of February 2014 OtherWise organised a workshop to set a research agenda on agro-ecology. A diverse public of 15 people participated of which most had a research question(s) in mind before participating in the workshop. After an initial round where all participants explained briefly their questions four working

groups were formed to talk more in depth with each other and employees/volunteers of the Research Mediation Programme about the problem at stake. Although people shared individual concerns it was possible to match people on 4 themes, namely; 1) permaculture and agro-forestry 2) quality of soil, vegetables and fruits, 3) socio-economic position of farmers and 4) to link knowledge of (urban) farmers among each other and with satellite data. The direct interaction in the working groups amongst farmers but also with other citizens, mediators of the Research Mediation Programme already allowed for sharing knowledge on innovations and other types of knowledge.

These different methods to include all had their merits and pitfalls. However taken together we were able to get a better sense of the issues that play amongst agroecological farmers. The experience moreover provided input to change and refine our own methods. Individual meeting for instance were found to be an essential (complementary) source of input.

3.2 Setting the agenda

In setting up the research questions several actors, often including students, mediators, farmers and university supervisors were involved.

The issue put forward by the farmer formed the starting point. Farmers came up with a great variety of research topic ranging

from controlling mites that affect the crust of a naturally crusted cheese to farm socio-economics. There were also questions that many farmers shared. This includes issues of weed control of couch grass and gallant soldier as well as manure management. Farmers had their own ideas on the research set up. For the topic of weeds several proposed conducting a survey to see how other farmers deal with weeds. The nature of the research question also varied. Some directed at innovations in farming practices. Others who sought scientific proof to back up some of the statements that were confident about but which were not scientifically proven, often because of the little interest. One of the farmers for example was convinced that raw milk is healthier than pasteurized milk. Dutch regulations however forbid the sale of raw milk. Another farmer argued that supermarkets value vegetables by their appearance and size but that these often have very low levels of iron and zinc. Yet other farmers were concerned about the social-political constraints they were facing. This includes the lack of farmer representation in policy and problems associated with organic certification.

Farmers questions could be grouped in the following themes:

- a) sharing innovations at all levels between farmers and with consumers
- b) labelling, e.g. labels conflicting with innovation

c) socio-economic position of farmers

d) on-farm integration of agro-forestry and permaculture practices

e) minerals

f) manure

Students were interested in research for different reasons. Often learning in a different way, looking at how studied topics are related to the “real world”, gaining inspiration from the ideas of farmers, and being able to contribute to solving actual problems were mentioned. University supervisor showed varying degrees of interest but in almost all cases found the issues put forward by farmers “worthy” of research. Some found questions to be complex, so called wicked problems, and noted that the research would be more suited for a PhD student. This includes both the issue related to the organic farmers’ union and on cheese mites.

OtherWise has sometimes found difficulty in finding the right student. Many of the questions raised by farmers were not found to be suitable for the disciplines offered at Wageningen university. Some of the issues also brought OtherWise to think of revising its strategy. This is not without dilemmas. To support an agroecological farmers in finding stronger political repre-

sentation and in the shaping of organic certification standards involves taking a political stance. For such research to be effective it should form part of a broader advocacy strategy where results are presented other parties.

4. Discussion

Setting the research agenda that seeks to reconnect research to farmers can best be seen as a continuous learning process for all actors involved. As interaction between farmers and other actors proceed research questions are revised, farmers get better idea of what research can mean to them and vice versa, mediators and students see the that conducting research alone is not enough.

From the different settings in which agricultural research questions could be raised by farmers, we saw on one hand that farmers were eager for research but on the other hand we saw how much knowledge and skills already had been obtained by individual farmers through constant innovation processes. This also raises the need to share these innovative practices, knowledge and skills with other farmers, now often still used in isolation, as well as with science.

In setting an agroecological research agenda it has also become visible and felt that we are “swimming against the current”. Leading research agendas continue to be set by those in favor

of conventional agriculture which often focus on single farming system components or variables to ultimately find an ‘one size fits all’ answer. Ecological farmers often do not have or do not wish to use the same resources as conventional farmers. The various agrarian disciplines moreover often do not have the conceptual and methodological tools to engage in agroecological research. And rules and regulations, designed on the basis of industrial farming, often put constraints for agroecological farmers to survive and innovate. For our research mediation program to strengthen its support for the often small scale, integrated and localized agroecological farmers we also need to engage in the construction of an enabling environment where farmers, researchers and other actors are able to innovate. This may very well involve creating spaces for other types of knowledge at the university as well as advocating for changes in policy.

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Partnership Education: Action Research & Learning Scenarios (PEARLS) – Community-based learning through empowered voices

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Introduction

This conference discussion paper tells the story of a higher education community-based learning module and the international community media partnership (Community Media 4 Kenya – CM4K), activities and practices that it facilitates and which continue to evolve as an outcome of the fledgling international community media network.

The paper is co-authored by representatives of groups and Youth NGOs from marginalised communities in Kenya; students from the University of Brighton and Dr Peter Day, the founder of CM4K. Dr Day is the paper's main author and use of the pronoun I in this paper refers to him and his opinions unless otherwise clearly denoted. However, because the paper is co-authored, the stories of CM4K's evolution are expressed here through the voices and experiences of its participants – even if condensed or edited sometimes through necessity. Existing participants of the CM4K partnership network include the International Youth Council (Kenya); Faces for Peace; Focus Youth Initiative; K-Youth Media and the SEMA Youth Film Festival; together with students and staff from Rongo University College Information, Communication and Media Studies and the Community Media 4 Kenya (CM4K) students and staff at the

Faculty of Arts, University of Brighton.

Drawing on experiential learning processes in a final year undergraduate module (LM376 Community Project) on the BA (Hons) Media Studies Degree at the University of Brighton CM4K has, over the past 4 years, been developing a participatory educational and action learning scenarios (PEARLS) approach to Community-based learning.

The PEARLS approach requires students to engage, through dialogic action, with partners to map assets and identify needs; assess how assets might be used to address needs; plan and develop all aspects of the partnership activities; create and test the interventions in the field; and reflect critically with partners dialogically at each stage of the process. To date, much of the CM4K work has been of an experimental nature – focussing on student facilitation of capacity building workshops with community partners. These workshops are organised with limited finances and resources.

Despite the experimental nature of the early years, the evidence of increasing interest among community partners in Kenya was compelling enough for the University of Brighton to formalise the fieldtrip into the UG curriculum and identify it

as a significant contribution to the Faculty of Art's Impact Case Study submission to the Research Excellence Framework (REF) which recently assessed the quality of research conducted by UK Higher Education Institutions (HEI).

After introducing CM4K and the theoretical influences that shaped its development, the authors reflect on the community media activities and the partnership development in Kenya over the last 4 years. These reflections are developed further through critical perspectives of both partners and students. Insights into partnership developments currently in the planning stage are outlined and the paper concludes with a 5 point summary of the contributions the PEARLS approach makes to community-university partnerships.

Community-based Learning – a synthesis of service and community learning

The Community Project module that shaped the development of CM4K was influenced by the educational practice of service learning and theories of community learning.

Service Learning

Service learning is based in community service – a long standing American tradition – emphasises building good character (Allen, 2005). In its crudest form, service learning is student

volunteering in the community for academic credit (Mooney and Edwards: 2001) and is about “working for the benefit of others” (FIE: 2013).

Whilst service learning was highly influential in the birth of CM4K, this interpretation of service, that is to say, students ‘doing for’ or ‘doing to’ a community did not match the community development/building ethos that influenced my thinking during the development of the Community Project module. Whilst wishing to retain the benefits to students of experiential learning found in service learning, I also wanted them to experience the development and implementation of community media partnerships; together with the knowledge sharing and mutual learning encountered when engaging in reciprocal dialog and action with community members. Community-based learning is about learning by doing ‘with’ community partners rather than doing ‘to’ or ‘for’ them. Whilst there is often an element of philanthropy in all service learning approaches, community-based learning emphasises sustainable partnerships of learning and development (Annette, 2002).

Community Learning

The other side of the community-based learning coin is community learning, which is described as a process which, when grounded in everyday community life, enables the capacities and capabilities of communities to be built in an informal but

contextualised and relevant manner (Day, 2011). CM4K's contribution to community learning seeks to enable and facilitate capacity building by equipping people with the skills, information, knowledge and support through which community voices can be heard. It seeks to promote a confidence among participants to speak and engage in dialogue with others – an essential ingredient in effective partnership collaborations.

Whilst community learning focuses on any subject matter relevant to community need, it is always participatory in approach and seeks to build dialogue between learners. Dialogic exchanges between learners occur when information and knowledge are exchanged. This can be through conversational communications and/or through groups of people learning by doing. Community learning therefore encourages community networking processes (Schuler, 1996; Day, 2009) in which dialogic exchanges are the transactions between community learning network nodes, i.e. learners (Nielsen, 2002). Packham provides a similar illustration of community learning processes by describing them as:

- Learning with others (recognising the importance of the participant's identity, connectedness to the community and a sense of agency to achieve something worthwhile;
- Learning from experience (based on evaluation and critical reflection);

- Learning and doing through collaborative activities undertaken by groups.

(Packham, 2008. p.110)

Community-based Learning

Community-based learning builds on Packham's model of community learning (2008) by encouraging cooperative exchanges of skills and knowledge between student and community participants. Community-based learning highlights a symbiosis between 'teaching' and 'learning', in which all participants both teach and learn (Scott Tharp, 2013). It is this belief, that all learning participants are actively involved in both teaching and being taught, that highlights the reciprocal nature of community-based learning (Schofield, 2013; Bringle and Hatcher, 2009).

Community-based learning therefore not only emphasises learning as a process of mutual inquiry and discovery but also as the development of mutually beneficial and sustainable learning partnerships that effectively meet student and community learning needs. The purposiveness behind CM4K's community-based learning approach is to enrich student learning through teaching and community engagement, whilst strengthening and empowering communities in sustainable ways (Hart and Wolff, 2006; Packham, 2008

The partnership relationships that CM4K has managed to build and sustain successfully has enabled each year's Community Project module students to engage in meaningful and complex community media projects that meet the needs of our community partners (Eyler, 2002). The establishment and nurturing of these relationships has played a crucial part in enabling each year's students to build on the work of students from previous years in meeting the needs of the Kenyan partners. Successful community projects do not occur by accident (Werner et al, 2002). Strategies of planning, engagement, implementation and reflection are the foundations for effective community projects and it is these that form both the challenges and learning environments for students and communities alike.

Community Media 4 Kenya (CM4K)

CM4K is emerging as a community media partnership network. At this early stage in its history it comprises one academic and media studies students from the University of Brighton together with community practitioners, NGOs, civil society & government representatives in Kenya. Still in its infancy and without any formal organisational structure, CM4K is an outcome of 20 years of community informatics/media teaching and research by Dr Peter Day at the University of Brighton.

The birth of CM4K

CM4K originated from a partnership with former students – some Kenyan – who believed that the community informatics principles and practices they had encountered during their studies could be applied to benefit Kenyan civil society.

It was this early partnership, together with the enthusiasm of final year media studies students 4 years ago, that influenced me to develop the Community Project module in the direction of the current collaborations in Kenya. The community media module was started 10 years ago, as an experiment in service or community-based learning. The module focussed on creating community media knowledge sharing and learning environments for students and community partners in the city of Brighton and surrounding communities. Students were encouraged to engage community partners in dialogue and identify ways in which their media skills, knowledge and experience could be utilised to design solutions to community problems.

These dialogic processes enabled participants to get to know one another and develop relationships of trust and reciprocity; whilst assessing community needs and mapping community assets at the same time. The intention of this experimental module was to identify how community media tools, spaces and processes could be developed, and shared, in ways that address local needs; build assets and capacity; empower local

voices; support opportunities for socio-economic development; celebrate cultural diversity and promote socio-cultural understanding between students and community.

CM4K Today

Today, CM4K modest activities are totally self-financing, although we are seeking to move on to the next phase in the partnership's development and are now seeking funding in order to meet a growing demand among partners. For now however, students who elect to participate in the Community Project module, become part of CM4K and collaborate on the planning and implementation of fundraising activities to finance the implementation of the fieldtrips. Students pay for their own flights to Kenya. Once in Kenya, the fieldwork relies totally on the skills, knowledge, expertise and enthusiasm of the students and participating partners.

Students participating in the fundraising, organisation and planning of the fieldtrip seem to learn to identify with CM4K's goals quite naturally and quickly developing a determination to make a difference by helping to address the needs and aspirations of participating community partners. In addition to facilitating the knowledge exchange and mutual learning that takes place in the capacity building workshops, student fund raising also contributes to equipping the training workshops. Although only minimal to date we leave the equipment, we use each year to

generate content during the workshops, with our partners so that the trainers, we train, can continue the training and their own community media activities in their communities after our departure.

In keeping with the philanthropic nature of service learning, students are also planning fundraising events to support other social needs of participating partners. One such example of this is a campaign to raise funds for and raise awareness of the need to connect Kingsway Preparatory School in Londiani, a remote rural area, to the electricity grid.

Workshop Participation – Local Selection

Participants in the community media capacity building workshops are identified by CM4K's Kenyan partners. They are drawn from marginalised communities; NGOs representing disenfranchised youth; women's groups; farmer's groups; etc. in Kenya. This year, the International Youth Council of Kenya – in co-operation with the UN Volunteers Programme, the President's new Youth Enterprise Fund and Rongo University College drew up a programme for capacity building workshops and community planning discussions – in Nairobi and rural communities in Migori County, e.g. the very remote community of Nyandiwa on Lake Victoria, where CM4K is collaborating in establishing a community media centre. Whilst the Kenya partners plan the fieldwork activities and the students raise

awareness and funds it is important to engage in and maintain a dialogue between all partners to ensure the capacities and capabilities of the UK partners can be matched to the needs of the Kenyan partners.

Invitations to participate are generated through local community, policy and civil society networks in Kenya. An interesting but unplanned by-product of this mode of invitation generation has been a growing interest to participate from other countries, especially in Africa but Asia also. CM4K is not in a position to support such interventions at this moment but it is certainly bearing the possibilities in mind.

Participating communities gain from the participatory learning (community media) workshop (PLW) approach of CM4K through the acquisition, or improvement, of practical media skills. The PLW processes facilitates and encourages: collaborative inter and intra community dialogues; learning by doing; active project planning and implementation; experience in knowledge sharing; confidence and capacity building; self-expression and community voice; the articulation of community needs and; finding local solutions to these needs among participants. The capacity building approach we adopt is intended to empower participants to engage in dialogue about needs and go on to plan, organise and implement community actions in order to address these needs through the utilisation of community media.

Trust is a major element for developing these kinds of community networks. It is also a prerequisite to unlocking community motivation to use ICT for the kind of community building activities described above (Day, 2001). Relationships built on trust and sustained over time can prevent dissatisfaction when things do not go to plan – something not uncommon in the kind of short-term and under-resourced program like CM4K (Martin et al, 2009). The CM4K partnership approach is rooted firmly in an understanding that the majority of successful and sustainable community-based learning projects are built on strong relationships with community partners (Cleary and Simons, 2006) in which trust, reciprocity (respect) and mutuality are nurtured. CM4K seeks to develop these strong partnership foundations based on an approach it calls Participatory Education: Action Research & Learning Scenarios (PEARLS).

Conceptualising PEARLS – a community-based learning approach

The development of the PEARLS methodology, still a work in progress, draws on, and synthesises the principles and ethos of community-based learning and community learning outlined in an earlier section of the paper. Its development is shaped and driven by 4 basic propositions:

1. Student learning experiences are enriched by the development of collaborative communities of learning.

2. Students can be drivers of knowledge creation and learning in community/university partnerships
3. Community-based learning promotes community learning.
4. PLWs promote capacity-building and empowerment through knowledge sharing and reciprocal learning exchanges.

Drawing on experiential learning the PEARLS approach can best be represented in the form of a model that requires students to engage with both themselves as well as our partners; assess how the outcomes of this engagement assists in addressing community needs; plan and develop all aspects of the partnership activities; and create and implement the interventions. Each stage of the PEARLS model is connected to and shapes the next in a virtuous cycle of community building and action. Critical reflection and collective deliberation through dialogue are essential to inform and shape the actions necessary at each stage of the process (see Fig. 1).

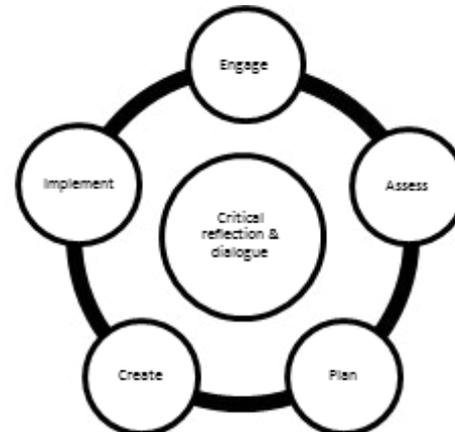


Figure 1 The PEARLS model conceptualised

On the face of it the CM4K community media partnership starts with the first semester of each new academic year in the form of the introductory session of LM376 Community Project. In reality, it could be argued that student engagement starts 6 months earlier at an elective module selection meeting, in which students are introduced to the elective modules they choose for the next academic year. It is from here that students decide whether or not they wish to take, what has become known as, the 'Kenya' module and start exploring ways in which they will pay for their flights and other personal expenses. In-

terestingly, we have recently discovered that some students are planning even earlier to take elective modules that might give them a chance to register for LM376.

That said it is during the early weeks of the module that the engagement phase of the PEARLS approach begins in earnest. The PEARLS engagement process has 2 inter-related stages. The first stage is the creation of a module community of learning in which students are encouraged to work collaboratively, share knowledge and reflect critically in both online learning and face to face environments. We have noted that the interactions that occur when students plan and organise fund raising activities – using their skills, knowledge and social networks very early on in the module contribute significantly to the development of a sense of community among them. Collaboration in pursuit of common goals, be they funding or learning targets, creates trust and friendship bonds conducive to effective partnership building. The second stage, starts when students open communication channels between themselves and partners participating in the next collaboration in Kenya. The purpose of this dialogue between participants in the UK and Kenya is two-fold:

- 1) To map and match assets (that is to say the skills, knowledge and expertise of the students) with the needs of our partners.
- 2) To build trust by identifying common ground and developing common goals.

Developing this mutual understanding and collective knowledge-base is crucial to the processes that will shape the development of the partnership from this point forward. However, communications between Brighton and Kenya, especially the more remote areas of Kenya, are not always easy and students need to learn quickly the need for determination and persistence. It is not enough to send an email and wait politely for a response, they need to learn to become proactive and take responsibility for the communication exchanges. In this way, through these early communication processes, students start to learn useful lessons about project management and cultural differences. They also learn quickly to temper their expectations of ICT. The connectivity and what can be done with ICT that students take for granted in their everyday lives are often far from commonplace in Kenya and students begin to learn that community media activities that have had the very best organisation and planning quite often have to be scrapped or revised to suit local conditions and circumstances.

Despite the importance of the assessment phase of the methodology in which the communication processes consider and reflect on how the partnership assets might be used to address needs and help us in the design or planning of the interventions. It is always important to be prepared for, and be able to, change on the spur of the moment. Understanding this need and assessing how changes might be implemented is an important part of the planning process.

The planning stage of the PEARLS approach is multi-faceted. It has practical purposes, for example – the raising of funds and awareness to make the interventions a reality form part of the planning process, as does the design and testing of training materials through pilot capacity building workshops. Not all students taking the BA (Hons) in Media Studies at Brighton – which combines theory with practice and allows them to select either theory-based or practical pathways for their studies, or a combination of both – possess practical skills. Running pilot training workshops enables us to test the training materials on young people with low levels of practical media skills.

In addition to the building the skills amongst the entire fieldwork team, the pilot PLWs contributes to the strengthening of trust and network ties, so that the social capital of CM4K is also strengthened. This outcome assists in the design of more effective

PLWs but it also facilitates confidence when unexpected problems are encountered during the implementation phases of the fieldwork. The capability to identify a problem and adjust or totally revise the training the trainers approach adopted in the participatory learning workshops (PLWs) is crucial to implementing effective interventions. The capability to be flexible and adjust when working under pressure in front of people with expectations is a valuable skill in the workplace and an additional outcome of the PEARLS community-based learning

approach is that students develop and become more grounded and socially responsible as citizens in the process.

CM4K – 4 Years of Fieldwork

The first CM4K's fieldtrip took place in July 2011. Due to the rather experimental nature of the trip – we were learning as we went – our planning and organisation for the trip was rather hit and miss. Partnered as we were at the time a very small UK based charity started by a group of former students and with very few resources organisation was somewhat chaotic. Despite this the trip, in which 4 students designed, developed and implemented participatory learning workshops for community reporting and blogging.

Having been informed that there was internet connectivity, we set up a blog using an open source content management system so that the content generated by our community reporters could be archived and added to after we left. Over 30 young people from the rural village of Kibugat, Kericho County, together with 15 managers from a newly formed network of ICT centres, took part in the community planning sessions we organised. The youth engaged in the community reporting training and learnt how to post content in the form of community blogs.

Unfortunately, connectivity in the Highlands of Kenya is incon-

sistent and the community blogging had to be shifted to an Internet Café in the neighbouring town of Litein. As 1 and 2 students switched the blogging workshop to Litein, the remaining 2 students stayed behind and organised an impromptu workshop on the United Nations Millennium Development Goals (MDGs) programme. On completion of the blogging training we returned to Kibugat to find a totally enthusiastic group of ICT centre managers engaging most effectively in an informed discussion on the merits of the MDGs and how they relate to the development of new ICT centres in Kenya.

As the next group of students started to think about our next intervention, I arranged for 2 of the first group to come in and speak about their experiences with them. Drawing on and learning from the experiences of their predecessors – who were rather dropped in the deep end – the next group started liaising with partners from Kibugat, Njangoma & Ruiru to plan capacity building training workshops in 3 marginalised communities.

It should be noted at this point that the work that achievements of this next group of students was key to the development of CM4K and its emerging partnership network. To successfully identify needs, audit skills and assess assets for ICT workshops with people who have little or no access to electricity, let alone telecoms and computing infrastructure, is a major achievement in itself. To plan and implement community digital

story-telling workshops using video cameras; to teach participants the mechanics of tripod use, the range of camera shots (when and how to use them effectively), as well as how to plan, story-board and shoot a video as a community building process, is really something quite special. To then think that 3 students, 2 of whom had no prior video experience, trained over 70 people from 5 different tribes – Kipsigis (Kalenjin); Luo; Kikuyu; Meru & Kisii in 3 different geographic locations across Kenya was something quite spectacular in terms of its effectiveness and student achievement.

However, to put this project into its complete context, it needs to be understood that we had been approached by a range of community organisations and youth NGOs at a Kenyan ICT Centre conference at which the lead author was presenting. A request was made for us, on our next fieldtrip, to provide training that facilitated the use of ICT in the promotion of peace in the run-up to the (recent) 2013 elections.

The previous elections in 2008 had been marked by inter-tribal hatred, violence, rape and murder, and many young Kenyans – including, as we were to find out, many who had participated in the violence – were ashamed and wanted to do everything they could to promote peace. It was against this backdrop that the students designed, planned and implemented the workshops.

Due to technical problems with the available computers, we

had been unable to edit the video in rural Kenya with our partners. The students undertook to edit the story based on their experience of working across the tribal cultures. What became evident throughout was that despite traditional tribal differences, for most Kenyan youth, the similarities in their living conditions and aspirations for the future transcended cultural differences and made the need for a common voice for peace an imperative.

The editing conducted by the students on their return was so effective that a number of the participating NGOs not only incorporated the training we'd provided into their own out-reach activities but they used the video as an artefact that illustrated how young people from different tribal and cultural backgrounds could work together in the promotion of peace.

The 3rd fieldtrip saw significant changes to CM4K. It was decided that we would no longer continue our partnership with the UK based charity, as it was proving increasingly difficult to sustain. This decision forced us to reassess our relationship with all our partners and, for a brief moment, caused us to question whether CM4K could continue its partnership activities. Engaging in dialogue with the Kenya based partners, the 3rd group of students were able to illustrate that both a desire and a need existed among our partners for us to continue. This was the spur that was needed and it was during this visit that the partnership with both the International Youth Council of Kenya

and Rongo University College developed substance.

3 students from Brighton designed and implemented video production and blogging workshops in Nairobi for 20+ participants. These included the Principal, the Dean, a Senior Lecturer in Media Studies and around 10 students. In addition to these participants from Rongo, there were also people from a number of youth and development NGOs, including IYC (Kenya), Accord, Oasis Peace Organisation and K-Youth Media. In addition to the workshop, we facilitated a community planning workshop at the Focus Youth Initiative premises in Ruiru alongside a peace NGO – Faces for Peace, whom we had worked with in the previous year. The purpose of this meeting was to scope out plans for the development of a network of community media centres. This network has not developed as swiftly as we had hoped but it is still a work in progress. The desire and good will exists but resources are required if this network is to become a reality.

In preparation for the fieldtrip, students had also been in contact with the founder and now Director of Kingsway Preparatory School in Londiani, Kericho. The students had been collecting books from libraries that would support the teaching of English in the school's curriculum. A visit to deliver the books was organised and a partnership and friendships were born.

At this point, a decision was taken by the School of Art, Design & Media in Brighton to formalise the community-based learning

fieldwork of CM4K within the curriculum of the Media Studies degree, Up until this point, it had only been the planning of the fieldtrips that had been a formal part of the Community Project module. The first 3 fieldtrips had been conducted after the semester ended and just prior to the student's graduating. In October 2013, LM376 was moved to the first semester and the 4th fieldtrip planned for January, 2014.

For the first time, all students taking the module were going to be available to participate. In previous years, most students taking the module once they'd handed in their last assignments were either taking well deserved holidays with their families and loved ones, or were starting work and were so unavailable. This meant that it was entirely possible that all 15 students taking the module would want to go to Kenya. In the end the number was 10. The Westgate Shopping Centre terrorist attack in Nairobi was still in the news and some parents were, naturally enough, worried about their children going to Kenya at that time. All students were asked to consult their nearest and dearest and 10 resolved to make the trip.

The fundraising and awareness raising was the most effective ever and a very strong sense of community developed fairly early on among the students and not just those who were going. Interestingly, most of those who decided not to go engaged just as strongly as those who decided to go. This was a significant development and one we hope to sustain for future trips.

Preparations for the 4th fieldtrip saw students engaged in the planning of what was to prove to be a very intensive intervention. It was decided that for this trip we would seek to run the video production and blogging sessions of the previous year but that we would also incorporate photography and podcasting into the workshops. Students interested in working on the photography and video workshops engaged quickly with partners interested in these practices. A collaborative photography project, entitled Stories from our Cities, emerged in which participants would share stories of their cities through the medium of photography. The student selected as project manager for this project set up a Tumblr blog and used a Facebook page to teach the young Kenyan partners how to use the photo-blog. Slowly but surely photographers from both Nairobi and Brighton started to post their photos.

The idea behind this project had been to organise an photo-story exhibition in collaboration with the SEMA Youth Film Festival & K-Youth Media but somewhere along the line, communications between them and International Youth Council (Kenya), who were planning the the trip on the ground for us, became confused. This was due in no small part to some very personal issues being experienced by the Director of the SEMA Youth Film Festival. Indeed the situation remained unclear right up until our arrival in Nairobi, when it became clear that a decision had to be made about what was possible and what was not.

The main lesson here is that whilst it is encouraging to see the CM4K partnership develop and grow in the way it is. Its activities now require a more organised approach to planning. It also requires adequate resources if it is to be sustained but above all it requires regular, open and transparent communication processes if the potential is to become reality.

Indeed, communications problems were to provide important for us lessons throughout the trip. On occasions we were sometimes left wondering what we were meant to be doing. I put this down to differences in organisational cultures and limited resources but I know it was very frustrating for the students at times.

The second half of the fieldtrip, which included community media capacity building workshops; community planning meetings and an intended meeting with the Migori County Governor, was organised by our partners at Rongo University College. Their friendliness and generosity was amazing and warmed our hearts, however at times there appeared to be a lack of clarity of direction and communications were at times problematic.

As a community practitioner and researcher of a good number of years I am used to things not always running as expected. To me this is a fundamental part of community work however, we need to consider how our limited time in Kenya might be used more effectively, especially when it is in such scarce supply on

the fieldtrips.

As a new departure for all participating partners it is important to understand that the collaboration was being run with very limited resources which were often stretched close to breaking point. This was especially the case on the technology front. More effective planning and inclusive communications would have assisted everyone in understanding what was happening and why in moments of uncertainty.

CM4K through the eyes of our Kenyan partners

In order to write this section I contacted partners who had participated in the planning and implementation of the 4 trips. What follows are their insights and perceptions, as far as possible in their own words. Despite some minor corrective editing which has been necessary in places, they are presented, as sent, and paint a powerful picture of the impact of CM4K's activities.

Faces for Peace organiser – Mike Asudi

“So far many youth acquired necessary skills that they now use in day to day activities. We have Oscar who now is a freelance photographer. James runs an NGO in Kisumu and has employed the skills to raise the community voices on need to be involved in supporting orphans. We have John who worked with Faces of

Peace during peace campaigns to develop films and cover the events across the country”.

Focus Youth Initiative ICT outreach worker & Ruiru resident - Kris Mbogo

“The students were very interactive during the training because they were working with fellow young people. The trip was successful since we were able to train over 20 youth in film making and digital story telling in our centre. Due to this training and the equipment you left with us, we have been able to make some videos addressing issues in the community. Also one of the trainees, Vincent Muiruri, is currently in the University pursuing Film Making and Theatre studies. This is as a result of the trip of the University of Brighton Students”.

International Youth Council peace worker - Tom Mwiraria

“I would not have had a chance to visit Kibugata, better still to acquire indispensable skills in ICT and peace had it not been for the invaluable efforts of the visiting Brighton University students together with their dedicated lecturer Dr Peter Day. The extensive 3 day training in Kibugata, drawing young participants from diverse tribes in Kenya was a significant achievement. It enabled an integration of the youths under a realisation of common shared national philosophies, values, principles and socio-economic matrix. The Kibugata training came against the

backdrop of devastating tribal bloodshed that rocked Kenya 4 years earlier. It was a relief to see youths and invited elders embrace and make declaration of never again to allow tribal divisions or feud. To this end, ICT training particularly film making was essential to equip the youths in their numbers from ethnic diversity to tell their stories and take the message of the need for peace using technology. I was one such beneficiary of the film making training.

The training offered by the students – whose excellent presentation, friendship, consistence, dedication and valuable support in every bit of training – left an enduring mark. I am confident to say, that I am now skilful with camcorders and film making and I never miss a chance to fly high a banner of peace. The training ended with a yearning for more from the participating trainees .Thank you Dr Day and the very effective team for this noble cause.”

In addition to this feedback received from participants of the first 2 CM4K fieldtrips, I asked Willice Okoth Onyango – Director of the International Youth Council (Kenya) and co-organiser of CM4K’s most recent training programmes to interview participants from the last 2 fieldtrips. The following section presents the results of this consultation in his words.

Benefits of Community Media Training to Kenyan Youth and Communities

“Media and modern technology are important. Young people specifically, need information to develop their potential through: education and training; identifying market trends and entrepreneurship; enriching cultural experiences; networking; and taking control of their daily lives through sharing and consumption. Information in the right form, in the right place and at the right time is a key contributor to the development of individuals and communities. Young people have the urgency to network, share, consume and generate information to improve participation and contribution to development.

The role of positive mainstream and social media as well as its effective use to benefit young people cannot be underestimated. In this regard, the International Youth Council of Kenya together with the School of Arts, Design & Media at the University of Brighton have collaborated in the past years to organize media induction workshops that focus on video production techniques. Facilitated by the University of Brighton students the purpose of the workshops is to benefit selected young people from different backgrounds in Kenya.

At IYC, we appreciate that the importance of information and media has grown in recent years with an ongoing transition to information and knowledge-based communities taking rapid shape. We want build on the strengths of our collaboration with CM4K to provide Kenyan youth with skills and information that leads to: job creations opportunities in media and journalism;

confidence in self-expression; and nurturing young people as leaders who can effectively communicate. Over the years, we have:

- i. Conducted media workshop with plans of establishing youth multimedia centres in in Kenya.
- ii. Promoted multimedia and cultural exchange between Kenyan youths and the attending University of Brighton students.
- iii. Used media as a tool to promote youth participation and express themselves through modern platforms like blogging.
- iv. Trained upward of 200 young people and visited several communities in programmatic community media trips.
- v. Facilitate continued online and offline exchange of information, knowledge between the Kenyan youth and the University of Brighton Art, Design and Media students which has led to the birth of numerous media related projects.
- vi. Built the capacity of Kenyan youth to use and think about using mainstream and social media as tools to participate in developmental initiatives they are part of and speak with their voices.

The training activities always integrate with field visits to enable our students apply what they will acquire through the training.

Since the trajectory is towards the disadvantaged communities targeting mostly the youth, IYC intends to conduct outreach activities and research initiatives in areas of peace and conflict resolution for the youth who participate in intra-ethnic conflicts and youth empowerment for promoting sustainable development for the youth.

This collaboration with CM4K has raised high expectation among Kenyan youth and communities on how these media trainings can transform their socio-economic well-being. In the long run, these acquired skills will have a spill-over effect in the communities such as to fuel some economic viability.

The joint media project has led to plans to establish Community Media Centres in Kenya which are networked with the main multimedia centre such that expert information can be made available to young people and communities whilst focussing on:

1. Peace and conflict resolution
2. Cultural diversity and inter-tribal unity
3. Entrepreneurship
4. Health related issues, e.g. HIV awareness
5. Drug abuse

6. Any other emergent and pressing topic

The CMCs will appropriate the information potential of media in driving and sustaining the activities of the communities for socio-economic development. A number of media resources will be used in the CMC, including photography, video production, podcasting, digital story-telling, info-graphics and social media to reach the youth in communities to promote sustainable development.

While CMCs will provide a large area for research and other outreach activities, IYC intends to make use of its collaboration with the University of Brighton to enable it, through the use of media, to reach a significant number of youth in the country. Our intention is to create awareness in development activities and use the energy and creativity of youth in order to positively transform their livelihoods and those of their communities.

Student Perspectives of CM4K

Having heard the views of CM4K's Kenyan partners it would be useful for readers to hear the thoughts of some of CM4K's participating students.

Lucy Beavis

"On reflection, the trip had numerous personal and academic

benefits. It was rewarding to see how the skills we taught were beneficial to both the communities and individuals. Several participants specifically distinguished how the workshops would help their career e.g. in music videos and advertising campaigns. On the other side of the coin, teaching in the capacity building workshops identified weaknesses in own my skills which I was able to improve by learning from other CM4K students.

The combination of having (a) identified our own skills, (b) the needs of the partners we were working with and (c) how our skills could be integrated into workshops and so meet the needs of participating communities, brought clarity to the project and provided a distinct aim to work towards-- teaching video/audio/photography skills to youths in selected communities in order to empower them personally whilst increasing their employability.

The work conducted in Kenya was gratifying as we successfully pursued a project based on identified needs, which subsequently benefited several communities. The sense of fulfilment from helping others whilst learning myself has inspired me to continue with this path of civic duty and we are currently discussing how to fundraise for Kingsway Preparatory School.”

Angela Hughes

The many challenges (e.g. technical and last minute arrangements) that we experienced in Kenya, strengthened our abilities: to deal with unplanned situations- there and then; to expect the unexpected; and to adapt and adjust. Being able to think on our feet and adapt to the unexpected built confidence and resilience within the student group.

Through fundraising we communicated messages of the project to our own local communities; businesses and fellow students at the university. We engaged and facilitated communication for development. Whether or not students travelled to Kenya, the project encouraged continuous participation and communication between students, local communities and partners in Kenya. I noticed that no matter how few assets/skills one brought to the table, or how small we might think they are, all contributions- whatever they were- were important. The key for me was to learn from each other, share knowledge, share new knowledge, build capacities and empower each other.

Chloe Merrick

“Whilst we were planning workshops and grouping together in skill assigned groups, it was also of primary importance that we raised enough money to not only send a larger group than normal to Kenya, but also to take out some materials to assist in

the workshops. The fundraising, was personally, something we all took great pride in and provided us with the sense of ‘agency’ mentioned earlier. The fundraising task was approached in a prompt way and the group wasted no time in raising the funds needed for the trip to succeed. As with any practical experience there were highs and lows and not all of our fundraising ideas developed, but for the ones that succeeded, we managed to avoid making a loss and continued to make a difference, whether it be large or small. The fundraising also taught as valuable skills in communication, negotiating and marketing, all skills, which will be beneficial to our future employers, which truly cannot be taught in the classroom alone.”

Jennifer Burrows

“A partnership was formed between those from Brighton and our Kenyan partners. Although we led the technical side of the training, what I found interesting was the unexpected amount I learnt from our partners.

However, working with limited internet access was often challenging and frustrating. Having one computer controlling 10 desktops might be cost effective but made editing on them almost impossible because everything was very slow. Sometimes, it felt like nothing was going to come together. So when we actually managed to get the film finished it felt like quite an accomplishment! I’m sure the other video, photography and

audio groups would agree.”

Sonja Madani

“The aim of these workshops was to share skills which can be used to facilitate communication amongst the community and its members in order to strive for social change. What I thought was particularly significant of this bottom-up approach was that the individuals within the community choose issues relevant to them personally. This not only ensured their commitment to the project, but also ensured that the community identified with it as it had not been imposed on them by us, the outsiders.

Our group chose the topic of female genital mutilation – a rite of passage ceremony among some tribes but an act that would be considered unthinkable in developed nations. Had we chosen the subject content to be covered by the video we would have unquestionably selected a different topic and could have totally misjudged which issues are important within the community because of our subjective understanding of societal issues. This is why CM4K is so valued by the partner organisations. It does not impose its own culturally specific values on the communities and aims to encourage development inclusive of everyone with the community. The skills acquired from the training can be shared by them with others to create understanding of how these technologies can be utilised to promote and sustain further social change.”

Roderick-Hele Kergozou De-La Böessiere

“At the start of the community media module I wasn’t really expecting much out of the class. I viewed the idea of going to Kenya as more of a holiday that I knew my parents would pay for as it was part of my university course.

During the fund raising stages this changed slightly. The act of working towards a goal in team made me a lot more involved in the cause we were working towards rather than the distant approach I had when we started.

When we were finally in Kenya my ideology about the whole trip had made a 180-degree change and I could see how what we were doing could make a difference as well as the people it was helping.

Just before the we set off on our trip we had a mishap with our flights, instead of our return flight being two weeks later it was booked for 6 months later, at the time this caused concern but by the end of those two weeks I was sad to go and would of easily stayed for a few more months to run more workshops.

After doing community work in Kenya I have carried on with philanthropic work, I have recently been accepted to go to China in the autumn to teach primary school kids English. I have also offered to make promotional videos for a new charity

which focuses on mental health and arts.

In addition to I have also continued to help some of the Kenyans who participated in the workshops we put on. Through the use of social media I have been guiding one participant through the stages of making a documentary and we are developing a personal friendship with each other.”

Conclusion

The most significant evidence emerging from these partnerships is the support they give to the argument that the participation, networking, communication and knowledge sharing activities and processes that occur when using ICT as part of community learning assist in building capacity and capability – empowering individuals and community alike.

To date, much of the CM4K work has been geared toward developing the capability of students and community partners collaborating with limited finances and resources. However, the interest among community partners has been compelling enough for the University of Brighton to formalise the fieldtrip into the UG curriculum.

It is our opinion that even in difficult economic climates it is possible, through determination and commitment, for HE institutions to: 1) shape the competencies and career prospects

of students and community partners alike; 2) make themselves more accessible to communities and civil society; 3) support and sustain community development activities; 4) stimulate both community-based and community learning; and 5) incorporate exciting curricular developments that contribute to mutual knowledge sharing development and learning.

In addition to this belief and it is important to conclude by adopting a more personal and human understanding of the CM4K experiences. As Rod (and the other students who maintain friendship via social media after they leave university) have discovered – community-based learning not only changes your perceptions of things; it also changes your life. Engaging in processes in which the sharing of knowledge leads to and developments in our understanding of the world in which we live. The PEARLS approach is about more than knowing how ICT might help us build community. It is about creating relationships in which trust develops and friendships evolve. It is a very human story but then so is community.

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Democratising knowledge: co-creating the future, insights from the iWeek 2013

Emma Diemont, Egle Draugelyte, Georges Felix, Gilbert Atuga, Rense Bos - Otherwise

Abstract

Citizens knowledge and laymen knowledge are increasingly recognised as valuable assets in creating innovations to reach social or environmental benefits. This entails a deep form of knowledge democratisation, where different groups in society are involved in the process of knowledge construction. Acknowledging the plurality of worldviews can therefore ensure that not only the views and interests of dominant groups are reproduced, thereby making the arena of knowledge production more democratic.

However, democratising knowledge may sound beautiful, but bringing it into practice successfully is highly context dependent and not as straightforward as one might hope. Enabling circumstances have to be in place to include all relevant actors, give everyone a voice, and create inclusive processes of participation.

During the iWeek 2013, an unconference on ‘interactive methods for social change’, organised by OtherWise (the Netherlands), various case-studies were presented on recent experiences with interactive methods for fostering participation.

In this paper we will look at three case-studies, in Haiti, Kenya and the Netherlands, which were explored during the iWeek 2013. The participatory process and its outcomes were analysed. The analyses suggests that, whereas in some cases co-creation might be considered as the ultimate stage of participation, in others co-design might be more effective to reach social and environmental benefits.

“Mikoko Pamoja” from Swahili: “we and the poles are one”

Introduction

“Knowledge plays a significant role in ‘development’ and ‘environment’. It is important because it shapes society not only through technology, but also through instilling values and assumptions which motivate human beings and inform national policies”, as Pimbert (2006) states.

But what exactly do we mean when we speak of knowledge? Whose expertise are we talking about? Nowadays, citizen and laymen knowledge are increasingly recognised as valuable assets in creating innovations to reach social or environmental benefits. At the same time there is a declining trust in professional expert systems, which are often dominating problem-framing and solutions offered to complex societal and environmental problems.

Towards Knowledge Democratisation

With the failure of innovations made behind closed doors (lack of transparency, consultation and societal participation) trust of society in science and its innovations has declined. Reason and Bradbury (2008) state it as follows: “First, around the world there has been an erosion of faith in expertise to solve pressing problems and issues. Whether because of the failure of science

adequately to predict or control risk (Beck 1992), or because of a growing acceptance of differing ways of knowing.” Moreover, when seemingly reliable knowledge is constructed within a narrow discipline or social arena, it might be easily contested by other groups in society, whose voices were not heard (Nowotny 2001).

The boundaries between expert and public knowledge are becoming blurred, and different forms of knowledge, both professional and lay, are being recognised as valuable assets in constructing effective innovations. Fisher (2000) states that the process of knowing is increasingly becoming the outcome of a negotiation between people with “expert knowledge and the actors in the everyday world, including the experts themselves.” Hence he argues that this process should not be regarded as merely the domain of professional expertise.

Woodhouse and Nieuwsma (2001) elaborate that whilst “some peoples values are systematically over-represented through access to and representation by expertise, others are systematically underrepresented.” A more democratic approach is hence needed in which the voices of otherwise excluded people are integrated in problem solution and innovations. Acknowledging the plurality of worldviews can ensure that not only the views and interests of dominant groups are reproduced, thereby making the arena of knowledge production more democratic.

In order to move towards a more democratic knowledge arena, “there is a need to actively construct knowledge for diversity, decentralisation, dynamic adaptation and democracy” (Pimbert 2006). In this context, Nowotny (2001) argues that we should “move towards socially robust knowledge”. Knowledge will become more socially robust when it meets several conditions. Firstly, knowledge should be tested for validity in the real world, that is to say: outside the laboratory. Secondly, it should involve an extended group of experts, rather than a select team of professional experts. Lastly, it should result from having been repeatedly tested, expanded and modified. In this manner a type of knowledge will come into being which is more socially robust and can resist in a social world with its controversies, hazards and complexities.

All in all, this argues for interactive and participatory methods to engage citizens and laymen in the process of knowledge creation. Citizen knowledge is not an ultimate solution but a contribution to finding such solutions. Integrating local, endogenous knowledge within the process can lead to a wider spectrum of knowledge diversity and hence to more robust innovations. But, how to adequately involve citizens in the process of innovation creation?

Stages of Participation

Citizens can be involved in innovation processes and imple-

mentation in a number of ways. When looking at participatory processes different interlinked stages can be defined. Levels of participation are widely addressed in the academic literature. The participation ladder and the participation wheel are widely used concepts (Reed 2008, Sutcliffe 2011, Lam 2013). Levels identified in the participation ladder of Arnstein (1969), most commonly are: manipulation, therapy, informing, consultation, placation, partnership, delegated power and citizen control. The ladder, being rather static and hierarchical, made place for a wheel in which one stage would follow the other subsequently. The wheel of participation (Davidson 1998) “emphasises the legitimacy of different degrees of engagement” (Reed 2008). In the wheel of participation four main areas are addressed: inform, consult, participate and empower. These stages show an increasing input and interdependence in the process. From top-down communication, involving a one-way flow of information, to two-way information exchange and dialogue between all relevant actors (adapted from Rowe and Frewer 2000).

In this article the following stages of participation will be used, from passive participation to co-creation. These have been synthesized from different domains, from politics to economy and natural resource management (Bauwens 2008, Blackstock et al. 2006):

- Passive participation: when citizens receive information from professional experts about innovation development and imple-

mentation, but have no input in the process and do not have the possibility to express opinion or give a choice.

- Self-service participation: citizens can choose between innovation options, but these options are static and they have no influence to shape them.
- Do it yourself (DIY) participation: citizens are involved in innovation development and implementation. They have the possibility to adjust certain parts of the innovation process.
- Co-design: citizens have input and influence the process based on their needs. They have the opportunity to shape innovation development and implementation with professionals. It is based upon a partnership between the relevant actors, but the final outcome is implemented and lead by professionals (adapted from P2P foundation 2014).
- Co-creation: all actors (including laymen, citizens and professional experts) are involved in the creation of innovation from the beginning. It is a transparent process in which all relevant actors are co-responsible for the innovation creation and implementation (adapted from Owen et al. 2012).

In the context of co-creation, Derrick and Pavone (2013) speak of “up-stream and down-stream engagement and decision-making”, where up-stream engagement signifies the

involvement of the relevant actors from the very beginning of the process, and down-stream refers to the research agenda having been set without the involvement of actors.

According to Kristensson et al. (2007), involvement of actors in the co-creation process produces more creative ideas, the innovation is better valued and more easily implemented (Kristensson et al. 2007). However, this does not imply that one stage of participation is necessarily preferred over other stages of participation: “different levels of engagement are likely to be appropriate in different contexts, depending on the objectives of the work” (Reed 2008). In some cases a high level of involvement “might result in confusion over aims and judgements” (Rowe and Frewer 2000).

Enabling Circumstances

The stage of participation which is wishful for a specific innovation is highly context dependent. Contextual forces such as location, technology, social relations, legal requirements, political regime of the country etc. might support or block participation. For instance, economic decline can abolish the support for the innovation development, or political regime instability can prevent actors abilities to engage in a process (Brown et al. 2003, Nadeem and Fischer 2011).

Enabling circumstances have to be in place for all relevant

actors to be able to fully participate and ultimately reach a stage of co-creation. Firstly, knowledge is a major factor that can allow and enable participation. Lack of access to relevant skills and knowledge is often a factor of exclusion (Liberatore and Funtowicz 2003). In order to increase participation it can, in some cases, be crucial to allow actors to become more knowledgeable on the topic and gain expertise needed (Corus and Ozanne 2012). Second, the environment of trust is crucial to participation (Derrick and Pavone 2013). Actors need to trust each other in order to collaborate and work together. Trust building is a long term process which involves listening, long-term relationships and presence in communities (Brown et al. 2003). Third, power structures can easily disrupt or enable and catalyse participatory processes. Involving diverse groups of actors will imply that there will be a divergence in levels of wealth, education, political clout and other sources of power (Brown et al. 2003). In order to be able to cope with such divergence, it is important that such power relations are firstly acknowledged and secondly balanced within the innovation process. Fourth, closely related to the issue of power relations, also tangible resources (such as financial means, sufficient time) and facilities need to be in place and accessible. These resources and facilities should be used in a rightful manner, benefiting all actors involved (Rowe and Frewer 2000, Nadeem and Fischer 2011).

Summarising all points above, enabling environments are need-

ed for participatory processes, in which there is trust amongst the involved actors, in which power relations and means are balanced and in which access to relevant knowledge and skills is available and accessible.

Insights from iWeek 2013

Otherwise foundation (Wageningen, the Netherlands) yearly organises the iWeek. The iWeek is an unconference on interactive methods for social change. The iWeek forms a platform for knowledge sharing and co-creation of interactive methods for social change. This means that methods and practices from over the world with regard to participation are shared and reflected upon. Central question during the iWeek is: what are recent experiences in the field of interactive methods and what can we learn from each other? In this paper we highlight three case-studies we came across during the iWeek 2013. We will describe and discuss these and give some tentative evaluation on the stages of participation and enabling circumstances.

Case Study A: EcoSan Toilets in Dessources, Haiti

On January 12, 2010 Haiti was struck by an 7.0 Mw earthquake, which caused immense damage to major cities and ports, affecting approximately 3 million people. Vital infrastructure was severely damaged or destroyed. In this context, Silent Grace Foundation (SGF) was founded. SGF focuses on conceptual-

izing and implementing community-led projects that address local needs in the fields of public health, ecological agriculture, engineering, renewable energy, education, and leadership. SGF started to work in Haiti with Organisation de Jeunes Honnêtes pour le Développement d'Haïti (OJHDHA) in 2010. They have been leading the community development project held in Dessources, a village with 400 inhabitants.

This project followed a six-step participatory process: (1) diagnosis, (2) local needs analysis, (3) design and selection of options, (4) project planning, (5) implementation, (6) follow-up and evaluation. The diagnosis was based on a study of local needs identified through formal interviews, participatory dialogues and observations. From this process, several principal problems were defined: underground water contamination, food insecurity, and an alternative solution to open defecation practices. In order to deal with the wide scope of the above mentioned issues, the Ecological Sanitation (EcoSan) toilets project was chosen. It addressed Dessources' community's environmental, public health, and social needs, while improved agricultural outputs through a custom-designed off-site composting system. The toilet design and engineering took into consideration the particular conditions of the community such as: high water table, extreme flooding, and limited financial and physical resources.

As of August 2012, three EcoSan toilets were built in Dessou-

rces by community members and supported by SGF engineers. An impact evaluation of the EcoSan project was completed through an adoption assessment realized by students from the University of Puerto Rico School of Public Health. In the assessment, perceptions and adoption rates were documented as well as recommendations for further development.

The implementation of EcoSan toilets increased and strengthened social capital in the community. The community was organised for setting up a self-sustaining project, converted human waste to organic compost and made it available to local farmers. The importance of listening to the community and including them in every step of the planning and implementation process was crucial to the sustainability of this project.

Case Study B: Mangrove Conservation in Gazi Bay, Kenya

Gazi bay, on the South coast of Kenya, has a population of approximately 2,000 inhabitants. Mangrove forest, which covers the coastal intertidal zone, has a valuable direct and indirect benefit to the local population. Mangroves can, amongst others, act as nursery for fish, as a buffer from storms, the trees can be used as building materials (poles) for the community and can have a medicinal value. In 2005 the Kenya Marine and Fisheries Research Institute (KMFRI) started monitoring the carbon stock and its deterioration trend, and identified major causes of mangroves degradation in Gazi bay. In a community

with high poverty levels and the mangroves being the main source of livelihood, forest degradation was a severe threat.

Key stakeholders, such as Kenya forest service, KMFRI and Gazi bay community came together. However, the community felt side-lined. They protested against conservation laws which were supposed to prevent them from cutting trees.

KMFRI decided to involve the community in a process to design a locally adapted strategy for mangrove conservation. In this manner a bigger sense of ownership and belonging came into being, related to the conservation goals. Alternative sources of livelihood from mangroves conservation were identified. For instance, KMFRI cooperated with the Municipality of Belgium which funded the construction of a boardwalk as a motivation for ecotourism. Other livelihoods projects such as beekeeping and integrated aquaculture were introduced with the help of United Nations Environment Programme (UNEP).

A key project in the conservation process was formed by Stewardship of KMFRI called “Mikoko Pamoja” a name which was carefully chosen meaning in Swahili language “we and the poles are one”. This name was chosen to focus attention on the community, which relied on the mangroves poles for construction of their house, and is thus a valuable local resource. In a later stage the project was handed over to the community. Since the community is directly benefiting from mangrove conservation,

up to now they are still actively conserving the forest.

Case Study C: ‘Operation Atlantis’ in Northeast Friesland, the Netherlands

The region Northeast Friesland, the Netherlands, is facing a demographic decline, which impacts many sectors. Facilities are closing down, employment opportunities decrease, housing agencies suffer. All this leads to a downward spiral, in which fewer younger generations are motivated to settle or stay in the region. The social housing cooperative Thûs Wonen took the initiative in 2012 to deal with the shrinkage and its consequences. They approached Institute Societal Innovation (ISI), which proposed a methodology for creation of ‘safe zone’ for social innovation.

Based upon the book *The New Atlantis* by Francis Bacon (1626) a participatory methodology was developed. He mentioned twelve boats “that sail into foreign countries [...] that bring us the books and abstracts, and patterns of experiments of all other parts”. ISI used the metaphor of boats because water is an important historical aspect of the region. After in-depth interviews ISI selected the crew of the boats, based on their willingness to participate, connection with the region and diversity. They finally had a crew of more than 50 people such as bankers, aldermen, artists, the director of a day-care institution, etc. Participants recruited new participants through mouth-to-

mouth advertising. The crew departed in their 'boats' and came up with ideas based upon literature and own experiences to cope with the consequences of demographic decline. In several facilitated sessions the crewmembers exchanged their findings and ideas. Gradually the ideas were funnelled into social business cases.

After almost two years of using the methodology 'Operation Atlantis', a network of local, diverse and connected change makers designed twelve social business cases. These business cases are dealing with the demographic and societal challenges of Northeast Friesland. Overall, the methodology 'Operation Atlantis' created a 'safe zone' where a group of diverse people could meet each other and freely create innovative solutions.

Preliminary Analysis

A tentative analysis suggests that the different contexts and enabling circumstances in which the participatory processes were implemented, determined the stages of participation. In all three cases the relevant actors were involved 'upstream', so in an early stage of the innovation process. However, whereas in one case co-creation could be considered as an effective and plausible stage of participation, in the others co-design and 'do it yourself' were suitable to reach social and environmental benefits.

The participatory process in Dessources, Haiti, touched upon several stages, from participatory problem definition, to participatory implementation of the innovation. Herewith the participatory process could be regarded as so called 'Do it yourself' participation. In Gazi Bay, Kenya, after an initial failure of several stakeholders to create an acceptable solution for mangrove conservation, a move was made towards a more inclusive approach of co-design. In this manner a process was set up in which people felt more empowered and took ownership of the programmes, resulting in a more sustainable conservation approach. The 'Operation Atlantis' in Friesland, the Netherlands, involved citizens in an innovation process where all participants were involved from the beginning in a process of co-creation. For this process a wide spectrum of enabling circumstances, such as resources (both financial means and time), trust, knowledge, and balanced power relations have been indispensable.

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Co-creation of academic knowledge in TUB's Project Laboratories

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What Project Laboratories are

With good reason there are actually numerous activities in society addressing sustainability issues, resilience and post-growth strategies. In order to build sustainable societies, education plays a major role. With education for sustainable development, the strategies are “translated” into citizen's capabilities. The authors consider citizens as stakeholders of a society that is worth living in.

In this context, self-determined student projects at Technische Universität Berlin (TUB) are in the upswing since 2012, when the German Ministry of Education and Research decided to fund “tu projects”, where students of TUB and other universities learn interdisciplinarily about sustainability issues.

The didactic concept of tu projects is based on Project Laboratories which have been introduced at TUB already in the mid 1980's. In Project Laboratories and tu projects (summarized in the following: “P-Labs”), students take over teaching within self-invented, practical, biennial projects, that both deal with pressing environmental and/or social concerns and blend into regular studies of the University. Methodically, P-Labs operate mainly with alternative educational formats, such as work in

small groups, joint semester planning and feedback sessions (Dietrich, Lebek, Reinhard 2013).

The issues of the projects are rooting in the problems and shortcomings the applicants experience as students of a certain discipline and – more holistically – as members of society. Students who are applying for project funding, include in their project description detailed information about the problem they perceive as relevant and how they are going to tackle it with the help of around 15 collegiate participants within the project duration.

It's the task of the University's Commission for Teaching and Studies to approve the project applications and by doing so to assign two student jobs (“tutors”) per project.

TUB supports P-Labs as an alternative to disincentive University courses. Students create themselves motivating forms of learning sustainability matters and science-society cooperations and learn self-organization methods in this process.

Besides self-motivating aspects of participating in P-Labs, students receive credit points for their activities in the project.

During the application and the project implementation, students are assisted by Science Shop kubus and TUB professors in order to ensure the quality of social and technical learning. Through further education offers at the University, project tutors' professionalization is supported. Further, kubus promotes the co-operations of P-Labs with societal groups and institutions, so as to enhance the practical component of learning in projects and the co-creation of knowledge with society. kubus also communicates results of self-determined learning, mainly in the academic community.

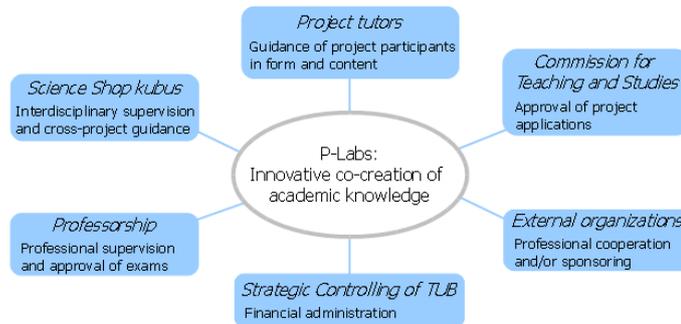


Fig. 1: Main constituents of P-Labs at Technische Universität Berlin (TUB) and their main functions

Co-creation of knowledge and innovation in Project Laboratories

At moment (February 2014) there are 22 P-Labs running. Retrospectively, more than a hundred P-Labs have been conducted since 1985. Some of them have become regular education offers at TUB, such as an Integrated Seminar for Environmental Technology UTIL and the self-help bicycle repairshop unirad.

In order to increase clarity, we give some examples of running projects:

- Jetsdreams is implementing a CO2-free power turbine, that can function as electricity supplier for housing blocks.
- Accounting Common Welfare develops a tool for including social and environmental aspects into economic balances.
- Social Software develops strategies and tools for efficiently supporting social organizations' online activities and online networking.

With Jetsdreams students do not only learn theory about power turbines, but they actively change modes of technology operation, asking: "How can we minimize climate impacts of electricity generation by adapting a given technology?"

Accounting Common Welfare is a highly reflexive project,

where students have the opportunity to learn about existing accounting models and develop a new excel-based tool for the measurement of economic success. The students thereby co-operate with companies who are interested in implementing ACW in their daily business. In this regard, students learn more than business management, they rather combine the spheres of economy, society and ecology.

Social Software uses a media approach. Through the vast development of world wide web technology, internet collaboration and campaigning has become crucial for the viability of social and environmental organizations. By surveying and engaging with the needs of these organizations regarding a certain set of tool functions or regarding professional education for online applications, students do not only learn more about informatics but they get insights into the work of civil society organizations in practice.

From kubus' experience, self-determined education as well as societal collaboration across the University walls leads to a continuous innovation of teaching and learning at the University. The chance of this innovation lays in the formation of self-empowered students who are used to take over collective responsibility by science-society collaboration at eye level. To this effect science and society do not only take advantage of the knowledge of each other – they are creating it in a mutual process. University walls are crossed by the learners. Taken on

a broader level, these processes can help working on society's problems in a new way, using a more holistic than separated perspective.

As to confirm this experience, P-Labs have been awarded as Decade-projects of Education for Sustainable Development ("Bildung für Nachhaltige Entwicklung") by United Nations and Social Software has received the Hochschulperle 2013 ("University Pearl") by the Association for the Promotion of Science and Humanities in Germany.

A recent survey (Dietrich, Lebek, Reinhard 2013) has been conducted in June 2013 by Science Shop kubus among 23 P-Lab tutors and 90 participants, 13 P-Lab professors and 13 secretaries. It highlights some of the chances of and barriers for P-Labs. A chance of this education format is to attract student groups that are obtained sufficiently by regular studies, especially in natural sciences and engineering. For instance, the proportion of women in the P-Labs is around 47% which is around 10% higher compared to the overall proportion of female students at TUB. Further, around 25% of project participants study in the first to third semester, a satisfying percentage with regard to TUB's objective to offer new students motivating education formats that both demand and bear skills for self-organization. According to the survey, for around 25% of the participants co-creation of knowledge through permission of their own initiatives and learning matters in an learning group is the most

important distinguishing feature compared to other course offerings at University. Around 67% of participants state that as a result of attending a P-Lab they could link the topics of different subjects.

Around 85% of professors who supervise the P-Labs consider self-determined and autonomous mode of learning as an important educational innovation and prerequisite for the participants. Approx. 31% state explicitly, that P-Labs innovate and enlarge the contents of teaching in their faculty. In the last few years, this fact has been realized by the Course for mature students BANA at TUB and by other German Universities that have started or are actually working on introducing similar educational formats, asking Science Shop kubus for exchange of experiences and advice.

The results also show a discrepancy of offering P-Labs as optional subjects for students of different disciplines and integration of the projects into the general studies. That means, professors work disciplinarily, whereas interdisciplinary projects are mostly offered as optional subjects (approx. 87% of P-Labs), as these are open to all students from different subjects. Thus, the circumstance that division of subjects does guarantee excellent academic results hinders P-Labs from being a more substantial part of teaching at TUB.

OUTLOOK

In terms of self-organized learning and the co-creation of knowledge about sustainability, student projects such as P-Labs offer an innovative educational format, which entails high potentials for innovation of University teaching.

Given that a framework like P-Labs can be set up at a University, including the assignment of responsibilities like administration and quality management, co-creation of knowledge in Universities can be turned into practice. In this regard, the tight separation of academic disciplines should be reconsidered and discussed. In this process, University-based Science Shops can play an essential role, contributing holistic perspectives on science and society.

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Analysis of stakeholder interaction in sustainability in regional issues and conflicts with a focus on the role of scientists

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Abstract

The Czech Republic has a relatively long tradition in environmental or sustainability oriented programs and initiatives, especially within the educational system, including higher education (HE). Consequently, many environmental specialists are already working in different spheres of society, but something is obviously missing – in practice there are numerous conflicts between different social groups that occur in controversial environmental issues at the regional level which seem to have no solution. Typically, these social conflicts have damaging repercussions for the actors and their relationships, the environment, and the economy of the region – communication “deadlock” has a negative influence on many aspects of regional development and always results in limited, short-term and non-strategic solutions

The authors share their experience with a recently completed 3-year national-wide project aimed at fostering cooperation between four HE and two research institutions, two NGOs and one business representative organisation, the outcome of which are (besides numerous practical activities, see MOSUR) a database of case studies from different regions of the Czech Republic (and some from abroad) and a special journal issue elaborating upon the same theme. An analytical perspective of both focuses on the roles of actors in a dialogue on regional sustainability issues within cooperative or conflict situations, and describes some of the communication processes, especially at the science – policy interface. An analytical tool (actor analysis) is employed to explore network characteristics, the relationships of the actors involved and the process of the deliberation itself where different approaches to “nature”, “environment”, and/or “sustainable development” were conceived but often not agreed upon. In some of the cases, scientists speak in the name of non-human nature and environmental values and thus they act rather as knowledgeable activists; sometimes, conversely, their expertise is misused and/or misinterpreted in the name of other policy priorities. Under specific circumstances, the involvement of scientists might reinforce the momentum behind regional development as they are (for example) able to identify and explicate its opportunities for which some of the other cases provide evidence. In general, to agree upon workable scenarios and implement practical solutions at the regional level, the development of an appropriate communications framework is needed, and possibly also facilitation of a dialogue between the actors, as well as (scientific) reflection on the process itself – this is one of the experiences highlighted in the successful cases. As part of communication between actors from different backgrounds, a social learning process is likely to have the potential to transform viewpoints and approaches of those involved so that final agreement is made possible. A comparison of different cases helped to formulate a hypothesis that respect for actor diversity and their viewpoints, as well as a will to contribute to the “common good” is a rather implicit sine qua non for success – although it is exactly this that is still often missing in Czech society.

Key Words: *Sustainable development; case studies; regional development; social learning; actor analysis; role of science*

Introduction

SD is a normative concept but to be implemented practically at different levels (from local to global), the involvement of experts from diverse specializations is needed. Within the sustainability context, scientists are often required to provide their expertise in regard to highly complex environmental and sustainability issues (which usually require transdisciplinary cooperation with other scientists, as well as with other social actors), sometimes with an urgent need for policy-relevant results (with non-linear causality) and hence their role might differ from the traditional one (cf. Funtowicz, Ravetz, 2002; Hessels, Van Lente, 2008). The aim of this article is to explore the roles of scientists in complex and ambiguous sustainability processes at a regional level and identify “success factors” – conditions under which regional SD has positive results and these are supported by the involvement of science. To map this field, exploratory research has been undertaken, the aims of which are practical – to provide know-how and tools for the facilitation of these processes, and especially to identify opportunities for scientific involvement.

The Czech context

Under Czech circumstances there is a long tradition of participation of scientists in environmental issues – a dialogue has flourished under the Ecological Section of the Biological

Society of the Czechoslovak Academy of Sciences since the 1970s between different experts on pressing environmental problems (often opposed to the regime in power). Members of this Society contributed to the social transformation after 1990 and often entered influential positions within government. With their involvement, changes in legislation as well as environmental policies were adopted shortly after 1989 – these mostly top-down strategies brought about enormous progress in the environmental field during the 1990s (cf. Vavroušek, Moldan, 1989; Vaněk, 1996).

Sustainable development (at the regional level)

In contrast with environmental protection, sustainable development is a multidimensional, future-oriented process that should involve a diversity of social actors. At the regional level it is based on soft factors such as trust, commitment, participation and network relationships, and specific capabilities for leadership and the integration of research in practical activities (Sol, 2013, Mader, 2013). For the efficient negotiation of highly diverse viewpoints, the importance of social learning is stressed by some authors (Wals, 2007, 2009; Dlouhá et al, 2013). Social capital that contributes to success in the achievement of joint goals is sometimes associated with the ‘communities of practice’ model (Wenger, 2000).

Question

In the decade after 2000, environmental issues in the Czech Republic gradually lost their popularity – some of the cases ended in deadlock (with no solution over many years). Bottom-up processes in the environmental field have been driven mostly by NGOs, with little involvement of local actors. The SD approach was developing with difficulty, as negotiation processes were not based on the tradition of deliberation. This also concerned the involvement of science: while environmental expertise simply provided input on the state of the environment and proposed measures to improve it, sustainability expertise should enter into a social dialogue. Consequently, in the sustainability context, scientific knowledge should be generated within and as a result of interaction with other actors. Question is whether this really happens in regional sustainable development processes and whether this affects the character of science and the role of the scientist.

The following research is focused on exploration and analysis of communication practices on regional level with aim to methodically support its reflection and facilitation.

Method

To explore communication processes and describe the role of actors in regional (un)sustainable development issues, case study methodology was used. A case study should “investigate contemporary phenomenon within its real-life context” (Yin,

1994), it may provide insight into the problem under observation and illustrate it (Fry, Ketteridge, Marshall, 1999) or even show its theoretical underpinnings (Davis & Wilcock, 2003). Case study research might be driven by interest in a single issue, actor, etc., but could also pay attention to multiple cases that might promote generalizations (Dillon & Reid 2004). In this article, we have observed similar phenomena under different circumstances, and produced several case studies within different genres (scientific, descriptive) which were subsequently analysed.

In the analytical part, attention was paid to the roles of actors with a special emphasis on the roles of scientists. To this end, the actor analysis method was applied, the purpose of which “... is to identify the relevance of each role player for the process of change and to establish which goals they are pursuing, whether they do it more openly or less transparently ‘behind the scenes’, with a hidden agenda. Their strengths and weaknesses are noted, ... and patterns of communication and relationships made transparent.” (GTZ, 2007). By applying AA, the characteristics of actors in regional development processes and their relationships were explored.

Results

Selected case studies describe communication processes through which new solutions emerge, or, on the contrary, that

bring about communication deadlock that is difficult to overcome. Besides paying attention to the scientific expertise, the role of NGOs has also been highlighted – as they have recently developed a significantly large amount of knowledge in particular issues of interest (cf. Čada and Ptáčková, 2013).

Cases were collected in two forms: built upon the scientific case study method (and thus within the genre of scientific article), and as a more lay description written by practitioners – within a database freely available on the internet. All of the cases have a similar structure (from opening the issue in question, describing its regional context, showing the factors influencing the case, incl. actors, to conclusion and possible generalization) so that actor analysis tools could be applied. Many of the cases demonstrated some success or failure of SD in the particular place in question. Overview of the cases and results of analysis are not included in this discussion paper (will be presented at the Living Knowledge conference).

The collected multiple cases were concerned with a range of very diverse sustainability themes, as the research question was a cross-cutting issue of communication. An analytical tool (actor analysis that uncovers actor relationships in a given issue and their roles showing thus potential opportunities or problems in communication) enabled comparison between them. Thus we could observe the driving forces behind problematic or successful cases from different regions, as well as from abroad.

Generalizations derived from these cases should be further justified and explored.

Discussion

The involvement of scientists is usually significant where there is a policy requirement from some side (pro- or anti- environmental) – and is often shaped by this demand. Where some aspect of sustainable development is needed in the region for e.g. promotion of tourism, then deliberation among actors is more or less balanced. Development is then driven by interest in changing practice-as-usual and all of the actors might play an active role in it. In some cases, only environmental protection is stressed (here environmentally oriented scientists dominate, usually with the support of NGOs) – this might produce a deadlock under specific circumstances. Other cases describe traditional past culture against current non-sustainable practices – the negative effects of which have been proven by scientific findings for decades already with little effect on policy-making (this happens when economic interests are more powerful). In these cases, scientist might be also employed to support unsustainable practices (providing questionable data to support these unsustainable policies). On the other hand, if a more complex SD vision is implemented, a less black-and-white view is possible.

Where development is spontaneous, controversy among the

actors often persists or is even exacerbated. Where, on the other hand, a framework for communication has been developed, and discussions facilitated, the outcome is more successful in terms of setting a strategy for regional SD and consequent actor involvement. A question remains over who can formulate this framework and how the participation of actors can be promoted. Experience shows that experts might also play a role here (obvious especially in cases from abroad).

Our research was exploratory – we have analysed collection of cases compiled in a relatively non-systematic way; some of them were described in-depth, the others were included in the database. Actor analysis method used to generalize the experience from the cases provided relatively superficial data for the first insight in the issue. This method has been widely used for facilitation, testing hypotheses, field research, etc. (cf. Burandt, 2014, under review); for more comprehensive reflexion it might be amended by more sophisticated methodologies (network analyses, scenario analyses). The results obtained in this short study have to be considered as preliminary, opening new perspectives and posing interesting questions for further research.

Conclusion

The cases briefly described in this article demonstrate the context for and results of developing and implementing sustainability related strategies at the regional level. The successful cases

were based on a sustainability vision and included the dimension of innovation – but these were often brought from outside the region, as innovative practices are usually “not visible” to regional policy makers. On the other hand, where innovation was under specific circumstances nevertheless required for some reason (deteriorating environmental quality with an impact on attractiveness for tourists, economic prosperity problems) – then an opportunity to negotiate a SD solution emerged and was sometimes utilized by enlightened actors. Deadlock appeared where no innovative and widely acceptable approach was developed and actors had simply to choose between two controversial states of status-quo. This situation brought about an enormous decline in the social capital of the region with negative effects on other fields – especially economic (although economic policies have contributed to the crisis).

The establishment of a communication framework for the involvement of actors (described in some of the cases) promoted processes of deliberation and supported the emergence of innovative solutions. The role of expertise in these innovative practices is obviously crucial; in our cases, experts were often those who brought new visions and were able to put them into practice. In all of these cases, negotiation was required to ensure that the process was driven by regional policy requirements. In some of the analysed cases, scientists have also played the role of facilitators, which shows that innovative SD practices are still based on strong leadership and the experts

have considerable authority in social dialogue.

Based on our experience, we could in a broader sense have a discussion about top-down versus bottom-up processes in which scientists are involved, with the preliminary conclusion that the role of science in sustainable regional development is also becoming more and more decentralised, and science is entering into multiple interactions with other social actors (in the process of which it is also changing). This generated the following question for further research: If these bottom-up processes are inevitable for democratic decision-making, then how would scientists involve themselves in a way that their discourse, potential contribution and hence their specific role would be respected in the given issue (as well as of other actors)? In our exploratory research, other questions also appeared: Under what circumstances is the potential of science and expertise most efficiently used within regional SD processes? What is the role of strategic deliberation and how should this be conducted? Who will play the role of an unbiased facilitator and who will communicate the vision which is necessary for the transformation of current practices?

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Community based learning in Sweden and United States – what works in different local contexts?

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Introduction

Today, there is a well-established consensus about the need for collaboration among stakeholders to address increasingly complex social issues. This is especially true in addressing all those wicked problems that characterize many of the global challenges societies around the world face today, like global environmental problems or the effects of increasing migration and urbanization, which sometimes are a consequence from local effects of global environmental problems. Many of those problems end up in cities, and must be handled by city officials. But wicked problems are so complex that they cannot be solved by a single actor. City officials need to collaborate with other stakeholders. There are numerous methods for collaborative and social learning. However, we must acknowledge that social learning always is situated within a specific local and institutional context, which creates unique circumstances. What works in one place, may not be useful in another.

The aim of this paper, a work in progress, is to compare community based learning processes in Sweden and the United States in order to gain a better understanding of what works in different contexts. We would like to explore how the local and institutional context in Malmö and Rochester, respectively,

affects processes of knowledge development in local community development. We are interested in exploring what kinds of knowledge about local conditions in a specific neighborhood are emphasized when public administrators dominate the process or when local community groups take the lead? The authors have extensive experience organizing or participating in different forms of collaborative learning processes where stakeholders outside the university collaborate with researchers and students in different forms of local knowledge production such as research-circles and resident-led participatory research.

The paper consists of the following parts. The first part describes a framework for describing and analyzing different aspects of community based learning in order to establish a foundation for comparison of different kinds of processes. In the framework, we identify different aspects of collaborative learning processes. In the next step, we apply this framework to two different community based learning processes related to local urban development, one in Sweden and one in USA. The purpose is two-fold: we will see if the framework is useful for analyzing and comparing different forms of collaborative learning, and we will try to answer the question we ask in the paper: what works in different context and how do these different

contexts impact outcomes. We end the paper with a discussion of the results and suggestions on how we may proceed with this work.

How could we understand and describe community based learning?

We understand community based learning as a specific form of collaborative learning. Learning in general could be seen as a process with two faces: an individual and a social process. The individual learner is engaged in both a cognitive process when I as a person understand something, memorize things and gain more knowledge and skills and a living bodily and experiential process, where I develop tacit embodied knowledge in relation to the life-world where my body is situated. This life-world is also a social world and my ability to learn is also affected by social context, my personal life-situations and also those societal and intuitional structures that surround me. Community based learning is affected by those structures, which in some part are formed and upheld by professionals, like public administrators. When we try to understand the condition for community based learning, we must also be aware of the conditions for learning among those groups of professionals (Montin et al, in print). Worked-based learning always takes place within different communities of practice (Wenger 1998). A community of practice is always a part of an organization. In an organization, learning takes place in three levels: on the individual level as a cognitive,

partly intuitive and embodied process, on a group level as socio-cultural process, based on language and shared understanding, and at the organization level, where learning is manifested through new routines, structures and organizational changes (Crossan et al 1999). All levels affect each other. How the work is organized also sets the frames for what kinds of learning could occur.

Ellström (2001) distinguishes between adaptive learning and developmental learning. Adaptive learning means, in short, that the goal is to adapt to something where the content is already given. Learning how to drive is an example of that. Developmental learning means that you aim for understanding of something in a new way. Doing research is an example of that. Developmental learning takes time, and an organization that has no space for reflection and criticism is not a fertile ground for this kind of learning. On the other hand, an organization where everyone puts everything in question will probably not be successful. If you want your driving-license, you must make the test and learn how to drive. It would be tricky on our streets if everyone developed their own rules.

To sum up, we see learning as a process that contains individual and social aspects. Individuals who learn, always are a part of social contexts. We also identified two forms of learning: adaptive versus developmental. Adaptive learning means that you try to learn content that already is defined. Developmental

learning, on the other hand, begins with a critical approach. Of course, in real situations, a movement between adaptation and critical development characterizes a good learning situation. Here, critical reflection is crucial, but it there is also a need for a safe ground – something that we believe as “true”. A situation of permanent deconstruction of everything will not create a path forward.

Before we continue our discussion of community based learning, we would like to make a last point: we see learning as a process focused on solving problems, in order to act. The first step to solve a problem is to understand it. Your understanding of a problem depends on how you experience the problem. Learning could therefore be understood as a process when you change your experience of something (Marton & Booth 1997). This could be described as follow –

“Problem setting is a judgement about the problem situation – that is, a diagnosis that also contains the prescription of directions for action. We cannot make a judgement of this kind unless we apply a frame to a field of experience. This frame enables us to (1) highlight certain features of the situation, including certain worries that we select as symptomatic, (2) ignore, or select out, certain other features of the situation, including certain worries, as noisy and irrelevant, and (3) bind together the salient features of the situation, including the relevant worries into a pattern which is coherent and graspable”.

(Rein & Schön 1977 p. 237)

Community transformation depends upon the capacity of all stakeholders to learn together and to respond to the new information and changing circumstances that take place as a result of the collective learning (Keen, et al 2005). Further, as Keen, et al note,

“Social learning is a process of iterative reflection that occurs when [participants] share ... experiences, ideas, and environments with others”. (Keen, et.al, 2005 p.9)

The notion of reflexivity – reflecting on the learning- is a critical consideration because it leads to more learning, which in turn leads to changes in thinking, and action. To sum up: learning is a process when you change your experience of something. You highlight new salient features, and you formulate new ways to act in order to handle a problem or a situation. In collaborative learning, change takes place in a social context, which means that whole groups change their experience of something. As a result, the whole group develops new ways of acting, and develops new ways of understanding problems and situations. In this process, a shared language is essential, because you need to share a language to be able to share understanding.

But as Foucault reminds us (1972, 2001) language is never just a description of the world. When we talk, we also order the

world, and this order names and frames what we see as relevant knowledge. According to Foucault (2011) our way of talking about things also affects how we act, and how we see and understand problems. When we name and frame things through our talk, we also establish an idea of what is normal and how things should be. Our life-worlds are to some extent formed by established norms on what is normal, and those norms are shared through our talk about things. But, as we claimed above, learning is also a bodily and tacit process, which grows from how our bodies touch and move in the life-world. Of course, language affects how we see and understand our life-world. But we also gain knowledge from our bodily experiences of the world. Individuals always have the potential to see things in new ways, and talk with different words. These new ways of seeing things often emerge from praxis – from new ways of doing things.

What Foucault teaches us, which is essential when we try to compare different processes of community based learning, is that we must be aware of who is formulating the problems. The naming and framing of a problem is always naming and framing of the solutions. Foucault also reminds us that naming and framing is always an act of power, and those who establish a certain way of understanding the problem – which manifests through our way of talking about the problem, also have the power to decide the solutions. Shared understanding could also be an act of oppression, where consensus is forced on different groups with the argument that “we must move the

process forward”. But we must always remember the potential to change that lies within praxis – within the ability to do and act in new ways, which is the basis in all kinds of community based learning. If we also are aware of the dichotomy between adaptive and developmental learning, we could see the outlines of two kinds of community based learning. We could see community based learning as a process when inhabitants of a neighborhood accept the ways problems have been formulated, and adapt to the problem-solving process presented to them. This results in a praxis when people adapt to and act in relation to established problem formulations. On the other hand, we could see a form of community based learning that starts with resistance and where residents take the control over the processes of naming and framing.

We think a few remarks on the role of resistance in community based learning is helpful. Here, we would like to relate to Chantal Mouffe’s concept of agonistic spaces (Mouffe 2013). According to Mouffe, conflicts are essential in a true democracy. A democratic process could be seen as choices between different ways of naming and framing problems – which also implies different suggestions on who is responsible and how we should act in order to solve the problem. A democratic society, claims Mouffe, therefore needs arenas for agonistic discussion, where conflicts could come into the open, and could be discussed. This may not lead to solutions, because many political conflicts cannot be solved, but must be handled temporarily, in order

to proceed with different kinds of developmental processes. However, all involved must be aware of the conflict, and who is winning and losing. If we transfer this to community based learning, we will claim that conflicts must be a part if we want to achieve developmental learning processes on a community level, because those processes presume that existing situations or ongoing developments are questioned.

Community based learning differs from other kinds of learning because it is tied to a specific place. It could involve professional learning in cases where community based learning takes place in collaboration between citizens and professionals, for example a neighborhood group and professional planners. Here the process of naming and framing may aim to teach the professional to understand the situation in a neighborhood in a new way. It could also aim to teach the inhabitants in the neighborhood the reasons behind a certain developmental process. Community based learning could also be a process to empower the inhabitants in a certain neighborhood, and to teach them to see their neighborhood in new eyes. Here community based learning could be seen as part of a critical tradition (hooks 2003, 2009). When we compare different community based learning processes, we must be aware of the origin of the process. What was the original purpose with the process? Who initiated it?

Of course, we claim that community based learning must be based on participation. But we must be aware that participation

could be organized in many ways, and some of those are more participatory than others. We must also be aware of the degree to which there is participation in defining a problem. To what extent are different stakeholders allowed to participate in the process of naming and framing? One way to sort out and define the levels of participation is Sherry Arnstein's well-known Ladder of Citizen Participation. Arnstein identified several levels of participation, which differ in the aspect of who owns the processes and has the right to make the final decisions. Originally Arnstein identified those levels:

1. Manipulation
2. Therapy
3. Informing
4. Consultation
5. Placation
6. Partnership
7. Delegated Power
8. Citizen Control

There is not room here for a detailed description of each level.

Briefly, the first two levels describe situations where there is no participation, even if citizens may believe that they participated. Level 8 is the highest level, where citizens gain full control over something, like a planning process. Our point is that we must be aware that each level contains different possibilities for collaborative learning. We will also make clear that learning takes place on every level, but with different results and consequences.

Citizens who experience the first level, probably learn that they should not attempt to participate because local officials believe their voices are not worth listening to. Citizens who gain full control, and become responsible for something, like a planning process, will probably learn a lot of things, because the situation calls for learning and understanding in many different dimensions. Different social situations open up – or close down – the space of collaborative learning. When you inform someone, the people you inform probably learn something, but the learning is likely not reciprocated. In a dialogue, both of you could learn something from each other. When we compare different processes of collaborative learning, we must also be aware of what kinds of participation are taking place.

Keen, et al. observe that there is growing acceptance that the Arnstein typology should not be interpreted as a “bad to good – coercion to co-acting” continuum, but rather as range of possible social learning approaches (coercion is the exception), that “can be combined and sequenced to achieve the outcomes

best suited to the participants and the circumstances” (2005 p. 15).

However, engaging citizens means giving them real opportunity to influence decisions and actions that affect them and their communities. This can happen if decision makers give citizens meaningful ways to provide input and if decision makers listen to citizens from the beginning of a process or when citizens have developed their own priorities and plans of action.

To sum up: community based learning is a specific form of collaborative learning, which includes individual as well as social learning. The content and results of community based learning depends on the aims, purposes and participants. A community based learning process that involves the inhabitants in a certain neighborhood and professional actors also opens up processes of organization learning among the professionals, but this depends if it is possible for the professional to learn from their experiences. Community based learning is also dependent on the level of citizen participation. If the collaboration only includes information, it leaves a very limited space for learning – and may not be understood as collaboration. If it includes consultation, it opens up more space for learning. With the exception of the “manipulating/coercion” step, Arnstein’s ladder creates several different opportunities for community based learning. When we try to compare different methods, we must be aware of the context. The context also names and frames the use of

the method.

Our method: comparative case study research

Before we continue to the empirical analyses, we would like to give a brief overview of our methodological approach. Our aim is to compare community based learning processes in Sweden and the United States in order to gain a better understanding of what works in different contexts, starts with an ambition to improve our own work as action researchers with a certain focus on community work. Here, we note the work of Bernt Flyvbjerg, who claims that the strength of social science theories and approaches lie in their capabilities to support rich and reflexive analysis of values and power. In order to achieve this, social science research should put a strong emphasis on critical analyses of different kinds of societal practices (Flyvbjerg, 2001). Here, case studies could be useful, because they involve rich empirical material, and could work as illustrations of general phenomenon in the society. Carefully selected, case studies could help us to gain a better understanding of why a practice, like local urban development, develops in certain ways, and not in others.

Case studies could also become a starting ground for developing a better understanding of our own actions. By comparing our own work with community based learning, we hope to both gain a better understanding of the different conditions for community based learning in Sweden and the United States. We

also hope to help each other to uncover our own assumptions of community work, and learn from each other.

When we try to get a grip on our empirical material, we are inspired by Kristian Kreiner and Jan Mouritsens' (2005) concept of the analytical interview. This approach is used for studying organizational changes by focusing on how the organization handles dilemmas. A dilemma, according to Ryle (1954) is lines of thought, which are not rival solutions of the same problem, but rather solutions or would-be solutions of different problems, and which, none the less, seem to be irreconcilable with one another. Dilemmas are a conflict between different ways of naming and framing a problem that excludes each other. Analytical interviews are centered on dilemmas:

By exploring dilemmas the interviewer and the interviewee are able to construct the counterfactual image of practice that makes the factual practice significant. It further allows them to contemplate how practice may change in the future, i.e., the current practice represents nothing but quasi-resolution of the conflict between competing concerns. (Kreiner & Mouritsens 2005 154f)

With this approach, Kreiner and Mouritsens emphasize the need to break down the notion that empirical research relies upon situations where researchers ask informants. Instead, this should be seen as processes of collaborative learning where

researchers and informants explore dilemmas together. When the analytical interviewing succeeds, the interviewer and the interviewee are both theorists who construct new knowledge in a collaborative process.

We have formulated our case descriptions based on interviews, participatory observations, examining documents, and last, but not least, spending lots of time working as participatory researchers in close collaboration with those stakeholders involved. Here, we have worked with a similar approach as described above, where we see ourselves as a part of a shared process of knowledge development together with the actors we have collaborated with. Our intention is to achieve thick descriptions of our respective cases. Those descriptions will then be the starting points for comparing the community based learning processes we have been involved in, with the ambition to gain a better understanding of what works in different contexts. Because both of us are closely involved in our respective cases, we need each other as critical friends, helping each other to reflect on our own work. Our own research process also becomes a process of collaborative learning.

The Swedish Case: a top-down approach

The Swedish case focus on the conditions for community based learning in a project that was initiated by the municipality. In January 2010 the city of Malmö received 28 million Swedish

Kroner (around 4 million US dollar) from the European Union for a large-scale urban regeneration project in an area in Malmö called Rosengård. As a condition for the EU funding, the city was required to contribute an equal amount of financial support. If the City co-funded less than 28 million SEK, the external funding from EU would be reduced proportionately. The EU-funding is mediated by the Swedish Authority for Economic Growth (Tillväxtverket), and the overall goal for this EU-program is the support of economic development. The process includes several developmental projects, and one of them, the establishment of an activity area, will be the focus here. The project was built up around three parts: 1) developing structures for collaboration in local urban regeneration, 2) developing the infrastructure along a pathway; Rosengårdsstråket and 3) the development of a center for sustainable urban development (The ICE-house). The community based learning process that will be analyzed here is the planning process for an outdoor activity area, which is a part of the physical development. The planning process itself is also included in the first part of the project, where the process is used both as an example of and as reason for developing new structures for collaboration.

Rosengård is situated in the southeast part of Malmö. It includes a large-scale housing complex between four to ten floors. The whole area was constructed between the 1960s to the end of 1970s, and was a part of a national housing developmental program named “The Miljonprogram”. The program was

intended to meet the need for affordable housing in Sweden, and the overall goal was to build 500 000 single family homes and 500 000 apartments. Originally, Rosengård was built for wealthy blue-color workers and their families, but when the area was finished, the City of Malmö was hit by the global transformations that led to a large-scale reconstruction of the base for the labor market in Sweden. Several of the main industries in Malmö, like the large shipyard Kokums that employed over 4000, closed down. This was the beginning of the decline in Malmö's population, because of rising unemployment, and the fact that those who could afford a single home, moved to the smaller and wealthier municipalities that surround Malmö. The huge finished housing complexes in Rosengård were left empty, and soon they became home for newly arrived refugees and the poorer inhabitants of the city.

During the years, Rosengård has become a national symbol for segregation, unemployment, poverty and an illustration of the failures with the Swedish welfare model. Some portions of Rosengård are considered to be the worst and poorest in Sweden, with a high rate of child poverty and unemployment. Of course, the inhabitants of the area are well aware of its reputation, and many of them try to move. Many of the youths living in Rosengård feel that they do not belong to the rest of the society. From time to time, the frustration has exploded in conflict between groups of youth, often gangs of young boys and representatives of the city, in most cases the police. At the

same time, both young and old are proud of the area, and talk about it as multicultural and creative melting pot. One of the main intentions behind Fokus Rosengård was to use physical urban regeneration as a starting point for social changes in the neighborhood. Local participation and community based learning was seen as essential by the municipality for supporting this kind of transformations.

The overall goal of the activity area was to create a public place in Rosengård that could function as a common urban resource. The intention was to create a meeting point, where different groups could interact, both from the area around but also from the rest of the city. Urban public places, like community gardens, could play a vital role for creating and sustaining social capital (Foster, 2006, 2012). This was the intention behind the idea of the activity area. But places need people, especially if one strives for places that also support the development of social structures in the neighborhood. Therefore, parallel with the physical development of the area, a process leader from the city Environmental Department worked to establish an understanding of the interest of residents to use the area when finished. One part in this process was a discussion about the possibilities of developing new forms of collaborative management. In this process, good governance is crucial.

In the application to the Swedish Authority for Economic Growth, the development of the activity area as a part of

Rosengårdsstråket was described as one goal in the second part of the project plan. Two of the aims in the first part of the project are also related to the case, because they play important roles in the development of the activity area. Part one in the project was based on the need for fostering long-term partnerships with stakeholders in the district of Rosengård, in order to facilitate urban regeneration. The goal was the development of a model for collaboration in local urban development. Here a special focus was to commit young people who lived in the district to take an active part in the regeneration process. This part of the project was labeled as the Youth Project. But there was also an overall need for developing a better intra-organizational collaboration between different parts of the city administration.

The application was written by the Environmental Department, which also led the project. One reason was an intention to use physical developmental projects as a tool for implementing sustainable approaches and solutions in the city. Another reason was the ambition to use those physical changes as a way of initiating social changes in a derelict part of the city. A more pragmatic reason was that during many years, a small group of project leaders at the Environmental Department has developed considerable skill in getting EU funding for different urban developmental projects using a sustainability approach. The projects in Rosengård are no exception. The city administration just follows the money.

However, the Environmental Department could not manage this project alone. Therefore, a project team was set up with representatives from the Environmental Department, the City Planning office, Streets and Parks Department, the Department of Internal Service, and the City District of Rosengård. The City of Malmö is divided into ten local city districts, which administer local health care, social issues and (until 2012), the schools located in the district. The development of infrastructure, urban regeneration and other more “hard” urban issues used to be handled by the central city departments, without collaboration with the city districts. In this project, however, collaboration on urban planning and regeneration issues among the central departments (in this case, the Environmental Department, the City Planning office, Streets and Parks Department) and the city district of Rosengård, was seen as an essential part of the project. The development of new forms of collaboration among these departments and the city district centered on urban regeneration was also essential for the first part in the project Fokus Rosengård.

The idea of developing an activity area in collaboration with young people was established by city officials in the project plan from the beginning. During the spring of 2010, a project team with representatives from the three central departments and the city district was established. A process leader was engaged and started working in September 2010. During the autumn the process leader together with the project team began

to identify important stakeholders. The project team also began to find ways to engage youths to participate in the developmental process. This discussion at this stage involved only the project team, and some administrators of the departments involved in the project.

During the late autumn 2010 several workshops were held with a local youth council. All workshops were initiated and led by the project team from the city. Using Arnstein's ladder, they could be seen as consultations. A local youth congress and a workshop for young girls were also held in November 2010. In addition, the project team organized a public event in late October to inform local residents about the project. During the event, the process leader invited participants to mark which places in the district they liked, and which places should be developed. Participants also had the opportunity to present their own suggestions of what should be developed in the area. According to the project team, 1750 people took part in the various dialogue processes between October – December 2010. During this process, the activity area was introduced by the city, among many others plans, as something that people could voice their opinions about. The City had chosen a place for the area: a parking lot close to the area's central shopping mall.

When the project had run for a while, the project team decided to focus on young girls as the main target group for the youth project. One reason was that only boys were members of the

youth council. Another reason was that the project team had learned that young girls missed meeting points and places where they felt comfortable. Young boys dominated the public spaces and meeting points in the district. During the spring, a new workshop for girls was arranged together with design researchers at Malmö University, with a specific focus on designing the activity area so it would attract girls. In this workshop, the participants also discussed what characterizes a public meeting point for girls. One comment was that the area needs to be perceived as a "good" and "safe" place for girls by their parents. Otherwise, they would not be allowed to visit the place. Another participant expressed the need to attract the "good boys" as a way to create a public space with a good reputation, and the need to engage adult female recreation leaders for running the place, keeping it safe and promoting a good reputation for the area.

The workshops resulted in a loose network of girls ranging in age 16 to 25 years. A project assistant was engaged by the city to facilitate the network, which became a part of the Youth Project. The network was given the opportunity to arrange some test activities during the spring of 2012. In connection with these activities participants were invited to provide more suggestions about the area. The most recurrent suggestions were "a dance floor", "a stage for performance", "possibilities to play music", "a graffiti wall", "a place for skating", "play grounds", and simply "a nice place to hang around". Another wish was

heated benches and grounds (the winter in Sweden could be harsh) and good lighting.

During the summer of 2011, 13 girls were employed by the city for a month. Their task was to arrange activities at the place, with the intention to further establish the idea of the place as an activity area. Another purpose was to show that things were going to change in the district. After the summer, these girls formed a tighter network, labeled “Engaged in Malmö” (EIM). The network became an important dialogue partner with the other stakeholders in the area after the summer. The project assistant continued to support the network, and to some extent protect them. Lots of actors were interested in becoming involved in the network in other projects and discussions about the development of the district, and there was a risk of them becoming overwhelmed. Parallel with dialogue processes, the formal planning process took place. A planner from the Street and Parks Department was responsible for the design of the activity area. He thought that the ideas and wishes from the girls could be worth listening to, but he was very clear that he had the last word and the formal responsibility for the final design. His concerns were aspects such as safety, how to maintain things in the future, the budget, and the rules for contract entrepreneurs for the construction and so on. Another aspect that interfered with the planning process was the deadline for the project. The area had to be finished during the spring of 2013, because the EU-funded project ended in September 2013, and

had to be reported then.

As mentioned in the background, the first part in the whole project was the development of structures for collaboration through the establishment of partnerships among stakeholders. During 2011, the project team decided to focus on the development of three specific partnerships. One was related to the physical development of Rosengårdsstråket, where the activity area was an essential part. This partnership included the network of the young girls – EIM. This partnership focused on the dialogue processes related to the physical development of the pathway, Rosengårdsstråket. As mentioned above, the development of the pathway was a part of the larger regeneration project Fokus Rosengård. Today, the city of Malmö sees pathways as a concept for tying the city together. The vision from the city administration is that citizens will move along those pathways, between different parts of the city. In the end, if citizens who never visited Rosengård before would go there by using the pathways, they will change their negative opinions about the area. The future will tell if this may work. In this context, the meeting point becomes essential, because one main intention was to have places along the pathways Rosengårdsstråket that would attract citizens from other parts of Malmö to Rosengård. The partnership became central, because through the partnership, the city would be able to maintain the meeting point, and make sure that it would be developed in a way that supports the overall vision of changing the views on Rosengård. There-

fore, the focus for the partnership was the development of collaborative management of the area after the project finished.

The work of establishing this partnership began with a workshop in June 2011, where researchers at Malmö University and the Agricultural University at Alnarp presented some thoughts and theories about collaborative management of public places. In this meeting representatives from the project team took part. This meeting was followed by a new meeting in September 2011 where representatives from other city departments were invited, such as the Culture and Events Department. The aim of this meeting was to continue the discussions about how to manage the activity area in the future. The network of the girls was represented by the project assistant. No NGO was invited. A further meeting was planned but was canceled by the project team. The reason was that the stakeholders who run the project (the Environmental Department, the City Planning office, Streets and Parks department, and the City District of Rosengård) had to set the frames for the management before other stakeholders could be invited. According to the process leader, there is an ongoing discussion with local NGOs about establishing some kind of partnership for collaborative management of the activity area.

In September 2013, a steering committee formed with representatives from the Streets and Parks Department, the Environmental Department, MKB, (a housing company owned by the

municipality, which owns the land where the activity area was built) and ABF, which is a NGO close to the Swedish working unions and the Social Democratic Party. ABF's main purpose is to organize different forms of citizen education. The Environmental Department received a small amount of project funding from the Region of Skåne for arranging events at the activity area (200 000 SEK, which is equivalent to around 20 000 USD). An advisory board was also formed and EIM was a part of this board.

To summarize, the Swedish case was initiated by the municipality, and the starting point was the approval of a project application to EU. The project application was central to the overall naming and framing of the problems that should be solved. The municipality however need to establish relations with those who lived in Rosengård, and they did that through lots of consultative workshops, some of them with the specific purpose of developing a meeting point in collaboration with a group of young girls. This group has become a part in the discussion with the municipality, but they have not challenge the naming and framing of the problems the project Fokus Rosengård are intended to solve. However, the girls have learned a lot according to them, and the public officials who run the project have also learned a lot. But it could be questioned if this should be understood as examples of adaptive learning or developmental learning? Within the frames of the project, some of the participants, like the girls, have developed new kinds of knowledge – and

new ways of experiencing themselves and their life-worlds. But the overall naming and framing of the problems in Rosengård and how they should be solved has not been challenged. No agnostic spaces have evolved during the process.

The American case: the role of neighborhood groups

The MarketView Heights Collective Action Project (MVHCAP) is a resident-led group, representing a portion of a residential neighborhood of approximately 8,700 residents in the City of Rochester, New York. The area represented by MVHCAP has experienced significant private disinvestment for several decades. Between 1990 to 2000 the population declined by over 20 percent and the following decade by another ten percent. Over forty percent of the current population is under the age of 18. The neighborhood is racially diverse: African-Americans make up over 60 percent of the population and over thirty percent of the population self-identify as Hispanic. Almost half of the population lives below the US poverty line. The neighborhood is made up of mostly older single family homes and duplexes (two-family structures), and the vast majority of housing is rental as opposed to owner-occupied. This has increased due to the conversion of many single-family homes to rental units. The housing stock was developed primarily during the early 1900s and much of it has declined due to disinvestment, particularly in the converted single-family properties. The city has undertaken a multi-year housing demolition program

to remove blighted properties and has been land banking the remaining vacant lots.

MVHCAP was established in 2005 as a result of a community-organizing effort sponsored by PathStone, a not-for-profit community development and human service organization providing services to low-income families and economically depressed communities throughout New York, Pennsylvania, New Jersey, Ohio, Indiana, Virginia, Vermont, and Puerto Rico. PathStone owns and manages several multi-family, low-income rental projects in the MarketView Heights neighborhood and sponsored the community organizing activity in conjunction with its efforts to stabilize tenancy in their rental units. Although PathStone recognized that investment in safe, decent, affordable housing was extremely important to the health and security of the neighborhood, staff made it clear that housing alone could not change a neighborhood; as a result, PathStone invested in a community organizer/planner to plan and implement comprehensive neighborhood revitalization strategies. PathStone has been working in the neighborhood as the organizer and facilitator of the Collective Action Project since the beginning.

Following an extensive visioning process, using an asset-based community development approach, and facilitated by the community organizer/planner with the assistance of a planning consultant, and involving residents, and other stakeholders, including representatives of the city planning department,

MVHCAP adopted a neighborhood revitalization strategy. Asset-based community development is different than traditional community development approaches. It is a resident-led approach that focuses on the strengths of a neighborhood, rather than its needs or problems. Based upon extensive research by John McKnight and Jody Kretzman at the Institute for Policy Research, Northwestern University, the approach begins with a process of revealing the gifts and talents of residents (1993). McKnight and Kretzman observed that traditional needs-based approaches to community development do not build neighborhood capacity and instead create negative views of community. In addition, these approaches reinforce the view that only outside "experts" can address resident concerns or change community circumstances. McKnight and Kretzman also note that when residents recognize their own capacities and neighborhood strengths and build upon them, they "begin to assemble their strengths into new combinations, new structures of opportunities, new sources of income and control and new possibilities for production (McKnight & Kretzman, 1993 p. 6). The emphasis on assets does not mean ignoring problems or not addressing concerns. In fact, a focus on "needs and problems is almost inevitable to community processes and often serves to mobilize residents to act on an issue" (Green & Haines 2012 p.10).

When asked to identify their individual assets- their knowledge, skills, values- key residents of MarketView Heights described themselves as neighborhood advocates. They feel as

though they are good networkers, take responsibility for their actions and their neighborhood, and are reliable and able to get things done. Given their skills networking and serving as community advocates, they are regarded very highly among their neighbors and trusted within the community. Many of the resident leaders have lived in the neighborhood for more than three decades and are tremendous assets to the community.

The Neighborhood Revitalization Strategy process engaged over 150 residents, business owners, representatives of the city and other non-profits and other stakeholders in evaluating current conditions, defining a vision for the future, identifying priorities for action and developing action plans.

Following the visioning process, MVHCAP organized into three Project Action Teams: Streetscape and Beautification, Safety and Security, and Housing and Development. The Action Teams, sustained by over 50 active residents of Marketview Heights and surrounding areas, have been charged to identify and prioritize, plan and implement short-term projects. Resident leadership has been cultivated from within the community via leadership development training and coaching through a local Neighborhood Leadership Institute, organized by PathStone and co-sponsored by NeighborWorks America, a national organization dedicated to affordable housing and community development, and by participation in NeighborWorks national community leadership conferences.

Over the past 8 years MVHCAP Action Teams have held a voter registration drive, organized and hosted various neighborhood fairs, an annual neighborhood leadership conference, annual neighborhood gardening workshops, hosted fitness classes facilitated by local professional trainers, organized several neighborhood cleanups, and transformed unsightly vacant lots in the neighborhood into resident supervised and managed community gardens. It is the transformation of one of these lots, the First Street Garden that is the subject of this case study.

The MCHCAP meets monthly at a local school to report on Action Team progress, to assess program outcomes, to engage stakeholders and to plan future activity. City officials are regularly invited to the monthly meetings to address questions about city issues and to update residents on city activities impacting the neighborhood.

The Streetscape and Beautification Team has assumed most of the responsibility for identifying and developing several community gardens. Many of these gardens were developed on city-owned vacant lots and MVHCAP negotiated with city officials to use these lots to develop the gardens. The first gardens were designed for fresh produce that is culturally appropriate and relatively easy to grow. One garden has been transformed into a sofrito garden, producing tomatoes, several varieties of peppers, cilantro and onions, to make sofrito, a traditional Puerto Rican sauce used in a variety of dishes.

The residents observed that very few youths were involved in the gardening projects and decided to develop a garden to that would be dedicated as a “Children’s Garden”. A vacant site (the site of a former single family house) was identified as an appropriate location. The site had been used in previous years for smaller gardening activities and was located on a street in the central part of the neighborhood. In addition to developing the entire site as a garden, resident leaders also wanted to give youths an opportunity to develop leadership skills and to use the Children’s Garden project as a vehicle for encouraging academic success.

For the Children’s Garden project the MVHCAP solicited the support of Rochester Institute of Technology (RIT). Through its University/Community Partnership initiative, RIT had a long-standing partnership with MVHCAP. Residents wanted the youths in the garden project to team up with RIT students in a co-equal partnership in the form of a learning community, recognizing that in a true learning community everyone is a teacher and everyone is a learner. Residents also saw the partnership with RIT as an opportunity for encouraging the youths to learn more about career opportunities and the college experience.

Members of the MVHCAP led the physical development and early planting of the Children’s Garden in the spring of 2010. RIT students and staff assisted with these early activities. In the late spring of 2010 resident leaders and the community organizer/

planner recruited seven youths from the neighborhood and RIT staff recruited seven students to form a co-equal leadership team (Leadership Team). A two-week orientation was developed by the community organizer and RIT staff to reinforce principles of asset-based community development, to introduce participatory evaluation and to develop programming plans for the summer. As conceived by resident members of the Beautification and Streetscape Team, the Children's Garden would be a place where younger children from the neighborhood would learn about where their food comes from, nutrition and the importance of eating fresh produce and exercise and healthy lifestyles. A city-run recreation center is located across the street from the Children's Garden and it was decided that younger children who attended summer programming at the recreation center would be recruited daily throughout the summer to participate in the programs at the Children's Garden. It was planned that the Leadership Team would also assist city recreation staff by supplementing programming with activities centered on exercise, healthy eating and cooking classes. The program also included weekly field trips for the Leadership Team. These trips were planned to enhance their learning and provide broader experiences related to food and food production and included trips to the RIT campus. The ten-week program was officially called "Field to Table" and was launched in early July 2010. The Leadership Team was responsible for tending the garden and leading programs for the younger children. Activities included

teaching planting and gardening techniques, teaching basic nutrition and healthy eating, cooking classes using produce from the gardens, organized games and physical activities and simple arts and crafts projects.

Throughout the summer MVHCAP resident volunteers assisted with the gardening and summer programming. In addition, monthly meetings of the MVHCAP were held in the garden.

Six goals were established for the Field to Table project by the community organizer and the Leadership Team. These six goals were: to strengthen the MarketView Heights community; to enable teens as community leaders; to explore career development opportunities with the youth leaders; to promote health and wellness amongst members of the Leadership Team, community residents and children involved in the program; to educate members of the Leadership Team, community residents and children involved in the project; and to have fun with all involved. Once determined, the goals were presented to the Marketview Heights Collective Action Team to provide an opportunity for resident input on the development of the Project. Through this process the participants and community members were given a voice in determining what the evaluation research would assess and set benchmarks for determining the success of the program.

The members of the Leadership Team kept journals throughout

the summer to use for reflection and to provide a written dialogue between each team member and the adult staff.

The program also incorporated an ongoing participatory evaluation process, whereby the Leadership Team engaged in an iterative program evaluation process throughout the summer. The goal of this process was to ensure continuous improvement in the programming, to assess how well all participants were carrying out their responsibilities, to assess accomplishments around the six program goals and to provide a regular forum for feedback to the community organizer, adult resident leaders and the MVHCAP. As the summer began, the community organizer and RIT staff led the teens through the evaluation process by providing questionnaires, giving journaling prompts and leading discussions, but as the Project advanced, more control over the evaluation was handed over to the youth leaders as their ownership of the program grew. By the close of the summer the youth played an active role in assigning journaling prompts, keeping the group on task and conducting interviews for the final stages of the evaluation.

The Leadership Team formulated an evaluation plan that included a questionnaire filled out by Leadership Team members, including a field trip evaluation questionnaire and an "end of the week" survey. The forms and journals provided a written record of the summer program but they also served as a starting point for group or 'circle' discussions. Circle discussions were loosely

guided conversations held twice a week, or as needed, to discuss developments and challenges as the Project moved forward. These discussions allowed time for the Leadership Team to sit down as a group and reflect on all aspects of the Field to Table Project including activities with the children, personal conflicts and any necessary changes to improve the Project.

The ongoing evaluation process resulted in refining and prioritizing the program goals since the original six goals were viewed as too broad and too ambitious for a ten-week program. This in turn resulted in program changes and efforts to enhance the work of the Leadership Team through a more collaborative process.

A framework for comparing community based learning processes

When we compare our two cases, we used following questions

Who initiated the learning process?

Who named and framed the issue to be addressed?

How was the process financed?

Who participated?

Who organized and lead the process?

Which kinds of learning took place?

Who learned what?

Which methods were used?

What resulted from the learning process?

These questions were put in to following framework:

Key questions	Malmö (The development of Rosengård)	Rochester
Who initiate?	The municipality	Residents
Who name and frame the problem	The municipality did that in the beginning, but they invited some groups during the process to re-frame the problem	Residents, but brought in partners (RIT and other funders) to carry out the project
What was the purpose with the process?	Support a social sustainable development in a poor area in Malmö Create a meeting point for young women Change how the area is looked up on	The development of youth leadership capacity through the creation a children's garden program to teach gardening, nutrition, exercise and healthy eating to neighborhood youth
How was the process financed?	By external founding and by the municipality	Several sources, including local foundation support and Rochester Institute of Technology
Who participate	Professional planners Young girls who lived in the area	Adult residents, youth leaders, RIT students and staff
Who organized and lead the process?	The municipality, which hired a professional process leader	Residents
What kinds of learning took place?	Consultative: the professional planners listen to and asked the girls. Experience based: the girls learnt to work with project by taking part in the planning processes	Experienced based: the Youth Leadership team carried out a summer program that included a youth leadership development component
Who learned what?	The professional planners learned more about the living conditions for young girls in the area The young girls learned more about urban planning and project leading. They also evoke their self-esteem during the process and started a network together	City recreation staff learned about the ability of youth to design and implement a summer program Youth learned participatory program evaluation methods; leadership skill; team building skill
Which methods were used?	Workshops organized by the process leader On-going dialogues with the girls Workshops with public administrators, related to a process of ongoing evaluation	Orientation facilitated by the community organizer, resident leaders and RIT staff Weekly participatory evaluation meetings and other participatory evaluation methods Informal collaboration with city recreation staff
Which results could be shown?	An meeting point, with a specific architecture A network with young girls An on-going work finding new forms of collaborative management The development of a model for intra-organizational collaboration in the municipality	Leadership development among the youth; youth gained a sense of ownership of the program and program outcomes Strong group ties within the Leadership team/learning community A participatory program evaluation process to be used in subsequent years for the "Field to Table" summer program

Summary

In the introduction we stated that the aim of this paper was to compare community based learning processes in Sweden and the United States in order to gain a better understanding of what works in different contexts. We were interested in exploring what kinds of knowledge about local conditions in a specific neighborhood are emphasized when public administrators dominate the process or when local community groups take the lead?

In our summary, we claim that the crucial differences between the Swedish and the America cases seem to be the level of interdependence and self-organization among the citizen who were involved. In the Rochester case, the neighborhood group set the agenda themselves. In the Malmö case, the municipality set the agenda and took the initiative and invited people from the neighborhood to participate in the process. Here it is important to remember that the project team in Focus Rosengård paved the way for new kinds of participatory processes, which are not common in local urban development. When the project team summarized the regeneration process in Rosengård, they showed that more than 1,700 visitors took part in different forms of consultations and dialogues. Sixty percent of them were women, which is also rare compared to other attempts by the municipality to involve people from the neighborhood in urban developmental processes. However, the process as a

whole was a top-down process, where the professional planners and the project team controlled the processes of naming and framing. The main reason behind this was the fact the whole regeneration project was financed by EU, and had to follow very strict timelines and requirements. The project team was caught between their ambitions to pave the way for broad participation, and the strict timetables and processes dictated by the EU.

Because of the lack of strong self-organized neighborhood groups in the Swedish case, there were no voices that could challenge the way the municipality talked about the area and the problems that the project Fokus Rosengård intended to solve. Even if the project team and other representatives from the municipality endeavored to have a participatory process, there were no opponents that could become a true partner in the kind of agnostic conflicts that Mouffe claims are essential for a democratic dialogue.

In the Rochester case, the resident leaders of MarketView Heights Collective Action Project named and framed the issue to be addressed- youth engagement and youth leadership development. The vehicle for achieving this was a summer program planned and led by a learning community of neighborhood youths and university students. Supported by key adult residents and a community organizer, the youth Leadership Team took independent responsibility for planning and implementing a program for younger children focused on healthy

eating and exercise. A key outcome of this resident-led initiative was a participatory program evaluation process that supported a continuation of the summer program in subsequent years. Funding for the program came from sources outside of government, including local nonprofit foundations and donations from local businesses. While basic eligibility requirements had to be met, these funders did not dictate the parameters of the program or how the program goals were to be met. The fact that the program was resident-led made it especially attractive to local foundations. City of Rochester recreation staff were partners in the program and collaborated closely with the Leadership Team on program planning and carrying out activities. University staff and students were also key partners.

Our ambition with this paper was to compare which different methods for supporting community based learning works in Sweden and the United states. When we try to sum our conclusions, it seems that it is not so much a question about methods as a question about who are using the methods. Community based learning seems to be dependent on a strong community that has the capacity to be self-organized and develop knowledge about their community on their own. They must also be able to use this local knowledge as an act of resistance against developmental processes that may threaten important values in the community. The community must be able to name and frame problems on their own way. Of course, the Swedish case shows that different groups in the community could be involved

in participatory learning processes even if the whole project is initiated and driven by the municipality with a top-down approach. But if we see community based learning as something worth striving for, we must always be aware that there are different conditions for communities to control the learning process.

The main difference seems to be to the lack of self-organized neighborhood groups in Sweden compared to the United states that could become a strong part in processes of local urban development. Without those groups, it is difficult to develop those kinds of agonistic spaces which Mouffe sees as essential for a democratic process. We see these kinds of agnostic spaces as crucial if we want a community based learning process which is dominated by developmental learning. Otherwise, we will probably face a community based learning process in a form of adaptive learning. Of course, those who participate could learn a lot, but they do this within an already established naming and framing of what kind of problems should be solved.

This is a first attempt to gain a better understanding of the different conditions for community based learning in Sweden and the United States, and how this affects the use of methods for collaborative learning. Or next step is to focus more on ongoing projects in our respective countries, with the aim to reach a better understanding of how different methods work in practice.

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The Secret Recipe For University-Civil Society Collaboration - A Sandwich Concept

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Key Words: *Gadamerian Hermeneutics, Knowledge Atelier, Community based learning, Collaboration, Understanding*

1. Introduction

Collaboration between government, business, societal organisations and other knowledge institutes is high on the agenda of Wageningen University & Research centre (Wageningen UR). Employed researchers as well as students are stimulated to actively collaborate with other societal actors. Within the educational programme this is facilitated, for example, through the Master course Academic Consultancy Training (ACT) and the Honours Programme for Bachelor students. The extra attention and energy dedicated to this type of education emerges from the strategy of Wageningen UR. One of the five core values of Wageningen UR is aimed at developing and utilizing such partnerships: 'Cooperation makes us strong and set us apart from other organisations. We find partnerships within Wageningen UR and beyond, both nationally and internationally, based on commitment and aimed at improving results.' (Wageningen UR Strategic plan 2011-2014, p. 42). Within the production of knowledge and innovation by Wageningen UR, cooperation is an important goal. It emerges from the translation and application of theory into practice and reflection on the outcomes. The developed knowledge only reaches its full potential when

it finds its use in everyday practice within society. Therefore, Wageningen UR is a knowledge institute that not only develops knowledge, but guides and supports its application: 'Wageningen UR believes it is important that its knowledge be applied in practice.' (Wageningen UR Strategic plan 2011-2014, p. 19). The applied nature of the research is part and parcel of academic research and education. The organisational structure of the Science Shop (Wageningen UR) and Knowledge Atelier are based on this.

In this paper, we will analyse the collaboration between academic education, ACT and societal actors. The case Better Wetter (in English: Better Water), an example of a project by the Knowledge Atelier Northeast Friesland, is a recurring theme in our story. We will explain the Knowledge Atelier and the ACT course. Both are examples of Community Based Learning (CBL). Attention will be paid to their organisational structure, because we regard this structure to be the backbone of collaboration. Furthermore, we will explain what we believe to be the fundamental elements of successful collaboration between academic education and society. We will introduce the sandwich concept, containing these fundamental elements for success. Successful

collaboration is based on mutual understanding.

Within philosophy, the understanding and interpretation of expressions of life by others, such as literature and art, has been studied for centuries. The area of philosophy focusing on this, is called hermeneutics. Hans-Georg Gadamer, a distinguished German philosopher, committed part of his work to this. Building on the hermeneutics of Gadamer, Jacobs (2001) has studied the ways in which groups of people understand each other and seek collaboration in solving complex problems, such as dilemmas of sustainability.

2. The case Better Wetter, the Knowledge Atelier and Academic Consultancy Training

The case Better Wetter is a project that emerged from collaboration between the Knowledge Atelier Northeast Friesland and Altenburg & Wymenga (A&W), a Dutch ecological consulting firm. The project, located in the Dutch province of Friesland, started in 2013. (More information on the Knowledge Atelier and Better Wetter: <http://kenniswerkplaatsnoordoostfryslan.nl/actueel/nieuws/programma-better-wetter-gepresenteerd>) Paramount to Better Wetter is innovative water management in the northeast of Friesland, with the additional aim of developing new business models. Current approaches in the water management in this part of the province start to reach their limits, calling for new insights. Peat areas are suffering from soil

subsidence and water retention is needed to cope with heavy rains and periods of drought.

The new knowledge required, is developed within and by the region itself; through collaboration between educational institutes (vocational, professional and academic), governmental organisations (such as the Province and municipalities), entrepreneurs, inhabitants and non-profit organisations. The Knowledge Ateliers plays a key role in this. It is a means (a tool) to enable and strengthen the regional collaboration between the aforementioned actors. Within varied themes, they work together in projects aimed at regional development. This approach builds on the idea of the Knowledge Atelier as described by its initiator Willem Foorthuis 'It is a learning, research and work community of regional stakeholders who in a durable setting meet students, teachers and researchers from universities and vocational education institutes.' (Foorthuis 2012, p. 3) Within the Better Wetter case for example, Master students of Wageningen University participating in the ACT-course have contributed to questions such as 'What are possible scenarios for the Better Wetter programme?' (With the expectation of a creative, non-prejudiced contribution by the students.) and 'How to develop a knowledge centre on water?'

Finding feasible solutions to such questions poses a challenge that requires multidisciplinary collaboration between a variety of actors, including academics. Therefore, Wageningen Univer-

sity developed a course (ACT) to train students in the field of academic consultancy. The course aims to suit the demands for competencies required within the professional work field. From the start of the course, approximately ten years ago, the ACT course has evolved into a six week full-time (9ECTS) obligatory master's level course. The course 'trains the application of master level academic skills in an almost professional setting of a small consultancy team working for a true client on a real work assignment' (Study guide Wageningen University 2012). Students work in multidisciplinary and multicultural teams. Multiple stakeholders are directly involved in this 'real-life' project: the participating master level students; the commissioners (companies, organizations, and institutions providing the projects); and the support staff of the University: content coaches who guide the content side of the project and process coaches who guide the process side during the project for teams and individual students.

"ACT is a form of project education, that is, education about both learning and working within a project setting. ACT is in line with real life; there is a direct link between knowledge and its application in society. University students commonly obtain, develop, and apply knowledge. ACT enhances this knowledge by presenting complex problems that require both interdisciplinary and intercultural collaboration (Jacobs, 2001) and self-reflection to solve them. Self-reflection provides the opportunity to describe and explore both personal and team

qualities. This approach relates to the design of ACT, which connects competencies through scientific research, projects, and collaboration." (Scheepers 2012, p. 70).

Within the case Better Wetter, the organisational structures of education and societal actors 'meet' each other through the Knowledge Atelier. For each of these organisations, their organisational structure determines what their underlying beliefs and prejudices are regarding the collaboration. Let us therefore zoom in on the organisational structure of the actors involved and the ACT course. The ACT course and the Knowledge Atelier are both examples of Community Based Learning (CBL).

This didactical approach encompasses "partnerships between students and communal organizations in order to meet community goals" (Dallimore 2010, p. 18). According to this approach, students learn both in the classroom and in the community. And vice versa, community learn from and apply scientific knowledge via students. 'The three key factors of the CBL approach are the engagement of the student within the community; learning by doing; and guided reflection. In ACT, the first factor is addressed on the one hand by the attention to the alignment between university education and working life, and on the other hand by the community-based supply of projects. The second key factor is reflected in the product-focused way of working and the formal division of team roles (e.g. team manager, financial controller, secretary, etc.).The final key factor

is operationalized by setting up learning goals and reflecting on these (and those of other team members) during the course and afterwards, supported by a process coach.' (Scheepers 2012, p. 70)

3. Gadamerian Hermeneutics

Successful cooperation is based on mutual understanding. Gadamer struggled with the classic question of how it is possible that some texts from people, who are dead for thousands of years still have meaning for us, the living. We still think that we understand ancient texts. How does understanding come about? Gadamer focused on texts that had been written in previous centuries, but this theory can also be applied to other areas. (see Gremmen 1997). Jacobs (2001) expanded this question of hermeneutic philosophy to include understanding complex issues of society. Such as the question about innovative water management in the Friesland region.

Tradition and Prejudices

The first explanatory notion that Gadamer introduced to explain our relationship with texts is 'tradition'. We understand texts because we are carriers of a tradition which we share with the creators of texts. In the case of Better Wetter, the ACT team and the commissioner (Altenburg & Wymenga), share the tradition of water management in relation to economic develop-

ment, trying to understand what the problem in this region is.

Understanding a text starts, according to Gadamer, from our tradition. But that tradition provides no clear-cut answers, no clear definitions and certainly not instant understanding. What tradition does give are 'prejudices'. 'Prejudices' lead to the second important concept in the thinking of Gadamer. Moreover, he used the term *Vorverständnis*.

Such prejudices are collective. We do not make them as individuals, but they come to us from our tradition. More often than not it will turn out that our prejudice is wrong.

According to Gadamer the understanding of a text arises in an ongoing dialogue between our prejudices and the sentences of the text. We read a few words, formulate a spontaneous prejudice and then experience what is wrong with our prejudice. When we read a text, then our tradition delivers us, in the form of our prejudices, a steady stream of hypotheses, which we immediately test to the text, and then reject, accept or correct. The result of that process is understanding. As Gadamer said it himself: 'The task of hermeneutics is to clarify this miracle of understanding, which is not a mysterious communion of souls, but sharing in a common meaning.' (Gadamer 1989, p. 292).

In the way just outlined, we not only understand texts, but the actors involved in the case Better Wetter understand each

other as well. The ACT team and the commissioner must understand each other on the content of the project. One must share the understanding that the excess / shortage of water is a problem in the region and, in particular, students need to understand what the next steps are towards innovative water management. And on the other hand, the commissioner must be aware of the educational framework of ACT and its related learning goals. The contribution of the ACT should ultimately contribute to the general project, and the commissioner contributes to the learning of the students.

Within this process, everyone makes continuous use of his/her prejudices, and tests them. Prejudices, even though they make that we are mistaken, are therefore more important than the judgments we make consciously. Precisely because of these prejudices, the actors can understand each other. An example of a prejudice in the case Better Wetter is that the students indicate that innovative water management means pumping the water out, while the commissioner just wants to allow more water in the region. They share their prejudices and thus come to a shared meaning by getting an original interpretation with respect to controlling the water level.

Moreover, prejudice and tradition are not immutable. In the continuous collective process of testing, they change.

If we want to understand, we have a dialogue from our trusted

but variable tradition,

each time with a different outcome. Now we understand the power of water otherwise than in 1900. But as long as our tradition has still enough elements in common with the tradition of the area, we will continue to understand the problem.

Fusion of Horizons

Rejecting our prejudices occurs in a process that Gadamer calls fusion of horizons. According to Gadamer, a horizon is the limit of our knowledge and understanding. Every time we learn something new, our horizon widens, and the wider our horizon, the greater our knowledge.

When we read a text or when we have a conversation with someone, and we open up to new knowledge, our horizon merges with that of our interlocutor. The fusion of horizons is synonymous with learning and understanding. In the case Better Wetter there is fusion of horizon as the prejudices about innovative water management leads to a new understanding.

Gadamer emphasizes that horizon fusion is not obvious, and certainly not without obligation. We must be willing to exchange elements of our knowledge for other and we must be willing to accept that the other one is right and we are wrong. 'By hermeneutics I understand the ability to listen to the other

in the belief that he could be right' (Gadamer quoted by Barthold 2012). Jacobs points out that the result of a partnership is not clear at the start. It is always surprising. The process that we enter into with stakeholders should have an open character. The problem in the region is formulated together. It is exposed in concert. The final solution is time and place bounded. It has a dynamic character.

4. Secret recipe: Collaboration and Community Based Learning

What is the meaning and significance of mutual understanding for Community Based Learning? Prejudices and traditions play an important role in the process of learning from each other. The ACT team of students and the commissioner both have prejudices about what the proper research question is for approaching and solving the problem of the region. Furthermore, the commissioner has prejudices regarding the ACT team, the students and the teachers. The ecological consulting firm A&W assumes the research question is clearly formulated and expects a certain outcome. Nonetheless, within Community Based Learning, this prejudice is replaced by the viewpoint that A&W decides on the (formulation of the) proper research question together with the students. Through interpretation (and mutual understanding of each other's' tradition) they jointly built a new horizon.

The Sandwich concept consists of the secret ingredients of Gadamerian hermeneutics and does justice to a large part of this process. It starts with 'well informed expectations': What does the commissioner want and what can the students offer? We distinguish two layers: agreeing on the collaboration at the start (How is the problem defined and what are we going to?) and finalizing the collaboration (Reflection on how the collaboration is experienced by the parties involved and on what they have learned.) As such, the Sandwich concept is not a method. Rather, it is a mind-set. It is a way of doing. The ingredients are secret in the sense that every process is different and unpredictable. Nonetheless, we do offer a certain way of thinking based on this mind-set, translated into a Sandwich concept.

To allow for a successful collaboration, it is important to come to the essence of the problem. The critical analytical attitude of the students should be the starting point, both for the university and the commissioner. This is part of the task of the commissioner. Moreover, it is imperative that the actors involved show a willingness to learn (from each other). They become aware of their own background and that of stakeholders within the region. Reaching a clear problem definition with proper research questions and working towards a solution is a dynamic process in which the actors involved have a shared responsibility. Beforehand, nobody knows what the outcome of the collaboration will be. The final result remains a surprise. However, the actors involved do know the outcome of the collaboration is a

product to which they commit themselves, in which they can recognize themselves and which they can (to a certain extent) agree upon. As such, for the students the final outcome is a satisfactory mark and for the region it is a building block of a wider programme. The final stage of the collaboration within CBL is (self)reflection. As explained above, reflection is one of the pillars of CBL. It is the final layer of the Sandwich concept. In this way, the Sandwich concept following Gadamerian hermeneutics makes collaboration promising and also surprising.

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Growing a knowledge mobilization unit at York University

Krista E. Jensen, David J. Phipps, Michael Johnny - York University and Jane Wedlock - United Way York Region

Introduction

The Knowledge Mobilization (KMb) Unit at York University in Toronto, Canada is a service unit that works to connect academic research and civil society. Established in 2006, the Unit has transformed from an externally funded project to an institutionally supported unit employing two full time knowledge brokers within the university, who work with an additional community based knowledge broker through a partnership with United Way York Region (UWYR).

The KMb Unit works across all academic disciplines at York University, as well as with the local community to support the mobilization of practice and policy relevant research. Instrumental to this is the support of research partnerships through knowledge brokering services. To date, the KMb Unit has assisted in brokering over 300 collaborative research projects, worked with over 300 faculty members, 148 graduate students and 226 civil society organizations. This paper serves as a brief field note on the work in progress of the KMb Unit at York. It will provide an overview of the history and development of the KMb Unit at York, the services we provide, our ongoing partnership with United Way York Region, a case study and some of the lessons

we have learned over the years.

History of the Knowledge Mobilization Unit at York University

The Knowledge Mobilization Unit was first established in 2006 with funding from the Social Sciences and Humanities Research Council (SSHRC) of Canada and the Canadian Institute for Health Research (CIHR). A SSHRC/CIHR Intellectual Property Mobilization grant (2006-2009) allowed the Unit to hire a KMb Manager, Michael Johnny, and a SSHRC Knowledge Impact in Society Grant (2006-2009) funded a KMb Officer position held by Krista Jensen. Funding in 2011 from CIHR grant supported the unique partnership between York University and United Way York Region and enabled United Way York Region to hire a knowledge broker to work in York Region and in partnership with the KMb Unit at York University with a focus on knowledge mobilization and the social determinants of health.

These grants allowed the KMb Unit to develop various knowledge mobilization services. The Intellectual Property Mobilization grant funded clear language research summary development and a research translation help desk (producer push), while the Knowledge Impact in Society grant allowed us to work closely with the municipal government in York Region,

the region just north of Toronto, along with a whole host of civil society organizations (user pull). Two subsequent grants that funded the partnership with United Way York Region and a SSHRC public outreach grant working with municipalities around Toronto allowed us to focus more on specific issues in a co-production and knowledge exchange capacity.

Since 2006, the KMb Unit at York has transitioned to being funded by external grants to being fully financially supported by the University through the Office of the Vice President Research and Innovation. This has allowed us to expand our service offerings and capacity building efforts within the university and with our external community partners. In addition, our relationship with United Way York Region has continued to grow, which has further strengthened our relationship with community partners in York Region.

Knowledge mobilization services at York University

The KMb Unit at York uses a variety of knowledge mobilization methods such as producer push, user pull, knowledge exchange (Lavis, Ross, McLeod & Gildner 2003) and co-production (Hart, Maddison & Wolff 2008). Figure 1 below outlines our services and the KMb method they each employ.

Our services can also be categorized under three broad areas—Grant support; Building capacity; and Partnerships and Collab-

oration.

Grant support

Recent changes to the funding requirements by federal funding agencies in Canada have increased the profile of using knowledge mobilization methods and activities in funded research projects. For example, SSHRC now requires that all grant applications

KMb Unit at York services

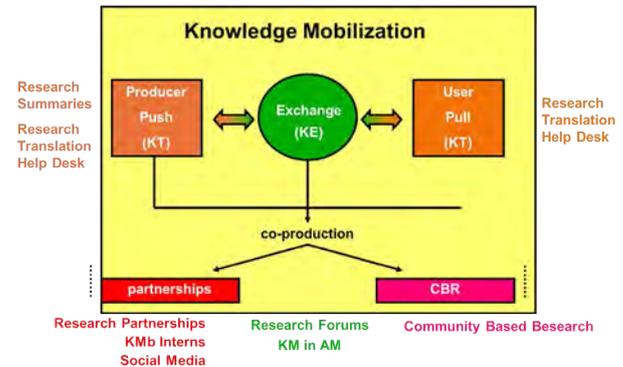


Figure 1

include a knowledge mobilization plan. While traditional forms of scholarship such as peer viewed publications and conference

presentations are still valued, applicants are also encouraged to employ various forms of knowledge transfer such as translation, synthesis and networking” (SSHRC 2013 <http://www.sshrc-crsh.gc.ca/society-societe/community-communite/index-eng.aspx>). Since these changes have been implemented, knowledge brokers at the KMb Unit at York have become more involved in helping to support the development of knowledge mobilization and social media plans for research funding applications. Through assisting faculty members, the Unit has played a part in attracting \$33.6M CDN in research funding to York University from 2006-2013. As all of these grants are partnered grants, a large portion of this funding enables activity at research partner organizations. In addition, through partnerships with external civil society organizations, the Unit has helped raise \$1.2M CDN in community funding, which is not normally accessible to researchers.

Building capacity

The KMb Unit at York has always believed in the importance of working with graduate students. Many graduate students are interested in connecting their research to the world outside of academia. Whether graduate student go on to become academics or chose to work in civil society or government agencies, there is value in providing opportunities for graduate students to work on research projects with community organizations (Hynie et al 2011).

From 2006-2013, the Unit has worked with 154 graduate students of which 45 were through graduate student internships. Through our original SSHRC/CIHR Intellectual Property Mobilization grant, we were able to provide funding for graduate students to work with external community partner organization part-time for four months and were awarded a stipend of \$6,000 CDN. The project topic was mutually identified by the student and the partner organization, which was usually closely related to the student area of research interest for their thesis or dissertation. The internship allowed partner organizations to engage with research in a way that was relevant to their needs and gave students real world experience, make personal connections in the community and helped to advance their studies.

A number of our partnerships have allowed us to place graduate students in internship positions as well. We have partnered with Mitacs (<http://www.mitacs.ca/>), which provides internships to graduate students across Canada. Students work for four to six months with an industry or not-for-profit partner and are awarded \$10,000 plus a \$5,000 stipend that is cost shared between Mitacs and the partner. And as a result of the CIHR grant supporting our work with United Way York Region, graduate students were able to work in the areas of housing and economic vulnerability.

Another area of capacity building has been the implementation of our series of KMb Learning Sessions. With the increased

emphasis on knowledge mobilization methods and practices by granting agencies, and with the increased use of social media and its potential to contribute to knowledge mobilization, the Unit saw an opportunity to build capacity within the University in these two areas. Beginning in the Fall of 2012, the Unit has offered a range of sessions, many of them hands on. Table 1 outlines the variety of sessions the Unit has offered from 2012-2014.

Knowledge Mobilization Sessions	Social Media Sessions
KMb 101	Social Media 101
KMb Strategy Building	Social Media 201
KMb Peer to Peer Networking	Social Media Strategy Building
Effective Community Engagement	Wordpress
KMb and Communications	Twitter
Impact and Accountability in KMb	Online Collaborative Platforms
Clear Language Writing and Design	Social Media for Research: Tips, Tricks and Analytics

Table 1.

Since we began the sessions, we have offered a total of 37 sessions and had approximately 175 attendees. External community members are invited to attend these sessions held on

campus and we are currently planning a pilot to offer these Learning Sessions in our local communities.

Partnerships and collaboration

One of the core services of the KMb Unit at York is knowledge brokering through our research translation help desk (Phipps & Shapson 2009; Phipps 2011). Decision-makers outside of the university who are interested in seeking research expertise can contact the Unit. A knowledge broker will work with the decision-maker to refine their research question and then will identify faculty members or graduate students who may be able to assist with the request. The knowledge broker typically sets up a time and place for the parties to meet and explore the potential for collaboration. The Unit does not participate directly in any research projects which may result from these meetings but instead sets the stage for potential collaborations.

Requests cover a wide range of topics of interests to all disciplines across the university and the resulting partnership can result in an evenly wide range of activities—from one time only meetings, to lunch and learn sessions, to long term research collaborations. As of December 2013, the KMb Unit has helped to broker 323 opportunities. The majority (75%) of these have come as requests from external decision-makers but the other 25% have been in the form of faculty members or graduate students looking to find external partners to work with on

their research endeavours. In terms of our success, 64% of our requests result in a match, meaning that we are able to identify a partner for the requester to work with. We have found that in the cases where we have not been able to make a match, it has most often been because the research question is unclear, the timelines were unrealistic or simply because the request was withdrawn.

Making research accessible to those outside of academia is a key component of knowledge mobilization and providing clear language translations of research findings is one way of achieving this (Meagher, Lyall & Nutley 2008). The Kmb Unit at York has developed a series of clear language research summaries covering a wide range of practice and/or policy relevant research. The Unit trains and employs students to write the two page summaries of completed research. To date (February, 2014) we have produced 317 ResearchSnapshot clear language research summaries (see Figure 2 for an example). These are housed in an online database, which is accessible to the public through the ResearchImpact-Réseau Impact Recherche website (<http://www.researchimpact.ca/researchsearch>). We also use Twitter to disseminate the summaries and send out a daily Today's ResearchSnapshot tweet, which includes the title of the summary and a link to the summary online.

Creating space for researchers and external decision-makers to meet and interact is another important component of the Kmb

Unit at York's services and we host a number of events with this goal in mind. One example is our KM in the AM thematic breakfast events, which bring together 20-25 people from academia, civil society organizations and government agencies. A main topic is identified in collaboration with our community partners and brief five minute presentations are given by a researcher and by a member of an external community organization. This is followed by a facilitated question and answer discussion period and concluded with time for further informal discussions and networking. The space and time created for people from a variety of backgrounds and sectors who are all interested and invested in the topic at hand makes for lively discussions and creates the potential for future partnerships.



What is this research about?

Knowledge mobilization (KMB) and social innovation gets university research into the hands of policy makers, businesses, and community groups. These stakeholders increase the social, economic and environmental impacts of research by using it to improve the wellbeing of people and our planet. Thus, research must speak to different industries and communities to see its effect on the social economy. A stronger social economy can emerge if we work together, finish projects, join knowledge, and set goals. This study explains the relationship between people doing research, people who need that research, and its relevance to society. KMB and social innovation find ways to collaborate and communicate it to make the world a better place.

What did the researchers do?

The authors studied literature and practices in universities, community groups, and the government. They wanted to see how effectively research was being used after it was completed. They reviewed social innovation trends and suggested ways to

What you need to know:

When research is easier to access, it supports closer collaboration between the different groups that are affected by it. Universities, communities, government agencies and businesses can improve their collaboration with each other to apply research findings to real world problems and maximize the impacts of research.

make research easier to access and understand for these stakeholders.

What did the researchers find?

A brief description of research findings allows interested stakeholders to recognize and access the full report quickly. Social Innovation can thrive when we share our research findings and open up communication between different sectors. Knowledge brokers play an important role in KMB. They help stakeholders in different sectors connect with research to improve its impact. The authors also suggested ways to improve communication and collaboration among government agencies,



universities, and community groups. These included:

- improve KMB strategies to strengthen the impact of research and social innovation;
- Develop sustained funding programs to help researchers and their community partners collaborate more effectively;
- Open and increase communication among government, community groups, businesses and researchers.
- Train and create a community of KMB and social innovation leaders and practitioners and stay connected

How can you use this research?

Businesses may use this research to improve innovation and social enterprise through access to research. Policy makers may consider developing a strategy to improve relations with universities through KMB. Academic researchers may also use this work to leverage investment in their research and maximize social innovation through their findings. Community groups can access research easily and use it to improve current and future programs and services. Community-based research also becomes more accessible to different universities when partnered with universities through KMB.

About the Researchers

David Phipps is Executive Director, Research & Innovation Services at York University. Naomi Nichols is a Research

Associate for York University and the Canadian Homelessness Research Network. Johanne Provencal is the Acting Director, Strategic Initiatives, Office of the Vice President Research Innovation at the University of Toronto. Allyson Hewitt is the Director of Social Entrepreneurship and Advisor of Social Innovation for SIG+MaRS Discovery District located in Toronto, Ontario. This ResearchSnapshot is from their publication, "Knowledge Mobilization, Collaboration, and Social Innovation: Leveraging Investments in Higher Education".
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Keywords

Knowledge mobilization, research, social enterprise, social innovation, stakeholders.

Knowledge Mobilization at York

York's Knowledge Mobilization Unit provides services and funding for faculty, graduate students, and community organizations seeking to maximize the impact of academic research and expertise on public policy, social programming, and professional practice. It is supported by SSHRC and CIHR grants, and by the Office of the Vice-President Research & Innovation.

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www.researchimpact.ca



Figure 2

Partnership with United Way York Region

The KMBUnit at York has had a long standing partnership with United Way York Region, a charitable organization whose mission is to unite people (agencies, business, government, residents and volunteers) and resources to improve quality of life in communities. UWYR operates in the region just north of the city of Toronto where York University is located. In 2012, York University and United Way York Region received a \$142K CDN grant from SSHRC to invest in knowledge mobilization focused on housing and economic vulnerability (see <http://researchimpact.wordpress.com/2012/07/18/york-university-and-united-way-york-region-receive-funding/> for more details). The grant was jointly led by Daniele Zanotti, CEO of United Way York Region, David Phipps, Executive Director of Research Services and Knowledge Exchange at York University, and two York University faculty members, Stephen Gaetz from the Faculty of Education and Michaela Hynie from the Department of Psychology. The grant funded graduate student internships, KMB events and the creation of clear language research summaries focusing on research in the areas of housing and economic vulnerability. The grant also allowed United Way York Region to continue hosting a community based knowledge broker, Jane Wedlock, to work in York Region to build community capacity and to identify and support potential collaborations between researchers and community experts.

Case Study—Strength Investments

To further illustrate our process and the impact of our work, we offer this brief case study of the Strength Investments project co-led by United Way York Region and York University. Both parties co-invested in three graduate student interns who undertook social asset mapping research in Markham, a suburban municipality in York Region. Evidence from their research led to the development of a new and innovative form of United Way investment called Strength Investments, which invested \$150K CDN in six projects. One example is the Building Sustainable Capacities amongst Afro-Canadian Caribbean Youth in York Region project by the Markham African Caribbean Association. Working together with local youth, the initiative seeks to learn how young people identify their realities in York Region in terms of inclusion, education and family life. It also helps youth identify and build their own solutions. This is just one example of a project that was made possible only as a result of the partnership between York University and United Way York Region (Phipps, Jensen & Myers 2012).

Lessons Learned

After being in operation for almost eight years, we have learned a number of lessons on how to grow a knowledge mobilization unit. There are too many stories to tell in this brief account so the following represents only some of the things we have

learned.

1) You need the right conditions for growth—For the KMB Unit at York, our success has been due to the combination having a strong and supportive team of brokers; strong partnership and champions both within the University and with our community partner organizations; financial support first through external grants and then from our institution; and the time and space to try a variety of tools, methods and activities to see what would work best for our locale.

2) It takes time to see impacts—We have found it often takes three to four years to start to see the impacts of collaborative partnerships and it can also be difficult to measure these impacts. In addition to quantitative measures, qualitative measures such as narratives and storytelling are a powerful way to share the impacts of these partnerships and mobilization of research. We have used blogging (<http://researchimpact.wordpress.com/>) and videos (<http://www.youtube.com/user/ResearchImpact>) as a way to share these stories.

3) It does not always go the way you plan but you can always learn from what happened—With the freedom to experiment, we have tried a number of activities and techniques in our knowledge mobilization efforts. Some of them have been successful, like our research translation help desk and our clear language research summaries, and some have not quite gone

the way we planned or had the uptake we were expecting. It can be disheartening when things do not go the way you plan but often these failures can teach as much as your successes. You just have to be open to learn from these times and be agile enough to be able to change course.

4) Strong leadership is key—The KMB Unit at York is unique in that we are an institutional service unit that offers knowledge mobilization services to all faculties and departments across the University. Our Unit also helps to forward the aims of York University's Strategic Research Plan. This is different from other knowledge mobilization that occurs in research projects or units. An institutional knowledge mobilization unit requires strong leadership to ensure this is a resourced program of the institution and not a faculty project. In our case, this leadership comes both from the Vice President Research and Innovation at York University and from the CEO United Way York Region. As a result of this leadership, we collaborate at staff levels, on projects and on shared governance. This collaborative process in turn reinforces the co-production model that informs all of our endeavours.

Conclusions

The Knowledge Mobilization Unit at York University has experienced much growth and development since it was first established in 2006. We started as an externally funded knowledge

mobilization project and have successfully made the transition to a university wide service unit fully funded by York University's Office of the Vice President Research and Innovation. The grants we received in our early days of operation allowed us to explore knowledge mobilization methods and refine our service offerings to meet the needs of our stakeholders, both within the university and in our external partner communities. Strong leadership and partnerships enabled us to work from a co-production model and allowed us to truly "walk the talk". Instrumental to this is our ongoing relationship with United Way York Region. Looking to the future, we plan on expanding our knowledge mobilization services, especially in the areas of grant support, knowledge brokering and capacity building both within the university and with our external community partners. We continue to be excited to have the opportunity to mobilize knowledge and help make research useful to society.

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The development of a model for collaborative learning between urban researchers and urban planners

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Abstract

Today, there is a common understanding that universities and the stakeholders in the society need to collaborate in order to handle big societal challenges. Sometimes this is mentioned as a need of developing mode 2-knowledge. Other times it is described as a need of developing triple helix processes. A general problem for these kinds of collaborations is different needs of knowledge and different conditions for knowledge production. University knowledge are mainly general and focal, are disseminated mainly through text. Knowledge among stakeholders outside the university, like citizens or professionals, is situated and tacit, and is mainly disseminated through practice.

The aim with the paper is two-fold. First, we would like to describe a model for knowledge development between urban researchers and professional public planners. The model was developed by a group of urban planners together with the authors of the paper, who were engaged as on-going evaluators of an urban regeneration project. The aim with the model was to summarize their personal experience of working with collaborative urban planning. The model could therefore be seen as a way for those urban planners to conceptualize their personal experience of an urban developmental project, with the help of urban researchers. During the work with the model, we need to handle the tension between theoretical knowledge versus tacit personal knowledge. How could we as researcher support the transformation of tacit knowledge into a more general model based on focal knowledge?

Based on this experience, we take a step back in the second part of the paper, and try to understand the process which leads to the development of the model. Here we will use this process as a way to illustrate what we see as the main challenge in university – society interaction: different needs of knowledge, and different ways to develop knowledge. We will argue that collaboration between university and the society, irrespective of which stakeholders is included in the collaboration, must handle the tensions between different conditions for knowledge production within the academia and outside it. Our way of working is one way to this.

Introduction

Today, some scholars argue that there is a need for new kinds of knowledge, which must emerge from processes of collaborative learning. This often refers to as the production of mode 2-knowledge (Gibbons et al. 1994; Nowotny, et al. 2001). The development of mode 2-knowledge is context-driven, problem-focused and involves multidisciplinary teams brought together for short periods of time to work on specific problems in the real world. This is distinguished from traditional research, which is labeled as mode1-knowledge. This forms of knowledge is the result from an academic, investigator-initiated and discipline-based knowledge production. In short, mode 1-knowledge production is investigator-initiated and discipline-based while mode 2 is problem-focused and interdisciplinary. Gibbons, Nowotny and their colleagues originally formulated this for describe a shift within the knowledge production within the university.

There seem to be an increasing call for mode 2-knowledge from stakeholders outside the university. There is a demand on the university for develop knowledge that could be applicable to handle those big challenges that face the society for example when it comes to sustainable development. The university is a producer of focal knowledge – of text and speech. University knowledge is distributed through text and talk. But when you learn to master a practice, for example becoming a professional

urban planner, you are dependent not only on focal knowledge, but tacit, situated and embodied knowledge. The main difference between university and the rest of the society is not between theory and practice, but between different modes of knowledge production

In this paper, we understood this as two different ways of naming and framing certain aspects of the world in order to act. In short, naming and framing is a way of understood and describe the process of problem setting:

Problem setting is a judgement about the problem situation – that is, a diagnosis that also contains the prescription of directions for action. We cannot make a judgement of this kind unless we apply a frame to a field of experience. This frame enables us to (1) highlight certain features of the situation, including certain worries that we select as symptomatic, (2) ignore, or select out, certain other features of the situation, including certain worries, as noisy and irrelevant, and (3) bind together the salient features of the situation, including the relevant worries into a pattern which is coherent and graspable. (Rein & Schön, 1977: p. 237)

At the university, we name and frame phenomenon with the intention to solve empirical or theoretical research problem. As researchers, we relate to established theories or results from empirical research. When we do this, we must follow rigorous

methods, in order to achieve results that could be accepted by other researchers as valid and reliable scientific knowledge. Research is always collaborative knowledge production, and we name and frame problems in relation to general bodies of knowledge. But as a practitioner, you must be accepted as a member in a local community of practice (Wenger, 19988). This mean that you name and frame problems in relation to local situations. Of course, focal knowledge is important here as well, but it is always tied to local contexts. When the research strives for a general understating of something, many other practitioners strive for solving problems here and now. These differences in time and scale when it comes to knowledge production are one of the main obstacles in collaboration between university and society.

Nevertheless, in this paper we will claim that these kinds of collaboration could benefit from the rigorous methods for knowledge production, used within the university. We will strike a blow for that collaborative learning between practitioners and researcher could improve from using the same procedures as traditional research, in this case improve the management of urban developmental project. We based our arguments on empirical material gathered from our work as on-going evaluators of large EU-project in Sweden, which aimed to support sustainable urban development.

The paper consists of three parts. We start with a presentation

of our empirical case, which ends with a short overview of how we collected our empirical material. Then we will presents some theoretical perspective on professional learning in relation to urban development, which we see as process of naming and framing complex problems, and how this could be related to collaborative learning. Then we will finish with a presentation of a method for apply a research mode of knowledge production as a way of improve a process of collaborative learning. We will end the paper with a short summary.

The empirical case – the need for improving the management of urban regeneration projects

The last twenty years, the City of Malmö has gone through a remarkable transformation. During the 1990ties, Malmö was characterized as a post-industrial city on a steady downturn, with an increasing unemployment. The biggest employer, The Kockum shipyard, closes down in the end of the 1980tieas, and the city failed to replace it with other industries. In the end of the 1990ties, the leading politician decided to begin a groundbreaking transformation of the city. Today, Malmö has changed its identity in many ways. For example, the city hosts a new university, which has become the sixth biggest university in Sweden. The university is situated at the same area as the old shipyard, and it is surrounded by new companies, and more people work in the area today compare to the when the shipyard was the city's biggest employer. Another sign of this

transformation is Malmö's global reputation as a city which has worked with different kinds of sustainable urban transformation. The other side of the coin is the fact that Malmö also became known as a segregated city where you could find some of the poorest neighborhoods in Sweden.

The majority of the urban developmental work in Malmö, especially those with a focus on sustainable urban development, has been founded through large-scale EU-projects. Our empirical case is one of these projects: Fokus Rosengård. In January 2010 the city of Malmö received 28 million Swedish Kroner (around 4 million US dollar) from the European Union for this large-scale urban regeneration project. The condition for the founding was that the City co-founded with the same amount of money. The EU-funding was mediated by the Swedish Authority of Economic Growth (Tillväxtverket), and the overall goal for this EU-program is the support of economic growth. One condition was the use of on-going, formative evaluation. The aim was to function both as an evaluator but also as a support to the project team. This kind of evaluation was a demand from the Swedish Authority of Economic Growth. The authors of this paper have been the on-going evaluators.

Rosengård is an area situated in the southeast part of Malmö. It consists of several large areas large-scale housing complex between four to ten floors. The whole area was constructed between the 1960s to the end of 1970s, and was a part of a

national housing developmental program named "The Miljonprogram". The program was intended to meet the need for affordable housing in Sweden, and the overall goal was to build 500 000 single family homes and 500 000 apartments. Originally, Rosengård was built for wealthy blue-collar workers and their families, but when the area was finished, the City of Malmö was hit by the global transformations that led to a large-scale reconstruction of the base for the labor market in Sweden. Several of the main industries in Malmö, like the large shipyard that employed over 4000, closed down. This was the beginning of the decline in Malmö's population, because of rising unemployment, and the fact that those who could afford a single home, moved to the smaller and wealthier municipalities that surround Malmö. The huge finished housing complexes in Rosengård were left empty, and soon they became home for newly arrived refugees and the poorer inhabitants of the city.

During the years, Rosengård has become a national symbol for segregation, unemployment, poverty and an illustration of the failures with the Swedish welfare model. Some portions of Rosengård are considered to be the worst and poorest in Sweden, with a high rate of child poverty and unemployment. Of course, the inhabitants of the area are well aware of its reputation, and many of them try to move. Many of the youths living in Rosengård feel that they do not belong to the rest of the society. From time to time, the frustration has exploded in conflict between groups of youth, often gangs of young boys

and representatives of the city, in most cases the police. At the same time, both young and old are proud of the area, and talk about it as multicultural and creative melting pot. One of the main intentions behind Fokus Rosengård was to use physical urban regeneration as a starting point for social changes in the neighborhood. Local participation and community based learning was seen as essential by the municipality for supporting this kind of transformations.

The project was built up around three work packages: 1) developing structures for collaboration in local urban regeneration, 2) developing the infrastructure along a pathway; Rosengårdsstråket and 3) An interactive process, supporting the development of a local plan for a part of Rosengård. Our empirical case is based on the work with the first work package. It was built up around following aims: a) developing a platform for collaboration in local urban development, b) create sustainable partnerships, c) developing plans for local investments and development tighter with those who lived in the area and d) developing a new model for collaborative action which could be used in other kinds of local urban development. In the project application, several arguments were formulated for the need of developing new models for collaborative action. One reason was the need of finding new forms for participatory planning, and involving citizens in local urban developmental project. But there was also an overall need of developing a better intra-organizational collaboration between different parts of the city

administration, around urban developmental projects.

The application was made by the Environmental department, which also lead the project. At the first sight, this seems strange – Environmental departments are not usually those who initiate and lead urban developmental projects. The City of Malmö has developed a progressive approach to work with sustainable urban development, where administrators at the environmental department have become very successful in organizing and running developmental projects which take a broad grip on sustainable urban development. During the years, this group of administrators at the Environmental department has evolved considerable skills of getting EU or other kinds of founding to different urban developmental projects with a sustainable approach. In this specific case, there were an intention to use physical developmental projects as a tool for implementing sustainable approaches and solutions in the city. Another reason was the ambition to use those physical changes as a way of initiate social processes in Rosengård.

However, the Environmental department could not handle this project by themselves. Therefore, a project team was set up with representatives from the Environmental department, the City Planning office, Streets and parks department, the Department of internal service, and the City district of Rosengård. The City of Malmö is divide into ten local city districts, which administrate local health care, social issues and (until 2012),

the schools located in the district. The development of infrastructure, urban regeneration and other more “hard” urban issues use to be handled by the central city departments, without collaboration with the city districts. In this project, however, collaboration between the central departments (in this case, the Environmental department, the City Planning office, Streets and parks department) and the city district of Rosengård, around urban planning and regeneration issues, was seen as an essential part of the project.

This means that the project with the purpose of regeneration of a socio-economic vulnerable area in Malmö with the overall aim to support sustainable urban development consists a meta-project: the development of a general model for these kinds of urban regeneration projects. The project team needs to do two things at the same time: managing the project, and developing a model for how these kinds of project could be managing. From the start, the ambition was to develop a model possible to apply on three forms of collaboration: between stakeholders, between citizens and intra-organizational collaboration between different departments within the city of Malmö. The model should first and foremost be valid for urban transformations that include physical changes in an existing area, like urban regeneration in an existing neighborhood, and were the transformation needs collaboration between other stakeholders in order to be fulfilled. The project team formulated two main arguments for developing the model. The first reason

was the need for the municipality to increase its capability to collaborate with other stakeholders. This is nothing radical, but something that could be traced back to the broader trend to talk about a shift from government to governance in public administration (Kooiman, 2003). Today, we could see an increasing formation of different kinds of formal and informal network, cross-sector collaborations and new institutional partnerships between public administration and external stakeholder which creates new demands for those who work within public administration to vitalize their professional role (Sörensen & Torfing, 2008).

New forms of innovative cross-sector collaboration were one important part in Malmö's successful transformation during the first ten years of the new century. Within public administration of the City of Malmö, there was an agreement that collaboration was essential. Nevertheless, there was also a widespread opinion among public administrators that city officials need to become even better performing intra-organisational collaborating. An argument from the project team for this was that external collaboration was dependent on good intra-organisational collaboration. Established forms of collaboration could easily be eroded, if different parts of the city administration did not perform coherent in relation to the citizen. In this specific case, the success of the project Fokus Rosengård, was to large extent dependent on those city departments involved (the Environmental department, the City Planning office, Streets

and Parks department and the administration of the City District of Rosengård) could collaborate and act coherent in relation to those who lived and worked in the neighborhoods of Rosengård. The development of the model also functions as tool for the project team for managing the collaboration between those departments.

The biggest challenge with the development of the model could be illustrated if we remember the difference between mode 1 and mode 2 knowledge, and use this metaphoric. Mode 1 claims to be general knowledge, at least in relation to a specific discipline. Mode 2 must always be understood as more or less situated, because it relates to a specific problem. Learning to managing a specific project could be seen as mode 2 knowledge. But the idea of developing a model which could be usable in other urban developmental projects could be seen as an attempt to produce knowledge which aspires to be more general. Of course, the model was not the result of a research project, and the project team has no ambition of that. But there was an ambition to produce something that was more than just a description of best practice. As ongoing evaluators, one of our aims was to evaluate this process in a way that at the same time supports it. We will describe this more in detail later on in this part of the paper.

The work with the model evolved gradually during the three years (2010 – 2013) the project was running. The project team

regularly presented the outlines of the model for an intra-organisational reference group that consist of representatives from the city department mentioned above. Three of the main goals in this part of the project were related to this work: develop a platform for collaboration in local urban development, create sustainable partnerships and develop a new model for collaborative action which could be used in other kinds of local urban development. By regularly refer to this goals, the project team could piece by piece move the collaboration between the city departments forward. The project team could also use the development of the model as a reason to initiate reflections among the members in the project and the reference group about the ongoing urban developmental work. The discussions about the model was also used as starting point for discussion of how the public administration could collaborate better with citizens and other external stakeholder.

This work could be seen as illustration of how collaborative learning could be seen as a process of naming and framing. Events and actions that happen during the work with the projects could be interpreted and discussed in relation to the need of developing a model. Because the model should be useable in other urban developmental project, the project team needs to generalize their experiences from this specific project. This could be seen as process of applying a frame to a field of experience. When the project team met the reference group and presented their ongoing work with the model, they highlight-

ed certain features of Fokus Rosengård as symptomatic and important for urban development in collaboration with external stakeholders. But they cannot do this without ignore, or select out, certain other features of the situation, as noisy and irrelevant. Of course, the represents from the other departments has their opinions of what was relevant and not, which mean that the development of the model become a process that creates opportunities for collaborative learning.

Ongoing evaluation is a formative method for evaluations. Different from summative approaches formative evaluation gives feed back to the project manager during the project, which opens up for the project team to adjust the project. This could also be understood as the fifth generation of evaluation. This relates to Guba and Lincolns (1989) notion of four generations of evaluations, which also could be traced back to four different traditions of evaluations: measure, describe, value and evaluation through dialogue. This development could also be related to a change from a instrumental view on knowledge to the growing insight that knowledge, especially those kinds of organizational and professional knowledge that are the focus for evaluations, are situated and tied to local context. A consequence is that the evaluator has to change how they work. One way to do this is to work more like an action researcher. Johansson and Lindhult (2008) identified two main traditions in action research: one critical and one more pragmatic. In short, the critical tradition has it root sin critical research, and strive

for uncover hidden structure in order to support changes on structural level. The more pragmatic tradition could be traced back to theories on organizational development and learning. Action researchers who work with this tradition strive for improving existing practices. Our approach as ongoing evaluators was pragmatic, and we took two roles. We should of course evaluate the project, both the process and the result, but we should also function as critical friends for the project team, and support learning. As ongoing evaluator, we followed the project on regular bases, took part in meetings, read through documents and did interviews with key persons during the project. Based on our analysis, we gave regularly feed back to the project team. In the third part of the paper, we will describe this more in detail, because this feedback was a central part in the collaborative learning process.

Collaborative learning as a process of naming and framing

One of the big challenges today is to support sustainable urban development. In short, this mean a development of our cities that are ecological, economic and social sustainable. In order to achieve this, we need to develop capabilities for handle complex problems like segregation, unemployment, poverty, the need of reducing fossil fuels and developing new forms of transportation of people and goods in and out of the city and so on. Rittel and Webber (1973) once named these kinds of problems as wicked problems. Wicked problems have in com-

mon that their solutions always limit of how we understand the problem.

The formulation of a wicked problem is the problem! The process of formulating the problem and of conceiving a solution (or re-solution) is identical, since every specification of the problem is a specification of the direction in which a treatment is considered. (Rittel & Webber, 1973, p. 161)

These problems characterizes of that our understanding of them depended on how we formulate them. If we return to our introduction, we could say that those complex problems are formed by how we name and frame them. A consequence of that is that wicked problems could be understood in many ways, and we would increase our ability to solve them through collaborative learning and knowledge development. We need many different forms of knowledge if we want to solve wicked problems. Therefore, we must learn how to combine both research based focal knowledge with situated practice based and tacit knowledge.

But we must also be aware of that these kinds of complex problems that must be handle in relation to support sustainable urban development always are unique in one sense or another. When we try to solve wicked problems, we only got one shot. As soon as we try to handle them, we change the nature of the problem, and then we must understand them again. Sometimes

we learn that the solution had consequences we could not foresee, and we need to rethink our understanding. Working with wicked problems could therefore be seen as a never ending process of collaborative learning which characterizes of double-loop learning (Argyris & Schön, 1992).

Chris Argyris and Donald Schön make a difference between single-loop learning, which could be described as process were you identified rules and routines for handling problems, and then learned to use them in similar situations. You name and frame something, and act based on this, and you keep your way of naming and framing, and continuing to act in a similar fashion. But this is only possible if the situation do not changes. Double-loop learning could also be described as a form of reflective learning (Schön, 1983), which in short could be understood as an awareness of that the way I understood and handle a problem, in one situation, may not be useful in other situations. Instead of learning rules, one has to learn how to understand and handle complex situations. A certain way of naming and framing, may not be useful in other situations.

Ellström (2001) makes a difference between adaptive learning and developmental learning. Adaptive learning means, in short, that the goal is to adapt to something where the content is already given. Adaptive learning could be described as a learning process when you know what you should achieve, and how you should act to reach the goal. Taking your driving-license is

an example. Developmental learning means that you aim for understanding something in a new way. Doing research is an example. Developmental learning takes time, and an organization with no space for reflection and criticism is not a fertile ground for this kind of learning. On the other hand, an organization where everyone put everything in question will not achieve anything. If you want your driving-license, you must make the test and learn how to drive. It would be tricky on our streets if everyone develop their own rules.

Professional's ability to solve problems also seems to be dependent on how they experience and understand different working tasks. Becoming a professional is much more than obtaining rules – it is also a process of embodied understanding (Dall'Alba & Sandberg, 1996). Within a community of practice, one could identify qualitative different ways of understanding the same kinds of working tasks. Some individual seem to handle and solve problems in a more efficient ways than others. Some are more skilled than others. Dreyfus and Dreyfus (1986) described this as the difference between beginners and proficient workers, where the last kinds experienced their working task in a qualitative different ways comparing to a beginner. Proficient works handle problems in more intuitive way, based on previous experiences of similar situation and tactic knowledge. Beginners become more and more proficient, step by step, when they gained experiences from their work.

Learning could therefore be understood as a process when you change your experience of something (Marton & Booth, 1997). But how you experience something also names and frames the content of your learning. Learning is something of a Catch 22, because we tend to direct our learning at what we think we is important to learn, which is based on our previous understanding of something. Dall'Alba and Sandberg describe the paradox as followed:

Depending upon the way in which work is experienced, particular knowledge, skills, attitudes will be developed. That is, different ways of experiencing the work produce different meanings for specific knowledge, skills and attitudes. (Dall'Alba & Sandberg, 1996:421)

Here, we could add another dimension to the dichotomy between adaptive and developmental learning. According to Ellström, developmental learning always begins with reflections. But these reflections seem to be limited by how people experience something – how they name and frame. Learning also presupposes that we become aware of the content of our own experiences; but that we also are aware of that we may not see the whole picture. When we do not understand how other people name and frame, we should resist the temptation of rejecting their views as “misunderstandings”. Instead, we should see this as something that could help us to enlarge our own naming and framing. This is especially important when we

try to develop collaborative learning among different groups who are used to collaborate, like professional planners and citizens, or different groups of professionals. The model we will describe in the next part of the paper is one attempt to develop a method for supporting collaborative learning which may result in new ways of handling wicked problems, related to sustainable urban development.

Project management, especially when it comes to management of projects with the intention to solve complex problems that always changes when we try to handle them requires certain skills and competencies. As a project manager, you must be aware of that those kinds of projects are to some extent unique. It is therefore difficult to use lessons learned from one project when one try to manage next project. It is always necessary to improvise during the project. Project plans for projects aim to handle those kinds of complex urban developmental problems must be seen as a hypothesis about the project and its outcomes. The project team must be able to learn during the process in order to succeed. It must be learning processes that strive for double-loop learning, based on ongoing reflections on the project. As ongoing evaluators, we must support these kinds of reflective learning processes. In order to do this, the evaluation must be done in collaboration with those who are evaluated, and it must be a collaborative learning process. Here lies a risk. If we as evaluators become to involved in the project, we may lose tracks, and fail to be able to critical

evaluate the project and the results. On the other hand, if we keep the distant, and strive for a critical approach, we may fail to understand the context and what kinds of tacit knowledge that may be essential for succeed. We may also fail to foster a collaborative learning process. If we are to much researchers, we fail. If we become members of the same community of practice as the rest of the project team, we also fail. We need an approach that helps keep the balance.

A model for a process of collaborative naming and framing

The headline for this paper stated that we should present a model for collaborative learning between researchers and planners. In this last part of the paper, we describe how we worked as on-going evaluators of the project.

But before we do that, we need to remind you of the challenges we face when we try to handle wicked problems. In the first part of the paper, we understood urban developmental project, especially those who focus on handling wicked problems, as unique events and often impossible to repeat. One reason it that wicked problems always transforms when we start to work with them. A consequence is that it is difficult to transfer experiences and lessons learnt from one project to another. One must get a grip on what was unique and what could be used again. As we mentions above, developmental projects are complex, and are always necessary to improvise during the project.

Therefore project plans must be seen as hypothesis about the project and its outcomes. But for those project that we has worked with, the project plan would not be able to follow. The project team must be able to learn during the process in order to succeed.

Above, we understood problem formulation as process of naming and framing. In line with that, we saw learning as process hen we changed how we name and frame, and therefore as a process were we changed our problem formulations. A project plan could be seen as a way of naming a framing what must be done in order to handle some problems, in this case problem related to sustainable urban development. These kinds of problems are complex and multi-dimensional, and they could be labeled as wicked problems. These problems could be understood – named and framed – in many ways, which in turn affects which kinds of solutions we think is the proper way to choose. The project plan could therefore be seen as a picture of the stat of the art – how we named and framed the problems and challenges with something before we tried to handle it.

We have also stated that wicked problems always changes when we try to understand them. This means that our understandings of those problems always are unreliable. But how could we then be able to solve them? Will this mean that wicked problems related to urban sustainable development, like segregation, unemployment, poverty, the need of reducing

fossil fuels and developing new forms of transportation of people and goods in and out of the city, in the end are impossible to solve? We think that those kinds of problems could be solved through processes of collaborative learning, which are situated in practice, and we also think that developmental projects are a useful area where those solutions could evolve. But we think that the best way to do this is to apply the mode of knowledge production that dominates within the university: rigorous testing of hypothesis. Let us introduce “The Matrix”.

“The Matrix” is a very simple and straight forward way to systematize the naming and framing of project, as it is formulated in the project plan. Here, we will remind our readers that we based this on our experiences of working with large scale EU-projects. In this context, the formulations in the decision from the foundation – in this case the Swedish Authority of Economic Growth which mediated the resources from EU – sets the name and frames around the project. The decision could differ from the application, and the project team has to follow the decision, and regular reports its progress. But this could end up that the project team just managing the project. But as we know, projects always changes. Opportunities for learning always dwell in situation when things are not going as planned. But with a strong focus on follow the project plans, the project team may work hard reducing those risks – and at the same time reduce learning opportunities. What we do as ongoing evaluators is just carefully read through the decision

and notes everything that has been promised. Applications for EU-funding are often written in a very persuasive way, and sometimes promises are hidden behind all rhetoric's. One way for the project team to handle this is to see this as just rhetoric, and the try to do something else with the money. On the other hand, if we take the decision serious, and also presume that there is lot of good thinking behind it, we need to be aware of what we actually have planned to do. By sorting up the text and writing down all promise sin a matrix, we got a useful working document to refer to when we discuss the project. You could of course just use the project plan. This is maybe just a question of style, but we found it more useful to sort it out in a matrix.

The matrix is a tool for organizing the ongoing process of naming and framing when the project proceeds. First and foremost, it is tool for the project team to understand how their naming and framing change during the project. When the project is up and running, project leading very much becoming a process of muddling through. The daily management of complex project left little time for reflection. With the matrix, we create a frame for collaborative learning, because we have a document that we regularly return to during the project. It is used as way to relate the ongoing experiences of running the project to the hypothesis about the project. The Matrix could then be seen as rigorous method for testing the hypothesis about the project, and figure out what worked and what not. It is a rather simple, but effective method. By regularly return to the "hypothetical"

naming of framing of the project (the project plan), the project team got a starting point when they try to get a grip on what they learned about the project when they try to accomplish the project plan.

This is also a way to challenge he paradox described by Dall'Alba and Sandberg: that we tend to direct our learning on what we already understand as relevant to learn. This means that we tend to experience what we expect to experience. When muddling through, there is a risk that the project team lose track of the originally idea, and then maybe just do as they always do, because they experience their work as usually. Here, the Matrix is a useful tool to problematize and call the projects teams' experiences in question. By regularly be reminded of the originally goal with the project, the project team could be aware of what they take for guaranteed. This could then be a starting point for learning, if we see learning as a process of developing new ways of naming and framing a phenomenon or a problem.

Summary

In the introduction of the paper, refer to the difference between two kinds of knowledge production, mode 1 versus mode 2. Mode1 knowledge is the result from an traditional academic, investigator-initiated and discipline-based knowledge production. It is focal knowledge, which distributes through speech and text. Mode-2-knowledge emerges from a con-

text-driven, problem-focused and interdisciplinary process of knowledge production. Often these processes

involves multidisciplinary teams brought together for short periods of time to work on specific problems in the real world. We also claimed that there seem to be an increasing call for mode 2-knowledge from stakeholders outside the university. There is a demand on the university for develop knowledge that could be applicable to handle those big challenges that face the society for example when it comes to sustainable development. One way to meet this demand is through collaborative learning.

Another reason for collaborative learning is that many of those complex problems that must be handling in relation to sustainable development are complex, and difficult to grasp. They could be understood in many ways, which the consequence that there is difficult to set the best solution. Different ways of naming and framing excludes different salient features of the problem as relevant or irrelevant. In praxis, is it not unusual that naming and framing is just a result of routines, which mean that established practice could hinder us from solving problem in a innovative way. Another obstacle is our individual understanding of the problem – how we name and frame what should be done. Learning could be seen as process which results in new ways of naming and framing, which open up for seeing new solutions; because of we experience problems in a new way.

The aim with this paper was to present a model for collaborative learning between university and society. Based on our experiences as ongoing evaluators, which is a method for evaluation in collaboration we developed a model for collaborative learning, “The Matrix”. The model is also a way of structure our work as ongoing evaluators. The essence in this model is that collaborative learning in compels project must be organized as traditional research, as a structured ad rigorous testing of hypotheses. Here, we see the project plan as a hypothesis of the project. By rigorously sorting out and carefully describe the goals and aims with the project by presenting it in the matrix; we had a firm ground for discussing the progress of the project. When the project proceed, and the project team discovered that some of the goal could not be reached as planned, we could return to the matrix and discuss way, and what we could learn from this.

We could compare the original way of naming and framing the project and it goals, with the naming and framing that emerges from the experience of the ongoing project. By carefully and rigorously put the project plan against the practical experiences from the work with the project, the project team, and of course the researcher could learn what works and what is not. In this case, we must remind ourselves that everything we learn in one project, may not work in the next. But it could be the base for anew project plan, which could be seen as new set of hypotheses of how to solve complex problems, related to sustainable

urban development, Those hypothesis could then be tested in the next project, and so on

The rise of the demands of new kinds of multidisciplinary and problem-focused knowledge, may be seen as critic of the traditionally way of producing knowledge within the academia. We agree that there is a demand for new ways of collaborative learning and new forms of knowledge production. But in this paper we claim, based on our own experiences, that new forms of knowledge production may benefit from the use of the old traditionally way of producing knowledge, or at least be inspired of it. There is a need of reminding ourselves that the university from the beginning was developed as institutions with the only aim of producing knowledge. When the university collaborate with the surrounding society, we may benefit from being a little bit conservative, and keep with our traditionally view on knowledge. Maybe the most innovative forms of collaborative learning stems from the traditional approach to doing research: together formulated and rigorously test hypotheses about how something may work or could be understood?

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Role of Citizens in the National Environmental Monitoring

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Abstract

The MONITOR2020 is a development program that was set up to increase effectiveness, improve customer service and to solve conflicts between lowering public budgets and increasing public obligations to monitor environment in Finland. In this paper, we introduce how the program has planned to give citizens a role in the national monitoring system. We will briefly introduce some studies that we have carried out to frame the dimensions of the field. The Finnish Algal Watch and the Lakewiki-service are introduced and we discuss about our experiences in them. Furthermore, we introduce a low cost and usable smartphone water quality sensor Secchi3000 for both professionals and volunteers. Connected with a smartphone it can be used as a field tool in water quality studies.

Introduction

Traditionally, Finnish national environmental monitoring systems have been organized by public research institutes and/or authorities. There are three principal reasons for this. Firstly, it has been assumed that data quality and neutrality require academic or at least public actors throughout the whole value-chain from data collection to delivery of the data and information to customers. Secondly, it has been considered that the end-use of data is either scientific research, legal control of the environment or some other public purpose. Thirdly, the monitoring data has been reported as data without noise and thus, the uncertainty of the data has not been taken into consideration or it has had a minor role.

In the MONITOR2020-program, we have adopted rather opposite viewpoint to that discussed above (MONITOR2020 2014). Firstly, we assume that the data is always noisy and the noise is the starting point when developing our systems. Secondly, and based on our first assumption, we think that we can deal with parallel data sources that have different amount of uncertainty. The uncertainty is not a problem, if it can be estimated. To get an optimal estimate of the combined data, we only have to weigh observations proportionally to their uncertainty. Thirdly, we think that the public European and national environmental monitoring data and information are valuable when used for academic and public purposes. It can, however, be made even

more valuable, when it is opened to citizens and companies who can both join in the data collection and storage and benefit of extended new data and information products and services (figure 1).

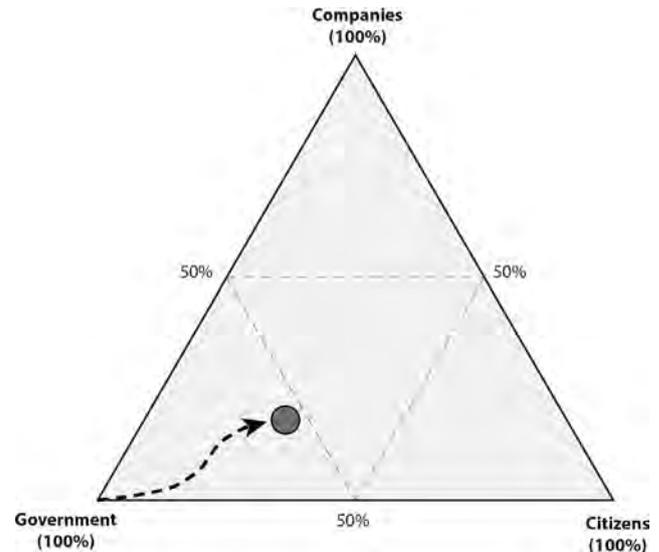


Figure.1. Traditionally, the national environmental monitoring was considered as being public of nature. Today and in the future, data can be collected, stored and delivered by public sector, companies or citizens.

In this paper, we discuss about the first steps in the process of involving citizens in the European and national monitoring work in Finland. First, we discuss of surveys on the citizen demand of environmental information. After that we introduce, how volunteers have participated in data collection.

Surveys on citizen demand

To support the design of new information products and services, we carried out a set of customer surveys that are briefly referred in the following. Anttila et. al. (2012) accomplished an internet survey on customer expectations of boaters and other users that use Finnish inland waters for sailing etc. 109 citizen-boaters and 60 professionals were interviewed. During the summer season, about 95 per cent of them were interested in water quality, especially in nutrients and transparency. Citizen-respondents were also interested water temperature, while professionals preferred data on oxygen concentrations in the waters. An interesting detail was that the respondents were significantly more interested in knowing about water quality than of real time weather information. Only about 50 per cent of professionals were interested in weather. The object of the interest was highly dependent on the season. During the winter time, ice was of main interest. About 80-90 per cent of the respondents wanted to get information about ice thickness, ice thawing and timing of the ice break-up.

In summer 2013, national environmental helpdesks received over 2000 phone calls (ELY 2014; Finnish Environment Institute 2014). According to their statistics citizens were most often calling in July and media in June. Citizens were mostly interested in water quality and algae, but also invasive species, dredging permissions, wells and private piers. Media mostly wanted to interview water quality experts. The results reflect holiday season in Finland. According to Statistics Finland (2013) in July 36 percent of Finns are on holiday, in May and August less than 15 percent.

Lakewiki and AlgalWatch – Tools to collect, store and share data

The Lakewiki (2014) is a web service that was created with the aim of sharing information on Finland's lakes, to raise awareness and promote the protection of Finnish waters. It was launched in Finnish in March 2011 and in English and Swedish in January 2012. The Lakewiki contains basic information on all 56 000 Finnish lakes that are over 1 ha in surface. The geographical base-information consists of the area and volume of the lake, the area of the drainage basin, the geographical location etc. The base-information is the fixed part of the Lakewiki-system and it cannot be changed. There is, however, also the flexible part of Lakewiki. In this part citizens are given a possibility to establish their own observations sites, where they can share written information and e.g. photographs with other

wiki-users.

The AlgalWatch is the mobile application working as a part of Lakewiki. By downloading AlgalWatch-apps into smartphones, the users can send and explore algal observations, send photos and sensor observations to Lakewiki-service. As a return message, they get the inference of their sensor observations (MMEA 2014), and weekly algal press releases.

SECCHI3000 – A water quality sensor

The SECCHI3000 is a modern participatory sensor that was designed to be a low cost and easy to use instrument for water quality observations. The system consists of a small water container with an optical element, a mobile phone application for sending optical images and receiving water quality results and the cloud service for analyzing the images (Koponen et.al. 2011). The SECCHI3000-sensor is working in the following way. The user picks up a water sample to the container and inserts the optical element into the container. The container is closed by a cap with a hole in it. The user takes a photo through the hole with a phone camera and sends it to the cloud-service. The service then returns the interpretation of the optical image to the user.

The sensor was field-tested in 2012. About 100 professionals were given the sensor and they used it for analyzing water qual-

ity using different mobile phones. The results were compared e.g. with transparency measurements with traditional secchi-disks and turbidity measurement in the laboratory. Results showed a good correlation on both of these parameters (Näykki et.al. 2013). Now, the system is operational and it can be used for measuring the secchi depth and turbidity, later more parameters, system is described by Kotovirta et.al. (2012).

Experiences in Lakewiki and AlgalWatch

Today, the Lakewiki and the AlgalWatch have been running two calendar years and some experiences can be reported. Firstly, the number of regular customers has grown steadily over time. In 2013, there were over 220 000 separate visitors (figure 2) on the pages. Between the years 2012 and 2013, the annual growth was 27%. The annual share of mobile phone users has also increased remarkably. From the year 2011 to 2013, it increased from 5 percent to 25 percent. In the summer 2013 already 27 per cent of visits to the Lakewiki were from phones and tablets. The number of observation stations maintained in the system was doubled between the years 2012 and 2013.

According to our follow-up, water temperature is the most reported parameter in the Lakewiki (figure 3), but nearly as many observations are obtained of algal blooms. The most surprising feature of the service has been that citizens report also historical observations. The longest time-series start from

1958, which is more than 50 years before the Lakewiki existed (figure 4).

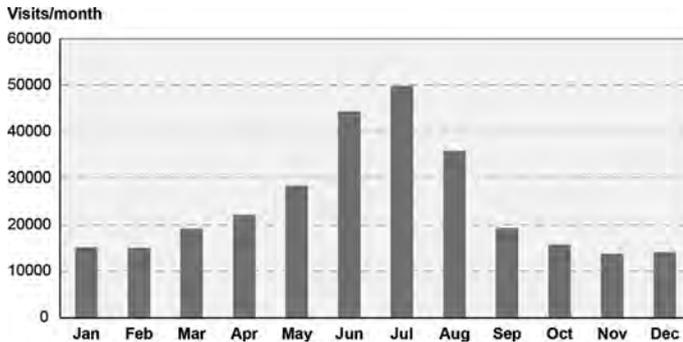


Figure 2. Number of Lakewiki-visits per month in 2013.

As customer surveys revealed the most interesting issues should have been water quality during the summer and ice conditions during winter. It was collocated 7000 observations (figure 3) and it proves that people are interested issues surveyed in several projects.

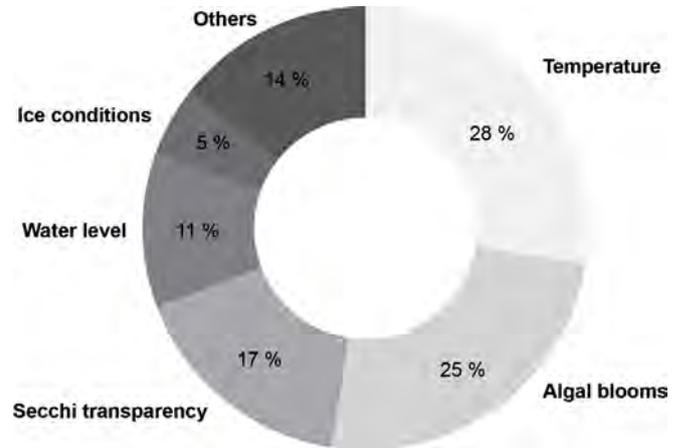


Figure 3. Polarization of citizen monitoring data according to their interest in the Lakewiki.

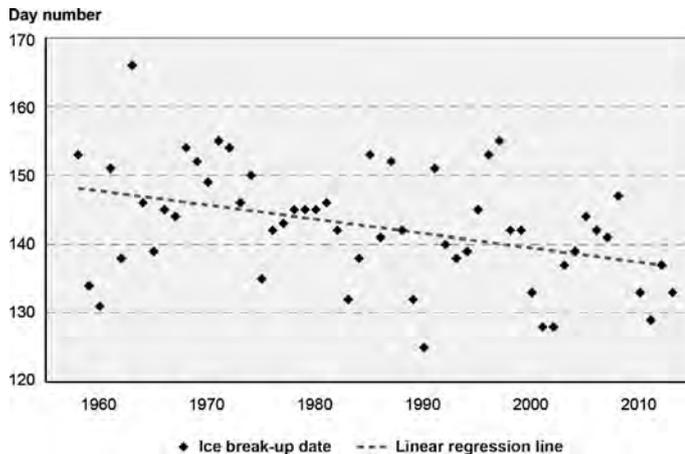


Figure 4. The longest timeseries in the Lakewiki. The ice break-up date in a lake (Torankijärvi 2014).

Conclusions

Our studies and experiences show that crowdsourcing has a great potential in environmental monitoring. Citizens are both interested in getting data from their environment and willing to participate in the work collecting the data and maintaining the data storages. Thus, we think, that one should give citizens a

role also in the official systems.

Our experience shows also that modern technology support the involvement of citizens in the monitoring work. Mobile phones are reachable to anybody and there are increasing amount of apps and sensors available. This makes it possible citizens can carry easy to use and cheap mobile-laboratory in the field. The only task is to organize new kind of monitoring system.

Our experience is that the most serious argument against citizen sensors and science is weak quality assurance process. Also we consider this as an important argument. However, very much behind this argumentation is in our thinking rather than in real life. At least in Finland, we think, one has overestimated academic and public monitoring systems. Also they have weak points. They are extremely limited both in space and time. For instance, we cannot dream of monitoring all our 56 000 thousand lakes. Giving citizens a role, can extend remarkably the coverage. Naturally there are differences also in the data quality. These weaknesses, however, can be diminished by educating volunteer, creating new certification practices and by computationally combining data of different accuracy.

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Of Wolves and Sheep: CSO Participation as a Responsible Research and Innovation Mechanism in European Security Research

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Abstract

This paper examines the poor record of civil society participation in the European Security Research Programme (ESRP) and associates it with the capacity of competing stakeholders to promote a specific agenda. Multi-billion public investments in ICT and security relevant surveillance, detection, and pattern recognition R&D under FP7 and Horizon 2020 may well unfold non-anticipated and non-intended consequences, as recent revelations have demonstrated. The present analysis maps the stakeholder landscape of the ESRP, and positions Civil Society Organisations, End Users, such as (public and private) security providers, policy makers, and (industrial) Research and Technology organisations within a power/interest grid, showing thereby their discrepancies in terms of influencing and profiting from the policy agenda. The paper argues that the unbalanced stakeholder involvement in the policy formulation process has established a high-tech bias in the promoted research agenda. This is reflected in the dominant security culture of the ESRP governance regime, which follows a market-oriented, industry-led paradigm. To minimize the backfire potential of security technologies toward infringement of fundamental rights and freedoms of citizens, the research governance regime has to be embedded into Responsible Research & Innovation and Societal Impact Assessment policies. Institutional and organisational change of the security research governance regime may positively affect the security culture in the stakeholder landscape: The ESRP has still the potential to become more inclusive, legitimate, and accountable, and at the same time, to establish new evaluation and assessment criteria for goals and results of the security research policy. Civil society participation makes sense not for the sake of it, but because publicly funded research in a field as politically contentious and value-laden as civil security should be regarded to be a public good, with high stakes, risks and benefits for European citizens.

Key Words: *European Security Research Programme, Stakeholder Participation, Civil Society, Responsible Research and Innovation, Societal Impact Assessment, Governance Regime, Organisational Innovation*

Accidental revelations in the course of 2013 concerning massive violations of the private sphere of citizens through the use of intrusive Information and Communication Technologies (ICT) by intelligence services worldwide have triggered fierce debates among political decision makers about the urgency and the direction of regulatory steps. Besides the initial moral panics in the media and the recurrent opportunistic actionism by governmental agencies, the documented protocols of the activities around the PRISM, Tempora, and X-KeyScore programmes showed most of all one thing: It is not easy to hunt the “beast” after it has got out of the cage. Particularly when policy makers seem to have little knowledge or capacity to tame that beast, that is, the non-anticipated multiple applications of ICT technologies, or when most of the users enjoy keeping the beast simultaneously as if it were their beloved “pet” in their smart phones and their “cloud” accounts.

This paper makes a step back from the policy stage and directs its attention toward the research stage of the current emerging security technologies. It critically examines (the absence of) civil society organisations within the institutional setting of the European Security Research regime, and their (poor) influence capacity in relation to other involved stakeholders. The focus of attention here is directed towards the governance regime of Research and Development (R&D) of all those surveillance, detection, and pattern recognition technologies, which has been so far largely absent from public debates about regulation. The

research stage seems to be, on the one hand, especially crucial for the diffusion process of such technological applications, since the “beast” is still young in the cage and can be possibly trained. On the other hand, it is particularly tricky to call for political and legal regulation of research and innovation processes, still far away from the context of commercial or political application: Dictating the agenda in a top-down manner runs the risk of compromising thus scientific openness and overall innovation potential.

This paper, nevertheless, argues that unbalanced stakeholder involvement in the research stage of ICT and security technologies, which marginalises European citizens as the ultimate affected actors and potential beneficiaries, and promotes specific problem definitions, objectives and instruments which do not necessarily respond to needs and concerns of broad parts of the European societies. The issue of regulatory options to anticipate and counter misuse of such technologies, originally meant to protect freedom and guarantee fundamental rights, is both tricky and thorny: A given technology seems to have manifold “innovative” uses, even in unforeseen and unprecedented contexts of civil, military, or everyday “lifestyle” character. At the same time, the discrepancies in terms of influence capacity among the engaged or excluded stakeholders in the ESRP seem to be too deep to manage. The paper explores the potential of Civil Society Organizations to obtain leverage in the early phase of research agenda formulation, and help to make

it more demand-driven. Relatively recent EU policy frameworks, such as “Responsible Research and Innovation” (RRI), as well as “Societal Impact Assessment” (SIA) provide useful templates for adapting the research governance regime along the “rules of play” for sensitive technology R&D, minimizing thereby undesirable non-intended consequences. The present analysis suggests that broadening stakeholder participation and bringing on board CSOs as agenda formulators in civil security research may counterbalance the current high-tech bias in favour of market growth and exports, and intrusive indiscriminate security controls against terrorism and crime. This would entail a shift in the security culture of the ESRP governance regime towards a more inclusive stakeholder engagement, favouring a more legitimate, accountable, and sustainable agenda, and promoting alternative criteria for impact evaluation and assessment.

The paper proceeds as follows: First, it sketches out the international public security environment of the past decade, as this provides the master narrative for the problem diagnoses of comprehensive threats and vulnerability and has brought about a new generation of security policy and research. In the second section, the dominant framing of the role of “innovation” under the current circumstances of the global financial and economic crisis is connected with the Europe 2020 agenda, focused on smart, sustainable, and inclusive growth, as well as with the new multiannual research programme 2014-2020, Horizon 2020, designed to respond to seven identified societal

challenges. In the third section, the European Security Research Programme for civil security (ESRP), comprising extensive surveillance, detection, and pattern recognition R&D, is set on the background of the “dual-use” problem, that is, of the multiple intended and unintended applications of the research results. The multiple stakeholders in the landscape, such as e.g. policy makers from national and European public administration (Policy Makers), large and middle-sized enterprises or research and technology organisations (RTOs), or public and private service providers and facility operators (End Users), compete for the definition of the agenda. The latter has taken a rather biased high-tech direction following an industrial-leadership, market-centred paradigm for growth. The awkward positioning and weak influence to date of the so called “civil society”, mostly in the form of CSOs, is addressed in the following, fourth, section, as they are set in relation to the above actors in a power/interest stakeholder grid. The relative discrepancy in influence capacity between CSOs and other stakeholders in the ESRP handicaps their leverage and marginalises them into objects of research or into advisory boards, rather than giving them institutionally a voice in the policy formulation phase as active agents and co-creators of knowledge and policy.

In the fifth section, the relatively new, and still in the making, RRI and SIA policies of the European Commission are contrasted with the above ESRP regime in order to show the gaps with respect to ethical, legal, and social aspects of the currently

funded security research. The differentiation among research process, outcome, and impact is essential in order to map the challenge for regulatory measures of ICT and security R&D, particularly with regard to the uncertainty and political contention linked with the multiple uses of ICT and security technologies. A core tension exists there among expertocracy, democracy, and “marketocracy” as research governance paradigms, which produce different evaluations and assessments for the direction of the research agenda. The sixth, and last, section, returns to the core political issue behind the ESRP policies, the reform of the future research governance regime in the face of competing stakeholders’ interests and diverging understandings of threats and security. Upstreaming CSO engagement would be one of the instruments available in order to broaden the basis of decision finding, and reach out to the ultimate beneficiaries and potentially affected stakeholders. This seems to be the core element of the dominant “Culture” of the ESRP regime: Who sits at the table largely defines what problem diagnoses prevail, what objectives for the ESRP are set, and, of course, what kind, high-tech or other, “innovative solutions” for comprehensive societal security challenges are promoted through research projects. Institutional and organisational change of the “rules of play” in the ESRP, as a form of non-technological innovation themselves, could valorise the results of publicly funded research on ICT and security technologies research into positive impacts in the public interest.

1. The (In-)Security Environment of the Past Decade

In the course of the 2000s political along with technological developments brought about dramatic changes in the way security threats are assessed, and national and international security policies are designed. The terrorist attacks in New York and Washington in 2001, in Madrid in 2004, and in London in 2005 manifested the urgency for policy makers, experts, and security providers to re-evaluate understandings and countermeasures (Kolliarakis 2013). Starting with the nature of threats, nation states seem to have gradually become porous to border-transgressing phenomena as different as terrorism, organized crime, pandemics, or cyber-attacks. This lifted the traditional paradigm of separation between external and domestic affairs in the field of security and consequently led to a comprehensive concept of societal security, practically encompassing both military and civil domains. The increasingly interconnected realms of society, be them industrial production, leisure and recreation, or critical infrastructures, blurred, secondly, a further long-held paradigmatic distinction: that between safety, referring to insurance from accidental damage, and security, referring to insurance from intentional attacks. Failure, e.g. in the electricity grid of a region might trigger a cascading spiral leading to fatal vulnerability, or, vice versa, a cyber-attack might cause interdependent vital functions in the critical infrastructure networks to cease, with consequences comparable with those of bombing an urban area. Such far-from-implausible scenarios prompt-

ed in the course of the past decade a third shift: that from source-centred security measures toward target-centred ones. The absence, often, of a singular perpetrator, or the difficulty, in general, to render threats calculable in terms of occurrence probability and amount of damage, seemed to undermine the optimism in the effectiveness of proactive measures such as deterrence or prevention. The subsequent focus in Security Studies upon the dimension of the potentially affected targets gave rise to the discourses on vulnerability, preparation and precaution.

At European level, the ‘European Security Strategy’ launched in 2003, took on the ambitious task of making a substantial contribution to more secure citizens and societies by raising the levels of protection of the citizens, reducing vulnerability of infrastructures and utilities, promoting intelligent surveillance, and improving crisis management.

Yet, while that raised awareness and mobilized expert, policy, and public debates about the desirable state of European societies in the years to come, the operationalisation and instrumentalisation of the concept into policy prescriptions has been everything but a straightforward exercise. Following the analytical distinction between tame and wicked problems in public policy, coined in the early 1970s by Rittel and Weber (1973), one can easily see that “security” enjoys neither a well-defined and stable problem definition, nor a definite stop-

ping point, i.e. the point when we know that a “secure” state has been reached, nor an objective evaluation of the appropriate solutions to the problem(s) set. Instead, “security” shares most characteristics pertinent to the ‘wicked’ sort of problems: “Security” is always defined in an imperfect manner, is politically ambiguous (in constant tension with “freedom”), and associated with strong normative considerations of how much, for whom, and by whom it should be provided. In this sense, security understood as the non-occurrence of a threatening incident is very elusive, both as a concept and as a societal state. Defining and classifying an issue as security-relevant depends upon the availability of solutions and not vice-versa, which means that every security policy solution shapes anew the diagnosis of problem. What is more, such a definition is stakeholder-dependent and there is often little consensus about what the actual problem is about, let alone what should be an appropriate remedy (Richtey 2011). This will be elaborated in more detail in section four when talking about the link between dominant stakeholders and security research agenda bias. From this perspective, “security” bears a strong affinity with other well-known politicized “moving targets” of public policy, such as “welfare”, or “sustainability”.

2. Dominant Understandings and Practices of Innovation amidst Crisis

This is exactly the point in the European security landscape

where the importance of stakeholders involved at defining the policy agenda (problem diagnoses, policy goals and objectives, and appropriate missions) comes into play. Stakeholders such as the security and defence industry, high-tech small and middle-sized enterprises, consultants and lobbyists from various service associations compete to influence the agenda in their favour by framing threats and their preferred solutions. Frames are cognitive devices or shortcuts for making sense of too much, too complex, or contradictory information. They organize phenomena and actors into coherent, intelligible categories, discarding dissonant or undesirable aspects of them. Frames work as a filter to perception and largely define our fields of vision. Frames routinely trade scientific detail for communicative clarity in order to mobilize resources and enable political action. Entman (1993) in his seminal analysis of framing mechanisms discerns four interconnected functions of frames: The promotion of a particular problem definition, a causal interpretation scheme, moral evaluation, and treatment recommendation.

The master narrative which explains which EU policy frames are currently prioritized and promoted is provided by the global economic and financial crisis. The drive to innovation as an omnipotent solution applies generally to several policy domains of the EU, and not least, to security policy and security research policy as well. The dominant paradigm thereby seems to be a neoliberal market-centred, “growth”-motivated innovation,

and this applies also to the ESRP, as shown in more detail in the next section. The overarching template is set by the “Europe 2020” strategy, which represents the economic governance programme of the EU for the years to come. This strategy is operationalized along seven Flagship Initiatives corresponding to “smart”, “sustainable”, and “inclusive growth”. European research falls under the ‘Innovation Union’ Flagship Initiative, and for the period 2014-2020 the recently launched multiannual framework programme Horizon 2020 is explicitly geared to foster growth, competitiveness, and jobs via innovation. The internal impact assessment for Horizon 2020, conducted already in 2011 at the European Commission, clearly pursues an economic approach and reaffirms the focus on increasing R&D investment and facilitate the path from research-to-market through commercialization of the developed technologies (European Commission 2011). The predominant frame here leans toward the understanding and expectation that technological innovation is the answer, via economic growth, to comprehensive societal challenges, such as the security concerns in contemporary European societies. Equally clear is the neglect of the societal dimensions of innovation: Novel high-tech applications, even if successfully promoted in the market as inventions, do not automatically amount to innovations which can successfully contribute to the programmatically defined Societal Challenges. This trend got confirmed during the “European Union Innovation Convention 2014”, hosted 10-11 March 2014 in Brussels,

where aspects such as current demographic, migration, and political tensions, as well as issues of sustainability, inclusion, and equal access, although present in programmatic documents, were absent from the high-ranking discussion panels.

What is more, the “innovative” adoption and diffusion of such technologies produced within the European Security Programme so far (under the Framework Programmes 6 and 7) have not been adequately assessed (ex ante), or evaluated (ex post), in order to estimate risks, hazards or benefits for European citizens and the society as a whole. That widespread (mis) understanding of security innovation as an instrument to boost fast growth, without properly reflecting upon the direction and the addressees of innovation, will be further elaborated below, in an effort to place CSO participation into the context of Responsible Research and Innovation and Societal Impact Assessment.

3. Unbalanced Participation and High-tech-biased Agenda in the European Security Research Programme

The shift in the requirements for European civil security policy of the past decade has been mirrored by default not least, also in the direction of security research. After the publication of the European Security Strategy by the European Council in 2003, the Commission promptly followed up in 2004 with the launch of the programmatic document “Towards a programme to

advance European security through Research and Technology”, tailored to the needs formulated in the security policy Strategy (European Commission 2004). The need of change both in institutional structure and in “security” culture in order to address security challenges is explicitly addressed in that document:

“Europe needs to invest in a „security“ culture that harnesses the combined and relatively untapped strengths of the „security“ industry and the research community in order to effectively and innovatively address existing and future security challenges.” (European Commission 2004, p.2)

From such a perspective, the culture of perceiving, defining and prioritizing problem diagnoses and policy missions gets directly connected with the practical, organizational dimension of the governance regime by naming the “relevant” stakeholders to be considered in the agenda, namely, the industry and the research organisations. Indeed, the Security Research Programme (ESRP) can be seen ever since to be a crucial form of proactive security policy, and in this respect, intimately connected with its production and provision mechanisms. The technological trajectories opened during the research and innovation process should end up providing the base for the security measures of the future. The ESRP, via its envisioned innovative results is supposed to generate a pool of potential policy instruments and establish and strengthen a European network of relevant security actors. Budgeted with roughly EUR

1.2 Bn under FP7 for the period 2007-2013, and with more than 1.6 Bn EUR under Horizon 2020 for the period 2014-2020, the ESRP aims at responding to a fast-growing international security technologies market, while adhering to the core values and principles of European treaties and declarations.

The areas identified for funding thereby are four: Security of Citizens, Security of Infrastructures and Utilities, Intelligent Surveillance and Border Security, and Restoring Security & Safety in Case of Crisis. The resulting technologies should address “hard security” functions, such as critical infrastructure protection, border management, counter-crime and –terrorism, as well as first-responder capabilities, public transport security, civil disaster planning, crisis management and emergency communications. Factually, the bulk of the funded projects and a large part of the allocated budget have been directed to ICT and surveillance, threat detection, new materials, and pattern recognition technologies.

This matches well with the fact that the ESRP is the only research area which is administered by Directorate General ‘Entrepreneurship and Industry’ (DG ENTR), and not by Directorate General ‘Research and Innovation’ (DG RTD) at the European Commission. This noticeable partition of portfolios originates in FP7 and has continued under Horizon 2020, as the initial Societal Challenge 6 “Fostering Inclusive, Innovative and Secure European Societies” got split into “Europe in a chang-

ing world- Inclusive, innovative and reflective societies”, and “Secure societies – Protecting freedom and security of Europe and its citizens”, which became just before the official launch of Horizon 2020 in January 2014 the new “Societal Challenge 7”, administered by DG ENTR.

The stated objectives after the operationalization of the Societal Challenge 7 in the context of the ESRP, are to overcome the fragmentation of the EU security markets through the harmonisation of standards and certification procedures for security technologies, to reduce the research-to-market gap via pre-commercial procurement (direct commissioning outside the standard research competition process), to exploit synergies between civilian and defence orientated research, and, not least to raise acceptance for those technologies among citizens.

A report commissioned by the European Parliament’s LIBE Committee (Civil Liberties, Justice and Home Affairs) at the Department for Citizens’ Rights and Constitutional Affairs has asked “... to what extent is EU-funded security research placed at the service of citizens? To what extent does it contribute to the strengthening of a single area of fundamental rights and freedoms? (European Parliament 2010, p.7). The report critically reprimanded the unbalanced and limited “public-private” dialogue staged by the European Commission. A big part of the stakeholders invited to the consultations during the preparation phase of the agenda have been from defence industry,

and became also the main beneficiaries of the research grants, disregarding conflicts of interest. The composition in that phase of the stakeholder forum which produced the ‘European Security Research and Innovation Agenda’ was two thirds from the security and defence industry, almost one third from national and European security services and agencies, and only 1,4% (9 participants out of 660) from civil society, none of them from civil liberties organizations though (Statewatch 2009, p.24). Statewatch sharply criticized the high-tech bias in the agenda of the ESRP, together with the largely not democratically legitimised trend in the EU to build up a “Homeland Security-Industrial Complex”, following course with the US security policy example after 9/11.

A similar imbalance is to be found in the composition of the (informal and temporary) external expert consultation instrument for the ESRP, the ‘Security Advisory Group’ which proposes topics for future calls in the area ‘Secure societies – protecting freedom and security of Europe and its citizens’ to the Programme Committee of the EU member state delegates at DG ENTR, where hardly any CSO is represented.

Yet, there is a third considerable dimension to that discrepancy in the stakeholder landscape: The ‘pull’ dynamics of the local and the international market for security technologies, which is, despite the global economic crisis, a fast-growing sector with an estimated annual turn-over of more than € 100 Bn in 2011

– compared with €10 Bn before 9/11. The EU security sector is estimated to employ around 180.000 people, having an annual turnover of around €30 Bn. This prompted recently DG ENTR to explicitly position security research within an action plan to foster an “innovative and competitive Security Industry” (European Commission 2012). Market sectors identified thereby for their potential, are airport screening equipment and alarm systems, both pursuing R&D of highly intrusive surveillance, detection and pattern recognition technologies. In consequence, officials of the Commission have a regular presence, and even co-organise info- and match-making events at international commercial Security and Defence Trade Fairs such as the annual CounterTerrorExpo in London, the MiliPOL in Paris, or the bi-annual SecurityEssen, in Germany, and the HOMSEC in Madrid. For civil society organisations, more closely examined in the following section, the question is raised indeed, to what extend this industry-led, market-centred approach is a mismatch with the publicly – in leaflets and official websites – proclaimed primary task of the ESRP of “promoting freedom and security of Europe’s citizens” and “securing European societies”.

4. The Positioning of Civil Society Organizations in the Stakeholder Landscape

The stated proclamation of DG ENTR that “Dialogue, consultation and participation are needed at many levels – regional, national and European – and between the widest number of

players: local end-users, industry, universities, citizens' groups, national governments, research institutes and the EU and its various agencies" does not therefore seem to fully materialize in practice. Analysing stakeholders is a promising method in order to assess and evaluate the ESRP, since it associates actors, with their capabilities, interests, and agendas, with each other, and places them into the institutional context of the policies they want to influence. Stakeholder analysis and management models, as elaborated since the 1990s, direct their attention to the organisational environment of a company or a public agency in order to identify and classify actors who are crucial (important or dangerous) for the strategic policy development of the organisation (Bryson 1995; Mitchell et al 1997). The classical power/interest grid used here conceptualizes stakeholder influence or leverage capacity as a function of the power and the degree of affectedness of an actor in that organizational environment (Mendelow 1991). A second advantage of this kind of "mapping" is that each stakeholder is examined in relation to the others. Consequently, empowering one of them, like the claim goes for CSOs, appears to always have a relational dynamics and does not merely depend on the absolute power of the stakeholder itself.

In the present paper, the security research governance regime provides the organisational environment/landscape where the involved stakeholders are active. Such an analytical distinction roughly defines four fluid zones in the organizational environ-

ment of the ESRP (see Figure 1):

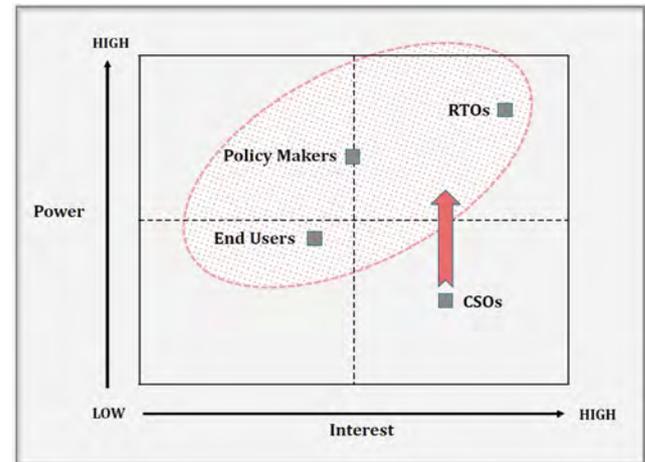


Figure 1: Influence Capacity of Stakeholder Groups in the ESRP Governance Regime

The graphic presents in a very schematic way, due to lack of space here, the relative positioning among visible stakeholder groups involved in the research policy making and implementation process in the ESRP. This is based on estimates of stakeholder participation in institutionalized committees or ad hoc consultations, as well as their involvement in the research

process as advisers, evaluators, or partners. The temporal dimension of this landscape refers to the past decade, starting from the preparatory actions for the ESRP and the course of FP7 and reaching up to the preparations for the Horizon 2020 programme. To be sure, the stakeholders depicted here, that is, End Users, Civil Society Organisations, Policy Makers, and Research and Technology Organisations represent only generic categories which comprise themselves many subgroups and players with diverging interests and power. For instance, scholars from universities belong to a public variant of RTOs, are strongly represented in consultations, but enjoy definitively less leverage at the consultation table than representatives from private, business oriented RTOs. Similar applies to the varying leverage opportunities reserved for national and European policy makers: Delegates from certain EU member states represent massive interests of their national security and defence RTOs, and are therefore expected to have a stronger say at influencing policy scope and budget allocation.

Stakeholder influence rises from the bottom left (low power/low interest) towards the top right (high power/high interest) field of the grid. The red-marked field visualizes the actors included more intensively (in terms of frequency and number) so far in the semi-formal/temporary consultation organs of the European Commission with regard to the agenda formulation of the ESRP.

End Users comprise governments and their front line agencies in law enforcement, health, emergency response, public and private border management and customs services, critical infrastructure facility operators in areas essential to public safety and security. Since the latter belong to the main customers of the R&D results of the ESRP, and thus represent a considerable portion of the market, there has been the effort, already during FP7, to integrate them both as partners in projects in order to do the “reality check”, but also as external advisers during the policy formulation phase. This, according to the Interim Evaluation of the ESRP under FP7, has worked only in part so far, despite the importance attributed to them by policy makers at the Commission (Centre for Strategy and Evaluation Services 2011). This could be attributed to lack of incentive, since involvement with the FP7 research projects still is a bureaucracy-intensive and not particularly financially rewarding endeavour.

Policy makers are themselves crucial stakeholders in that landscape, since they administer millions of public funds and have to implement missions successfully in a manner compatible to legal and financial good practices. While they have a powerful instrument at hand- formulation competence of policies- they have to balance interests of several stakeholders as if they were moderators and mediators within the policy process. At the same time, they are exposed to public criticism, and ought to adhere to a number of parallel or competing EU policies other than the Security Research one, such as the internal market

and industrial leadership ones, but also the guidelines on good practices in public governance, and the conformity with the Charter of Fundamental Rights of the European Union.

Unsurprisingly, the largest discrepancy in the ESRP stakeholder landscape is to be found between CSOs and RTOs. This is an expression of the contrast between the budget/turn-over between not-for-profit and commercial organisations, but also an expression of how big, how durable, and how well organised and represented those organisations are. Many Civil Society Organisations are small and scattered, with shifting or very broad agendas, or lack in personnel and resources in order to deliver visible impact. Security and defence Research and Technology Organisations, on the other hand, have been opening professional lobbying offices in Brussels since the 1990s, their economic stakes may well comprise eight or more digits, and have clear-cut innovation visions and missions, which they professionally pursue with committed and competent personnel. Comparing them with ‘wolves’ shouldn’t only point to their assertive, predatory side, but also to their effectiveness and coordination tactics, in comparison with herds of sheep. Civil society organizations, as the more easily identifiable, organisationally concrete part of the civil society, are the actors who bear a good deal of the potential benefits from the publicly funded security R&D, but also the ones which experience the potential non-intended effects of privacy violations, freedom infringements, discrimination and exclusion through the application

of such technologies. The typical managerial attitude toward such stakeholder groups as CSOs is non-binding consultations, involvement in general top-down information events, but not necessarily engagement in upstream decision making.

The Interim Evaluation Report for the ESRP under FP7 stresses the fact indeed, that not all end users are direct beneficiaries, and that the ultimate beneficiaries of security research should be the EU citizens, which have been so far difficult to integrate (Centre for Strategy and Evaluation Services 2011, p. 95). For this reason, it explicitly recommends that “... the EU citizens dimension should also be taken into account as a cross-cutting priority in all projects” (p. 108). By and large, the so called “societal dimension” is frequently reduced to the issue of acceptance of new security technologies by the public, which is tacitly perceived to be a passive recipient of security R&D products and services. As a consequence, civil society actors have been so far confined to the role of observers and advisers, of evaluators, and of project partners, but they have not been given a voice at the stage of objectives formulation for security research. The latter would imply a move upwards in the stakeholder grid, as visualised by the red arrow in Figure 1.

While this CSO-empowerment exercise may work on paper, it deviates from the realities of a very competitive, nearly zero-sum game about finite resources, such as research budget allocation and technology priming. A key aspect in the compe-

tion between RTOs and CSOs lies in the perception that civil society participation is obstructive for doing innovative R&D business. Reluctance or opposition toward intrusive security technologies along with the demand for privacy and rights “add-ons” would allegedly undermine pace of innovation in the security industry, effectiveness of security technologies, and competitiveness in the market.

Having said that, one should add a brief note on which organisations are considered to be CSOs. There is undeniably a track record of European institutions articulating the need and the desire to engage citizens into the EU public policy making process. Nevertheless, “civil society” appears most of the time to be a fuzzy, literary category which is broadly used without being further specified in terms of who those actors are supposed to be (legitimate representation), and how those actors are supposed to contribute to the decision finding process (design of participation). In a definition proposed in the Opinion of the European Economic and Social Committee on “The role and contribution of civil society organisations in the building of Europe”, civil society encompasses the trade unions and employers’ organisations (“social partners”), nongovernmental organisations, professional associations, charities, grass-roots organisations, and organisations that involve citizens in local and municipal life, including churches and religious communities. These are supposed to voice needs of excluded and discriminated citizens, and provide a communication channel for

them to policy makers (European Commission, 1999, p.30). The organised variant of the civil society in the form of CSOs is not only more visible and clearly contoured as a stakeholder in the public sphere, but it is generally taken to be more credible, accountable, and transparent in pursuing interests and agendas.

Nevertheless, issues of representation and legitimacy for justifying participatory deliberation with CSOs still remain open. In a more recent formal operationalization of the term for practical reasons, the European Commission proposed that Civil Society Organizations include “... all non-state, not-for-profit structures, non-partisan and nonviolent, through which people organise to pursue shared objectives and ideals, whether political, cultural, social or economic.” (European Commission 2012a). Turning to the CSOs having a stake in the ESRP, they can range from local, regional and international NGOs, pursuing civil liberties, privacy and cyber-activism, to religious groups, and to interest organisations for disabled persons. The institutional window of opportunity to engage and strengthen their position within the governance regime of the ESRP is further elaborated in the next section.

5. Responsible Research and Innovation: Evaluation, Anticipation and Participation

There is a relatively short record in the European Union regulatory context of integrating civil participation in public policy in

order to enhance inclusion, legitimacy, and accountability, and an even shorter one of claims to integrate citizens in research. Attempts to “democratize” the policy formulation process have been paved by the European Commission as early as in 2002 in the policy document “Towards a reinforced culture of consultation and dialogue” through establishing principles and demanding minimum standards for consultation of stakeholders and acknowledging that degree and quality of participation have an impact on the quality of policies:

“For consultation to be equitable, the Commission should ensure adequate coverage of the following target groups in a consultation process: those affected by the policy, those who will be involved in implementation of the policy, or bodies that have stated objectives giving them a direct interest in the policy. ... In determining the relevant parties for consultation, the Commission should take into account the following elements as well: the wider impact of the policy on other policy areas, e.g. environmental interests or consumer policy,..., the need to involve non-organised interests, where appropriate.” (European Commission 2002, p. 19-20)

In July 2009, the “Lund Declaration” called for gearing the European research and innovation process toward societal needs, addressing at the same time ethical questions of the R&D process. This has been the programmatic trigger to direct a considerable part of the Horizon 2020 funding toward seven

Societal Challenges – one of which is “Secure Societies”. The policy turn toward “Science-in-Society” initiatives and projects has sensitized for the underrated and underdeveloped paths for “Social” or “Non-Technological” innovation, as stated in the programmatic recommendation “Empowering People, Driving Change: Social Innovation in the European Union” (Bureau of European Policy Advisers 2011). Applied to the ESRP, the Commission welcomed in 2009 a change in the governance regime through integrating human and social aspects of security as a function of “societal resilience” and by enabling the role of the public in security research:

“No security technology can in fact be a security solution in the long term without the active participation (and acceptance) by the public at large. ... a societal security approach implies a vision of security that does not focus on prevention and protection at all costs but rather, features in the capacity of our societies to face risks, and at times losses, and to recover from them. Such a “societal resilience” depends on the free will of informed citizens as much as on the quality of technical systems and on business continuity capabilities of companies and administrations.” (European Commission 2009, p. 3)

This recommendation warns against mistaking high-tech inventions with innovative and effective measures to enhance societal security, and explicitly associates citizen involvement with the achievement of the policy goal set. Yet, the threshold

of advancing civil society participation from an optional desideratum to a policy requirement for transparency, accountability, and legitimacy of a policy process was passed with the recommendations of the MASIS (Monitoring Activities of Science in Society) Group of the European Commission in 2009, which sought to ensure that research and innovation is rooted in society and is responsive to its needs. Communication on research policies should, accordingly, dismiss the top-down model of transmission of information to, and adopt a more inclusive and horizontal one of bidirectional transaction with the civil society. Such a participative consultation model is supposed to reinforce trust in institutions and solidarity within social groups (Monitoring Activities of Science in Society 2009). This does not imply, of course, that civil society participation is taken to be a panacea for the thorny problems of normative and operative character security research policy is associated with, or that CSOs enjoy a privileged, objective point of view.

In the course of the above developments, the demand for responsive and inclusive research took form in the “Responsible Research and Innovation” (RRI) policy of the European Commission. A series of reports published by DG Research & Innovation (European Commission 2011a; 2012b) called for a comprehensive shift of approach to research and innovation, whereby all stakeholders should be involved at an early stage of the process in order to take informed action themselves. This presupposes knowledge about the impacts of research outcomes, reflection

about the options for action, and evaluation of research procedures and products in order to be able to propose correctives for present as well as alternatives for future research policies. Particularly in the fields of nano-technologies, technologies for genetic modification of organisms, or security technologies, such as in body scanners, the lack of adequate assessment and evaluation of ethical, legal, social, and political consequences directly affecting citizens, have led in several occasions to low acceptance – if not outright rejection – by social groups, bringing billion-worth research programmes to fail.

New ICT and security technologies emerge at a fast pace in grey regulatory zones. Legal regulations or policy directives lack most of the time the qualities of strategic foresight: They often suffer from a year- or decade-long time lag, and have to be either specified or considerably modified in order to provide for as many R&D application options as possible. Indeed, new generations of ICT technologies have diffused in everyday “lifestyle” gadgets or “smart applications”, which connect people via social media and, simultaneously, find use in civil protection at public places, or in steering military device and intruding into data bases for defence purposes. This multiple use problem, known since the middle of the 20th century from the fields of chemical, biological, radiological, and nuclear technologies under the tag “dual-use” (peaceful vs military), enormously complicates contemporary regulation attempts. There are, accordingly, no straightforward ways to guarantee ethical

acceptability, sustainability, and social desirability, as criteria for pursuing research, development, and marketization of such new technologies.

Nevertheless, and following the expert reports of the Commission cited above, the necessity for ethical acceptability, the enactment of fundamental rights, and a fair distribution of risks and benefits should provide “red lines” when it comes to privacy and freedom infringements, be them temporary or permanent, for the “sake of security”. Since codes of conduct and good research practices are necessary for the scientific community, yet insufficient when it comes to application and marketization of the research results, some additional steps have to be additionally introduced.

First, compliance with the Charter of Fundamental Rights of the European Union, which promotes citizens’ freedoms, equality, sustainability, justice, dignity, and solidarity, and has the binding legal status of an international treaty among the signatory EU member states; Second, promotion of certification, standardisation, and accreditation procedures in order to guarantee accountability for the application phase of ICT and security technologies. In the face of high uncertainty levels and severe value conflicts associated with those technologies promoted, ICT and security (research) policy issues become at times pretty politicized. Enabling and empowering participation of civil society groups in technology foresight and assessment delib-

erations would, third, bring them as ultimate stakeholders of such technologies on board. This applies especially to decisions concerning security policy and security research in sensitive areas such as border, aviation, and cargo security, data storage, mining, and profiling for commercial, criminal, and intelligence reasons, as well as chemical, biological, radiological, and nuclear agent detection, which affect both the private and the public sphere in European societies.

Researchers in the context of the International Risk Governance Council have argued that with rising complexity, uncertainty, and ambiguity in R&D policy, the higher stakes and potential risks are, and, consequently, the more inclusive the participation of operative end-users and affected stakeholders in decision making should be (International Risk Governance Council 2008). In line with the “post-normal science” paradigm, a group of researchers and European research policy makers controversially debated as early as 2001 about the future role of experts and other societal actors, such as citizens, in shaping the direction of publicly funded scientific and technological development (Liberatore & Funtowicz 2001). In public research governance, as in the case of the ESRP in this paper, one can clearly discern three policy paradigms, usually simultaneously present in science & technology governance regimes and in tension with one another, roughly dubbed here as “Expertocracy”, “Marketocracy”, and “Democracy”. “Marketocracy” has been, according to the analysis above, the dominant in the

ESRP under FP7 and up to now in Horizon 2020. As the power/interest grid of the stakeholder landscape visualises, the business- and market-oriented “alliance” between Policy Makers and Research and Technology Organisations has practically sidestepped a good deal of needs and concerns shared by stakeholders closer to the receiver’s end, such as Civil Society Organisations.

Indeed, expertocracy, “marketocracy”, and democracy as policy paradigms in the ESRP governance regime follow different logics of evaluation and assessment, they favour and include different stakeholders in the consultation and decision-making process, and put forward divergent security solutions and research directions for future innovation. “Expertocracy”, equally roughly said, operates along technocratic criteria of consistency, coherence, and evidence-based analysis, while “marketocracy” follows economic, often particularist, profit-oriented performance indicators. “Democracy” focuses, on the other hand, rather upon societal relevance, and is need- and value-oriented. Indeed, comparative surveys, such as the Eurobarometer ones, and focused research studies examining citizens’ perceptions on security, online behaviour, or data protection, regularly find out salient factors other than growth, efficiency, or effectiveness of actual security levels, which are supposed to shape attitudes toward intrusive security technologies, such as e.g. institutional trust (Pavone & Degli Espositi 2010).

The established mode of conducting impact assessments in research and research policy focuses predominantly upon market, business development and employment. Ex ante assessments take usually the form of econometric analysis of financial and economic indicators, by inviting experts and stakeholders from the industry and the public services, and regularly sidestepping representatives from civil society, as the case with the impact assessment of the Horizon 2020 Research Framework Programme has been (European Commission 2011). Narrowing down the scope of engaged stakeholders comes together with the fact that a whole lot of consequences, concerns, and probable impacts and trends slip out of the methodological nets of that sort of impact analysis and drifts to its invisible “blind spot”. Lately there has been a rise in interest – and pleas – to expand the target domains relevant for assessment and evaluation. This move has led to a proliferation of attempts toward “social”, “ethical”, “privacy”, or “societal” impact assessments, which undeniably appear to be more citizen-centred than the classical variants (Dovovan 2011; Hempel et al 2013; Wright & Friedewald 2013). An institutional attempt by the European Commission to integrate societal considerations right from the start of the research process in the context of the ESRP is the “Societal Impact Assessment” questionnaire (s. Table 1):

»Ensuring security research meets the needs of society

1. What documented societal security need(s) does the proposed research address? (e.g. life, liberty, health, employment, property, environment, values).
2. How will the research output meet these needs? How will this be demonstrated? How will the level of societal acceptance be assessed?
3. What threats to society does the research address? (e.g. crime, terrorism, pandemic, natural and man-made disasters, etc.).
4. How is the proposed research appropriate to address these threats?

Ensuring security research benefits society

5. What segment(s) of society will benefit from increased security as a result of the proposed research?
6. How will society as a whole benefit from the proposed research?
7. Are there other European societal values that are enhanced by the proposed research e.g. public accountability and transparency; strengthened community engagement; human dignity; good governance; social and territorial cohesion; sustainable development etc.?

Ensuring security research does not have negative impacts on society

8. If implemented, how could the research have a negative impact on the rights and values enshrined in the Treaties (e.g. freedom of association, freedom of expression, protection of personal dignity, privacy and data protection etc.)?
9. If implemented, how could the research impact disproportionately upon specific groups or unduly discriminate against them?
10. What specific measures will be taken to ensure that the research outcomes comply with the European Charter of Fundamental Rights and to mitigate against any of the negative impacts described above?»

Table 1: Societal Impact Questionnaire to be applied in “Secure Societies” Research Grant Applications during Horizon 2020 (source: European Commission 2012c, p. 17-18)

This table contains the list of questions drafted at the end of a series of expert workshops organised to address the dimensions of assessment of societal impact, specifically targeting security research. This questionnaire is due, besides the already introduced “Ethical Review” to be a component of the research grant application procedure under the Societal Challenge 7 “Secure Societies” of the Horizon 2020 programme. The “Societal Impact Assessment”, unless it degenerates into a “fig-leaf” patch and becomes in practice a ticking-box exercise, as the fate of the “Ethical Review” has shown so far, is definitely an institutional innovation within the ESRP governance regime. Broadening the non-technological scope of research evaluation makes a step toward the demands of RRI policy and should go, nonetheless, hand-in-hand with involving CSOs, as being among the most suitable stakeholders to assess societal impact.

6. Outlook: Security Culture and the Change of the Security Research Governance Regime

This paper combined in its analysis the stakeholder environment in the European Security Research Programme together with the institutional EU policy context for research, innovation and governance. This juxtaposition, while it demonstrated considerable discrepancies in terms of access, vulnerability, and influence capacity between CSOs and other stakeholders, it also pointed out certain EU policies which could, and should, enable strengthening of constructive engagement of the civil

society into the assessment, evaluation, and agenda formulation process of security research policy. Diversity in stakeholder participation would help widen policy makers' "peripheral vision" in terms of strategic planning for future societal demands. Consequently, this would minimise the "blind spot" in failing to assess and contain non-intended, counter-productive side effects of security research and policy.

The logic behind this analysis made necessary to explore the relative strengths and weaknesses of CSOs in relation to other, more influential players on the stakeholder landscape, and the institutional opportunity windows in order to open up space for action. Security policies, and also security research policies, have become politically too contentious and too value-laden to be left to experts, security technology developers, service providers, and policy makers alone to define and implement. CSO engagement in security research has, by and large, little precedence and, at best, a mixed track record so far. The available, partially competing, European policies, reaching from market-centred economic growth to responsible and inclusive innovation and compliance with the Charter of Fundamental Rights, and renders stronger CSO engagement in the thorny and sensitive security research domain all but a straightforward policy endeavour.

The mapping exercise in this paper aspired to show the politics behind the policies of the ESRP, and should conclude with two

observations: First, that the potential for innovation lies already in existing EU policies, still compartmentalized and competing, and not (yet) generally endorsed within important policy areas at the European Commission. Strengthening Responsible Research and Innovation, and Societal Impact Assessment dimensions of security technology R&D policies, helps to consider needs and concerns of underrepresented but affected weaker stakeholder groups such as human rights, civic liberties, and contentious technology assessment CSOs, and give them a voice in the policy formulation stage of the security research programme.

The second observation is closely connected with the first one: It refers to a deeper shift in the security culture lying in the background of the research governance regime. This kind of culture in security research policy provides a meaning-giving context for prioritising certain problem diagnoses, certain objectives, and certain security solutions over others and making them seem to be "self-evident", necessary and adequate research policy choices. The function of such an organizational culture for the ESRP consists in systematically blending out the potential of marginalized stakeholder groups, such as CSOs, of contributing to the formulation of the agenda for ICT and security technologies. At the same time, exclusion of CSOs at that stage raises the chance of them spoiling the "soup" overall at a later stage, by withholding acceptance, as the widely publicized case of the FP7 INDECT project has demonstrated.

In the perspective followed throughout this paper, the security culture of the ESRP governance regime demonstrates the link between the unbalanced stakeholder involvement in the policy formulation process and the high-tech bias in the promoted research agenda. Reform of the ESRP governance regime goes, in this respect, hand-in-hand with that evolution of that European security culture into a more inclusive and responsive path. This could be a contribution to raising acceptability, legitimacy, accountability, and benefit sharing of research, as well as to sensitizing key stakeholders for unintended and undesired middle-term societal impacts of security research outcomes, and minimizing potential “boomerang” effects of surveillance and detection technologies. Contrasted with the questionable role of high-tech innovations in the actual state of security and freedom in the European societies, that sort of change in the stakeholder landscape of the ESRP would be a non-technological, institutional innovation helping to better match problem cause with policy action in a domain of public interest and concern. Institutional and organisational change of the security research governance regime would definitely be an “innovative” departure from the current security culture, by turning it more inclusive and legitimate. At the same time this could establish new evaluation and assessment criteria for goals and results of the security research policy which are more responsive to needs and interests of civil society stakeholders.

It is crucial thereby that publicly funded research be treated

as a public good. When it comes to the European Security Research, where the possible civil, military or other applications may trigger non-anticipated and non-intended middle-term effects, stakes are very high, perhaps even more for those which have a lot to lose a lot, than for those which have a lot to win. As long as the “beast” of the high-tech security promise is still in the cage, a fair, responsible, and accountable distribution of benefits and risks calls for an upstream, comprehensive engagement of more vulnerable stakeholders into the ESRP policy process.

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Permaculture: A Great Excuse For Building A Bridge Between Civil Society And University

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From Brussels To Tenerife (Canary Islands)

“The promise of permaculture as an effective protector and restorer of biodiversity should be explored and enhanced”, said the European Commission in 2010 (EC 2010). The Asociación para el Desarrollo de la Permacultura-Finca El Mato (herein-after, ADP-FEM), a good practice under the UN Habitat Programme (2012), unofficially started in 1996 in Tenerife (Canary Islands) and it was formally set up as a CSO in 2001 with the aim to foster the permaculture principles. It accomplishes those from a series of perspectives: making the most of local organic farming production; conversion of neighbourhood waste products into resources; and labour integration of persons with long-term mental illness using permaculture as therapy. It is an exemplary experience at local, national and international level, with a clear focus on outreach in the field of recovery and design of sustainable agroecological and social activities.

ADP-FEM has proven experience in the field of social inclusion, setting standards as a centre recognised for the highly therapeutic value of its activities in different fields (pre-vocational training, labour integration, family respite). Moreover, ADP-FEM has been an employee training centre in different ways and through different entities (courses and workshops requested by

town councils, vocational training, etc.) and increasingly by the University of La Laguna.

The initiative starts out with the life plan that its founder, Javier Reyes Barroso, envisaged 18 years ago when he acquired Finca El Mato and took a course on permaculture which allowed him to channel his inclinations and work with the mentally disabled. Legally set up thirteen years ago, the ADP-FEM has taken on the role of dynamic factor in the Canary community in which it is integrated. This is an experience which, although centred in a one hectare farm, has an area of influence which goes beyond its perimeter, thanks to the network that it has been weaving during these last eighteen years. This is a stable network which, right now, is made up by the ADP-FEM together with nearby companies and townspeople who take their waste products there in order to convert them into resources; the public administration at European, national, regional, island and municipal levels with which the ADP-FEM has interacted and continues to interact through different policies; volunteers who contribute with their work; university and its science shop that sign agreements for business practices and for final research work for finishing student degrees; families who buy the organic products of the farm on a weekly basis, thus associating the

organic crop system with the economic and social development of the area, and committing the townspeople with the philosophy of the project; and with different approaches for labour integration of persons with long-term mental illness using permaculture as therapy in a day to day basis with volunteers of the ADP-FEM; in a project of 11 years (2002- 2013) with the Special Employment Centre (CEE) ; and on a one-off basis with an association of people with mental disabilities and their families, which has become involved in the project by creating an Occupational Therapy Centre (CO) in the farm .

In 2002, Tenerife (2,034 km²- 906,854 inhabitants), the Canaries (7,493 km²- 2,117,519 inhabitants), and probably Spain lacked experience of social enterprises which associated the social and labour insertion of persons with long-term (chronic) mental illness with permaculture for therapy and rehabilitation. Still today, it is a novel idea.

The priorities of the project during these 18 years have been:

- a) Agroecological project using Permaculture criteria in Finca El Mato;
- b) Creation of the ADP-FEM;
- c) Project for the social and labour integration of persons with disabilities due to long-term serious mental illness and difficult social and labour reinsertion;
- d) Design of adequate infrastructures for integration between permaculture and the ADP-FEM;
- e) Creation of a network of economic, social and institutional agents to support the project;
- f) Training and educational issue.

The mobilisation of resources of the ADP-FEM

- The Equal (2002-2004) European Project served to lay the foundations for the initiative by financing infrastructures, tools, counselling.
- The association with the Island Plan of Psychosocial Rehabilitation of Tenerife (PIRP) since 2002 boosts the initiative and provides permanent technical support for the social and labour inclusion process by means of direct therapy on the farm using the Canary mental health resources.
- Since 2002 until the end of 2013, the Canary Employment System (SCE) subsidises 50% of the national minimum wage for workers with mental illness and pays the company's portion of Social Security contributions.
- Collaboration with the Canarian Association of People with Mental Illness and their (AFES) during three years (2009-2011) giving courses on inclusion of persons with mental disabilities and, during a one-year project (2011), the co-operation was extended with an Occupational Therapy Centre (CO) in the farm with capacity for 15 persons.
- Stable network with 36 companies in the area and with a group of families (50) of the neighbourhood that provide waste products in order to convert them into resources.

- Counselling, support and co-operation with the University of La Laguna.
- International and local volunteers (20) who co-operate with their work.
- Families (35) who co-operate each week as customers of the agroecological products of the farm.
- One-off specific “subsidies for sustainability” from financial institutions under the criteria of corporate social responsibility.
- Courses, visits, counselling for town councils and educational centres at all levels.

The narrative of the process

Legally set up thirteen years ago, the initiative has been running for eighteen years, with obstacles from the outset: family and community resistance to a project that was not understood; resistance from the original “ADP” group, gathered in 1996, to the incorporation of a social project that associated permaculture with therapy and that used subsidies as resources. The confidence of the initiative’s founder, the availability of a farm where permaculture was being implemented for five years and the lifestyle approach of the project were key factors for overcoming the obstacles. Indeed, the obstacles became opportunities,

especially the resistance generated by a social project involving people who were facing the twofold discrimination of their illness and their social exclusion.

The consolidation of the project, via the network, has allowed the agents to increasingly participate, in one way or another, in the decision-making of the initiative: a shared learning opportunity with different actors contributing with different resources to the initiative, spreading knowledge and generating a multiplying effect by attracting new stakeholders and their co-ordination. Their actual co-ordination effort with different stakeholders will be explained further on.

As tools and procedure, the initiative has followed the design principles of permaculture, enriching the farm with incremental methodology in terms of time and space which enhances the density of interrelations, and gives the initiative a multifunctional dimension, resistance and resilience. This is a methodology where the pace of nature, of persons and of institutions plays a decisive role, making this an infrastructure that can host training and the inclusion of socially excluded groups.

Results achieved

The objectives are being met. An indicator of the results obtained by the initiative is to compare a “photograph” of today, enjoying community backing , with a photograph of the outset,

suffering lack of understanding and obstacles.

The initiative continues to work thirteen years after its official incorporation. It is a standard setter for the different fields in which the experience is demanded and used: persons with mental illness who continue to join; families of people with mental disability who find respite; agreements on business practices for students and courses organised for the university and for the neighbouring town councils; start up of multiannual four-way agreement – town council of Tacoronte, University of La Laguna, regional Government and the initiative – in order to spread information on the project; growing number of voluntary workers and visits from educational centres of all kinds; European projects which identify it as an emblematic sustainability initiative; good practice under the UN Habitat Programme (2012); setting up a webpage with among other things a documentary of one of the projects – the CEE. Its frequently visited model for waste collection has been qualified as Good Practice by the EU and by the town council of Tacoronte (the approximate quantities of waste products of the neighbourhood converted into resources of Finca Mato, a farm of one hectare, are of 180 Tm/year on average). Ultimately, we are talking of a consolidating project-social network.

The lessons learnt

- The importance of respect and trust between those responsi-

ble for the initiative and the different actors of the network.

- Learning in regard to the awareness of limits:

a) nutritional: the initiative co-operates with food rights, providing – week after week – quality foods for 35 families and five market stalls;

b) energy: it practices ways of reducing energy consumption, using its own multi-crop system and the multi-species livestock farm for waste management; using microorganisms/invertebrates as micro tractors for the soil; recycling the waste material of 36 companies and 50 families of the neighbourhood;

c) proximity: creates proximity by interchanging weekly boxes of vegetables with 35 families; collecting waste products in a field of action of no more than 3 kilometres around the farm, avoiding they end up in the waste dump;

d) defence: creates safe and healthy surroundings based on the resilience of the project involving a wide network of actors (persons with mental disability, volunteers, association of families of persons with mental disability, customers or co-operators, companies, town councils, universities, mental health resources...).

- An example of sustainability subsidy.

Indeed, the focus of permaculture puts the emphasis on the

observation of the environment as a holistic system— observation sets out guidelines for action —, and of oneself as a person—correct observation is difficult if one does not know how to observe oneself; and taking care of people implies taking care of oneself. This is a real learning exercise in action, with trial and error as method.

“Taking care of people” puts the initiative in an institutional context, namely PIRP, an organisation dealing with mental health resources in the island and, consequently, in the framework of legislation, social policies and strategies, and adequate processes for start up and running. Also, from 2011, it has been labelled by the Spanish government as a public interest association with tax incentives for the association and for its patronage. These processes include the financial aspect: the initiative starts with the support of the Equal project and Canary Employment Service (SCE). This means starting (2002) with a ratio of “81% of external funding (subsidies)- 19% own resources (sale of farming products)”. In 2010 this ratio was inverted: 32% - 68%. In 2014, after finishing the CEE project the ratio is 0%-100%. The economic and fiscal crisis has forced the ADP-FEM to terminate one of its projects, the CEE. This crisis is added to the permanent threat to any project which is hard to comprehend by the public administration due to its complexity. It follows a sample of this impression in a Seminar ex post evaluation at the ADP-FEM: «An enlightening experience, exemplary; it breaks away from existing conventional and institutional lines. For that

same reason, it can come against multiple obstacles»

However the financial aspect, with its difficulties, only goes to show the efficient, transparent and responsible management of the public funding used by the ADP-FEM and its projects. The financial profit resulting from the network is essential for the economic viability of the project.

Permaculture Insights

As already said, the cultural and environmental aspects of the ADP-FEM are tackled from the perspective of permaculture, a holistic system which endeavours to handle resources in a sustainable manner for the mutual benefit of mankind and nature. The practice imitates natural processes, creating biological synergies and interactions between the components of an agro-ecosystem where nature becomes its best insurance agency. It is done based on the principles of taking care of people, the Earth, and sharing resources.

Permaculture is highly knowledge-intensive, based on techniques that are not delivered top-down but developed on the basis of farmers’ knowledge and experimentation.

A core element of the condition of highly knowledge-intensive is the soil and, in this regard, it would be pertinent to recall the words of Albert Howard (1940, quoted by Robin 2013, p.212 –

Spanish version) when he pointed out “how to subordinate the profit motive to the sacred duty of handing over unimpaired to the next generation the heritage of a fertile soil”. With this, he claims the need to put the focus on building the soil rather than feeding the plants, on the immune system of the soil, since the soil is determinant for cultivating in an efficient and sustainable way.

This emphasis takes us to the key role of organic matter in permaculture soils, something which is closely connected to the structure and fertility of the soil, the distribution of water resources, carbon storage and biodiversity. In the case of the ADP-FEM, since no precise quantitative data is available on the organic matter and its evolution when it comes to appraising soil behaviour, we use as indirect indicator the unit corresponding to the “weekly bio-box of vegetables with an average weight and variety of 6 kg and 19 products, respectively”. The bio-box can be interpreted as one of the units of measure of the stability of the ADP-FEM as there has been no interruption in the production of the 35 boxes for the co-operating families, week after week and year after year. For the purposes of information, it is useful to point out that the first ADP-FEM 280 m² field began to be cultivated 17 years ago and, week after week, it continues to yield produce using the permaculture principles. This stability allows the identification of nature, in some way, as the best insurance agency; an agency that is able to ensure all year a weekly standard box with a variety of 18-20 products

which represent the evolution of the diversity of edible and medicinal plants in the range of 196 varieties cultivated in the 3,140m² of fields in the ADP-FEM (see Figure 1). This is an agrobiodiversity of 196 varieties of usable plants which evidences nature’s capacity to permanently regenerate itself, bearing in mind the demands of the environs; an agrobiodiversity that should be practiced in situ. In this sense it worthwhile to recall the conversation of Yashinori Kaneko to Marie-Monique Robin (2013) about the meaning of the word *hyakusho*, a Japanese traditional word for describing the peasants, a person «who cultivates one hundred products».

Area	10,100 m ²
Area of productive edible gardens and forests	3,140 m ² (31,1 %)
Annual yield of vegetables in 0.31 Ha of the ADP-FEM model	12,692 kg
Monthly yield of vegetables in 0.31 Ha of the ADP-FEM model	1,058 kg
Potential yield of vegetables in 1 Ha of the ADP-FEM model	40,941 kg
Land equivalent ratio of the ADP-FEM model LER = P ₁ /K ₁ + P ₂ /K ₂ + ... + P ₂₁ /K ₂₁	1.32
LER > 1 indicates that the ADP-FEM model overproduces if compared to the single crop model	A total of 1.32 Ha of fields with different single crops would be needed to produce the same yield for those crops in 1 Ha of the ADP-FEM model
Yield per unit of energy invested	Kilocalories obtained in production of 21 products in the ADP-FEM model > Total kilocalories obtained in production of 21 products in single crop model
Biodiversity in 0.31 Ha (nº of varieties of useful plants: edible, medicinal, forage and mulching)	149 - 196
Recommended intake of vegetables/person/day (OMS)	400 gr
Nº people who could satisfy all year the recommended daily intake with ADP-FEM produce	87
Nº people who could satisfy all year the recommended daily intake with the produce of 1 Ha of the ADP-FEM model	280
Nº hectares of the ADP-FEM model required to satisfy the recommended daily intake of 1 million people	3,571
Average radius of action of the Waste → Resources Circuit	3 km
Average annual amount of the Waste → Resources Circuit	180,000 kg
Waste → Resources Circuit (nº of companies)	35

Figure 1. ADP-FEM indicators

The ADP-FEM multifunctional system not only minimises the problems of loss of soil fertility, soil erosion, breakdown in agroecological functions that have resulted in poor crop yields, land abandonment, deforestation, but reverts them. These capacities that have not been sufficiently prioritised for research purposes (IAASTD 2008, p.8). There is little recognition of the ecosystem functions that mitigate environmental impacts (see Figure 2). The ADP-FEM can be seen as a multifunctional system which can provide references so that these systems climb the policy priority rating, as the ADP-FEM has been contributing towards solving these environmental questions for 18 years. The association of the ADP-FEM with the university since 2009, and very recently with island and regional governments, are a result of this experience.

<ul style="list-style-type: none"> - Genetic - Productive - Tourist-related - Scientific-educational - Psychological - Atmospheric - Energy-related 	<ul style="list-style-type: none"> - Edaphic: <ul style="list-style-type: none"> o biospheric o hydrospheric o atmospheric - Recreational - Historic - Aquiferous - Assimilatory
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Figure 2. Environmental functions of the ADP – FEM cultural ecosystem

Acknowledging competing well-supported narratives of

permaculture as the ADP-FEM is crucial for designing effective policies. Well-supported narratives link with those using contextualised, territorialised and useful knowledge, built on transformer practices, and which can only be exercised in areas as close as possible to such practices and in such a manner that the actors of the social action are also the actors of the creation of knowledge (De Sousa Santos 2007).

Scaling up agroecology (permaculture as one of its expressions) in order to maximise its positive impacts on farmers' incomes, productivity and the environment means both (horizontally) increasing the areas cultivated using agroecological techniques and (vertically) creating an enabling framework for the farmers. The ADP-FEM is trying to be part of the innovative ways of ensuring horizontal expansion that includes the "pilot scale-up" strategy (De Schutter 2010, p.15); that is the reason behind the essential existence of innovative institutional arrangements. The ongoing process of developing the university-civil society interaction with the island government is a good opportunity in this regard.

The island and regional governments have a real responsibility in promoting local food provision systems based on agroecology. The Report submitted by the Special Rapporteur on the right to food, Olivier De Schutter (2010) and the International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD 2008), specifically the Global Summary

for Decision Makers (2008), are good references for supporting these claims.

It has been considered that "meeting the goals of development and sustainability has to be placed in the context of a rapidly changing world of urbanization, growing inequities, human migration, globalization, changing dietary preferences, climate change, environmental degradation, a trend toward biofuels and an increasing population" (IAASTD 2008, pp.33-34). These conditions are affecting local and global food security, and putting pressure on productive capacity and ecosystems". For IAASTD, agricultural knowledge, science and technology (AKST) alone cannot solve these problems, which are caused by complex political and social dynamics, but it can make a major contribution to meeting development and sustainability goals. The AKST becomes a strategic dimension and since the ADP-FEM is seen as an example of permanent generation and application of the AKST, it could become an important source of suitable applications.

Collaboration between government agencies and the ADP-FEM allows the public administration to benefit from the ADP-FEM know-how. The ability to allocate human and financial resources effectively will depend on a significant improvement in the capacity of those in both public and private sectors to forecast and respond to environmental, social and economic changes, locally and globally. This will include the capacity to make

strategic technological choices (where permaculture can be seen as an appropriated technology), create effective public policy and regulatory frameworks, and pursue educational and research initiatives and extension. In this sense, “innovative and better targeted AKST investment policies are essential to build natural, human, financial, social and physical capital for social and environmental sustainability” (IAASTD 2008, pp.38-39). The next subheadings deal with this choice.

Agroecological practices such as permaculture are best adopted when they are not imposed top-down but shared from farmer to farmer. Extension services play a key role in favouring the scaling up of agroecology. An improved dissemination of knowledge by horizontal means transforms the nature of knowledge itself, which becomes the product of a network. Co-construction is a key factor for the realisation of the right to food, acknowledges De Schutter (2010). First, it enables public authorities to benefit from the experience and insights of the farmers. In this context, rather than treating smallholder farmers as beneficiaries of aid, they should be seen as experts with knowledge that is complementary to formalised expertise.

The achievement of the ongoing objectives of a framework agreement between the ADP-FEM, the university and the island government should be placed in the context of a rapidly changing world; a world where unprecedented problems are approaching for the supply of food in a context of a worldwide

trade system in which farming and other natural resources are allocated for other uses, explains the IAASTD (2008). It is worthwhile to keep in mind the EU report “Tackling the challenges in commodity markets and on raw materials”: “Commodity markets have displayed increased volatility and unprecedented movements of prices in recent years... To varying degrees, these price swings have been reflected in consumer prices, at times leading to social unrest and deprivation” (EC 2011).

The AKST generated and applied in the ADP-FEM can contribute towards the search for solutions, providing they are backed by institutions and adequate capacities. The AKST generated and applied in the ADP-FEM and in other initiatives in the islands are contributing towards the resolution of environmental issues, while maintaining and increasing productivity, that is why the ADP-FEM is identified as an important source of information when it comes to compiling comprehensive data in order to carry out a more thorough evaluation of the status of agricultural research and development, with the inclusion of aspects such as agricultural extension, traditional and local AKST. This is a subject that is being studied in greater depth right now. The Ecosocial Study Centre of University of La Laguna (hereinafter, CEES-ULL) has a living lab project in and with the ADP-FEM, with researchers from ULL and other research institutions.

The ADP-FEM can be understood, on the other hand, as part of an effective risk management strategy. There is a background

of weather events in the ADP-FEM which evidence the resistance and resilience of the site if compared to other surrounding areas. It would be of utmost interest to draw up a narrative on such experience and, consequently, propose a future project on extreme weather events. The AKST present in the ADP-FEM are very important to increase adaptation capacity before the challenges and impact of climate change, by means of biological diversity management. This dimension has been identified as good practice by the COPCHAVET European Project- Coping with Challenges on Vocational Education and Training in Agriculture (green) Sector (COPCHAVET 2011-2013).

The ADP-FEM experience, in short, can be seen as an example involving better resource management in terms of “improved soil and water management to increase water retention and decrease erosion; strengthened organizational capacities to address emerging water scarcity by increasing water productivity and providing increased value per unit of water used; wider deployment of soil conservation measures; use of microbiological techniques to suppress diseases in soils; ... integrated pest management (IPM) supported by farmer experimentation and learning; ...” (IAASTD 2008, p.27). By doing this, integrated crop, tree and livestock systems can be intensified and managed as multifunctional agricultural systems with less negative consequences for ecosystems. Permaculture can be identified as a way of intensifying the ‘ecological function’, based on local resources, internal circuits, and avoiding external provisions as

far as possible. In this context, the farmer identifies himself as manager of an ecological system (Robin 2013, p. 253), of the “soil” immune system, and not only as producer of raw materials or food (see Figure 3).

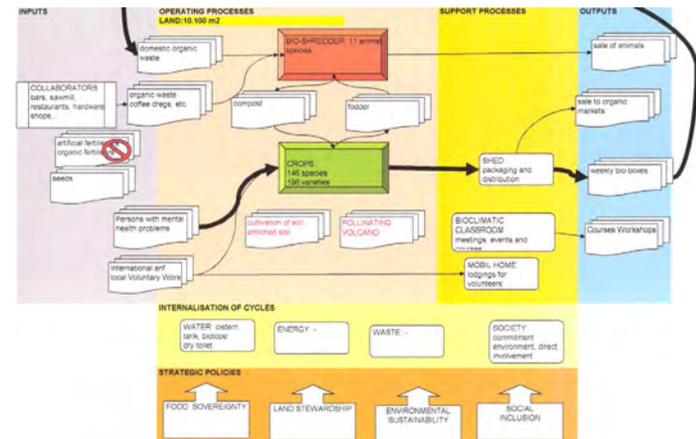


Figure 3. ADP-FEM resource management scheme

The ADP-FEM, due to its long and tested experience, can improve the above aspects by in situ training. Training that can be seen as a foreword for a horizontal and transversal extension.

The workshops described later can be seen as a good start.

A greater volume of public investment, better focused in the field of AKST like the once represented by the ADP-FEM, can contribute to a large degree towards meeting the development and sustainability objectives. In this case, CSO investment and funding for “subsidy to sustainability” from public administration and corporate social responsibility have been translated, through the years, into the capital now represented by the infrastructures and know-how of the ADP-FEM.

The Schutter report on the right of food upholds that the propagation of experiences such as the ADP-FEM is the main challenge posed today. It is possible to create an environment conducive to this type of sustainable production by means of adequate public policy. It claims the adoption of measures which favour the transition towards a type of agriculture with low carbon emissions and the conservation of resources.

The ADP-FEM on-site college proposed in the workshop described further on can be seen as a means to support the AKST which need on-site schools for farmers and the circles of researchers made up by farmers and scientists. The ADP-FEM is envisaged as a permaculture school based on practical lessons, visiting the cultivated fields of committed farmers such as the human team of the ADP-FEM; this will allow rapid diffusion of best practices, including agroecological practices, where the

farmers participate in the system and are not mere beneficiaries of the training activities, an idea that was put forward in the workshop (see Figure 4). The ADP-FEM can be identified as part of an ‘experimental propagation’ strategy of the island government, as an innovative way of securing the horizontal expansion of permaculture. The strategy is based on the identification of test areas for propagation which act as the base to establish ‘propagation platforms’ which favour the formation of ‘transformer teams’ and the selection of associates through the projects and collaboration frameworks such as those which will be described further on, which go from community organisations to private enterprise.



Figure 4. ADP-FEM Training Levels

The ADP-FEM/CEES-ULL bridge has been shown to carry out an essential function in the establishment of a framework conducive to the propagation of permaculture. The vertical dimension of propagation, as shown below, acts in turn as precondition and motor for horizontal propagation. The island government or Cabildo (CITFE) can, does and should carry out an essential function in both dimensions (vertical and horizontal) both through the Tenerife Tres-i project, an internal call for one-year projects presented by the CITFE President at the end of January 2014, and through the collaboration framework (agreement) with the ADP-FEM. This hints at a step in the right direction.

The participative focus (bottom-up) which outlines the collaboration framework between ADP-FEM/CEES-ULL and CITFE that started in December 2013 is understood as a grand opportunity for developing participative learning schemes on permaculture. The ADP-FEM is a movement which is already working as a shared learning organisation (see the following section on the bridge between the ADP-FEM and the university).

Now, the ADP-FEM must secure support to carry out this function, given that fostering a change towards sustainable agriculture has been a delicate process, involving transition costs. The wider application of AKST institutional models capable of addressing the combined development and sustainability goals requires resources to support the transaction costs of interaction among the partners as an integral part of the innovation

process. (IAASTD 2008, p.36) Both the Tenerife Tres-i project and the collaboration framework can be identified as part of an incentive structure; an incentive structure that should be regularly tested and re-evaluated with the participation of the beneficiaries, transforming policy into a mode of “social learning rather than an exercise of political authority.” (De Schutter 2010, p 16). It will be wise for the Cabildo to invest in innovative activities based on strategies addressing the determination of the required measures to ensure the transition. The potential investments implied by the execution of the abovementioned project and the Cabildo/ADP-FEM collaboration framework in this field could be sound initial funding to cover such transition costs.

Targeting small-scale agricultural systems by “forging public and private partnerships, increased public research and extension investment helps realise existing opportunities”. (IAASTD 2008, p.11)

The ADP-FEM ↔ CEES-ULL Bridge

The ecologies of knowledge resort to contextualised, placed and useful know-how anchored to transformer practices. They can only be exercised in areas as close as possible to such practices and in such a way that the actors of the social action are also the actors of the knowledge creation (De Sousa Santos 2007). This quotation resumes quite well the horizontal relation

between the persons who are building the “ADP-FEM / CEES-ULL” bridge.

In 2009, there begins a close co-operation between the ADP-FEM and the University of La Laguna through a Student Work Practice Agreement; and continues from 2010 until today with a research scheme addressing and collaborating with the community through the CEES; the ULL Interdisciplinary Courses (years 2012, 2013, 2014); the Seminar of the Master in Urban Law of the ULL; the End of Degree Dissertations in relation to the ADP-FEM projects. The collaboration agreement with the ULL is being extended to various disciplines and to other Spanish universities such as the Universidad Autónoma de Madrid, which signed a work practice agreement through its School of Science.

The relationship of the ADP-FEM with the CEES-ULL begins casually as a result of a Conference on agriculture and territory held in the capital city of Tenerife in May, 2010. The CEES-ULL drew up some brief reflections which were translated into an ex post informal Seminar with the participation of thirty persons involved in the field of agriculture and territory, even if from different professional spheres. The methodology of the seminar was to observe first, and then reflect in the wake of such perception. The observation, in a peripatetic key, took place in the ADP-FEM site-project, with which one of the writers of this paper was connected as collaborator. CEES’ reflection in the

Seminar was based on a proposal of components for action; namely, resilience, food sovereignty and healthy and safe environments. The interrelation between the three components was a key point in the reflection; as was the serendipity situation that emerges between what was describing the person responsible for the ADP-FEM project in the peripatetic walk and what was explained by the CEES representative in his subsequent Seminar.

The attendees at the Seminar identified the ADP-FEM as the result of a well-meditated succession of incremental improvements, of progressing slowly through trial and error. An experience which takes as reference nature patterns, through intensive observation and reflection, making the surroundings sustainable and returning the benefits to the community, as a way of recovering the lost symbiotic relationship between the city and its immediate surroundings, and recalling in this way the Aristotelian principles of balance, limit and oikos. This is a complex process resulting from an incremental methodology in time and space which follows the design principles of permaculture; a methodology which has enabled the cultivation of eco-social resilience in the project for 18 years. Therefore, the experience of the walk around Finca El Mato became an experience for shared learning, and this opportunity is maintained to date.

This is a sample of the impressions on the ex post evaluation of

the seminar in the direction of shared learning:

- «A model which should be generalised and, therefore, get increased visibility, increasing the information channels on what is being done. To synthesise and generate a recognisable model, so that it doesn't stay in a singular experience»

The CEES-ULL had the intuition that the ADP-FEM was a candidate to what Flyvberg called a critical, extreme and paradigmatic case study. Critical in having strategic importance in relation to a general problem; Extreme because of the possibilities it has of generating information of unusual cases; and Paradigmatic because of its potential prototypical value, setting standards for other situations. The first formal collaboration of the CEES-ULL with the ADP-FEM resulted in the recommendation and systematisation of the ADP-FEM experience in a good practice case of the UN Habitat programme. This systematisation derived in a Good Practice qualification in the 2012 session.

From the CEES-ULL standpoint, the replication potential of the experience for training and researching is found in the actual concept of permaculture: to observe the dynamics of natural ecosystems in order to design production systems which respond to human needs without downgrading our natural environment. It has the objective of integrating plants, animals, landscapes, buildings, technologies and human settlements in harmonious and symbiotic systems, establishing enhanced

diversity in order to obtain the stability and resistance of ecosystems and greater potential for economic sustainability in the long term.

The CEES-ULL observes that two levels of transferability can be identified in the ADP-FEM experience: that of permaculture as lifestyle and of permaculture as therapy. In the first level, a bridge between civil society and university starts to be built by means of courses and training delivered at the ADP-FEM, whose experience is made known and subsequently applied in different realms (personal, institutional):

a) The signed agreement between ADP-FEM and ULL for psycho-pedagogy work practices; and, as a result of this experience, there was a three year agreement – starting in 2012 – between ADP-FEM, ULL, Town Council of Tacoronte and Canary Island Government resulting from such practices, for the training of teachers and pupils of the nine schools of Tacoronte and professors and students of ULL based on the ADP-FEM experience, in order to transfer the experience to the school kitchen gardens and the curriculum of future psycho-pedagogues;

b) The ULL interdisciplinary courses in 2012, 2013 and 2014 that the CEES-ULL presented in a competitive stance. Courses open to ULL and non-ULL students. The common background of the courses is the context of financial, nutritional, energy and environmental multi-crisis, in short an ecosocial crisis, which

claims a new cultural awareness in terms of the aforementioned limits: a nutritional limit which ensures the right to food and water; an energy limit which ensures the completion of the energy and materials cycle; a traffic limit in terms of creation of proximity; and a defence limit in terms of safe and healthy environments based on the resilience capacity. The titles of the interdisciplinary courses evidence the framework of these limits: “First observe and then reflect in the wake of perception: creation of proximity in the university-society relationship” (2012); “The setting of limits: a new cultural awareness” (2013); and “Transition initiatives and research oriented to and with the community” (2014).

Each course came as an incremental result due to the positive outcomes in the wake of the jointly constructed methodology given that “an improved dissemination of knowledge by horizontal means transforms the nature of knowledge itself, which becomes the product of a network” (De Schutter 2010). The collaborative network in these cases was provided by the students’ assessments and those of the teaching staff of the courses- both rewarding.

Let us describe a little more the content of the new 2014 CIULL course “Transition initiatives and research oriented to and with the community”. The guiding lines of this third project were Transition Initiatives and Research to and with the Community. Transition Initiatives are seen as emerging and underway

sustainability proposals at community level. One of its basic principles is defined in the following terms: “releasing the collective genius of those around us for the creative and proactive design of our energy reduction, we can construct life forms that are more connected, more enlightening and which recognise the biological limits of the planet” (Hopkins 2008). This concept and its multiple dimensions are transferred in our case to the framework of an interdisciplinary course, connecting it closely to the common threads of the two previous courses (observation/reflection and limit).

Furthermore, a great synergic potential with the other component of the common thread of the course was envisaged: research to and with the community. Social transmission of knowledge and relevance of research activities are counted among the demands made of the university by society. The interdisciplinary course can be seen as an opportunity to define the utility of the research results for society, a research whose relevance should include a connection with social demands and needs. Research to and with the community proposes that universities and public research institutions provide solutions to the needs and demands of civil society, setting up a differentiated programme with respect to technological transfer programmes for industry and enterprise. The interdisciplinary course can be understood as an element of that differentiated community-based research programme.

Both the CIULL2014 project (ULL 2014) and the 2012 and 2013 courses have been understood as an opportunity, as a place of encounter for people interested in community-based research and, in general, in the relationship between science and society, connecting civil society – its research and training needs – with the research groups. We talk of what Sousa Santos (2007) describes as the ecologies of knowledge: contextualised, anchored, situated and useful knowledge. The interdisciplinary course project is conceived as an opportunity for what could be called a university of contexts and reciprocal learning instances, and the ADP-FEM is playing a key role in this process. Indeed, this year the first two modules of the course will be delivered in Finca El Mato.

Just as an example of the community-based research potential that can be derived from CIULL2014, the following is a list of the titles of the modules and papers, with a sample synopsis for each module.

Module I: Permaculture as support for transition initiatives

- The common thread between transition initiatives and community-based research
- Observation of nature as basis for permaculture
- Spaces for living with nature

- Principles and practices of bio-construction

- From signification of details to the rebellion of silence and slowness. Synopsis: With the prospects of a new citizenship for the 21st century which, necessarily, would have to be non-fatalist, we are left with the option of active commitment depending on the ability to act, which is often that of daily details, the human scale. This has been the common thread in the previous courses, prompting us to advance, in this new edition, towards recognition of the importance of silence and slowness, as ingredients of a less standardised and more reflexive society... A good example of the foregoing is Finca El Mato, a venue for diversity, often silent or silenced, and almost always at a slow pace, which acquires the meaning of a construction on a human scale of what could be a new lifestyle at a social scale. Without a doubt, EL Mato is a privileged site for the existence of university-society dialogue of a transforming nature.

Module II: Resilience and healthy and safe environs

- The territorial dimension of the ‘Finca El Mato’ eco-social initiative
- The nutraceutical quality of organic food
- The soil, life reserve

- Resilient communities, risks and participation

- Discussion on the End of Degree Project, an opportunity for research to and with the community. Synopsis: The approach of conducting the end of degree project (TFG) involving other cultural, economic and social agents broadens the field of action of the graduate while also producing an enriching interaction between the university tutor, the external tutor, the student and the collaborating agents which results in a series of beneficial aspects for the community as a whole. The discussion, presented as a dialogue between the university tutor and the external tutor, will address the TFG case study in a collaborative manner between the ULL, an external consultant and the collaborating agent (the ADP-FEM)- during which the energy needs of the farm and the possible applications of clean energy sources to cover needs will be studied.

Module III: Research to and with the community: constructing networks

Can the reactivation of the Canary countryside be stimulated?

Are Transition Initiatives applicable to Desertification?

Towards a new energy model: Savings, efficiency and exploitation of own resources

Transition experiences for a new social model

What do we research? How and for what? Creative and participative planning workshop. Synopsis: The general objective of the workshop is the definition and planning of community-based research projects. Right now, many scientific studies pursue highlighting or recovering their relationship with society, a relationship that is underestimated in our collective imagination due to the weight of neutrality and objectivity, which presumably has guaranteed the excellence of an activity considered superior, a prerogative of the human being. Nevertheless, the 'for what' of the research allows us to look beyond, to give shape to a set of contents which cannot be disassociated from their given purpose. The 'for what' will determine the 'how', the ends before the means; means that should be put forward and proposed by those who enjoy and/or suffer the object of the research. Hence, in this workshop, we reflect by means of a practical exercise, on the tools, advantages, difficulties of conducting research to and with the community.

Below are some appraisals by the students of CIULL2012 and CIULL2013 and some pictures of the courses (See Figure 5): «The course format has had a common thread which has made possible the evaluation of actions we carry out on the territory»; «I have surprised myself "learning"»; «It connects quite well with the line that should be followed by a social change process which pursues environmental and social improve-

ment»; «Seeds for a new cultural conscience»; « It has given me “interdisciplinary know-how“»;«Methodological innovation process »; «I recommend it both as learning content with practical application, and as experience on shared reflection»; «Knowledge is acquired which is impossible for me to place in a file on a shelf, because the knowledge is tools; and when you have tools, all you want to do is to start work immediately».

Appraisal of a student-professor:

«For me, it was a pleasure to have participated in the two editions of the course, first as student, in the three modules of last year, and then as speaker, in this edition. I would highlight the following: the opportunity of these courses, on account of their style, their methodology, the diversity of proposals, scopes and planes in which it is deployed, in order to recreate possibilities, foster fruitful connections and build bridges which help to restore the proximity network in a comprehensive manner, from the self-reconstruction of the subject to the relationships which forge the community spirit, as essential experience for human development »

Appraisal of a professor: «Not only is it an honour to participate in them, but also a moral obligation in favour of the construction of a society which is respectful with human, natural and social dignity. I believe that the University Institution should encourage, promote and ensure the continuity of courses such

as these which, if they cannot be continued with their excellent current format, would have to be hosted in other scenarios, if possible ensuring university-society dialogue».



Figure 5. Pictures of the ULL courses at the ADP-FEM

The bridge already erected between university and civil society has become stronger since the beginning of 2013.

a) A Peasant to Peasant Movement example.- In February 2013 17 farmers of the Agricultural Association “Alborinco”, from Gran Canaria island, came to the ADP-FEM to learn and exchange experiences after hearing about the ADP-FEM experience from members of the CEES-ULL during a conference in the above island. There follows a sample of the exchange:

- «The human quality of the project, in perfect symbiosis with the surrounding environment, integrating it and resorting to society collaborating in a disinterested manner and helping it to take advantage of resources, is a way of boosting ecology and interesting others in what I have always thought as utopian. Simplicity put into practice, obtaining a quality of life, of food, of harmony with animals and plants. Bravo.»;

- «To discover that utopias cease to be when the heart connects with reality is a delight. Even if the word impressive is all too often used, I am astounded, “impressed”, pleasantly surprised by the dimension of what is carried out. What satisfies me is to discover that it is true, that it is possible, that nothing is madness if there is a ‘feet on the ground’ component, and a clear idea connected with the entire complexity that surrounds us. Congratulations and thank you for persevering, for listening and for discarding useless words ».

b) Horizontal knowledge: Peasant ↔ Expert. The CEES-ULL was responsible for organising and co-ordinating a three day seminar in Participatory Planning, as part of a two-year ULL master course on Urban Law in September 2013. On this occasion, the concept of transition initiative was transferred to the sphere of territorial and urban planning with the following questions as its common thread: why and how do groups of persons organise themselves as independent initiatives when it comes to participating – reacting, taking the initiative... – before an official policy which often suffers from large shortcomings with respect to proactive citizen participation and/or with important political flaws in terms of corruption, as became evident in the participation seminars of previous editions of the Master?

The Seminar materialised at the right moment of the planning of the Master, halfway between territorial planning – a subject dealt with in the first semester of 2013- and urban planning – a subject dealt with after the seminar. And it is done using a theoretical-practical approach, leaving the official classroom of the Master in the ULL Law School, and going to a territory which exemplifies an independent initiative: the ADP-FEM. The Seminar took place in the ideal place for reflection on the need for participative planning. For the purposes of evaluation, there follow some appraisals:

- Novel. Up to now these questions were foreign – extraneous – to me; I didn’t give them much importance because I consid-

ered them utopian. To realise that ideas and proposals have “a face” suggests to me that they are possible.

- A thoroughly interesting seminar which released us from routine and has fully immersed us in the problems and disconcerting reality which surround us. It has given me a rather pessimist outlook on the problem, but which is optimistic at the same time, as we are still in time to solve it.

- A little less sceptic, a little more optimist. It seemed interesting to me to become acquainted with “real” participation initiatives or citizens’ “actions”, as well as putting into practice “ideas” on the territory as is done in the ADP-FEM.

- The assessment [of the seminar] is positive. I admit I was a little reluctant with respect to these classes, because I couldn’t understand how a Master on urban law could be related to coming to a farm in order to be told about “Art”, among other things. I think that this type of seminars serves to ‘open the mind’.

From the description so far, we can infer that the ADP-FEM/CEES-ULL bridge clearly evidences, putting it into practice, the need to overcome the distinction between theory and practice, combining them through systematic meetings, whether those basically addressing the practice of social transformation or those basically addressing theoretical production (De Sousa

Santos 2007).

Without a doubt, the reflection prompted by the enriching experience of the processes-projects analysed during the above courses encouraged the teaching staff to include them in future research agendas and/or in future training programmes. The ADP-FEM is being seen as a transfer centre for solutions adapted to the needs of the environs: express and tacit R+D+i in the ADP-FEM in the management of nutritional, energy, traffic and healthy and safe (resilient) environment.

The ADP-FEM as a hub for information, practice, reference, training, open processes it represents a sensorial sustainability experience, a clear example of sustainability. The ADP-FEM is a living environment, a permaculture school where you can touch, smell its development, a project which changes continuously, where you can observe and be witness to the change. These intangible sensorial dimensions can be an asset in learning processes at all levels.

Transversal Extension And Changes In Institutional Mechanisms: Public Policy For Targeting Small-Scale Permaculture Systems

To enhance the promise of permaculture as an effective protector and restorer of biodiversity (EC 2010), the ADP-FEM/CEES-ULL collaboration currently goes in the direction of helping to

scale up permaculture through public policies within the island government, by focusing on the establishment of an enabling framework for its development. Different workshops are underway in order to achieve what the ADP-FEM experience intends to be: a resource in those public programmes that are supportive of social inclusion and sustainability; a training centre of reference; and a platform for the dissemination of best practices.

A turning point pursuant to meeting this objective has been the visit by politicians from the Environment and Agriculture departments of the island government or Cabildo de Tenerife (CITFE) to the ADP-FEM in the last term of 2013. As a result of the visit, the politicians proposed a co-operation agreement between both institutions. However, the ADP-FEM, with the guidance of CEES-ULL, proposes a bottom-up focus to reach such agreement, involving CITFE technicians in a series of workshops in the ADP-FEM so that, from the viewpoint of their technical responsibility, they can envisage and adopt the terms of the future agreement, while converting the workshops into a transversal extension experience consistent with the permaculture approach.

After that initial meeting, different governmental departments of the CITFE and other business and social echelons have considered the establishment of mutual co-operation channels based on the ADP-FEM experience of utmost interest, in order to promote and spread sustainable practices in the manage-

ment of natural resources, and to explore viable alternatives for wide extensions of island farming land. In order to carry out such co-operation, the initial criterion is the utility of detecting and working on the basis of concrete experiences of good practices, carrying out follow-up and support in order to boost and broaden its demonstrative effects. Special relevance is given to the detection, analysis and promotion of examples of good practices in the sustainable treatment and management of natural resources which are limited on Tenerife, such as fertile soil, looking after and regenerating the land, while improving its productivity and making rational use of – and coming full cycle with- resources such as water, electricity and waste.

During the last months of 2013 and so far this year, there have been various visits, meetings and workshops which have pro-pounded the agenda of the fledgling co-operation. Namely:

- a) To study cases of agricultural management in the rural-suburban transition area, as a way of highlighting production capacity, boosting short cycles of proximity between production and consumption; guiding and furthering urban and suburban kitchen gardens; improving self-sufficiency capacity, etc., while restoring the value of the uses and agricultural dimension of the island's suburban landscape.
- b) To explore valid options for the treatment of transition zones between areas of rural land with agricultural and natural

protection, as an option allowing the cultivation of farming land which is compatible with the conservation of biodiversity, while preventing the risk of forest fires.

c) Moreover, experiences such as the ADP-FEM are considered to pool a set of synergies with respect to their training potential, as a way of reconciling urbanites with the values of integrated and sustainable rural activity, with a clear focus on regeneration of the landscape of our surroundings, good eating habits and health, social inclusion and general welfare.

d) Furthermore, this is related to new demands for quality tourism (active, pro-environmental, supportive, etc.) which requires genuine and singular experiences, where there is also a chance to learn by participating in workshops and activities which permit liaison with the local reality.

The horizontal expansion of experiences such as the ADP-FEM was posed as a strategy for 'experimental propagation': a strategy based on the definition of testing zones for propagation, the establishment of 'propagation platforms', the training of 'transformer teams' and the selection of associates, which go from community organisations to private companies (IASSTD 2008). It is a case, therefore, of learning in a shared and transversal manner about real cases as guidelines for more far-reaching concerted action. This type of actions should act as inspiration and, at the same time, fall within the framework

of strategic resource planning, exploring through co-operation agreements the legal construct of "contrats territoriaux d'exploitation". and pursuing the strategic development of land stewardship.

Synchronicity As An Asset

The same day (Monday, 20th January 2014) that a first workshop is held to explore the described co-operation possibilities between the ADP-FEM, CEES-ULL and three CITFE departments (Environment, Agriculture and Welfare), the president of the island government presented the "Tenerife Tres-i" Internal Call for Projects addressing workers of the institution. Thus, once the CITFE technicians involved in the above collaboration came to know of this call by their president, they immediately identified "Tenerife Tres-i" as an ideal framework to incorporate the fledgling ADP-FEM/CEES-ULL/CITFE collaboration process, and to co-ordinate and promote possible associations, addressing not only the ADP-FEM (which they saw as the ideal geographic location for the new project), but also a set of sites with similar conditions or liable for the implementation of initiatives of this kind. Those responsible for the initial co-operation believe that this concurrence of factors reinforces the idea that synchronicity is an asset which must be taken into consideration and valued.

"Tenerife Tres-i" promotes and boosts novel initiatives which,

originated in the island government, permit the gradual conformation of an articulated and integrated strategy based on the following three backbones:

- the most self-sufficient island, whose main objective is to highlight the natural, cultural and human resources existing in the island territory, making the most of its potential in order to generate wealth and employment, and to find solutions which contribute towards the sustainable development of the island.
- the exterior island, capable of improving the degree of internationalisation of its economy, taking better advantage of the potential of its strategic geographic situation, its human resources, its experience in certain spheres and its infrastructures.
- the ultra-connected island, whose main objective is to improve the internal accessibility and external connectivity of the island, both for reasons of a social nature and to guarantee the competitiveness and development of the tourist sector.

The president's call has a fourth and transversal backbone, identified as the general objective of the initiative, promoting the participation and the initiative of persons who work in the CITFE, stimulating formulas of open and participative government, and which contribute towards generating within the island government the means for dialogue and exchange of

information between the different departments, whose proposals will make up the institution's "Tenerife Tres-i" strategy, understood as a project for the future which will be integrated in the Cabildo's action in coming years. This transversal element relates undoubtedly with the term proposed by the ADP-FEM/CEES-ULL collaboration as one of the objectives of the process underway: transversal extension. Therefore, among other aspects, the aforementioned workshop highlighted that this experience and the workshop favours especially the visualisation of the inter-administrative co-operation potential in the CITFE.

The proposals submitted to "Tenerife Tres-i" consisted in pilot actions which, once developed, could be assessed in terms of their contribution to the pursued goals and, if applicable, of their future integration in the priority action plan carried out by the proposing department in its sphere of competence. The ADP-FEM was envisaged as one of the pilot actions and, as from 20th January, the initial collaboration project was rerouted as a presentation of a "Tenerife Tres-i" project as that initiative also accepts the participation of external institutions. The deadline was 28th February, 2014, so at the moment of writing this paper we do not know the results of the project but we know the result of the project writing process- a process well worth acknowledging.

This consideration as pilot action was adopted by the ADP-FEM right from the start of the collaboration process when, accord-

ing to the summary by the decision-makers of the “International assessment of agricultural knowledge, science and technology for development” (IAASTD 2008), CITFE politicians and technicians should focus their attention on small-scale systems like the one they have visited “by means of creation of public and private alliances and an increase in public investment in research and extension, they contribute towards making the most of existing opportunities”. Such opportunities can be identified as R+D+i sources, if we recall the following EU quote: “It would be convenient to examine and exploit the prospects offered by permaculture to efficiently protect and restore biodiversity”.

The 18 years of experience of Finca El Mato in permaculture is a good opportunity to embark on this exploration. Indeed, the ADP-FEM is taking advantage of this opportunity for organising and sharing the information on this experience.

The focus of the process identifies backbone 1 “the most self-sufficient island” as the core idea for the new project, even though it is considered to explore dimensions which also connect with the other two elements: with “the exterior island” inasmuch as the ADP-FEM promotes initiatives which already have a recognised function as transfer centre for solutions adapted to the needs of the environs. Moreover, it connects to the third backbone, “the connected island”, relating it to ADP-FEM activity in the creation of proximity, which means satisfying basic needs in places close to home.

The turnaround in the process during the five weeks going from 20th January to 28th February was then marked by the terms of the “Tenerife Tres-i” call for projects. The title proposed for this new project is “Agroecological Lab on Sustainability (LASOS). Pilot project for the integration of social, economic and environmental spheres for a more self-sufficient island”. The specific objectives of the project based on the work carried out by three initial entities (ADP-FEM/CEES-ULL/CITFE), which are being joined by others, are the following:

- 1) To explore in depth the potential of a pilot agroecological facility such as the ADP-FEM, from the different concurrent perspectives, defining potential lines of action and inter-area co-operation and collaboration with other business and social entities, both with this facility and with others with similar characteristics.
- 2) To develop a useful working methodology in order to strengthen the ties and liaison between these facilities with a high endogenous value and the echelons of public and civil society.
- 3) To create a network of agroecological facilities with high endogenous potential on the island of Tenerife, with the co-operation of the parties involved.

Having as general objectives of the project the following:

1) To promote agroecology as a resource for the island's rural land, and its implications in regard to sustainability, social inclusion, quality tourism, social welfare, health and education, economy and food sovereignty.

2) To foster furtherance of collaboration networks between public, private and community bodies, with a focus on valuation and promotion of endogenous resources, using an innovative approach.

As pilot experience, the project centres on the analysis and knowledge potential of a highly specific case, Finca El Mato, en Tacoronte (Tenerife), in order to take advantage of the possible synergies of a concrete experience. Based on the identification of the above experience, the project poses a set of actions addressing the detection of facilities and initiatives of agroecological interest in Tenerife, which generate or could generate positive externalities, such as training centres, visitors' centres, etc.

a. As protectors or regenerators of biodiversity, combining farming systems and wild species in rural land (natural and cultivated biodiversity).

b. As extender of profitable agroecological production systems focused on the local market.

c. As examples of integrated resource management, including livestock, waste recycling, etc., which produce results in regard to reduction of provisions, emissions and waste, as well as to health improvement.

d. Which develop social inclusion programmes and projects associated to the handling of farming land and the rural heritage.

e. Which develop enhanced environmental sustainability projects in areas of tourist interest.

f. Strategy against climate change.

There will be a series of workshops on visualisation and theoretical-practical work, carrying out a specific diagnosis of each of the lines of work and a synthesis of contributions. The diagnoses and syntheses will make up a results panel which will generate an accessible document.

All participants in the workshops will have the opportunity of taking part, moreover, in seminars to present results and conclusions of the workshops, prior drawing up a report on the work carried out.

A project technical team will be responsible for organising and running the workshops, the conclusions seminar and the documentation.

Continuing with the general objective of the Tenerife Tres-i Project, a transversal approach workshop took place on 21st February attended by 37 technicians, civil servants, managers, researchers, etc.

The methodology of the Visualisation Workshop at the ADP-FEM venue consisted in a more experience-based part (guided visit to the farm and working brunch time consisting in the biodiversity products of the farm) and a more technical part, with a transversal workshop in the Bioclimatic Classroom (see Figure 6 below). It was conducted on Friday, 21st February, from 10 a.m. to 2.30 p.m. Information was compiled on the experience in different ways: the interventions were recorded, photographs were taken and three questionnaires were filled in (an Ingoing Questionnaire with questions on the expectations generated by the Seminar based on the information received beforehand; on prior transversal work experience in his or her professional sphere and, in its absence, the reasons he or she would put forward to justify such transversality; and another Outgoing Questionnaire, where he or she was asked to identify him or herself with the same pseudonym as the one used in the Ingoing Questionnaire, and where he or she was asked to appraise what was proposed and discussed in the Seminar; opinion on the seminar format, combining a prevalingly practical part based on the experience of Finca El Mato and a second more technical part, in regard to the workshop on possible liaisons between the attending institutions and the ADP-FEM; assess-

ment of the experience of working with transversal groups in situ; potential contribution of the Seminar to his or her professional experience; what was found to be missing and what should be highlighted, if at all). The drawing up of both questionnaires was the responsibility of the ADP-FEM/CEES-ULL; the intention was to involve the participants in drafting the Conclusions of the Seminar, and in the organisation and development of future Seminars organised by the ADP-FEM/CEES-ULL. The third Questionnaire for Debate was drawn up by the co-ordinators of the island government responsible for the presentation of the project, and had the principal goal in converting it into working material for the start up of the transversal groups which were formed after the brunch. The project co-ordinators asked the 34 attendees to answer various questions in writing: a) to identify possible convergent actions which are currently underway in the professional field of each of them, and which could be included or taken into consideration in the project to be submitted with the ADP-FEM as pilot-action; b) to identify what other aspects of interest in the medium-long term he or she could envisage based on this pilot experience; c) and lastly, what difficulties can they envisage in regard to the answers of the first two questions.



Figure 6. Collage of a transversal extension experience

The transversal working groups were formed randomly, ensuring that there were not two technicians from the same field in the same group and that each group was as varied as possible from a transversal viewpoint.

Based on the principle of reciprocity (and within the context of shared learning represented by the Seminar), the ADP-FEM/CEES-ULL and the co-ordinating team of the CITFE project made a commitment before the attendees to process and return the relevant information generated.

On commencing the activity with transversal working groups, a stock of knowledge had been already accumulated, which fell within the scope of the ecologies of knowledge of De Sousa Santos. During the workshop presentation, the co-ordinator of the ADP-FEM requested a De Sousa Santos-type attitude, to commence with a stance of reciprocal ignorance and a willingness to generate shared knowledge through the transversal meeting. The Workshop intended to generate a whole range of contextualised ecologies of knowledge, anchored and territorialised as a result of the experience-based part of the Workshop.

It pursued incremental improvement of knowledge in terms of:

- prior information they arrived with;

- ingoing questionnaire;
- information based on the greeting by the attending politicians;
- presentation of the co-ordinator of the ADP-FEM/CEES-ULL;
- individual presentation of the 37 attendees;
- visit to the FEM guided by the person responsible for the project;
- exchange of opinions during the brunch;
- project information in terms of quantitative, qualitative and visual indicators in the panels placed in the classroom;
- presentation of the two co-ordinators of the CITFE project;
- the Questionnaire information for Debate

Added to this, at the end of the Seminar:

- the summary of each transversal group (6 groups, between 4 and 5 persons per group) presented by a representative of each group, in the final assembly.

The information-summary that the transversal groups provided in the final assembly prompted the co-ordinators to give an ad

hoc positive appraisal of the Workshop. The two planned objectives were being met: a) to continue delving into the bottom-up focus of the collaboration framework between the ADP-FEM and the CITFE, with the guidance of the ULL as liaison; an objective that was met with the extension in the number of CITFE departments from 3 to 6, and in other agents which went from 2 to 8, as compared to the workshop held one month earlier (see Figure 7); and, b) the execution of a pilot action, in the way of a test, on the objectives of the “Tenerife Tres-i” call for projects.



Figure 7. Map of ADP-FEM as focal point for transversality

The attendees envisaged in the ADP-FEM experience a set of

short term actions to be articulated within the existing lines of action, and others in the medium-long term, opening up the possibility of new intra- and inter-departmental lines of action in the spirit of the call for projects; these latter actions could respond to the questions posed by the Tenerife Tres-i call for projects on the durability and sustainability of the project once finalised, and on how the results of each pilot action proposed will serve to appraise the opportunity and feasibility of its future continuation as part of a more far-reaching project. The actions shown below are actions, therefore, that met the two objectives of the Seminar; actions which could be seen as conclusions of the bridge between CSO and university, extended to public administration and private firms.

Sustainability laboratory in situ: This experience can be an example of sustainability, as it demonstrates in situ a tangible experience (its importance in regard to environmental education and all that this implies: values, training, lifestyle, employment, enterprise...). Furthermore, it provides an opportunity to become acquainted with socio-economic misgivings in regard to these initiatives, and to get to know experiences and results.

A point of encounter for transversal action and its implication in policy action: AFP-FEM is identified as the ideal place for the articulation of many actions underway (short term), whether intra- or inter-departmental within the professional spheres of the various attendees, but especially for new transversal

elements in the line proposed by the Tenerife Tres-i call for projects (medium and long term). Various examples were indicated by each attending department and institution, which the project co-ordinators undertook to translate into concrete actions for the project.

Laboratory to study the reproducibility of the ADP-FEM model in the Canary multiple exploitation system (SAVM, Spanish acronym) and its possible application in the restoration of ecosystems marked by human action: A SAVM is a system which «avails itself of the multiple ecosystems with multiple species which generate multiple products by means of conducting multiple productive practices» (Toledo et al.1985). Reproducibility potential in land belonging to the Cabildo. Reproducibility potential in public and private urban kitchen gardens in order to recover the country-city symbiosis.

Laboratory to analyse resistance to the dissemination of these focuses: current regulations in regard to issues such as land planning, agro-livestock policy, health... can strongly limit extension of permaculture, as well as the technical “mispings” of the authorities in such areas.

Energy efficiency laboratory: analysis of the energy balances in the ADP-FEM model and small-scale implementation of renewable energy (full cycle): biomass and anaerobic digestion, wind turbine, thermal solar and photovoltaic panels, and mini

hydroelectric turbines.

Laboratory for strategies to adapt and mitigate climate change: the ADP-FEM hectare as unit for mitigation of the carbon footprint. ADP-FEM, as mentioned earlier, has recently been identified as good practice in environmental protection, adaptation and mitigation to climate change in the farming sector by the COPCHAVET Project. There derives the reproducibility potential of the ADP-FEM as carbon sink for other agricultural, forestry and livestock farms.

Laboratory to cultivate a resilience culture: an opportunity to further the study of the resilience of the project in the past in the face of extreme weather conditions.

Social inclusion laboratory: Potential for establishing a network with existing centres for the disabled. Potential for including permaculture in the occupational therapy centres of the CITFE, as some carry out farming activities as a basic part of their programme.

Laboratory for voluntary work: Potential for connection with volunteer work networks. There is great interest on the part of young people, and the ADP-FEM experience provides an opportunity to channel such interest. Possibility of promoting voluntary work in connection with permaculture, to the benefit of FEM-ADP as a means to consolidate its consideration as

centre of reference, as well as other external support (alliances, patronage, crowdfunding associated to very specific actions,...).

Laboratory in relation to the productive fabric:

- Bank of ideas for sustainable environmental businesses (BI-NAS) of the CITFE based on the ADP-FEM experience. Laboratory on cost-effectiveness and feasibility of organic farming.

- Eco-experiences (food lab, edible forests and gardens) for the tourist world as differentiating factor. Contact with hotels and restaurants.

Laboratory on short-circuit trade based on the ADP-FEM experience. The study of new forms of relationships with people (in their capacity as “customer” or “co-producer”); new forms of market (proximity, low impact, exchange...) and price-forming mechanisms (how a non-market price can be the best indication of product value; food and economic safety for the parties to the agreement). How to interpret the relationship of humans with food – reinstatement of the relationship with food: communal kitchen (raw material and kitchen together). Supportive production: crowdsourcing – collective intelligence on food; supportive consumption strategies: fight against food squandering.

Training laboratory endorsed by the variety of training levels in

which ADP-FEM has been involved (see Figure 3 above on ADP-FEM Training Levels).

Horizontal knowledge laboratory: farmer ↔ expert

- The ULL can provide support and learn from the systematisation of the knowledge accumulated in the ADP-FEM and continue to enhance the system of indicators commenced by the association. Potential of the project to compile permaculture indicators based on the 18 years of experience of the ADP-FEM permaculture model.

- ADP-FEM can be an integrated ULL laboratory (curricular and extra-curricular practices; Final Year Dissertations; Extramural university studies; Masters; Research Project; ...). Some of these collaborations already exist.

- Possibility of organising a Permanent Permaculture School based on a connection with the experience of ULL's Permanent Seminar on Organic Farming (SPAÉ).

- Justification of a living lab as the next step in the process of research oriented by and to the community. The living lab will test the hypothesis of the ADP-FEM case fitting well into the research design by giving strong support to the propositions for theory-building and indicating where further research is needed. It is hoped that the case under scrutiny will highlight

issues which researchers are likely to encounter in other case contexts.

This set of actions corroborates and extends the work agenda already started up by the initial ADP-FEM/CEES-ULL/CITFE working group. The results of the workshop are identified as the conclusions of the new bridge under construction between the four stakeholders described: CSO, university, public administration and private cluster firms.

Conclusions

The results of the workshop tally perfectly with the general objective (the transversal concept) and the specific objectives of the “most self-sufficient island” concept, but without forgetting the other concepts.

The call for projects implicitly favours the participation of external institutions which become involved. The workshop has confirmed the presence of institutions such as the University of La Laguna, some departments of the Regional Government, two business innovation clusters and a CSO.

As the main conclusion it has to be said that the above Workshop, “Pilot Project for the valuation of positive externalities of different agroecological initiatives in Tenerife” has confirmed the hypothesis of considering the ADP-FEM experience as an

extreme, critical and paradigmatic case: extreme because it obtains information on unusual cases which can be especially good or problematic. As mentioned earlier, extreme cases often offer more information than 'average' cases, it activates more actors and more basic mechanisms in the situation studied, and are furthermore useful to make a strong point (Flyvbjerg1991:148). It is paradigmatic because the case transcends any sort of rule-based criteria. No standard exists for the paradigmatic case because it sets the standard; and, critical because knowledge of a specific case like the ADP-FEM may be generalised to large segments of the population. The workshop and the project try to achieve the highest sum of information on a given phenomenon, permaculture, an effective protector and restorer of biodiversity, among other things.

The Workshop highlighted the importance of maximising the utility of information from small samples and single cases as the ADP-FEM and its networking. Indeed, the attendees (including the "sponge group" which established itself right from the initial individual presentation, by those persons who publicly stated that they did not have clear ideas on the objectives of the seminar, but who were open to learning and proposing), with their work on shared knowledge during the Seminar, highlighted that the study of the ADP-FEM case was suitably selected as pilot project/centre of reference on the basis of novelty and of expectations regarding its information content.

So it can be inferred that the workshop has confirmed the adequacy of the strategy in selecting the ADP-FEM as a pilot project pursuant to helping to scale up permaculture through public policies within the island government by focusing on the establishment of an enabling framework for its development. The interpretation of such a case as simultaneously extreme, critical and paradigmatic, as highlighted in the workshop, has already provided a unique wealth of information, because various perspectives and conclusions are obtained on the case according to whether it is viewed and interpreted as one or another type of case.

A characterisation of the case study which is presented as a powerful opportunity to further the construction of a bridge between the university and the CSO which, with the ongoing process, is consolidated with the ingredients provided by new actors (public administration and business innovation clusters).

Finally, if we make the return trip, like from Tenerife to Copenhagen, to the 6th Living Knowledge Conference themes, we will be surprised by the multiple coincidences in the themes' key questions with the "ADP-FEM/CEES-ULL bridge" case. There follows a list of coincidences:

- A civil society initiative aiming at delivering social care, health care, environmental protection

- The role of a science shop, university research and education in enabling, organizing, embedding, and disseminating social innovation
- Different methods used in organising the temporary spaces (pop-ups) in social innovation processes
- Applied methods that influence the focus and the impact of the social innovation processes
- A civil society organisation builds alliances with local and some with businesses in order to obtain influence
- Learning obtained by different stakeholders from sustainable development projects in terms of conditions and strategies for future sustainable transition processes
- An experience with integration of environmental, social and economic aspects of sustainable development in a sustainable development project
- An experience from cooperation between civil society and researchers with respect to knowledge production, capacity building, and empowerment
- A “community-based learning” in co-operation with citizen groups that which has advantages by making connections between abstract concepts learned in the classroom and real applications in the world outside.
- A community-based learning that enables learning through a cycle of action and reflection.
- A example of an strategy and experience from incorporating a science shop project and a community-based project into different types of curricula
- Knowledge about what role civil society plays in the increasing focus on interaction between higher education institutions and society
- The role of a civil society organization in co-operation between universities and higher education institutions, and society
- A participatory research project to policy-making, and the participation of civil society and citizens in research policy-making as part of the governance debate
- New way in which civil society directly participates in policy-making
- An experience from participatory research projects with involvement of civil society actors, policy-makers
- An experience with respect to project shaping, research or-

ganisation, knowledge production, societal influence

- An experience of thematic forums and platforms etc. with researchers, civil society organisations, policy makers

- Raising civil society organisations' awareness about research opportunities and make them familiar with the concept of participatory research

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Communication & Collaboration: The Development of a Social Care Partnership Network

Victoria Morris - Manchester Metropolitan University

As a University, Manchester Metropolitan University is strongly committed to Research and Knowledge exchange and appreciates the importance of 'the two way flow of knowledge and expertise between the University and wider society' (Manchester Metropolitan University, 2013).

In many respects, this ethos underpins my work as Placement Development Coordinator within the Social Care department. I am responsible for securing placement opportunities for the students undertaking this degree. It is my job to nurture a wholesome working relationship with community social care providers. This includes organisations within the voluntary and private sectors, Local Authority providers, schools and nurseries.

We are very keen to have a community presence and as such, these organisations are invited to join us initially as placement partners so that we can both benefit from each other's expertise and knowledge.

It is a simple yet effective formula, which provides mutual gain.

Firstly, for the students- who going out into the community for their placements; students are urged to take full advantage of

how much they can learn from those already in practice. Emphasising to them how these opportunities afford them unique experiences of the realities of social care provision currently.

But the transfer works both ways, my colleagues in the field of social care have frequently told me how having the input of the academically minded enthusiastic students gives them much food for thought in relation to their service delivery.

This theme of reciprocity and exchange between placement providers and the department of social care became the foundation stone for the inception of a unique network in May 2013.

Meetings of the Social Care Partnership Network provide a platform for us to invite our partners to come together with us at the University and discuss how we can collaborate and innovate together.

At the inaugural workshop event, we looked at the challenges and constraints they face as third sector organisations. Amongst others, these included funding issues, training, and research needs.

Predictably, the most pressing issue facing our social care colleagues is how to sustain their services during these austere times especially given recent welfare reform. Sustaining high levels of training when under such financial constraints is also a real issue. These are two of the issues that the network aims to address.

When discussing ideas for alliance, we and the partners unanimously acknowledged that we can learn so much from each other. All were keen to explore ideas such as collaborative funding bids and joint research projects. We also discussed how we can work together to improve students' employability within this growing field.

Regardless of the activity, the sole purpose remains the same; to share our knowledge and expertise for our mutual benefit and for the benefit of the future social care workforce.

Following the inaugural meeting, we agreed to hold a network event every quarter, with a mixed programme of social and academic events.

From that larger group we also hoped to develop a smaller working group. After asking for a more significant time commitment for membership to that group, this is now active and in due course, I will tell you about the work of The Social Care Advisory Panel.

Events

Equality and Diversity Training

As I have said, it was evident from our scoping work that during these austere times, our third sector partners are not able to completely satisfy their training needs. We at the university recognise that when working within the field of social care, this is potentially highly problematic. We also recognise that as educators ourselves, we are expertly qualified to assist them. In light of this, in July 2013 we ran a free certificated training workshop for our partners on the subject of Equalities and Diversity. This was very well attended and our partners fed back how much they enjoyed coming in to the University and benefitting from our knowledge.

Student/Employer Meet and Greet Fair

Following the success of the training, we once again opened the doors of the university to our partner agencies at a Student/Employer Meet and Greet Fair in September 2013. A highly successful event, this gave the students that vital first-hand experience of meeting those already engaged in the fields of work that they are hoping to go into and asking them their advice. Whilst for the agencies, it gave them the opportunity to meet their future employees and recruit bank staff and volunteers.

Sharing research outcomes

In January 2014 we invited the partners to an inspirational workshop presented by a lead researcher entitled 'Values and what makes for quality care'. She presented the findings of a research project, which listened to the stories of learning disabled adults. Unusually during this project, the researchers also explored the individual and collective values of trustees, leadership, managers and support workers and went on to delve deeper into perceptions of organisational "culture" – their findings were significant.

The afternoon provoked much food for thought for attendants who in turn took this knowledge back to their organisation for the benefit of their own staff and clients.

Again, this is an example of such a simple way of benefiting everyone- our partners, their staff, their service users and our students as future social care employees. – a win- win situation for all.

Logo/ affiliation

We acknowledge that for many organisations, being able to say that you work in collaboration with the university provides a level of endorsement and kudos. We wanted to be able to reward their commitment to us by sharing an exclusive logo with

our partners. I am pleased to say that our partners are now able to use this logo on all their communication.

Social Care Advisory Panel

I briefly mentioned above that from the larger group we asked for members to commit to a smaller working committee. This advisory group was formed to look in more detail at how we at the university can collaborate with our partners on individual projects and how the partners can work more closely with the university department in relation to curriculum development.

This advisory panel meets monthly and so far, we have had two extremely productive meetings. The focus is very much on reciprocity and give and take.

Recognising that the field of social care delivery is constantly changing, together we have begun revisiting the current undergraduate and postgraduate curriculum. Gaining the practitioners views has been most enlightening and informative for the academic team.

Auditing and evaluation project

We are keen that this panel also explores how we can best meet the identified needs of the larger group.

In light of this, we have begun by focusing on their increasing

need for assistance in auditing and evidencing outcomes. As they increasingly have to chase pots of funding, which demand this evidence; these skills are vital for their success (Hogg and Baines, 2011).

Currently, we are at the preliminary stages of planning a free series of accredited training sessions facilitated by our colleagues from the MMU Community Auditing Evaluation Centre. These sessions will furnish the attendants with all the tools that they need to fulfil these competencies. Offering this highly demanded training for free once again clearly demonstrates our firm commitment to our partners' future success.

SPARC Project

Joint research is the focus of the latest collaborative project with which we are involved. One of our partners is a charity for people with enduring mental health needs. Having recently formed an alliance with another local service provider, they are keen to explore the effect this has had on the service users. Initial consultation has been very positive and we are hoping to be able to facilitate them with a researcher to look at this for them.

Issues

Our network comprises of a diverse representation of social

care providers. Whilst this no doubt adds richness to the made-up of group it also poses a challenge.

To some extent, it is a matter of trial and error when trying to provide events, which will appeal to the majority. Thus, the varied programme of activities, some more lighthearted than others.

Again, the nature of our partner organisations means that their commitment to attend is also difficult to guarantee. Many of them are SMEs and they simply do not have the staff to release for the sessions, even though paradoxically if they could, their organisation would no doubt benefit from the knowledge gained.

Conclusion

There is no doubt that even though a very simple formula, this project has produced a huge amount of mutual gain and knowledge exchange thus far.

In these testing times, demonstrating our commitment to our third sector partners' well-being and sustainability through a variety of means has been most welcome.

They have seen that the MMU department of Social Care does not want to be accused of sitting in an Ivory tower. That actu-

ally what we want is to be involved at the very heart of their organisations. Whether through student placement, assistance with research and training, joint applications for funding or just by providing them with a relaxed space for them to congregate and swap their experiences and knowledge.

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Constructing collaborations, strengthening democracy?

Reflections on science and society relations through the development of a collaboration with the Portuguese Stuttering Association

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Abstract

This paper aims to present some reflections resulting from the ongoing collaboration between the Centre for Social Studies (CSS) and the Portuguese Stuttering Association (PSA), taking place in the Portuguese science shop Biosense. This collaboration aims to promote the organizational, political and epistemic empowerment of the PSA through the facilitation of a set of relational spaces of dialogue between people who stutter (PWS), speech-language pathologists, psychologists, neuroscientists, linguistics, and geneticists. The first goal of this paper is to reflect on the merits of this collaborative device to promote an epistemological empowerment and a political awareness of PWS, allowing them to emerge as “experts in experience” (Rabeharisoa & Callon, 2004). This allows their rise as holders of a relevant experiential knowledge (Borkman, 1976) of stuttering. This is central for the PSA to participate in the agenda-setting of both the political discussion and scientific research, being able to develop an “evidence-based activism” (Rabeharisoa et al., 2013).

Given the characteristics of Portuguese patients and health movements, this type of collaborative dynamics between CSO and scientists or research units constitutes a new mode of science-society interaction with new interesting consequences for the development of CSO, for the way we think the role of social scientists and for the construction of Portuguese democracy itself. Like similar health movements, the PSA revealed an extreme difficulty in providing an explanatory political narrative of stuttering that could sustain its political and advocate activities and therefore justifying its existence as a CSO representative of PWS. It also revealed a problematic institutional fragility: its support base was worn out, with a break in the connection between governing bodies and associated members and more generally between PSA and the PWS wider community. Given this scenario, this paper will discuss the problems arising for social scientists during the development of collaborative devices that, through these intense engagements with scientific knowledge, aim to actively allow the emergence of new collective identities and political narratives. These simultaneously empowers individuals and promotes a capacity-building exercise for CSO that strengthens the quality of democracy, by creating spaces for new voices to speak out and giving them new epistemological tools for the political work in which they engage.

introduction

The collaboration between the Portuguese Stuttering Association (PSA) and the Centre for Social Studies (CSS) being held under the project Biosense “Science Engaging Society: Life Sciences, Social Sciences and Publics” , will be at the core of this paper. The project Biosense main goal was the creation in Portugal of a Science Shop, and with it, the promotion of a new form of science/society relations through the engagement of science with a variety of publics concerning issues with social implications. What are science shops? Science shops are organizations that offer citizens groups and Civil Society Organizations (CSO) free or very low-cost access to scientific and technological knowledge and research in order to help them achieve social and environmental improvement (Jørgensen 2003). The major responsibility of the Biosense project’s team was to identify the knowledge needs of the CSOs that contacted the Science Shop and to promote the constitution of collaborative partnerships between those CSOs and scientist and research unit considered relevant for an effective response to the identified knowledge needs. The mediation and facilitation work needed for these partnerships in order to promote this “citizen access” to research and knowledge was a significant part of the work done by the Biosense team and involved the active engagement of Ph.D students in each collaboration.

The development and analysis of the collaboration between the

PSA and the CSS was part of my doctoral work named “Dialogues and Translations in Collaborative Research Practices”, specially the analysis of the conditions that would permit the development of the collaborations in a more democratic mode of knowledge co-production. The main research interest driving my work was on how these collaborative participatory research projects could stimulate a radical co-presence (Santos 2006), an epistemological parity between citizens and scientist in order to overcome the deficit model, thus allowing community members, CSOs representatives, patients, non-scientist, to become full active participants in research projects, contributing in all stages of research, including the use of its results. This raised questions concerning the classic epistemic distinction between experts and lay people, about the conditions necessary to stimulate this kind of horizontal and democratic interactions between different communities of practice (Lave and Wenger 1991), especially in a collaborative setting involving not only scientists but also CSO and communities. These, among others, are some of the question that we will try to answer during this paper.

Collaboration?

The first of these questions is precisely on what we mean by collaboration. One possible definition describes collaboration as a situation of cooperation in which the actors involved work together on an equal basis with the intention of mutual help in

the pursuit of goals that will benefit all those involved (Boavida and Pontes 2002). In our work, nevertheless, collaboration is far more than cooperation. So, an additional conceptual refinement is necessary. In collaborative work we have a redistribution of ownership and authorship of the work being done between those involved and this includes the products and benefits resulting from this work. In this sense, authority and responsibility are also redistributed. There is no active/passive dichotomy because all participants are engaged actively not only in the work being done, but also in the collective definition and identification of what is the problem at hand, what are the best possible solutions to resolve it, what are the necessary steps to do the necessary work, what are the relevant resources to be mobilized during the process, etc.

The relevance of this discussion lies in the type of collaboration here considered, which includes not only scientists - and we have to consider the internal diversity of the scientific community- but also representatives of CSOs, members of communities, patients or afflicted by some condition or problematic situation. Therefore, the focus of attention was necessarily directed to the problematization of the conditions necessary for a communicative and interactive situation that will not reproduce the deficit model relational dynamics and the power/knowledge hierarchical relations (Foucault 1980) traditionally shaping scientists and citizens' interactions.

This implied that knowledge drawn from CSOs, from communities, from citizens or patients should be recognized not only as a relevant epistemological resource to the process of knowledge production, but as a legitimate body of knowledges and practices that participates fully engaged in the knowledge production process. This is quite different from its use as raw material for the production of scientific knowledge, where the definition of what is relevant or not is the exclusive competence of the scientist, who decides on its inclusion or exclusion in research work, on the way in which this is done and on what the parameters dictating these choices. The work developed in science and technology studies by authors as Michel Callon (1986), Bruno Latour (1988) and John Law (1987) in the analysis of the "translation processes" involved in scientific work, in the conceptualization of both the role of scientists as focal actors in the definition of the actor-network and on the involvement and intersement processes of the different entities considered at stake is central for the reflections where proposed.

Given these reflections, and in order to satisfy the conditions being established throughout this initial discussion, there was the need to create a collaborative device that would allow a dialogue based on horizontal and non-disqualifying relations between common sense, everyday pragmatic knowledge and scientific and expert knowledge. The definition of these conditions was inspired by the theoretical proposal for science/society and North/South epistemic relations of Santos (2006) for an

“Ecology of Knowledges” and by the work of Jacques Rancière (2010) and his postulate of the equal capacity of all to produce knowledge about the world.

Inspired in the work of the French philosopher, we assumed an “equality of intelligences”, the equal capacity to produce valid and relevant knowledge by all those participating in the collaboration. This means that the epistemological parity earlier mentioned does not come as a final goal, as a product of a pedagogical process by which someone who possesses knowledge transmits it to someone completely deprived of it. In this dynamics, the ignorant will have to learn and acquire the knowledge that he initially does not possess in order to gain epistemological status. On the contrary, this epistemological parity is the initial assumption for the creation of this collaborative device: all involved have the capacity to produce relevant and valid knowledge about the issue at stake. There is no initial distinction in terms of epistemological relevance or value between scientific knowledge and common sense and pragmatic everyday knowledge. All of the involved know something relevant about the issue at stake. Instead of focusing on the ignorances, on what we think the other doesn’t know, we choose to focus on what’s known. Whatever forms it may take. The problem posed in front of this assumption is to simultaneously create the listening technologies and methodologies that permit us to identify these modes of knowing and to enhance their voice. The way we embraced this challenge is described next.

Creating a collaborative device

Focusing the collaborative alliance between the PSA and the CSS, it was assumed a problem-oriented approach, inspired in action research and in community based participatory research methodologies. The collaboration started with a set of preliminary meetings arranged with the intention of identifying a problem, a knowledge need felt by the organization that simultaneously could be translated into a research question that could be answered by the CSS and by me, thus being simultaneously suitable to the research interests of both the institution and researcher and around which we could structure, support and give an objective and purpose to the building science-citizens partnership. In these meetings participated People Who Stutter, Speech-Language Pathologists members of the directive boards of the organization. They were gradually complemented by individual interviews with other specialists and professionals considered relevant. Their identification followed a snow ball methodology.

The PSA revealed an extreme difficulty in providing an explanatory political narrative of stuttering that could sustain their political and advocate activities and, therefore, justify their existence as a CSO representative of PWS. This in turn would be translated in the absence of a strategic political project for the organization. The absence of this narrative compromised significantly both their ability to engage in the public political arena

and in their capacity to influence the agenda setting and debate around scientific and clinical research of stuttering. In the absence of this narrative, were the Speech-Language Pathologists that collaborate with the PSA that assumed the responsibility of trying to articulate something close to a political discourse. They eventually ended up reproducing a specific disciplinary narrative of Speech-language pathology due to their professional bias, lacking the experiential based argument that would give PSA the legitimacy to be seen as representative organization of the PWS community.

The PSA also revealed an extreme fragility at its organizational and institutional structure, being more a local organization than a national one. Moreover, their support base was very worn out, with a breakdown in the connection between PSA governing bodies and its associated members and more generally between PSA and the PWS wider community. Thus, the PSA had no efficient channels of communication nor to the wider civil society or with the PWS Portuguese community. This undermined seriously their institutional legitimacy to act as representatives of PWS in Portugal. The very notion of a community of PWS was hard to conceive due to the total lack of a collective identification between PWS.

This description of the PSA characteristics and weaknesses is in line with the reality of the majority of the patient organizations and health movements in Portugal. Due to the Portuguese 20th

century history, the story of the Portuguese CSO begins only during the post April 25 transition to democracy period and reveals the all the weaknesses and fragilities of newly formed civil society structures and of societies with a frail civic and political participation culture.

A problem was identified as being able to trigger the collaborative process. The problem could be translated into a question: What is stuttering? The question is quite simple but the answer is not! Stuttering is a complex, non-linear and multifactorial entity, involving and articulating multiple dimensions: genetic, neurological, social, behavioral, psychosocial, among infinite others, with multiple possible entry points and with an increasing number of interesting and fascinating scientific branches and disciplinary combinations. There is a) a controversy about its causes; b) there is no consensus on what treatments are more effective; and c) there is no cure for stuttering.

On the one hand, in Portugal the scientific and medical research done about this condition is in a very early stage of development. On the other, the PSA stressed the desire to strength the ties linking them to the scientific community in order to a) lobby for greater investment in this research field and, b) actively engage in research projects directed towards a full cure or mitigation of stuttering.

So the problem and the question raised were translated into a

knowledge need: the organization's need to develop a strong activist position through the elaboration of an explanatory and political narrative of stuttering, rising from the point of view of those who stutter, and to inform and strengthen this narrative – and the following demands, vindications and political and advocacy activism – with privileged close contacts and dialogues with the Portuguese scientific and medical community and knowledge.

Identified the problem given meaning to the collaboration, identified the research question and the knowledge need, It was then established the main goal driving the collaboration: the creation of relational spaces where people who stutter, speech-language pathologists, psychologists, but also relatives and parents, neurologists, linguistics or teachers, could talk, interact, exchange ideas and experiences, thus promoting a constructive dialogue and a mutual learning environment, based on the democratic premises of epistemological parity and horizontality defined earlier. These relational spaces would create the dialogical environment necessary for the emergence of experience-base knowledge about stuttering, but also for the interaction of this knowledge with credential and expert knowledge and other relevant understandings of what stuttering is.

The multiple nature of stuttering

From a scientific standpoint, this collaborative device would

prove its pertinence by accounting the difficulties and complexities of this type of alliances between citizens and scientists, and the complex nature of the object of knowledge itself, stuttering, shared by several thought collectives (Fleck 1935) claiming a position of epistemological sovereignty.

Due to this shared nature, stuttering can be analyzed as a boundary object (Star and Griesemer, 1999), an object living in various social worlds. Boundary objects are plastic enough to adapt to the local needs and constraints, keeping nevertheless a common identity across these various social worlds. Due to this unique possibility for contact between those who usually do not interact promoted by stuttering, we have the opportunity to witness the production of ethno-epistemic constructions (Irwin and Michael 2003) that articulate different actors and entities in hybrid and heterogeneous constructions, involving epistemological, ethical, regulatory, cultural, personal suffering different dimensions.

The different translations at work, the tensions that arise, the commensurabilities and incommensurabilities in progress between different versions of stuttering, complex and multiple in its ontological nature, meaning distinct things for distinct thought collectives, points out to stuttering as an ideal object for the analysis of the possibility of dialogues between them. The question at hand is precisely the multiple ontological nature of stuttering, ground for a political work of choices to be

made (Mol 2008): what is stuttering? What are the ontological consequences of those choices for the distinct actors involved? Can different versions of stuttering interact? If so what are the consequences? Both in terms of research, for the production of knowledge, but also in terms of the political activist demands raised by the Portuguese Stuttering Association. And, perhaps more important, what are the consequences of those choices in the lives of those who stutter?

The strategy developed

In order to answer to some of these questions, the creation of the necessary boundary conditions for bringing to light this multiple nature of stuttering was indispensable. The strategy adopted was then the design of several relation spaces where the different publics engaging with stuttering could meet, dialogue, exchange meanings, lived experiences and theoretical and pragmatic conceptions of stuttering. These relational spaces are spaces where different forms of socialization take place, identities are performed, expertizes are defined, knowledge and world, or more accurately, knowledges' and worlds, are co-constructed.

In doing so, another intended goal, as we are going to address latter in this paper, was to craft the conditions necessary for the creation of a sense of communality, of a community sharing a common problem and the right environment for a rising pro-

to-activism to emerge. This would be essential for lobbying for greater research on stuttering, for the development of better coping and therapeutic strategies, for an inquiry on existing different legal and clinical frameworks, among other.

The crucial and central goal in this craft work was the promotion of an organizational, epistemic and political capacity building exercise of the PSA. This was going to be done through the creation of the conditions necessary for the development of a political narrative of Stuttering. This narrative would emerge in those relational spaces, from the experience and knowledge of PWS of their own condition and through privileged interactions with professional, scientific and biomedical knowledge. These privilege interactions and the emerging robust and experienced based narrative would in their turn strength PSA's political claims and activities. These contacts would also promote more consequent lobby activities and their participation in the agenda setting of the research agenda concerning stuttering.

The creation of an explanatory political narrative of stuttering within these relational spaces required the engagement in a collective inquiry involving PWS, relatives, speech-language pathologists, teachers, psychologists, linguists, bit also geneticists, neurologists and medical and technical experts in imagiology, thus allowing intense contacts and dialogues between these multiple actors and their corresponding bodies of knowledge. These spaces, actively constituting the boundary between

science and society, would give body to a platform of communication between the different thought collectives (Fleck 1935) involved in the multiple and simultaneous performance of stuttering both as a health medical condition, as a medical and scientific knowledge object, and as a problematic issue of everyday life for those affected.

Different types of relational spaces were designed and promoted: 1) open online forums for PWS, speech-language pathologist, psychologists, relative members, and health and education professionals, 2) self-help/mutual aid groups exclusively for PWS, 3) multidisciplinary conferences about stuttering and, 4) collaborative platforms and pilot collaborative activities linking PWS, speech-language pathologists, psychologist but also neurologists and medical geneticists with the aim of developing joint research projects.

Stutter groups, online forums and collaborative pilot activities: the creation of relational spaces

First, support was given for the creation of two online forums (on Facebook and on Google Groups). Each one has now more than 200 participants. These forums are described as being «composed by people who stutter, parents and relatives, speech-language pathologists, teachers and other health and education professionals aiming the creation of a “safe space” of reflection and share that will feed a new perception of stutter-

ing among all those who interact and live with it and seek to critically debate it and better understand it».

Secondly, is also being provided support in the organization of self-help/mutual-aid groups. These groups function on a monthly basis and are run and facilitated entirely by PWS. They are named as “Stutter Groups” and are described as «informal group meetings, with extent of 1 or 2 hours, aiming the encounter and share of experiences and ideas between people who stutter. Participation in these groups is free, voluntary and entails no obligation to intervene». At the moment there are three Self Help/Mutual Aid groups fully operational in Coimbra, Porto and Algarve. One is starting in Lisbon and three more are being planned in Guimarães, Leiria and S. Miguel. Participation in these groups fluctuate between 4 to 12 people per meeting.

Third, it was provided support in the organization of the 5th and 6th Conferences about Stuttering, the first on “The Right to Stutter”, the second called “Breaking Silences, Sharing responsibilities”. The main goal was to discuss, in a formal communicative context, the multiple nature of stuttering. To this purpose, there were invited national and international specialists from various fields of expertise to discussions with PWS, the latter participating on an equal basis, making presentations, taking place on stage as legitimate and relevant speakers to share their experiences and tell their own life stories, as opposed to the more theoretical interventions of the credential specialists.

The collaboration has been working actively in the establishment of an institutional platform for collaborative partnerships concerning stuttering issues that besides the PSA and the CSS, includes at this moment the Health Sciences School of Polytechnic Institute of Setúbal (HSS/PIS) and the School of Health Technologies of Porto (SHTP). A formal partnership with the Health School of Alcoitão (HSA) is being planned and an informal partnership with the Health Institute of Alto Ave (HIAA) was also held.

It was possible, within the platform, to develop a funding application for a first joint project involving the PSA, CSS, SHTP and HSS/PIS. The application, called "Breaking Silences, Sharing Responsibilities", had as its main objective the production of informative materials concerning stuttering direct to specific targeted publics: parents, general medical clinicians and school teachers. It was also possible to test some pilot activities. The application was not funded but it was very well evaluated and the consortium was encouraged to submit new applications for funding in the future. The first pilot-activity concerned the application of the survey "The perception of the PWS patient of the efficacy of therapeutic intervention in a previous speech therapy" among PSA members conducted under the partnership with the HIAA. The second concerns a collaboration between the HSA and PSA aiming the translation and adaptation into European Portuguese of the scale "Global Assessment of Experience Subjective of Stuttering- Adult" (Overall Assess-

ment of the Speaker's Experience of Stuttering- OASES Yarus, S. & Quesal, R. 2010) also through its application among PSA members.

It is expected that the partnerships developed in the institutional platform will be intensified in the near future. As an example of the work being done, it's noteworthy that the partnership with the CSS will be consolidated in the coming years with the preparation of joint funding applications and proposals. A pilot project that will articulate the PSA, CSS and NeuroSciences Centre and Cell Biology (CNC), the Institute of Biomedical Research on Light and Image (IBILI), both of the University of Coimbra, and Institute of Science and Health ICS) of the Catholic University is being discussed. The aim of this project will be the development of an exploratory work in genetics and imaging applied to stuttering.

All together, these spaces and collaborative dynamics intend to promote a broad an intensive knowledge sharing exercise. The proliferation of these relational spaces has allowed the production of informational materials that have been made available in the APG websites. These materials relate to first-hand accounts about stuttering, frequently asked questions and myths surrounding stuttering. On the other hand, permitted testimonies and individual narratives to be shared and that have been essential for producing adequate repertoires of action and appropriate responses to stuttering. But also, as

we will see in the next section, for the creation of a collective narrative about the stuttering in which a new identity of the PWS could be underpinned by giving them a space of existence in public space, and yet in which the PSA can develop a more robust and capable of producing informed and consequential social activism level results.

Community building, proto-activists and the role of PSA in collective knowledge production

The creation of these relational spaces had the following purposes. First, to create the conditions for PWS to share their personal experiences and testimonies, promoting discussion concerning common features but also idiosyncrasies, commonalities and singularities in the lives of those who stutter, reflecting on what are the possible ways of understanding and experiencing stuttering. This could allow, and indeed allowed, an emerging perception of stuttering not as an individual problem or condition but as a collective and social problem, thus allowing a political awareness and the consolidation of community ties around a collective identity and a collective knowledge, based on experience knowledge of stuttering: an “experiential knowledge” (Borkman 1976). If this generalization dynamic is crucial in the constitution of stuttering as question of public concern, consolidated by the definition of a collective understanding of stuttering rising from experience, the opposite dynamic, of singularization, seems to take a vital role in

the consolidation of a community of people sharing a common problem. It’s through the perception of the existing individual and idiosyncratic ways of living stuttering that PWS relate to the emerging collective.

Second, through this experiential Knowledge, another intended goal was to overcome the knowledge/power relations that usually silences the individual knowledge emerging from everyday pragmatic experiences of patients, community members, ordinary individuals, when he or she interacts with the collective and institutionalized theoretical and abstract knowledge of scientist, doctors, therapists and others health professional. This was done by focusing on what those who stutter knew about their problem, working collectively on a common understanding of what stuttering meant to them. This allowed the gradual transformation of PWS from silenced victims- either by stuttering and the stigma and self-stigma associated to stuttering or the knowledge/power relations already addressed- to responsible “experts of experience” (Rabeharisoa and Callon 2004).

On the other hand, through the individual and peer empowerment of PWS resulting from this share of knowledge and practices of stuttering, and through this mutual and collective learning environment, we are observing a rising proto-activism around a “commonality” between the participants that is slowly feeding the PSA, simultaneously given a renewed legitimacy for representing PWS, strengthening and enabling its institutional

building and its political and epistemic empowerment. The gradual rise of a community of PWS, aware of a common problem that has negative social consequences for the lives of many PWS due to inadequate institutional and individual responses to stuttering is key. This rising community and the collective knowledge that they produce, are emerging in spaces that are supported by the PSA, so their claims, discussions, fears, perspectives and views are being appropriated and translated into political, activists and knowledge claims that are being presented by the PSA in the public social arena. By doing this, these spaces are not only creating the conditions for their emergence but also giving to the new social collective a representative organization that, more than simply speaking for them, is amplifying their voices and views to the public space concerning their own condition. It's not innocent the fact that these different relational spaces are gaining significant relevance in the overall discussion of stuttering in Portugal.

It is also important not to forget that the rise of this community around stuttering and the consequent proto-activism resulting from it is taking place through an intense engagement with knowledge, more accurately, through an intense interaction between an experiential knowledge and a rising political awareness (that are taking form simultaneously) and different scientific and medical bodies of knowledges related to stuttering such as speech-language pathology, psychology. For the PSA and for the PWS community, this results in a mode of activism

that not only mobilizes the experiential knowledge of PWS but is also made in the intersection of science and politics, in a more informed, robust and far-reaching mode of activism. This has been recently conceptualized as "evidence-based activism" (Rabeharisoa et al. 2013). With this notion of evidence-based activism, the authors wanted to capture the innovative aspects that features this new organizational knowledge-related activities developed by CSOs related to health. Instead of mobilizing knowledge as a resource for grounding political claims, knowledge is at the very center of this mode of activism (Ibidem). Through this mode of activism the different bodies of knowledge are constantly confronting each other, being tested in social worlds different from those who produce them, with other validation criteria, by new actors with different backgrounds. What counts as a relevant knowledge, what is the very definition of the condition- in our case the definition of stuttering-, and through this the frame of what is in question.

The mobilization and articulation of professional and experiential knowledge is done in order to make the latter relevant, performing those who produce it, PWS, as relevant actors in knowledge production and medical and scientific research in the fields related to stuttering. In this, we can also observe the emergence of new networks of expertise, that articulate experiential and professional knowledge, in the form of new "epistemic communities" as proposed by Akrich (2010), where a new hybrid form of expertise is being created and mobilized

for the sustenance of political and scientific claims with the different epistemic actors developing an alliance in that pursuit. This creates new configurations not only of knowledge but also of meaning and perception for all those involved, transforming not only the way PWS live and understand stuttering but also the clinicians and professionals involved. The success of this knowledge centered mode of activism will be measured by the actual capacity of PWS, through the Portuguese Stuttering Association, to influence the definition of the research agendas on stuttering.

Working with CSO and public sociology: strengthening democracy?

Given the characteristics of Portuguese patients and health movements, this type of collaborative dynamics between CSO and scientists or research units constitutes a new mode of science-society interaction with new interesting consequences for the development of CSO, for the way we think the role of social scientists and for the construction of Portuguese democracy itself. The collaboration developed between the PSA and CSS triggered a collective inquiry concerning stuttering, both as an object of science and as a health condition affecting gravely the lives of a group of individuals. This collective inquiry articulated PWS, Speech-Language Pathologist, Psychologist, sociologists, family relatives, schools teachers, general medical clinicians, students, and more recently geneticists, medical

neurologists in different relational spaces and settings, combining and articulating different bodies of knowledge: expert and credential knowledge with experiential and pragmatic everyday knowledge. The primary objective was to promote an organizational, political and epistemic capacity building exercise of the PSA but also the empowerment of PWS.

The strategy adopted required the consolidation of a community of PWS around a commonality, stuttering as a common problem around which they could present a social problem affecting gravely PWS lives in the public space. The presentation of PWS problems and perceptions in public space is being done through the PSA, finally assuming its place as the legitimate representative organization of this new social collective. More than simply speaking for them, its amplifying and transporting their voices and views to the public space concerning their own condition, transforming what was a private and invisible problem in to a public and visible one.

The type of relational and dialogical processes promoted in these collaborative exercises resembles the conceptual proposal of Michael Burawoy of a Public Sociology (2004). For Burawoy, sociologists should participate and strength public debates through an active involvement in conversations with concerned publics and stakeholders on several relevant public problems and matters of concern. Public Sociology corresponds to a Sociology of conversation, in which sociologists interact or-

ganically with civil society and its organizations in order to make visible the invisible, and private problematic issues in to publicly discussed matters (Burawoy 2004).

The full social and political impacts of this mode of organic interaction with Civil Society Organizations through collaborative citizen/science partnerships is yet to be fully scrutinized, especially in contexts like the Portuguese young democracy. Nevertheless, the work being developed in the collaboration between the PSA and CSS reveals some of the potential positive consequences and the transformations that these engagements can promote in CSOs. At the moment we can affirm that these modes of interaction through intense engagements with knowledge seems to be creating a democratic dynamics that transports into de public arena problems and concerns from affected groups of citizen, producing a difference that seems to be making a difference. This is being done in alliance with professionals and experts that support the political and activist claims and gives rise to a reinforced and more consequent and informed form of activism.

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Lifestyle Change as Climate Strategy

Ecovillages represent living laboratories and innovative campuses for learning how to live well and lightly together

Ditlev Nissen - The Danish Ecovillage Network

Abstract

This article describes the common lifestyle found in ecovillages and how it contributes to lower environmental impact and use of resources. It also looks at how the ecovillages cover basic needs and at the quality of life they create. Furthermore, it investigates what the academic world can learn from ecovillages when viewing them as centers of education in sustainability. Finally it looks at the role social capital and social experiments can play in promoting sustainable lifestyle changes in the greater society.

Lifestyle changes are primarily about consciousness.

The first step towards creating lifestyle changes is to awaken our consciousness about how interconnected everyone and everything is on this planet and in the universe. In other words, to reach the perspective from where we can fully see that the many crises we face—ecologically, economically, socially, culturally and spiritually—are all woven together. It is simply impossible to solve one problem without also having to solve the others.

We have to understand how the industrial lifestyle, which is rooted in increasing consumption, economic growth and fossil fuel energy, destroys the possibility of a worthwhile life for both the worlds' poor people alive today and for future generations everywhere. First then can we begin to seek alternatives.

In 2009 the UN General, Ban Ki-moon, said about the challenge we are facing: "We have less than 10 years to stop the increase in greenhouse gasses, if we want to avoid catastrophic consequences for humans and the planet. It really is the biggest collective challenge the human family has ever faced." (Ban Ki-moon 2009).

It is especially the people in the global north and the other rich societies that have to change habits. Currently, we act as if we had more than one planet earth from which to take resources.

Our "ecological footprint", a popular measurement of resource use, needs to be cut back 80% before 2050.

Former Danish Climate and Energy minister Martin Lidegaard describe the situation in this way: "No matter how realistic we are, doomsday prophecies do not work sufficiently as political motivation. The nightmare simply does not scare us enough to change our behaviour. We need to be able to believe in the alternative and the road to get there, and both of them have to seem at least as attractive as the life we are living today. Therefore our task is not to tell each other what we should not do. The task is rather to describe what we are in fact capable of accomplishing together, and to do it so convincing, that the transition seems logical and irresistible." (Lidegaard 2013).

The results that ecovillages have accomplished over the last 50 years provide a good example of how lifestyle changes are both logical and attractive. "The ecovillage movement has something to contribute that is quite unique, available for all to see on the ground, and not widely recognized, namely that a change in lifestyle can reduce CO2 emissions by more than half without any reduction in the quality of life, in fact, with an increase!" These words are from the editors of a international issue the Danish Ecovillage Magazine Creating Oneness made for the COP15 Climate Summit in Copenhagen in 2009 (Jackson 2009).

What is an ecovillage?

Ecovillages are settlements that try to integrate all aspects of living — homes, culture, businesses, institutions, local production, self-determination and much more. The aim of ecovillagers is to integrate human activity with the natural environment as gently as possible. Energy consumption and environmental impact tends to be continually decreased. A key purpose in their work is to insure good life circumstances for future generations, based on the philosophy that “The earth is not a gift from our ancestors, but a loan from future generations”.

Demark has 30-40 ecovillages, and new ones are in a planning or construction phase. They are not all alike by any means, but range from small co-housings (5-50 inhabitants) to larger ecological communities and villages (50-400 inhabitants). A few communities are centered on a specific spiritual practice (10-100 inhabitants).

The Global Ecovillage Network (GEN) has developed a tool for ecovillages to design, form, develop and maintain them, and not least, to teach others in their region. This is called the wheel of sustainability, a holistic approach containing four dimensions: Ecological, Social, Economic and Worldview (the cultural and spiritual aspect).



Figure 1: The wheel of sustainability is part of the curriculum of the Ecovillage Design Education, a living and learning education developed by Gaia Education (Gaia Education). The education is recognized and approved by UNESCO and UNITAR and is a part of the UN Decade of Education for Sustainable Development (2005-2014).

Why and how ecovillages are created

The people who create or move into ecovillages are all actively searching for a meaningful life. They have ambitions on a per-

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sonal level and a desire to be part of a group that shares their vision. Often, they also wish to collaborate with the surrounding “conventional” local community and in a larger perspective affect the greater society to move in a more sustainable direction.

For people outside, it can sometimes seem like the ecovillages are closed up units who forget they are part of a larger society. But this is largely false for well-established ecovillages that are often teaching centers and well integrated into their local communities. It is my experience that an inward focus can happen in the beginning years, as the process of creating an ecovillage is very demanding. Before anyone has time to engage in the surrounding “conventional” society, daily living needs to be established.

Establishing an ecovillage involves many stages. Beginning with the “I want to make my dream real”, find a group of people who shares the dream, search for land, collaborate with municipality plans, buy land, install infrastructure like traffic, water, energy, a sewage system etc. and then a long process of building individual houses and a community house.

Some of the social aspects of living in an ecovillage are community meals, different types of meetings and working weekends. Families with children are involved in the local kindergarden and later in the local school. And in general it happens that

when the basic functions are in place, new energy is released to create bigger cultural events like Christmas market and music or circus festivals.

The instalment and upscaling of energy-saving solutions like windmills, solar-heaters, carshare systems, garbage management, local food production and more is an on-going task. And the fact that there is often a high level of vegetarian diet in ecovillages also helps to protect nature.

Some ecovillages strive to also be so-called “living and learning” centers, where people from both home and abroad come to participate in weeklong education and field work. Others participate in politics. One example is a person from the community Svanholm, Denmark who is part of the local political committee in Frederikssund municipality. And another is an inhabitant from Damanhur in Italy who is mayor in the local town of Vidracco. And then there is Dyssekilde, Denmark (founded in 1992) that is identified as the fifth strategic business area in Halsnaes municipality (Halsnes 2011). Findhorn in Scotland (founded in 1962) is a major teaching facility with yearly turnover of £5 million and with around 400 local jobs.

Social diversity and social capital

One of the great qualities of ecovillages is that there is room for everyone. Young and old generations, couples, singles, families

with children, collectives and more live side by side. One good example is Munksøgård, close to Roskilde. Here different forms and options for owning and renting a house or apartment were already thought into the community design from the early beginning.

In an ecovillage, maintenance and development depends on everyone's involvement. Most tasks are done as volunteer work or as part of a local economic system, functioning parallel to the national currency. The aim is community solutions and local workplaces. Many ecovillages also have the ambitious dream of becoming self-sufficient in energy, food, waste treatment etc.

The structure of ecovillages creates possibilities for a life rich of meaningful relations. The elder people who are retired often are very active in the tasks of the ecovillage and they take part in the daily life of the children. Some ecovillages have a house specifically designated for elderly people, and in some communities three generations of the same family live together.

Growing up in an ecovillage has many advantages. As the outdoor space mostly is a carfree zone and green, it becomes a healthy and a safe space for children to play. The constant presence of other children and adults apart from the child's own family, gives easily many friends and also a healthy variety of adult role models.

Divorces also happen in ecovillages, but a nice thing is that there are many cases where the mother and father both stay within the community in separate houses.

Daniel Greenberg from Sirius community, USA, writes about social diversity: "Ecovillages tend to be more heterarchical (yes, it is a word) and there is generally a wide diversity of relationships with members interacting on more or less an equal footing. Two people might cook a meal together one day, sit together in a budget meeting another day, and perhaps help harvest vegetables on yet another. These interdependent sets of relationships help members get to know each other on many levels and better understand the complexity of living systems." (Greenberg 2011-5)

Welfare society tasks solved in new ways

Hertha, an ecovillage near Aarhus with 130 inhabitants, is one of two Danish ecovillages that has a community of physical and mental handicapped people (20) integrated into the ecovillage. The place works with a term called "integration the other way around", as "normal" people are invited to come and live with and near the life of the handicapped. Houses are build taking care of the specific needs the handicapped. And protected workplaces created with the themes kitchen, laundry, bakery, weaving, agriculture, dairy and horticulture. Some years ago the municipal of Skanderborg, where Hertha is located, decided

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that all the kindergartens should have a free lunch. Afterwards the community created a workplace for the handicapped, where they can make the lunch together with the kids in the kindergarten (Uggerby 2013).

A group of teachers living in Hallingelille Ecovillage near Ringsted have created a foundation with the purpose of "creating greater understanding of how we can live in more healthy, sustainable, humane, and meaningful ways as co-responsible and co-creative individuals who take part in a great variety of natural ecosystems, groups and communities, local and global societies" (Mimundo). Other inhabitants of the ecovillage can participate in the courses in exchange for helping with the practicalities. And at the same time as the ecovillage shares its knowledge with the visitors from outside, both the teaching and the visitors bring in new knowledge and ideas.

Recognition and empowerment

In the winter of 2011-2012 I initiated an Ecovillage Design Education (EDE) inspired course running over 6 weekends, and from that experience came two results that I find worthy of mention. First, a group of the participants still keep in touch as an educational group that continues to inspire and support each other in creating transition at both the personal and community level. Secondly, some of the people involved came from the fringe of mainstream society but found with the help of the

course an improved self-esteem and a way back to becoming a part of society again.

In 2013 I was facilitating a 6 weeks EDE inspired course for unemployed people. A comment from a participant expressed what many others in the group also shared in their evaluation, "Transition and sustainability is not only about the environment, but it is also about oneself. I have learned a lot about my self and about group dynamics, including new knowledge about sustainability, such as cradle to cradle, permaculture, matrix agriculture and much more. Most important, I learned that when we unite, much is possible" (Omstillingsagent 2013).

Create community and value diversity

Ecovillages have many types of organizational structures and dynamics. One type is driven by a strong idealism and powerful individuals that most often focus on the ecological and economical dimensions. That kind of commitment can be inspiring and motivating, but if it is an inflexible "my way or the highway" approach, it creates conflicts and separation in all relations: couples, families and the community.

In other ecovillages they build a management team where idealism and strong individuals, go together with common purpose, values and a conflict resolution policy and practice. Here, conflicts are met with a willingness to listen and turn the

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conflicts into learning experiences for the whole community. An example is Sieben Linden, an ecovillage in German where they work with attentive communication: "Early we realized that for the community to be a success we need a high degree of transparency. Only when we know about each other and what is on our minds, can we assess and appreciate what the others are doing. For showing the others who we are and to get to know each other and solve conflicts, we use beside the direct face-to-face approach: Forum, Nonviolent Communication, and mediation, to name a few. Thus we can grow together in living together." (Sieben Linden)

To implement this awareness, they have three types of decision making processes:

- 1) Meetings where feelings are shared: It can be about conflicts, unemployment, divorces or more joyful circumstances. The aim is to strengthen love, compassion and confidence.
- 2) Meetings where worldviews are shared: it can be about values, opinions and belief systems. The aim is to awake consciousness, find and strengthen common values.
- 3) Organizational meetings: Big community meetings as well as meeting in smaller work groups. The aim is to implement and make the vision real.

A part of the common ground in Hallingelille Ecovillage (Hallingelille) is to bring attention to everyone's well-being, to care for one another and to include all. Some of the practices and principles they use are:

- To prioritise personal check-in and check-out at common meetings
- To use "heart keepers" - people who have the function of being specially aware of the emotional atmosphere.
- Have children's meetings (different age groups).
- Deal with conflicts in the beginning instead of allowing them to grow.
- Use a constructive conflict resolution method with internal or sometimes external mediators.
- Remind one another to speak respectfully about everyone.
- A well-being group that organizes different types of events.

Finally there are communities founded on a spiritual idealism. In my experience they seem to have a more solid and more grounded development. This is probably due to the spiritual work, which focuses on self-reflection and how to mindfully and without defensive ploys, confront and avoid conflicts.

Socially Engaged Spirituality

An example of an ecovillage founded on a spiritual vision is Findhorn in Scotland:

“The founding principles of the Findhorn Foundation and community have remained at the center of all our activities over the years, they are

- deep inner listening, and acting from that source of wisdom
- co-creation with the intelligence of nature
- service to the world.

How we express these principles through our activities, continues to change and grow, reflecting both the evolution of the consciousness of the community and the needs of the world around us, locally and globally.

Meditation in its various forms – such as sitting quietly, singing, dancing, being in nature, working – is practised at Findhorn as a means to connect with and listen to our inner source of wisdom.” (Findhorn)

In “The Song of the Earth – A Synthesis of the Scientific & Spiritual Worldviews”, one of the 4 KEYS To Sustainable Communities Everywhere on the Planet (Gaia Education) is a chapter

about socially engaged spirituality which provides a “summary of insights that have proven helpful to socially engaged activists who grapple with how to integrate their ‘inner’ spiritual values into their ‘outer’ practical work” (Keepin 2012, p.214). To illustrate the dimension of this work, 6 of the 14 guidelines are:

- Transformation of motivation from anger/fear/despair to compassion/love/purpose.
- Non-attachment to Outcome.
- Don’t Demonize your Adversaries.
- Love Thy Enemy.
- What You Attend to, You Become.
- Take Sufficient Time for Retreat, Renewal and Deep Listening.

I have visited several ecovillages in Europe and I am impressed about how many places the spiritual aspect is integrated well into daily living and educational situations. The “living and learning” teaching method in complex ecological, economic and social themes combined with personal and spiritual aspects in a very diverse group of students (age, education, country) provides a very rich learning experience.

Lifestyle changes and environmental impacts

So far there has not been a lot of scientific studies or research on ecovillages and their attempt to live more environmentally friendly, but the academic work that has been done looks promising. One piece of research, done in three Danish ecovillages by energy consultants in 2009, showed that CO2 emissions are 60 % lower than the Danish average.

Table 1: Average CO2 emissions for heat, electricity, transport, goods consumption and fresh water use, Danish average compared with citizens from the three ecovillages.

In tons CO2 per year	Heat	El	Transport	Goods/consumption	Fresh water	Total
Danish average	1.59	0.95	2.02	1.49	0.17	6.22
Munksoegaard	0	0.81	0.55	1.16	0.09	2.61
Hjortshøj	0	0.72	0.52	1.07	0.10	2.41
Svanholm	0	0.00	0.71	0.87	0.26	1.84
Eco-citizen average (weighted)	0	0.60	0.70	1.06	0.15	2.51

Jonathan Dawson is co-head of Economics at Schumacher College. He was until recently a member of the Findhorn ecovillage community in Scotland and the President of the Global Ecovillage Network (GEN). In STATE OF THE WORLD 2010 he wrote an article about Ecovillages and the Transformation of Values, where he referred to recent studies that confirm that the eco-

logical impact of ecovillages is markedly lower than for average conventional communities.

“A 2003 study by the University of Kassel looked at carbon dioxide emissions associated with two ecovillages in Germany. It found that per capita emissions in the Sieben Linden and Kommune Niederkufungen ecovillages were 28 and 42 percent, respectively, of the German average.”

“A study undertaken by the Stockholm Environment Institute found that the Findhorn ecovillage in Scotland has a per person ecological footprint a bit over half of the U.K. average, the lowest footprint recorded for any settlement in the industrial world.”

“A 2006 study comparing the contribution of built (economic), human, social, and natural capital to quality of life in 30 intentional communities with that in the town of Burlington, Vermont. The study found that the quality of life was slightly higher in the intentional communities despite the fact that average incomes were significantly lower because of a greater cultivation and appreciation of other forms of capital, especially social capital.” “It is especially interesting that many of the activities and design features that are responsible for low energy and resource use within ecovillages are also among the most important in contributing to a better quality of life.” “Many of the other footprint-shrinking design features—preparing and

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eating meals together, car clubs, community-owned renewable energy facilities, community currencies and investment, and so on—similarly engender a spirit of cooperation that builds community and contributes to strong feelings of well-being” (Dawson 2010).

The Danish Ecovillage Network hopes that similar multi-disciplinary studies will be made in Denmark, as it will be very interesting to see the concrete results of 25 years of “bottom up” experiments.

Needs cared for in new ways / Influence and meaningfulness

One major explanation of how the ecovillages are capable of having a high quality of life and at the same time a low environmental impact is that the social richness fills needs that in mainstream society often are satisfied with some kind of materialism. Examples can be having a spontaneous night with community friends instead of sitting in front of the TV or Internet. Or cooking for a big group of people, opposed to a small family, and sharing kitchen appliances also saves resources in the areas of transportation, food-making and cleaning.

Jeppe Læssøe, a researcher in environmental pedagogy and public information says: “it not so simple that an ascetic, ecological sustainable life also will give a higher life quality. But slower living, stronger social relations and richer experiences

in the near environment will be able to care for many more of people’s needs, than a continual acceleration of the daily routine” (Læssøe 2000, p, 234).

In modern society, governance and implementation often seem out of reach for normal people. At the same time, everyone is absorbed in individuality and self realization. Some people can, by living in an ecovillage, fulfil the search for identity and accomplishment. Here, the highest authority is the community meeting, and all members have the possibility and expectation to participate in both decision-making processes and their realization. Active participation can give a feeling of influence, responsibility and creation that is very life-affirming.

Another quality is the caring aspect in community. First of all, people just know each other better than in most other neighbourhoods in general, and if you are close with somebody it is natural to care for them, because the mutual dependency is more obvious. If one person is suffering, the whole community will be affected in small and large ways. This feeling and experience that the others care for you enriches your life.

Competition vs. Collaboration

Another important value in ecovillages is that collaboration becomes more important than competition. Otto Scharmer, the creator of Theory U, helps groups of diverse stakeholders

from business, government, and civil society innovate at the level of the whole system. In his blog he writes about “how individuals relate to each other and to the whole system”. He quotes a participant from an event with different stakeholders: “I was so surprised by the quality of awareness and connection in the room. It happened very naturally. I have never seen anything quite like it.” “There was very little ego in the room. The ego-awareness was gone, and the eco-awareness was activated in just about everyone. It was quite a natural process. Very different from what I experience otherwise. As if a dormant collaborative gene has been switched on...” (Scharmer 2014).

The kind of quality present in the event mentioned is equal to experiences I have had in meetings and gatherings in the ecovillage movement, especially when hosted by communities that put an emphasis on the social and worldview dimension. Scharmer talks about “Activating the Field of the Future” where seven tools and practices are used by the facilitators and the participants to co-sense and activate the best future potential:

- 1) A core group that “holds the space” with a common intention
- 2) Mindful methods and tools.
- 3) Experiential labs: storytelling and theatre.

- 4) Connecting to source.
- 5) Awakening the undocumented part of our story.
- 6) Prototyping the new.
- 7) Weaving the field of the larger eco-system.

Actions to improve well-being

Another part of the transition is about well-being. A British study, Government’s Foresight project on Mental Capital and Wellbeing, has developed a set of evidence-based actions to improve personal well-being. “The aim was to analyse the most important drivers of mental capital and well-being to develop a long-term vision for maximising mental capital and well-being in the UK for the benefit of society and the individual. The concept of well-being comprises two main elements: feeling good and functioning well. Feelings of happiness, contentment, enjoyment, curiosity and engagement are characteristic of someone who has a positive experience of their life. Equally important for well-being is our functioning in the world. Experiencing positive relationships, having some control over one’s life and having a sense of purpose are all important attributes of well-being.” As an output of the study they mention five actions in our daily living that are important for well-being (Neweconomics.org, 2011).

- Connect – Building connections will support and enrich you every day.
- Be active – Exercising makes you feel good and enhances your level of mobility and fitness.
- Take notice – Reflecting on your experiences will help you appreciate what matters to you.
- Keep learning – Learning new things will make you more confident as well as being fun.
- Give – Seeing yourself, and your happiness, linked to the wider community can be incredibly rewarding and can create new connections with the people around you.

As I see it ecovillages have the perfect social and physical context to very naturally fulfil this list of actions.

What can the academic world learn from ecovillages?

Daniel Greenberg (PhD) from Sirius Community, Massachusetts, USA, is founder of Living Routes, an organization that, until January 2014, has send almost 1500 American university students on “living and learning” courses in ecovillages all around the world. In 2011 he wrote a blog where he explored “education towards a sustainable future”, and also wished to explain why the academic world needs to use the ecovillages as learning

centres. Below is a list where he compares the different paradigms of the academic world and the ecovillages:

ACADEMIA	ECOVILLAGES
<p>Conservative</p> <ul style="list-style-type: none"> • Nothing will ever change anyway. We should just go on with business as usual. • We should trust the PhDs to solve these problems. 	<p>Experimental</p> <ul style="list-style-type: none"> • "The problems we have can't be solved by the same level of thinking that created them." – Albert Einstein • Let's just start and learn as we go.
<p>Hierarchical</p> <ul style="list-style-type: none"> • I'm one person. What can I do? • It's the 'higher-ups' responsibility to figure things out. Not mine. 	<p>Heterarchical</p> <ul style="list-style-type: none"> • Everyone has a piece of the truth and nobody holds the whole truth. • Power with, not power over!
<p>Competitive</p> <ul style="list-style-type: none"> • Is this going to be on the exam? • How will this help me get a job/tenure/grant? 	<p>Cooperative</p> <ul style="list-style-type: none"> • We're all in this together. Let's act like it. • Many hands make light work.
<p>Fragmented</p> <ul style="list-style-type: none"> • Where do we even start? It's too complicated. • This is a problem for <another discipline> 	<p>Transdisciplinary</p> <ul style="list-style-type: none"> • "For every complex problem, there is a solution that is simple, neat, and wrong." - H. L. Mencken • True solutions are integral & integrated.
<p>Proximal</p> <ul style="list-style-type: none"> • I'm just trying to live my life. I don't have time for this. • As long as it's not in my backyard... 	<p>Intimate</p> <ul style="list-style-type: none"> • We all breathe the same air and are fellow travellers on this Spaceship Earth. Relationships are key! • We need to think 7 generations ahead.
<p>Theoretical</p> <ul style="list-style-type: none"> • Climate change is just a theory. We need more evidence before acting. • I think we have a subcommittee analysing the problem. 	<p>Applied</p> <ul style="list-style-type: none"> • "Be the change you wish to see in the world." – Gandhi • "The only way to predict the future is to invent it." – Alan Kay
<p>Secular</p> <ul style="list-style-type: none"> • We can fix the planet through bioengineering or nanotechnology. • The world belongs to Man. Oil is here for us to use. 	<p>Spiritual</p> <ul style="list-style-type: none"> • "I am part of the [plane] protecting itself." – John Seed • "We are on the brink of an evolutionary leap in consciousness." – Sri Aurobindo
<p>Large Footprint</p> <ul style="list-style-type: none"> • I want my MTV and like my campus' <favorite amenity>. • "Living large" is a sign of having 'made it'. 	<p>Small Footprint</p> <ul style="list-style-type: none"> • Live simply so others may simply live. • Small is beautiful.

Notice that these comparisons are in each their extreme end of a continuum, but reality is not that black and white.

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Greenberg finishes his blog with these words: “We are living in an amazing moment, not just in human history, but in planetary history. We have exceeded the Earth’s carrying capacity and must now transition to a post-oil world if we are to survive as a species. It is possible to live lives that are both high quality and low impact. I know this because I have seen thousands of people manifesting positive visions in ecovillages around the world. While not utopias, these communities represent living laboratories, beta-test centers, and innovative campuses for learning how to live well and lightly together. We have so much to learn from each other. Building bridges between ecovillages and academia is literally building bridges to a more sustainable future.” (Greenberg 2011-11)

Being an active person in the Danish Ecovillage Network since 1996, I have followed the development both locally and globally. And I agree with Greenberg, that ecovillages are living laboratories that voluntarily test alternative lifestyles, and many of their lessons learned and creations are of great value to the mainstream society.

The ecovillage movement is not alone in actively creating experiments and solutions. The movement is closely connected with groups of indigenous people who in their traditions have a fountain of sustainable philosophy and practice. There is the whole permaculture movement attracting many young people, there is the Transition Town and Urban Farming movement that

helps making a thriving and sustainable living in already existing neighbourhoods, by re-awake community bonds and re-localize caretaking of needs.

What can the greater society learn from ecovillages?

Experiences from ecovillages point in a direction where it is possible to have a lifestyle of high quality and at the same time low environmental impact. This doesn’t mean that the ecovillage solution is for everyone everywhere. Ecovillages are future laboratories that give an idea of how we can design communities and neighbourhoods, design new kinds of local economies etc. with the purpose of developing a rich and sustainable lifestyle. To learn from ecovillages, we have to look at the positive experiences and see how they can be transferred to the rest of society, such as traditional villages, the cities and the suburbs.

As I see it, there are two particularly important findings from the civil innovation that has happened in the future laboratories of ecovillages in the last 25-50 years:

- Social capital is more important than economical capital
- Social experiments can lead to constructive solutions.

Social capital is more important than economic capital

A strong social capital is the most important condition for an

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ecovillage or other social experiment to succeed. Social capital is created when good and nurturing relationships exist between people. Relationships build on confidence and mutual values give the individual access to different kind of resources (e.g. help, caretaking, interchange of knowledge, food and material things). When the relations and collaborations are flourishing, more social capital is created, projects inspire other projects and people find ways to benefit from each other. But if a negative energy, like mistrust, enters a network, it can quickly destroy the creating spirit. So in a community that mostly is based upon voluntary participation, it is very important to install a strong set of values and practices, e.g. communication structures, already from the beginning.

When people's needs for acknowledgement, participation and creation are met, they start to flourish and will be contributors to the community. Social capital depends on a feeling of trust. According to the American political scientist Robert Putnam, trust can best be created in face to face meetings. He thinks that the reason for low trust in the post 2nd World War generations in the US is that they use their free time in front of television screens instead of direct interaction with other people. He calls this phenomenon a "privatisation of free time" (Svendsen 2012, p. 42).

In the consumer society "human growth" is put into a pattern of continually consume, work, earn, consume – more and

more. In an ecovillage, the "human growth" of each human's activity, work or "product" is channelled into social capital that can stay and enrich the community. Knowing this, we can start to prioritise and value more new social experiments and push for the kind of politics that supports them.

Social experiments can lead to constructive solutions

In the Norwegian book "An experiment for change? Alternative routes to a sustainable society" Denmark is described as a society that can be viewed as a kind of "social laboratory" for experiments (Dahle 1997, p.96). In the beginning of the 1970's social experiments were influenced by a very wild and immature movement. The actors were the many new collectivist, feminists, the early environmentalist movement and many more. These bold experiments actually all became in one way or other cornerstones in important developments like the windmill industry and organic agriculture. And they played a role in the foundation of The Danish Ecovillage Network in 1993, which actually is the first national ecovillage network in the world.

Over the years, social experiments changed character. Ecovillages became a kind of "privatized life experiment", and the ideas took a new and holistic form. As I see it, the ecovillage movement is entering a new phase where ecovillages and other green communities start to collaborate across borders, in a

way in which economics and business development will be a dynamic part in that cooperation.

As I have described in this article, civil society driven social experiments have a substantial innovative power and can play an important role in the transition to a sustainable and thriving society. I hope that with this article perspectives have opened up to put Lifestyle Change as Climate Strategy on the political agenda- an agenda which aims to create a framework for a new, sustainable and thriving lifestyle characterized by a high quality of life in balance with nature.

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Producing Social Innovation

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Abstract

In this paper we present a new research initiative exploring Distributed and Open Production (DOP). We shortly outline the background for the initiative, and present a series of research directions and activities planned for the near future. Finally we report on the first results related to the design interventions we have carried out in both well-established and ad hoc settings highlighting both benefits and potential traps of DOP, showing strengths and weaknesses of such constructions.

Introduction

The digitization of society, the democratization of technology, the personalization of production, and the gradual opening of the design practice are disruptive phenomena that build a new scenario in which the processes of creation, production and distribution of many goods and services will undergo profound changes. These changes require the development of a mix of “making cultures”. The changing of production models is becoming a central theme of the research and innovation policies in many Western countries, and at the same time several bottom up initiatives are growing from citizens and local associations, especially in cities. Moreover, many experts in economics, sociology and technology are studying manufacturing process changes in terms of the development of personal fabrication, growth of new communities of makers and self-producers (DIY), and to new forms of handicraft production. This is an important issue for the design on a global scale.

Recent years’ development of computer controlled manufacturing techniques such as laser cutters and low-cost 3D printers (fabrication machines) has provided a potential change in conditions for the production of goods. In praxis, rational, high precision and sophisticated production is no longer only in the ownership of experts and placed in large closed facilities but can be local, open and community governed, responding to local needs and aspirations rather than results of market research

(Manzini 2011). We denote such possibilities as Distributed and Open Production–DOP.

In this paper we propose that and discuss how DOP contributes to increased life quality in several ways. First, it helps bring production back to the local communities. Second, it builds on close loops of development based on local desires, interests, capacities, needs and division of labour. Third, it facilitates the establishment and growth of strong local communities, which in line with the long Scandinavian practice of organizing ownership and work in co-operations helps the development of trustful and engaged citizens. This is not a trivial contribution since the strong sense of trust among strangers within the Scandinavian countries, traditionally is credited for being a key factor for the successful running of these peaceful, effective and wealthy communities (Serritzlew 2012).

The DOP Research Cluster

Distributed & Open Production (DOP) is a cluster in the DESIS network, bringing design research environments from among others Sweden, Italy and Denmark together. We work within the field of distributed and open production to revitalize the idea of unique personally shaped and/or described products. Products requested and desired by people, rather than offered as mass customization products developed on the basis rational production. Products we believe which in both identity and use

leave people indifferent.

By the approach of DOP we wish to provide an alternative to classical industrialized products, that we buy, use, grow tired of, and discard within a time span that is horrifically short, if we consider the impact it has on our environment.

In this direction, the cluster aims also at explore issues and possibilities around DOP as an alternative to the mass-production and consumption model, by reflecting on the insights emerging from a growing number of practical initiatives.

In line with the general objectives of the DESIS Network (Design for Social Innovation and Sustainability), DOP works to promote the knowledge exchange related to sustainable and best practices in the field of new production processes and models. We also work to understand how we as designers can help people realize their potential as creative and responsible citizens through interventions and other activities.

Currently, we are developing a range of research initiatives, from the collection of case studies related to best practices in distributed and open manufacturing experiences to the development of surveys conducted on regional and global scale. Together with partners from our local communities we also design and carry out interventions in the public realm, focused on engaging the public and boosting people's understanding of

their individual active role in a sustainable community.

Research Areas

In DOP, we work along a number of research lines, each comprising their own hypotheses, goals and methods. In the following, we describe the nature of these lines, along with the related current or near future activities.

Infrastructure and Platforms

One aim of our work is to better understand how certain infrastructures or platforms can promote production and experimentation in local communities.

Today, FabLabs, Hacker-spaces, Makers-spaces and many others, including public libraries, offer production facilities of a quite sophisticated nature to non-professional users.

Such facilities, that provide open access to advanced technology and support collaboration between users, lower the threshold for realising design ideas and supports the making of products specialized the individual's need. However, these initiatives are also facing practical challenges related to how they are organized and run. In the track on distributed and open production at the Crafting the Future Conference 2013 in Göteborg, several participants voiced their concerns on how to organize

maker spaces so that a community, that could run and take care of the space, would arise. At the same time, these facilities are often presenting issues of limited participation (Troxler 2010), which question their role and potential as spaces empowering final users in becoming producers.

The Reskilling of People

Making is connecting as Gauntlett (2011) so famously has proclaimed. But making is more than that. Making is also about looking at what you need and what you have, wondering how to customize or optimize already owned products. And most importantly, it is about realizing that you are an active player in your own life and community, that you have a voice, a brain and two hands.

With this research line's focus on skills we aim to explore how we can help increase people's practical skills and competences in order to a) lift their capabilities to fix and mend things, and to hack or tailor products, and to b) support them getting empirical and embodied knowledge from own constructive work. In our understanding, having practical experience with craft broadens people's appreciation of the inherited possibilities in the artefacts we surround us with on a daily basis. By inherited possibilities, we mean the potential of, say, an old Ikea book case, which with a few changes could be turned into a number of practical things, which would prolong the life and value

of the initial product tremendously. On a more general level, we believe that succeeding with such reskilling of people, will effect people's understanding of how we can each contribute actively as responsible creative citizens in both local and larger communities.

Research Activities

The research lines described above point to a series of activities. In the following, we present current and planned activities.

First, the schools, universities, and organizations involved in DOP work to create an "open" collection of case studies related to "distributed and open production" initiatives promoted by national and regional governments and institutions and networks or associations of citizens and enterprises.

The collection of light cases aims at analysing and describing:

1. Innovative services related to distributed open production
2. Entrepreneur experiences linked to open production and manufacturing
3. Innovative business models, organizational models, and social models
4. Examples of open source innovation, that is, products and

services developed using open and collaborative processes.

Besides a description of light cases, DOP conducts a series of practical interventions where we explore some of the challenges uncovered by the light cases.

In FolkeLab (People's Lab) we explore how to engage citizens in activities that involve the construction of things and the sharing of knowledge between strangers in Denmark's second largest city (removed for blind review).

The first FolkeLab was TechLab, which explored what happens when the local Hacking Community moves into the welcoming areas of the local library. During a month, volunteers and technical equipment were available for library users for both open work and hosted sessions, where one could for example build small robots. The second FolkeLab, the SkrotLab (TrashLab) has several foci: First, it will explore the notion of trash to understand how we might re-define this concept. When, for example, chickens are introduced into a household, the understanding of kitchen waste is changed into valuable food for the birds. Can other minor changes in our minds, skills or everyday contexts help move our understanding of trash in a similar fashion? Second, SkrotLab explores how to physically and organizationally to go about engaging citizens in activities. For example, which spatial qualities support such work and how is it best organized and planned, if at all?

Other two practical interventions have been developed in Sweden. They are two facilities offering access to fabrication machines and fostering collaboration between the participants. The first is Fabriken, a community-driven makers-space, which has been set up and run as a collaboration between a university research center, a local NGO and the participants. Fabriken has been up and running since April 2011 and it has provided a number of insights regarding the co-design and co-making of a makers-space and possible patterns for its long-term sustainability. The other space is CL a prototyping lab that, by supporting the collaboration between academic researchers, companies, and experts, aims at developing new products and services in the realm of Internet of Things. CL has been set up by the same research center involved in Fabriken starting out from similar concerns. Even if CL approaches and activities may overlap Fabriken's one, the prototyping lab entails a radical different way of understanding what DOP may be about. Confronting these two facilities allows therefore to raise issues and controversies around DOP being (or not) a potential alternative to the actual production system.

In Autoproduzioni Lab – a didactical workshop at the School of Design (Politecnico di Milano) entirely focused to self-production – we explore new models of connection between design and advanced fabrication within a DOP scenario. The Lab works on the skill of the designer re-adopting the model of the designer-business (Bianchini; Maffei, 2012), a new profile

of the designer-manufacturer able to design and implement a system-product and its production system in a perspective of environmental and social sustainability (Systemic social Innovation, Mulgan, 2012).

The workshop (second edition) is configured as a maker lab or a teaching factory where the students develop a full experience of design, manufacturing and distribution- from idea directly on the market.

In the development of their experiences designers have to build micro-networks and platforms collaborating with makers/makerspaces, craftsmen, and DIY people creating communities of practice and production as *Produzione Impropria*, produzione-impropria.com).

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Lense- Learning Enduring Society Engagement

The Lense: What Is It All About?

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The Lense is exactly what its letters stands for, namely a concept with which pupils and students can experience and learn how to engage with their surrounding society in a sustainable way. It is a service learning concept that was developed by the Arbeitsstelle Forschungstransfer (AFO), the innovation office of Münster University and is being implemented by one of its divisions, the Expedition Münsterland, which aims at bringing science to the people. Thereby it deliberately does not limit itself to the city of Münster, but communicates scientific events where they actually happen(ed), which is oftentimes in the barely known urban hinterland of Münster. Three objectives are pursued by this approach: On the one hand to arouse interest in science by delivering it in an appealing way right to the people, to overcome the seeming distance and indifference of the university for its surrounding area, which the university often is reproached with and thirdly by bringing the students into the region, to show them that there are more attractive places to stay than just the city of Münster.

The Lense targets integrating social and responsible teaching and learning experiences in universities and schools as an integral part of the curriculum. Pupils and students train their social competencies by reacting to real existing challenges or

problems within their community. The Lense is being implemented in close cooperation between school/university and regional partners. Pupils and students become aware of their surrounding region and can assume responsibility for it. Like this, students and particularly pupils working in Lense-projects get the feeling of having done something really interesting, which at the same time serves the community.

There are two primary target groups, i.e. pupils and students. Only the involvement of both groups makes this concept as successful as unique. The Lense succeeds in activating both groups in such a way, that their dedication and commitment are a lot higher than when executing theoretical tasks, since all the Lense topics come from the direct social reality of the students' and pupils' private lives and they get the chance to make a difference in every respect when getting involved in a Lense project. Until now only senior classes of secondary schools participated in these kind of projects, but an expansion to other school types, like primary schools e.g. has already been discussed and is planned for the near future.

Sustainability is not only guaranteed through anchoring the Lense in the school curricula but also by enabling continuing education in a variety of sectors ranging from ecological and

social to entrepreneurial and historical topics, that it always remains up to date and true to the experiences and environment of the children.

Not only university teachers are included, but it is intentionally the students' expertise, which will be relied on, since this means a twofold advantage: The societal engagement as objective of the service learning is being achieved through the social commitment in the education sector on the part of the students. On the other hand, pupils support actively research activities through their participation, which is not only rising the pupils' motivation and arouses interest, but also delivers new results on research questions.

Especially through the integration of students in the on-site activities as e.g. student assistants, within trainings, courses or a final project, a win-win-situation for the promotion of young skilled staff can be achieved for the region. The students hold another kind of credibility than within the traditional teacher – pupil relationship. Students act from their point of view and convey their own motivation and interest in the subject on to the pupils. Furthermore, early contacts are being created towards the university and potential future employers. This reduces thresholds, too.

To give an example of such a cooperation: During one project, a school class rediscovered an old moat system that once most

probably belonged to a huge historic building that has disappeared unnoticed over time. Before the pupils' work, only aerial photos and the repeated discovery of a special kind of stone suggested the existence of such a complex, but it could not be proven until then. Guided and instructed by geoinformatics students and a geology and geoinformatics professor of Münster University they were able to retrace the old system and also delivered valuable results for a local regional authority, the LWL, who themselves would not have had the resources to do this research on their own. The pupils did not only do the field work, but also communicated their progress via a self-created homepage to the outside world. All their findings were then presented publicly at the end of the project. Only this 'special' cooperation led to the desired success. That is why the project payed off for all involved parties. The pupils learned a lot and were very committed, also beyond the actual assignment, because they got the feeling of being an equal member of a research team. The students were able to adopt their previously, within their studies, acquired knowledge, and to act as guides for the pupils. And last but not least, science was actively exercised and new findings could be safeguarded.

The Lense enables schools to discover exciting places together with science, to examine them in closer detail, to research them together with scientists and to present the results in public. Especially this last point has already proven to be very crucial, since it boosts the pupils' self-confidence and increases

their willingness to participate in further projects of that kind. Social engagement is thus being practiced and strengthened in an environment, which the pupils are familiar with, i.e. their concrete neighborhood. This leads to further discoveries of the bordering region. Schools normally operate independently and very close to what is provided in the curriculum by the respective state. Extracurricular cooperations are thus very rare. Especially cooperations with universities, where pupils can become a vital part in (parts of) the research are normally out of reach or not even thought of.

Urban Agriculture for Changing Cities – Potential for a Better Life

ROOF WATER-FARM and other projects - a field of science shop work

Gisela Prystav - Science Shop kubus / Technische Universität Berlin

Background

In many developing and emerging countries urban agriculture (UA) and urban gardening (UG) are standard practices of food provision for the population with low-income; in Africa 40% of the urban population is said to be involved in UA (FAO 2012); in 1999 34 % of the meat and 70% of the eggs consumed world wide were produced urban or peri-urban (FAO 1999).

In Europe we find millions of inner-urban allotment gardens organized in associations. By far most of them in Germany, where more than 1 Mio. allotment gardens exist, with 76,000 spots in Berlin, the “capital of allotments in Europe” (Tschacher 2009).

World wide increasing urbanization, densification and globalization of the agricultural market reduce the accessible agricultural land and green space and at the same time agricultural experience of wider parts of the population is going to diminish. What remains are people without work, without money and without the ability to self-sufficiency. Similar tendencies- albeit on a higher financial level- appear in the poor neighborhoods in industrial developed countries.

In recent years, increased attention is given to urban agricul-

ture. Following I will elaborate on different forms and objectives of urban agriculture in the past and the present.

This leads to the question what potential urban agriculture has to improve the living conditions of the urban population and how it can be deployed- also with the contribution of science shops.

The tradition of urban gardening in Europe dates back to the industrial revolution. Again, the purpose of the first urban allotment gardens was to supply the poor worker’s families with food and fresh air. Also in the first years after the Second World War, this function was in the focus. Even today many allotment association’s statutes state, that 2/3 of the land has to be dedicated for fruit and vegetable production and exclusive use as ornamental gardens is not admitted. Meanwhile, however, allotments are primarily places of recreation and social interaction. This ranks from conversations over the garden fence to community activities such as summer festivals, common building of a community meeting place and meeting house, a play ground for the children, etc. The land is often leased from the city. From an ecological perspective, these green corridors have an important function for cooling of the city and as a habitat for

numerous plant and animal species. Nevertheless, in the inner city they are in a constant competition with residential and commercial land use. Despite good lobbying of garden associations and networking with politicians, the number of allotments decreases in the urban area.

In industrially developed countries, a new social movement grows around community gardening which is driven by the educated middle-class. Here the appropriation of public space and neighborhood-related activities contributing to social cohesion are in the foreground. This movement is aside with other initiatives of non-profit and co-working collaboration s.a. Repair-Cafés, Fablabs or self-enabling and exchange of craft skills. Another category and direction of urban garden activity is environmental education for children in school gardens and other educational-oriented activities, institutions and initiatives. In addition to these grass-root activities we find an increasing number of technological approaches and marketing strategies. One of these examples is the project ROOF WATER-FARM: Cross-sectoral use of water resources by building-integrated farming (Roof Water-Farm 2013) which is presented more in depth in the following.

ROOF WATER-FARM demonstrates paths towards innovative city water management and urban food production. The aim of ROOF WATER-FARM is to test building-integrated water treatment technologies and water purification for the irrigation

and fertilization of building-integrated greenhouse farms. The research focuses on a hygienically safe usage of rainwater, greywater (from bath tubes and kitchen) and extraction of liquid fertilizer from blackwater (from toilets) both as a strategy for city water management and a potential for urban food production. Analysis of the water sources and the plants on hygienic parameters and significant micro-pollutants (selected pharmaceuticals) are undertaken.

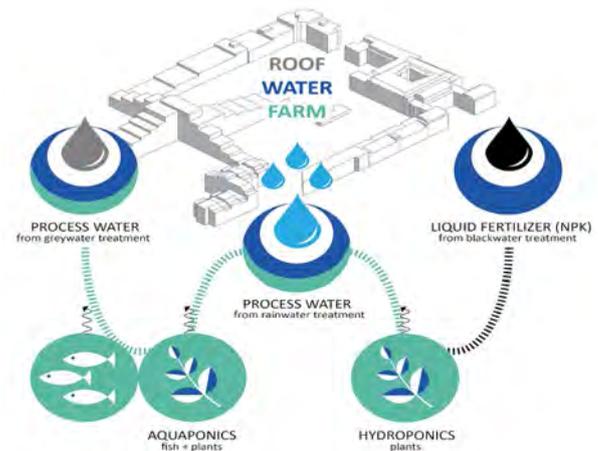


Figure 1: ROOF WATER-FARM Concept scheme. copyright: project ROOF WATER-FARM

In an inner-city housing complex in Berlin-Kreuzberg a closed-loop water cycle for the production of fish (aquaponic) and vegetables (hydroponic) is implemented and investigated. Further questions are: What is the potential for food production in cities? What buildings are suitable? What are the ecological and social benefits? The transferability of the ROOF WATER-FARM concepts into the urban realm will be projected and examined for the scale of a building unit and upscaled for urban spaces at large. Communication and training tools on building-integrated water treatment and urban food production will be developed for different target groups (see Figure 1).

ROOF WATER-FARM is funded from 2013-2016 by the German Federal Ministry of Education and Research (BMBF) through the support initiative “Intelligent and multifunctional infrastructure systems for a future urban water management (INIS)”. The Chair of Urban Design and Urban Development of the Technische Universität Berlin coordinates the project, the science shop kubus provides the project management.

Pollutants and hygienic risks

The questions of health risks should be discussed in relation to urban agriculture. Far from having an overview I can make some remarks.

In the framework of the project ROOF WATER-FARM investi-

gations will be undertaken about hygienic risks and selected pollutants. For the greywater it is already proven by long time surveys that bathing water quality can be safely maintained by an easy biological inhouse-treatment following UV-desinfection (Nolde 2005). Bathing water quality is regarding hygienic parameters sufficient for fish production and various green house cultivations.

In Berlin studies of soil quality in allotment gardens started already in the 1980s. At that time heavy metals (lead, mercury, copper), chlorinated hydrocarbons and organochlorine compounds from car and factory exhausts and liquid leakages of industrial plants and gas stations appeared on the agenda of soil contaminants. During the last 30 years in Germany and Europe harmful emissions and immissions have been reduced through technical innovations and legal regulations, such as lead-free gasoline, improved filter technologies, storage regulations for hazardous liquids and soil remediation so that the environmental situation improved significant. However, many urban garden plots are on land that has been used for industrial or military purposes in previous years. Here, different pollutants have accumulated in the soil. In many cases low areas were backfilled with soil that contains pollutants. Since the 90s, the Berlin districts conduct systematic soil investigations at the allotments. The results are communicated to the garden associations. In the case of critical analytic results, recommendations are derived not to grow certain fruits / vegetables that espe-

cially accumulate pollutants. Such investigations and studies are also carried out in other German cities. This procedure should be followed also when an inner-urban community garden is started. At first it should be investigated how the land was used in the past, whether the ground was backfilled or not and what relevant contaminations might be brought in from around. Afterwards a soil analysis program can be decided. However, soil analyses provide punctual data and not in all cases conclusions can be drawn for the quality of the whole plot. In inner urban areas we might find sealed plots where unsealing is not worth it or not possible (an example is here the former Tempelhof airport which is now used as recreation area). In these cases the beds can be separated from the subsoil through the creation of raised beds or containers, bags, etc. Container solutions are also recommended for micro gardening in sealed backyards.

For less developed and emerging countries we can assume a greater exposure to air pollutants and other emissions for example from leaded gasoline, gas stations and open waste incineration. The focus here, however, is the hygienic risk if untreated sewage- often with feces – when it is used for irrigation. It has to be underlined, that national governmental and international actions are highly needed to introduce waste water treatment on a central level or above all, implement decentralized solutions and re-use of rain- and wastewater. There is no other way. In addition, health hazards can be reduced by educating the population. Various grass root projects in Africa and other

parts of the world proved already that food provision through urban gardening is possible without health risk. It needs much more investment and promotion to distribute these examples on a broader scale and establish them.

Multifunctional benefits of urban agriculture

Urban agriculture and decentralized water treatment and reuse contribute in several ways to a sustainable urban development, s.a.:

- Local food production for subsistence and income generation
- Recovery of nutrients (phosphate and nitrate) from waste water
- closed-loop water and nutrient cycles for urban fish and vegetable production
- Conservation of open green space in cities
- Improvement of the microclimate and less energy demand for cooling of buildings
- Social cohesion and improvement of social life; community gardens are places to meet people, for recreation and learning from each other

Involvement of Science shop kubus

In recent years the science shop kubus is involved in some urban gardening and urban agriculture projects, partly related to decentralized sustainable waste water treatment and reuse. The participation in these projects allowed us to gain some experience and expertise in the field. The role of kubus differs from project to project:

- The “Mauergarten”-project (Walled garden) is a recent grass root level project. Neighbors of a Berlin neighborhood started a gardening initiative on an inner-urban green strip that stretches along the formerly Berlin Wall which divided East and West Berlin. Beside participation as co-initiator, our main role was facilitation and support in approaching policy makers to negotiate the confirmation for the land use. Mauergarten.net
- In the international project Urban Agriculture in Casablanca (UAC) we cooperate with the department of Landscape Architecture of the Technische Universität Berlin and several national and Moroccan partners since more than 6 years. Here we work on people’s engagement, round table discussions, capacity building and a pilot project in an peri-urban informal settlement (see presentation 101 in the same session). Further we participated in the project management for the preparation of the application and during the project. www.uac-m.org

- In the ROOF WATER-FARM project we are partners in the project management, as mentioned before. www.roofwaterfarm.org

- In cooperation with environmental NGOs and initiatives in Berlin we prepare discussion fora and an international conference.

Thesis and Leading questions

- Increasing urbanization makes inner urban green spaces disappear and extremely reduces peri-urban agricultural land - even in cities where now is still large agricultural activity. Both developments dramatically worsen the living conditions of the low-income urban and peri-urban population in ecologic, economic and social terms.

- UA and UG are forms of productive green land use, that can enfold a multifunctional positive impact in ecologic, economic and social terms, such as: reducing the inner-city heat stress, conservation of biodiversity, supply of healthy food, reduction of the transport distances for food, local income through local food production, self-provision with food and income generation through direct sale of regional products and local tourism, upgrade of neighborhoods, recreation plots for families, social interaction, training and empowerment of socially disconnected people such as the unemployed and the elderly.

- Today and in the near future UA and UG are disadvantaged against other commercial forms of urban land use, like real estate development or transport infrastructure. With increasing scarcity of resources, impacts of climate change and social collapse of urban agglomerations, however, the economic benefits of UA and UG will increase.

- UA and UG can only become a significant part of sustainable urban development now and in the near future with massive support from policy makers in politics, administration, and public infrastructure companies. This includes safeguarding of open space through use restrictions or land purchase.

- Science shops can provide useful support to two interfaces. One is the collaboration between social actors who practice UA and UG and scientific research and teaching. The other is to promote and organize the dialogue with decision makers, with the aim to foster future-oriented sustainable urban development actions.

The potential of UA and UG and the intermediary role of science shops will be subject of discussion with the audience.

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A Participatory Action Research Approach to Developing Assistive Technologies for People Suffering from Cognitive Disorders

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Abstract

Cognitive disorders, such as disorders on the autistic spectrum, Downs's syndrome, etc. often imply significant constraints on communication between persons suffering from those, and the environment where they act. Meanwhile, governmental propositions on human rights emphasize equality concerning information, where overcoming such interaction challenges should be considered as strongly encouraged. This contribution discusses studies that have been performed towards municipalities, public institutions, and non-profit organizations, in southern Sweden. The studies aim to involve users throughout the development of an innovative concept of communication assistive software technology, by involving multiple types of users, such as: persons with disabilities, personal assistants, teachers for students with special needs, academics, and others. The studies and the resulted findings are discussed in regard to the participatory action research framework.

Key Words: *eHealth, Action Research (AR), Participatory Action Research (PAR), People with Communication Disabilities, Multiple types of users, Communication Assistive Software Technology (CAST)*

1. Introduction

The term eHealth has been introduced quite recently, and it often relates to IT-based assistive technologies in contexts of health care. Such approaches may generally be considered as having potentials also for supporting communication alternatives in cases of cognitive disorders. Still, exhaustive and careful investigations need to be done in purposes of developing genuinely supporting IT-based assistance.

Participatory Research, PR, is an inclusive approach to include several types of participants in studies, in intentions of improving the domains of the studies. Several values are considered, such as, that research should be done with, rather than on, people in order to find relevant information for improving their lives. With such approach in mind, the probability of developing higher valued assistive support in cases of communication constraints should increase.

This contribution discusses a two-folded investigation of cases of persons with cognitive disorders with different grades of communication disabilities, in relation to PR and participatory action research (PAR).

On one hand, it outlines the context of the research question to be answered, categorizing multiple users. Further, it presents the PAR framework of the context defined, including:

- an analysis of participants being research active (RA), active (A), and included (I) in relation to participatory action (PA), action research (AR) and compliance (C)
- information regarding participants or test-candidates, facilitators and researchers
- the socio-technical approach
- and finally the corkscrew action in the context of PAR

On the other hand, the paper discusses the studies conducted so far, presenting a pre-study phase and three other phases, parts of the ongoing research. Moreover, it enlightens also on features and prototypes developed with regard to PAR. At the end, the paper also presents a vision on the need of assistive technologies in both well- and less developed countries.

2. Context

The context of the ongoing study is framed by the attempt of finding the answers to the change-oriented research question: “How can I/we (people within the family, non-profit organizations, institutions, or industry) re-conceptualize communication tools (programme) to improve people’s with communication disabilities communication skills (problem) within their social context/daily life (phenomenon)?” (Naughton & Hughes 2008).

The research question shapes, in its turn, the context, in terms of four different types of parameters: people, programmes, problem, and phenomenon.

2.1 People

The study is formed around the first focus parameter, and merely the most important one, represented by people. In this context, the partnership or interaction between different groups of people is categorized into three different main categories:

- the first group of people, the academics, are represented by people from Kristianstad University
- the second group of people are working for municipalities and non-profit organizations from Southern Sweden, or public institutions affiliated to industry, such as Krinova Incubator and Science Park (Krinova AB n.d.)
- and finally the third group of people entitled as “multiple users”, where these persons interact in some way with people with communication disabilities, their families, personal assistants etc. So the final category relies on the interaction of multiple types of users

Figure 1, is exemplifying the part of the context build by the

first parameter, people.

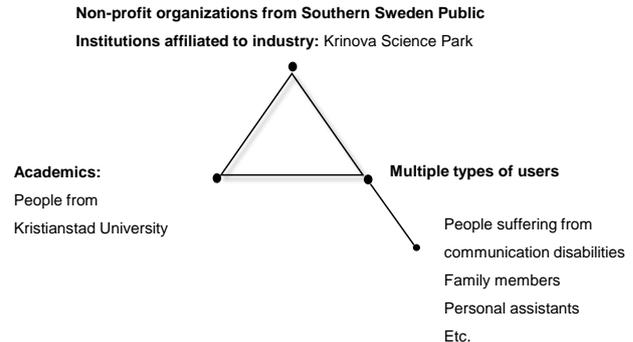


Figure 1. Overview on the first parameter

2.2 Programme

Further, the second parameter, programme, refers to re-conceptualization of communication tools. By re-conceptualization we mean re-imagining the user experience, by re-designing the existent communications software aids, following a user-oriented model, rather than a product-oriented one.

2.3 Problem

The third parameter, problem, identifies, de facto, the other focus point of the study. The problem represents the issue that

needs innovative solutions, in this context, referring to communication constraints.

2.4 Phenomenon

The last parameter, the fourth one, phenomenon, represents the relation between the two focus parameters, people and the identified problem, in a specific daily situation. Such a daily situation example would be: how a person with communication disabilities can communicate with the bus driver when taking the bus alone.

2.5 Defining the Context, Based on the Four Parameters

Finally, the relation between these four parameters builds a socio-technical framework (Iakovidis 2004) (Saplacan 2013), where the focus is on the user, and the assistive technology is created with the help of the user. Figure 2 illustrates the current context in that framework.

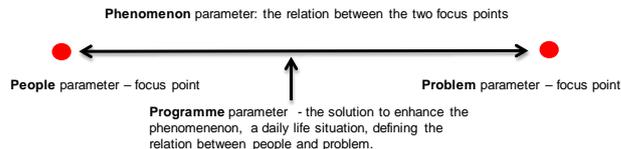


Figure 2. The socio-technical framework built upon the four parameters

3. Participatory Action Research (PAR) Framework

The next section discusses PAR as a framework, but also in regard to: the types of participants to the ongoing research studies; the socio-technical approach; and finally an overview on the corkscrew action in the context of PAR.

3.1 PAR as a Framework for the Ongoing Research Study

The context is defined, as it has been pointed out above, by the four research parameters: people, programme, problem and phenomenon. These parameters are included within the PAR framework, where it is applied as the main approach.

The PAR framework, here, is focusing on the people parameter

in regard to a positive change (Wright, et al. 2013). It enables also the study to be a research on and with different types of participants, who are also users of the assistive technology concept developed. In this way, there were identified three types of participants in regard to their degree of participation in active research oriented scales. These are:

- the persons with communication disabilities who are included in the research process (Saplacan 2013), following the compliance sub-model usually employed in the medical field (Wright, et al. 2013)
- the facilitators who are active participants, by participating into the action research (AR), but they might not have the power or capability to conduct the whole research process
- and finally, the researcher, who is research active (RA) and is directly involved into the PAR process

Moreover, a person oriented scale in a three-layer-user model was also identified in a post-study in Dawn Chandler’s and Bill Torbert’s study, *Transforming Inquiry and Action: Interweaving 27 Flavors of Action Research* (Chandler & Torbert 2003). They put it as first-, second-, and third-person research. The correlation between the created model and the model identified in their study is presented as it follows:

- the first-person is represented here by the participants in the ongoing study
- the second-person is represented here by the facilitator
- whereas the third-person is represented here by the researcher

The matrix from Figure 3 identifies three types of participants, in regard to their degree of involvement in active research oriented scales.

PAR = Participatory Action Research AR = Action Research C = Compliance				
Active		PAR	AR	C
RA = Research Active	RA	X		
A = Active	A		X	
I = Included	I			X

Figure 3. Active research oriented scales

3.2 Participants or Test-Candidates, Facilitators, Researchers

Below, we categorize each type of participant in one of the identified types, by emphasizing on their roles, i.e., creating a person-oriented structure, in relation to Figure 3:

- People suffering from communication disabilities. They are named “participants” or “test-candidates” in the ongoing study. The category is represented by: people with communication problems with unknown diagnosis, people suffering from Down syndrome (DS), or disorders on the autism spectrum (ASD). The test-candidates suffer also from mental retardation (MR), at different levels. As the CAST has to be developed for the people with communication disabilities, but also together with them, these participants or test-candidates are included throughout the development process at the highest degree possible, according to the PAR principles. As previously mentioned, the sub-model followed is the compliance model employed usually in the medical field (Wright, et al. 2013).
- The facilitators also named here “co-participants”, who are active participants within the PAR framework, are represented by: caretakers of the people with communication disabilities, personal assistants, teachers and teaching assistants for people with communication disabilities, and/or speech-therapists. Their view and knowledge regarding the individuals with communication impairments originates de facto from own experiences based on series of events lived or encountered, but also from their close relationship to such individuals. This

leads to pragmatic contributions from their sides, as not always the researcher has all the necessary knowledge for conducting such a study. Though, they may not always have a vision on the whole study or process, and therefore they could not conduct a PAR, their research being limited instead to only AR, in contrast to the researcher who may perceive the whole process in a holistic way, and therefore may conduct a PAR.

- Finally, the researchers’ role is to design the research process, but accommodate it during its development, according to the necessary changes. This type of “emergent design” applies both a pragmatic and a critical theory. On one hand, the pragmatic theory consists into the inclusion of the following elements within the research design: cooperation, action, dialogue, and experiential learning. On the other hand, the critical theory subsists of reflections and reflective knowledge in regard to other assistive technologies and the concept developed itself. (Johansson & Lindhult 2008) The researcher also empowers other types of participants, i.e., facilitators, as the PAR’s focus is on empowerment and the ability to delegate power, creating in this way the participatory environment. (Walmsley & Johnson 2003)

3.3 Socio-Technical Approach

The type of research process applied in our research follows a model described by G. Naughton and P. Hughes in their book

Doing action research in early childhood studies: a step by step guide (Naughton & Hughes 2008). This is developed around the core criteria of re-designing, re-defining, and re-conceptualizing the CAST. More concretely, in our research, the research process is based on a continuous action of: conducting interviews and open discussions, evaluating these, envisioning, (re-) designing, creating prototypes, setting up developer tests, setting up end-user tests, and finally evaluating these tests. Then the whole process is re-started (Saplacan 2013). As the end-users, i.e., various participants, are involved directly into the process of creating the concept, the participatory design praxis from the PAR framework is applied (Iakovidis 2004). This leads also to the fact that the research is at the cross-section between various fields: technical and health care, but also covering aspects from the social one. Figure 4 exemplifies the participatory design in the context of PAR.

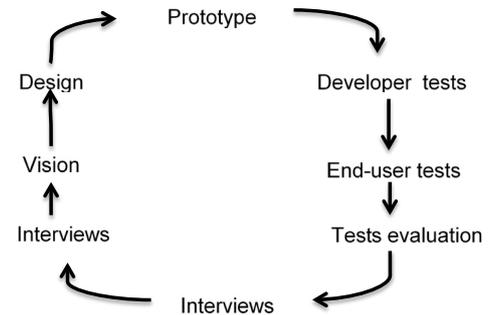


Figure 4. Participatory design (Saplacan 2013)

3.5 Corkscrew Action in the Context of PAR

There were conducted several studies towards municipalities, public institutions and non-profit organizations from southern Sweden. The main focus was on re-conceptualizing a communication software tool. However, the studies can be framed so far into three different phases, preceded by an initial pre-study phase. The phases evolved into a participatory corkscrew action (PCA). Figure 5 illustrates the whole process.

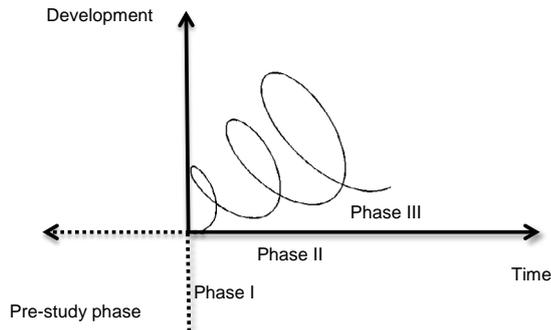


Figure 5. Participatory corkscrew action (PCA)

4. Studies' Phases – Methods, Results, and Findings

As specified, the studies conducted hitherto can be framed into three different phases, regardless the pre-study phase. The findings, results and methods, employed in the pre-study and within the three phases are described as it follows.

4.1 Pre-Study Phase

The pre-study of the ongoing research focused on a market analysis regarding the available CAST for people suffering from communication disabilities. There was observed that there are currently developed many types of CAST. These software

tools available, usually, follow a hierarchical navigation model, where symbol images, i.e., ideograms including: pictograms, Bliss (National Agency for Special Needs Education and Schools 2012), and Picture Exchange Communication System (PECS) symbol images (The National Autism Center 2009), are placed in folders and subfolders. Another alternative navigation model is the browsing model, which is employed in less professional CAST. The software tools were analyzed together with researchers, co-participants and participants according to PAR's core principles: dialogical sessions, active participation, reflections, empowerment, pragmatism and critical thinking. The main methods employed here were: interviews based on open discussions, survey questionnaire, dialogical sessions, brain-storming, and, as mentioned, market analysis.

During our investigations, there was observed the need of re-designing a tool that provides fast communication between the receptor and interlocutor, where at least one of them suffers from communication disparities. The resulted findings focused on critically identifying the advantages and disadvantages of the existing tools. The conclusions drawn from this early stage include:

- there was a strong desire to have a fast navigational CAST, which will lead to faster communication
- the CAST should avoid a hierarchical navigation, instead

should be based on zooming navigation

- to reduce purchasing costs and to have a large availability to the users
- there was a strong desire to be based on own content, without necessarily being depended on the use of various ideograms

In this way, a new concept was approached, by re-designing old communication technology tools, and introducing (one finger) zooming navigation model. This provides the user fast access to various ideograms, and therefore simpler and easier communication.

4.2 Phase I

Phase I, was a continuation of the pre-study phase. As methods employed, the main approaching resided on: brain storming, design and re-design; participatory design; interviews and open discussions with people working as teaching assistants, personal assistants, academics and business developers; developer tests and end-user tests; and evaluations. Here, we operated according to participatory design principles, as described earlier (see Figure 4). During this phase, the results consisted into a first prototype of a communication software tool based on the innovative one-finger zooming navigation. The prototype was

developed for Android Operating System (developer.android.com 2014) based smartphones. Own content, and available administrator and user mode were introduced, such that the administrator user could grant and revoke privileges to/from other users regarding various features. Other findings resulted here include: the users, i.e., people suffering from communication disabilities, were able to employ the software tool; moreover, they also were very positive to a tool employing own content, such as personal photos instead of other ideograms.

4.3 Phase II

The methods employed here consist basically of feedback interviews and feedback protocols, including end-user tests, and evaluations. The findings resulted from this second phase refer to the fact of expanding the study even further, such that various end-users suffering from communication disabilities due to various diagnosis should test the communication software tool.

4.4 Phase III

Phase III, expanded the study to several types of end-users, based on the findings from Phase II. Here, there were included throughout the research process people suffering from Down syndrome (DS), disorders on the autism spectrum (ASD), but also suffering from mental retardation (MR) at different levels. The methods employed here were: extensive literature review;

dialogical sessions and interviews as in PAR; design of scripts, i.e., here meaning a description of how procedural tests with people suffering from communication disabilities would be conducted; procedural tests designed for three levels of abstractions on three different types of navigations, i.e., browsing, hierarchical, and zooming navigation, and two different embedded systems, i.e., smartphone and digital tablet; and finally feedback surveys post procedural tests. The end-users, i.e., people suffering from communication disabilities due to various diagnosis had to answer gradual questions, included into procedural tests, designed at three abstraction levels: emotional (e.g. How do you feel today), self-awareness questions (e.g. How did you go to school today?), and perceptual ones (e.g. How is the weather today?). These had to be answer with the help of three assistive communication software tools, and two embedded systems technologies.

The results from this third phase consist into a further developed prototype of assistive technology, where features such as text-to-speech (TTS), pictogram-to-text (PTT), SMS, call and GPS were the main features included. Some investigations on speech recognition (SR), speech to text (STT), and near field communication (NFC) were also included. Moreover, the availability of the prototype was expanded from previously only smartphones to currently both smartphones and digital tablets.

The findings derived from this phase include procedural

knowledge, such as: procedural tests conducted in non-home environments resulted into poorer end-user performance; home environments for conducting the procedural tests are preferred; end-users preferred digital tablets rather than smartphones; the questions defined as scripts for the procedural tests were well-defined, this being resulted from the feedback surveys post procedural tests; the time allocated to each procedural test, i.e. a maximum of ten minutes, was just right; the level of MR of each test candidate affect the performance.

5. Related Work

Studies from the eHealth field show that there is a high need for developing CAST for people suffering from communication problems, as the number of people with ASD is continually increasing, not only in Sweden, but also in other countries (Saplacan 2013) (Hjern 2012). Moreover, studies have shown that people from developing countries would rather invest into cheaper solutions of small computers, such as smartphones or digital tablets, rather than into other types of personal and/or portable computers (Braa & Purkayastha 2010) (Saplacan 2013). The related work fortifies the contributions of the ongoing research study.

6. Future Work

During a future study of assistive technologies for people

suffering from communication disabilities within the PAR framework, it is wished to expand the study in such way, that families having a member suffering from communication disabilities shall be actively involved throughout the process. The procedural tests shall be held in the home environment. Several follow-up meetings together with families (parents and/or siblings) shall be planned, where the families become active participants in the research process, i.e., co-researchers, rather than being only facilitators.

7. Summary

This contribution is two folded. On one hand, we elaborate on concepts of PR, and especially on, PAR, where this approach puts even more focus on a scale of active participation in the domains of studies. Especially, in contexts of PAR, we bring contributions regarding categories of types of participation, which is necessary to illuminate on, and understand the interaction scene as a whole. On the other hand, we present case studies of persons with cognitive disorders with different grades of communication disabilities. Furthermore, we here outline design proposals, and prototypes, for IT-based assistive solution approaches to overcome such constraints.

The work is an ongoing research, and should be seen as a holistic non-reducible cross-section between fields, such as, health care and computer science, where even social aspects

are covered, such as communication in daily situations. Studies investigate the socio-technical approach in the context of PAR, in the intention of improving daily lives of people with communication disabilities through the use of a new concept of CAST. Great results and potentials have been proven when it comes to the performed PAR based investigations, as well as when it comes to the concrete outcomes of those, pointing out promising development continuations.

Studies have been performed towards municipalities, non-profit organizations, and public institutions, i.e., Kristianstad University and Krinova Incubator and Science Park (Krinova AB n.d.), in southern Sweden.

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Benefit of Re-use of IT Hardware for Society and Environment – a German Business Case

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Abstract

The article shows how the re-use of IT hardware can be beneficial for the environment. The reuse of a standardised notebook with a 15.6 inch display reduces greenhouse gas emission by 73.5 kg CO₂e, which could accumulate to a worldwide saving potential of 1,345 t, if only 10% of the nearly 183,000 sold devices in 2012 (data from digitimes.com) would have been refurbished notebooks. The company AfB is a good example to bring together social and environmental activities while being at the same time a seed for societal changes to break out of the lock-in pathway of production and consumption of new goods. The social innovation of reusing offers a way to future sustainable transition processes: High quality products are sold at a lower price.

Key Words: *transition of society; environmental benefits of re-use; LCA; case study*

Introduction

Several studies have shown that the re-use of computer hardware has a positive influence on reduction of potential environmental burden. Often neglected in the debate of efficiency for the use of electricity is the consumption of energy during the production, in other words: the look at the burden backpack from the upstream processes. Therefore, a Life Cycle Assessment (LCA) was carried out to evaluate the potential environmental benefit in relation to the re-use of a notebook and a standard PC. This work has been done in cooperation with the German company AfB (Arbeitsgemeinschaft für Menschen mit Behinderung gemeinnützige GmbH), a leading social enterprise focusing of the refurbishment of used IT products from companies as well as administration and providing job opportunities for people with disabilities. Still, the willingness to buy used computer hardware is low or even none existing in many procurement departments in companies. This discussion paper shows that the reuse business is a contribution for societal transformation processes.

The German Business Case: AfB

The case of the German remanufacturer AfB (which is an abbreviation of “Work for People with Disabilities”), founded in 2004, shows a concept of collecting used IT hardware from enterprises and public administration in order to resell the

products to the private customer. Around 70% of the devices are re-used. The rest will be treated for material recycling. In addition, the company provides a working area for people with disability in a first employment market, because many people with a disability lacked good job opportunities, despite their talent and work ethic (Wessel 2014). In combination with offering high quality devices at a low price, AfB is a sustainable entrepreneur addressing all three dimension of sustainability: economy, society and environment. The socially-oriented interest and the societal responsibility has become the core of their business model and of their economic activities. Nowadays, AfB obtains used it hardware from many companies as a donation to keep the old devices out of landfills. The data on the hard disk drive (HDD) are deleted by a secure and ISO certified procedure.

Benefits for the Environment When Reusing Computer Hardware

One of the main arguments to hand over their old device to AfB is not only the fact that they employ people with disability at an equal level to the other employees, but that through the re-use and recycling environmental benefits are generated. Sarkis et al. (2010, p.337) also state that “the environmental implications of reclamation, re-use, and recycling to save landfill space, fuel, and costs are becoming more important for organizations”.

Therefore a LCA has been done to evaluate those potential for a notebook and a standard PC. The life cycle of a product can be generally described by the stages of (1) raw material extraction, (2) manufacturing, (3) use and (4) end of life (re-use, material recycling, thermal recycling or disposal). In the specific case of the refurbishment of used IT hardware a treatment step and a second use period are added before the final decomposition. Thus, the life cycle consists of the following phases (c.f. Figure 1):

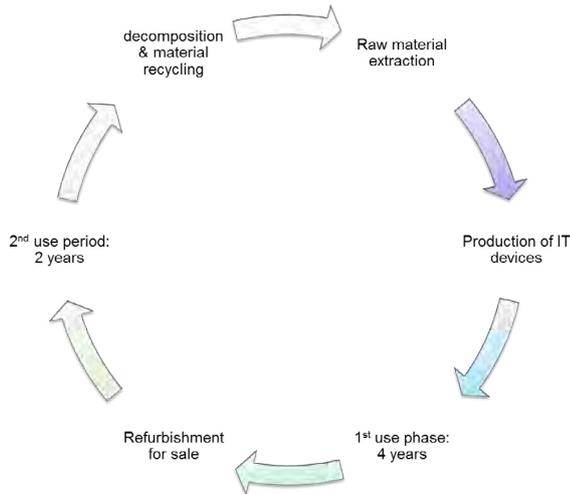


Figure 1: Assumptions for the IT product life cycle

To model the notebook with a 15.6 inch display a study on the determination of environmental impact of the production and use of ICT by Prakahs et al. (2011) is used as well as a Life Cycle Assessment for the Asus UL50 (Ciroth & Franze 2011) and the weight data from the decomposition a Toshiba computer from 2001, with the acceptance of weight reduction in plastics by 20%.

Notebook	Toshiba, 2001 with a reduced weight by 20% & Asus UL50, 2009	measures in gram
Total		2574
Plastic/Metals	51%	1305
Electronic components	14%	350
Battery	15%	389
Screen	20%	530
Chassis		700
Keyboard		79
Battery		389
PCB		350
HDD		97
DVD/CD Drive		261
Screen		530
Power Supply		362
Packaging	corrugated board	739
	HDPE	15

Table 1: Data and weights for the modelling of a Notebook

To model the standard PC a data sheet of the Dell Optiplex 580 was used as well as the mass-based material analysis of a container with around 50 used PC carried out at the TU Berlin.

Standard PC	Dell Optiplex 580; production 2012	measures in gram
Total		8260
Metals	64%	5317
Electronic components	31%	2550
Plastics	5%	393
<hr/>		
FE-Metals		
NE-Metals		189
Iron-Copper-Mix		19
Cables with connectors		237
Power supply		769
Drive		820
Hard Disk Drive		270
Printed Circuit Board		427
CPU and RAM		23
Batteries		3
Thermoplastics white		275
Thermoplastics black		87
Mixed plastics		31
Power Cable		328
Packaging	corrugated board	739
	LDPE	15

Table 2: Data and weights for the modelling of a standard PC

The environmental benefits in terms of reduction of global warming potential (GWP) has been calculated and is displayed in Figure 2 for the lifetime of six years of a notebook with a 15.6 inch display.

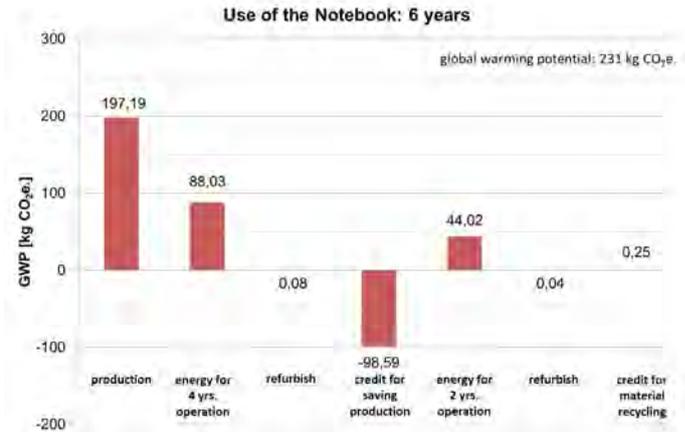


Figure 2: Global warming potential for the life of 6 years of a notebook

The GWP of the notebook makes a non-negligible share of the total score of 231 kg CO₂e. The main credit results on the assumption that for the use of the refurbished equipment half of a new device must not be produced (four years of first use to two years of secondary use). Based on the described scenario

with an initial use phase of four years and a second use of at least two years the savings of greenhouse gases result in the amount of 73.4 kg CO₂e (c.f. Figure 3). The saved amount of CO₂e. is equivalent to climate-relevant emissions for a car-ride from Potsdam to Munich (~ 564 km), so re-use is worthwhile from a climate perspective. The analysis resulted also in a saving potential of cumulated energy demand (CED) of 693 MJ for the product group notebook.

For the assessment of a standard PC the GWP makes a non-negligible share of the total score of 510 kg CO₂e. with a saving potential of 64.6 kg CO₂e. For the investigated use scenario. The CED savings were 830 MJ.

In addition sensitivity analyses were performed to show the effect of different periods of use. The highest contribution to the climate effect is due to the 3:3 scenario for desktop PCs and notebooks, as can be read in Table 3. This is partly due to the credit from production related emissions (= 100% credit given by avoiding the purchase of a new device) and the other at a relatively low second life time.

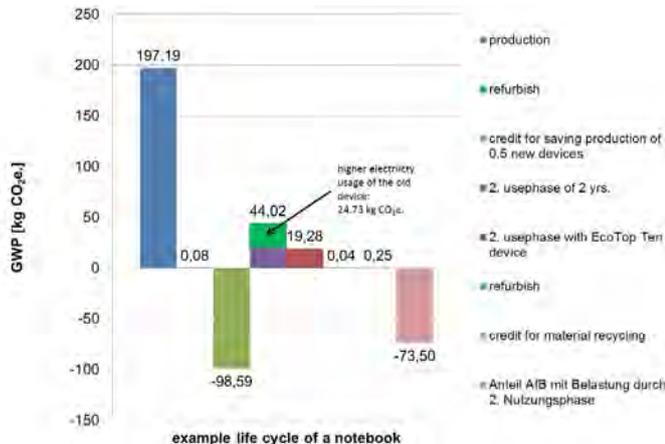


Figure 3: GWP over the lifetime of a notebook with a re-use phase of two years

use in years	6	7	8			
relation 1 st & 2 nd use phase	4:2	3:3	2:4	4:3	4:4	2:6
Saving Greenhouse Gas Emissions [kg CO₂e.]						
Notebook	75.1	161.2	148.7	111.9	148.7	123.6
PC	64.8	143.8	106.3	85.6	106.3	31.1

Table 3: Savings for GWP through refurbishment by AfB in relation the use scenario

Now, how long should a notebook be used until the production related emissions are levelled out by the emissions related to higher electricity consumption in comparison to more efficient

devices? As illustrated in Figure 4 a notebook must be re-used for at least 15.7 years and the PC at least 6.4 years. Therefore, the longer use of ICT devices holds strong environmental benefits. The open question is why the acceptance of buying refurbished products is so low and how this intelligent use of complex goods can be a driver for societal changes and be part of sustainability transitions (Loorbach 2010; Grin et al. 2010; Farla et al. 2012)?

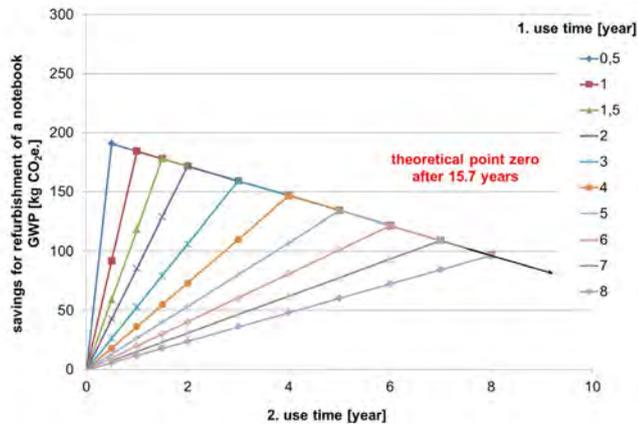


Figure 4: Savings of greenhouse gases with different use scenarios

Transition Potentials and the Benefits for the Society

The challenges we face nowadays are manifold and have a direct impact on production processes. Energy supply has to deal with decreasing natural resources which leads to a continuous price increase. Water supply and sanitation systems need huge investment to maintain and repair. The road transportation traffic and the near collapse situation of traffic in cities have an influence of the supply of material and in time as well as delivery problems to customers. This all means that changes towards a sustainable development faces a high degree of complexity but also lock-ins as established technologies are linked with user practice and life styles as well as business models, value chains, regulations etc. (Sanne 2002; Markard et al. 2012)

Although it is important to picture complexity and an incorporated system thinking when dealing with societal changes towards a just and sustainable future, it is the team play of different actors who establish a growing movement into the right direction (Grin et al. 2010; Loorbach 2010; Schneider et al. 2010; Becker & Zacharias-Langhans 2012; Schneidewind & Augenstein 2012; Nevens et al. 2013; Freidberg 2013). The example of AfB is suited to encourage entrepreneurs, scientists citizens to test new, participative strategies as an appropriate approach to reach a more environmental friendly, social acceptable and economical fair status of human life on Earth, which is more than just decoupling natural resource use and environ-

mental impacts from economic growth as proclaimed by UNEP (2011).

The business case discussed in this paper refers to a process called co-creation and helps to find alternative pathways as well as being more courageous in working together to share knowledge between sustainable entrepreneurs and scientists in a competing market. Alternatives can be found also in university based education, where in self-organised student labs as well as in research and through the work of Science Shops nucleuses are developed for designing and creating transition schemes. So, the Great Transformation takes places in many different small activities. Initiatives like the ReUse e.V. (a registered association dealing with the question of gathering acceptance of used products) contribute to the transition of society by pointing out new ways of satisfaction of our needs (Becker et al. 2005).

Such activities from social entrepreneurship are complemented by other forms of “social innovations”, like for-free shops or all-sharing shops, repair-cafes and re-use businesses, new strategies of co-operation and exchange often established in niches (Jaeger-Erben et al. 2013; Rückert-John et al. 2013). Co-operation between researchers, civil society and sustainable entrepreneurs is adjusted to support the mainstreaming of such new standards of living or types of lifestyle. The practical testing of these “social innovations” can be viewed as “practical

discussion contributions” as they seem to be more suitable than solely theoretical disputations when it comes to overcoming what Gregory Bateson refers to as the “roots of ecological crisis”, namely “we live within an infinitely expanding ‘frontier’” or “technology will do it for us” (Bateson 1987, p.497).

The detachment of the economy from society can be seen as the starting point of the rise “of an automatic system of price-making markets. In every society before that, the economy had always been embedded or immersed in the social system” (Machado 2011, p.137). The economist Karl Polanyi refers to the disconnection of the economic exchange process from its social context as the “disembedded economy”. Market, barter, (re-)distribution and reciprocity are four basic elements of economic activity as so called forms of integration in the history of mankind (Polanyi et al. 1957; Polanyi 2001). Alternatively, the German economist Niko Paech proposed four different economic-technological concepts: renovation, imitation, exnovation and innovation (Paech 2005; Paech 2009). Both approaches can be brought together into a matrix as developed by Becker (Becker 2008).

	Reciprocity	(Re-) Distribution	Market	Barter
Renovation		AfB		
Imitation				
Exnovation				
Innovation			AfB	

Table 4: Matrix on Economic Change and Exchange Modi (Becker 2008)

The eight elements of the matrix are explained briefly here to identify, where the case of AfB might be located (see Table 4):

- **Reciprocity:** the exchange of goods and services takes place in accordance with a principle of mutual obligations; the goods and services are exchanged on the basis of pre-determined or freely negotiated relative benefits.
- **(Re-)Distribution:** Goods and services are collected in a determined relationship, stored (as far as possible for the item in question), and redistributed.
- **Market:** the exchange of goods and services is based on a price established through supply and demand.
- **Barter:** the exchange process is based on the usability of the bartered goods and services.

- **Renovation:** The re-use or refurbishment of existing goods for the re-use or continued use.
- **Imitation:** The adaptation /supplementing of an existing good by transfer / adaptation / extension.
- **Exnovation:** Taking an existing good out of use and disassembling it into its parts.
- **Innovation:** The development of a new additional good with all its (production) technical pre-conditions.

There is a broad field of various possible activities towards the implementation of sustainable entrepreneurship. Economic successful activities are not restricted only to the interface between market of supply and demand and innovation of new additional products as the example of AfB shows. The re-use business is one type of social innovation with respect to the idea of avoiding production and consumption. Already in 1966, the economist Kenneth E. Boulding stated that the “essential measure of the success of the economy is not production and consumption at all, but the nature, extent, quality, and complexity of the total capital stock, including in this the state of the human bodies and minds included in the system. [...] This idea that both production and consumption are bad things rather than good things is very strange to economists [as well to engineers as to designers], who have been obsessed with the

income-flow concepts to the exclusion, almost, of capital-stock concepts” (Boulding 1966, p.8).

Conclusion

Such stakeholders, e.g. AfB or initiatives like the ReUse e.V., may play a key role in transition movements within communities. The example of AfB illustrates ways of re-connection and re-embedding economy into societal contexts by considering environmental and societal considerations at equal level with economic categories. Together with their members or customers they can create long lasting value by deriving a common decision on the purchase of next IT generation in a company – either used or high quality primary devices suitable for at least a second lifetime. Rather trying to find the big single universal working solution we need community-based research in order to adjust and to identify ways to deal with this continuum of a societal change called Great Transformation. It is not necessary to change things deliberately – things are going to change anyway. Re-use, Open Source and collaborative technology development designate skills as well as concepts which will be required.

The re-use of IT products offers a way to future sustainable transition processes: High quality products are sold at a lower price (economic value generated), the reprocessing and material recycling employ people with limited qualification and the

potential environmental burden due to production is reduced as well as.

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MAKING A DIFFERENCE TO RESEARCH STRATEGIES

Experiences and Attitudes of Research Funding Organisations towards Public Engagement with Research with and for Civil Society and its Organisations

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The European Commission funded PERARES project (Public Engagement with Research and Research Engagement with Society) aims to establish a deeper and more systematic engagement of research bodies- such as universities, research councils, Science Shops and others- with civil society groups in setting research agendas, and to advance this by transnational exchanges of experience and mutual learning. One element of this work has been to better understand the experiences and attitudes of research funders across Europe towards public engagement with research with and for civil society and its organisations.

The present results should enable research funders throughout Europe to better assess the options to take PER (Public Engagement in Research) activities up in their strategy and thus contribute to European policy and the future of the European Research Area (ERA). It does this by giving an overview of experiences and attitudes of research funding organisations in different countries towards research with and for civil society and its organisations. This type of research engagement can make civil society a partner in identifying and responding to the “Grand Challenges” of our time to which European research should respond according to the Lund declaration (Lund Declaration

2009).

The Ljubljana process, which aims to make European research more effective, calls for an improved governance of the ERA, involving universities, research organisations, and civil society (Council of the European Union 2008). More equitable access to science and technology, and more response from civil society to science and technology are necessary to achieve the ideal of a knowledge society capable of sustainable economic growth and greater social cohesion.

It should be noted that this paper focuses solely on the experiences of research funders and therefore does not examine whether or how CSOs themselves feel they have been – or should have been- involved in research funding. Interviews took place in the UK and Ireland in spring and summer 2012, in Germany and the Netherlands in late 2012 and France in early 2013 whilst further information was also gathered from Canada, Romania, Italy and Spain and the European Commission. The Monitoring Policy and Research Activities on Science in Society in Europe (MASIS) reports provided background information on the situation across Europe (MASIS 2012) and this research seeks to add another layer to this work which

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examined Science in Society in 38 national reports from a range of European countries.

Experiences varied across the different countries. In the United Kingdom (UK) and Canada and increasingly within the European Commission itself, there is a strong policy context for research funders in supporting public engagement with research. In Germany and the Netherlands there is also support amongst some funders for engaged research but at a less embedded level. In France there is an increased interest in the involvement of CSOs in research at both the local level and especially at the regional level. The new law on the organization of higher education and research also opens several modest possibilities in the science and society landscape. In Romania the new National Strategy for Research, Development and Innovation (2014-2020) is expected to involve stakeholders from “civil society, social partners, etc.” including CSOs. In Ireland, Spain, and Italy, the infrastructure is still being developed, however there is some interest amongst funders in how to move forwards in this field.

Key findings

A wide range of terms are used to describe engaged research with civil society organisations. This has an implication for levels of understanding of research partnerships amongst research funders. For example community engaged research or *bürgerbeteiligte Forschung* is used in Germany whilst in the UK

Public Engagement with Research is the accepted terminology. Some countries are still developing an adequate terminology to describe this work.

There are national and international commitments to research partnerships and an emerging interest in examining and spreading out models of good practice in research with and for CSOs.

There are many models of good practice across Europe of research funding organisations supporting research with and for CSOs and building infrastructure to support this work, some of which are explored below (and pp 117-123 in the full report, (Steinhaus et al 2013)).

Even in countries where there is less of an understanding of research with and for society, there is some interest in how this is done in other places. When research with and for CSOs was explained, interviewees from research funding organisations often expressed an interest in the concept.

These models are often isolated and lessons learned do not necessarily feed into the larger research funding structures, nor (with some exceptions mentioned here) are they generally exchanged at a national or cross national level.

In many countries the healthcare sector in particular has led the way in engaged research with and for CSOs.

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Research with and for CSOs often does not fit into structures of applied research. Firstly, research funding policy to support applied research is often related to income generation rather than research with and for society. Secondly, funders reported that there is still a perceived tension between the understanding of academic excellence (in curiosity driven research) and social relevance, leading to some resistance amongst academics to the idea of engagement.

To date, European funding programmes have represented the only significant mechanisms for supporting EU-wide coordination and collaboration in Science with and for Society research. The actions supported have already made, and will continue to make, important contributions to both the understanding of problems and the development and widespread dissemination of effective solutions (technopolis [group] & Fraunhofer ISI 2012). Several correspondents to the MASIS report note that the framework programme is the sole vehicle for accelerating efforts, because there is no funding (Hungary, Cyprus, Sweden) or insufficient funding (Czech Republic) available on a national level within the area of Science in Society or mention an undeveloped SIS research culture (Ireland) as the explanation for this tendency (Mejlgaard et al 2012, p. 57).

Horizon 2020's focus on Responsible Research and Innovation (RRI) is acting as a driver to encourage research funders to consider research with and for civil society. It was explicitly

mentioned in this context by funders in the UK, Ireland and Germany.

Research funders felt that to get a better understanding of research with and for CSOs they need information to improve understanding and knowledge of methodologies for research with and for CSOs and structures to support this work. They suggested that this need for understanding also applies to the majority of researchers.

Where research funders have developed policy and practice to support research with and for CSOs, there has been strong leadership which has enabled changes in structures, support and funding.

Where models of funding are shared, interesting practice develops. For example, the PICRI funding model and the 'Researchers-Citizen' programme in some French regions were based on the Canadian CURA programme, which allowed the organisation and implementation of complex and innovative research and fostered the mobilisation of knowledge towards participants. The CURA programme itself, in turn, was inspired by the Dutch Science Shop model.

Another good model, at the European level, is the FP7-funding scheme 'Research for the Benefit of Specific Groups – Civil Society Organisations (BSG-CSO)' which allows CSOs find responses

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to their needs. This scheme was inspired by both the Science Shop model and the CURA programme.

There are also good models for supporting culture change and sharing practices, such as the National Coordination Centre for Public Engagement in the UK, or competitions such as 'Mehr als Forschung und Lehre' initiated by Donors Foundation for German Science.

Some funders suggested that there was a need to ensure visibility for and support research with and for CSOs activities. Institutional mechanisms such as Science Shops may offer one way to ensure visibility for this work. The mission statement of Science Shops (by that or any another name) is: A Science Shop provides independent, participatory research support in response to concerns experienced by civil society. Science Shops use the term 'science' in its broadest sense, incorporating social and human sciences, as well as natural, physical, engineering and technical sciences. Science Shops seek to: provide civil society with knowledge and skills through research and education; provide their services on an affordable basis; promote and support public access to and influence on science and technology; create equitable and supportive partnerships with civil society organisations; enhance understanding among policy-makers and education and research institutions of the research and education needs of civil society; enhance the transferable skills and knowledge of students, community representatives

and researchers (Living Knowledge 2000). With a history of over 30 years, Science Shops have proven to be a regular part of the research strategy in several research institutes, and their numbers continue to grow. Even in countries who had a strong commitment to carrying out research with and for society, it was acknowledged that this process is still in development and further lessons need to be learned.

Summary of Country Reports:

Experiences varied across the different countries. In the United Kingdom and Canada and increasingly within the European Commission itself, there is a strong policy context for research funders in supporting public engagement with research. In Germany and the Netherlands there is also support amongst some funders for engaged research but at a less embedded level. In France there is an increased interest in the involvement of CSOs in research at both the local level and especially at the regional level. The new law on the organization of higher education and research also opens several modest possibilities in the science and society landscape. In Romania the new National Strategy for Research, Development and Innovation (2014-2020) is expected to involve stakeholders from "civil society, social partners, etc." including CSOs. In Ireland, Spain, and Italy, the infrastructure is still being developed, however there is interest amongst funders in how to move forwards in this field.

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United Kingdom (UK)

The main United Kingdom (UK) research funding agencies, notably the Research Councils, and the national funding councils, have worked together to build a vision for a research culture that values, recognises and supports public engagement. Public engagement is now written into research funding policy at all levels and in interview, funders confirmed that this will continue for the foreseeable future. A shared set of priorities and a shared language for this work have been developed alongside an overall strategic framework. Funders have made an explicit commitment to public engagement via the Concordat for Public Engagement, and have encouraged Higher Education Institutions (HEIs) to make a similar commitment by signing up to the Manifesto for Public Engagement. Funders have also put in place a range of resources to encourage and enable academics to participate in research which will have a social or economic impact. For example, RCUK (Research Councils UK, the strategic partnership of the seven research councils) has developed guidance for researchers to help them understand the routes to economic and societal impacts in the form of Pathways to Impact. Alongside the Wellcome Trust and the national research funding councils, RCUK also co-funded the Beacons for Public Engagement and the National Co-ordinating Centre for Public Engagement, both of which seek to support and embed culture change in HEIs. More recently, RCUK has funded eight Public Engagement with Research Catalysts across the UK.

The key research funders are therefore encouraging research that shows evidence of public engagement and public benefit. This report finds that whilst the infrastructure has been established at a policy level, this is still in the process of being translated to practice and some funding agencies have a much clearer remit for working with Civil Society Organisation (CSO) sector than others given their disciplinary areas. However more recently, UK rhetoric at governmental level has been heavily focused on economic rather than social impacts. It will therefore be important for UK CSOs to ensure that they take the opportunities currently being offered.

Ireland

Public engagement in research in Ireland is still in early stage of development. With a few exceptions, research funders agree that there is little experience of incorporating the needs of CSOs into funding streams and little co-ordination across funding agencies in this field. However Ireland's recent economic difficulties have led to a renewed strategic focus on research as the engine of innovation and the cornerstone of a knowledge economy. There is an emphasis on research which delivers direct benefits both to the economy and to society. This was confirmed in the 2011 National Strategy for Higher Education to 2030 and in the Research Prioritisation Report which stresses research with potential economic benefits.

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Several key Irish research funders stated that they were exploring methods of engagement to ensure that research demonstrates both economic and societal impact and there is an interest in building capacity amongst Irish researchers which will assist them in accessing international research funding, particularly through Horizon 2020. Irish funders expressed an interest in and a willingness towards taking this agenda forward and to work with other research funders across Europe to do so.

The Netherlands

In the Netherlands part of the government responsibilities for research funding is carried out by intermediary funding organizations such as Netherlands Organisation for Scientific Research (NWO) which is the main funder of research in the Netherlands and receives 500 million Euros per year.

Research with participation of CSOs doesn't appear to play an explicit role. Scientists and researchers focus on the scientific criteria of publishing. Some interviewees reported that the scientists find the structures to integrate CSOs in research insufficient. It doesn't seem to be clear why and how to take the research questions from the CSOs into account. To ensure the quality of the research, the national research funder focuses more on valorisation than on incorporating the needs of CSOs in research.

However participation of CSOs in research plays a stronger role in a number of health care projects and there is a growing interest among patients and patient organizations to talk about the content and organization of the scientific health research.

Germany

In Germany for many funders as well as for many scientists community based research continues to be a relatively unknown form of scientific work. On the other hand they expressed that from their experience citizens wish to an increasing extent to be included in scientific decision-making processes dealing with the societal challenges of the present day and demanded that more should be done to conduct research in this manner. But industrial foundations, organisations primarily concerned with basic research, as well as community foundations, have hardly ever considered the subject of research with and for CSOs. The dialogue forums set up by ministries or federal agencies can to a certain degree be seen as platforms for input to research agendas when adequate participation of all societal groups is guaranteed. However, new research questions were generated from the results of completed or ongoing research projects.

At BMBF (Federal Ministry for Education and Research), one of the largest research funders in Germany, it was not possible to conduct an interview because there was no clarity about where

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the responsibility for community engaged research lay, and no one therefore felt authorised to discuss it. Nevertheless BMBF was considered as central addressee of participation efforts when setting research agendas: because it is main supporter of publicly funded research and it is the most important (partly exclusive) sponsor of major research communities and organisations. BMBF's support of specific research fields should be in the focus of efforts to participative agenda setting.

There are first indications for including citizens' participation and transdisciplinarity into funding programmes. Even if in the near future only few opportunities for non-institutional civil society organizations will be found to back for their scientific questions and projects, it seems the right time to move community based research out of the margins during the coming years.

Other Sources

Some of these key findings have also been endorsed by other bodies at the European level. President Barroso's Science and Technology Advisory Council recommends in its policy paper 'Science for an informed, sustainable and inclusive knowledge society' that "The Commission should invest in more and more inclusive pan-European citizen participation and involvement programs aimed at advising the Commission (and/or the European parliament) on science- and technology issues. A major

topic should be the inclusion of evidence-based and precautionary decision making as important elements of dealing with opportunities and risks of new developments. Furthermore, the Commission should encourage meetings, conferences and symposia directed to bringing experts, civil society and policy-makers together" (European Commission 2013a).

The European Commission-funded CONSIDER project (Civil Society Organisations in Designing Research Governance) suggested that CSO participation in research is not an unconditional good, and that in order for CSO involvement to be positive, expected benefits need to be more clearly defined. This can influence the choice and role of CSOs. They suggest that where CSO participation is desired, funding schemes and calls should be adapted and designed in such a way that CSO characteristics can be accommodated. Participation procedures should be simplified and administrative obstacles minimized. While the CONSIDER research has revealed substantial CSO involvement in research, their findings also suggest that most actors in research projects are not aware of options and models of such involvement. Participants have voiced a desire for mechanisms that allow them to share good practice, exchange experience and communicate about different options (Stahl 2013).

Conclusion

The concept of public engagement and its importance to a re-

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sponsible research and innovation process has evolved rapidly over the past decade. Within the current economic climate and within the context of the major challenges facing society, a deeper engagement by the public in science and technology processes is necessary to ensure that appropriate pathways are followed and that continued high levels of investment in research and innovation are delivering the outcomes that society needs.

In Horizon 2020, the European Commission suggests that for research and innovation to be 'responsible' it should be oriented towards societal needs and should be conducted in a manner that society finds acceptable. In order for this to happen society should be engaged at all stages of the research and innovation process, from the setting of research priorities through to the take-up and exploitation of new technologies. Increasingly it is expected that public engagement will not only improve public confidence, trust and support, but will also lead to more creative inputs, improved decision-making and the development of more appropriate and effective solutions. It is clearly essential for further development and progression of research on science in society that European support mechanisms are in place.

Public consultations revealed that research funding programmes can still involve a greater degree of public input to their design and implementation, with the aim of increasing the

public relevance and utility of the supported activities. Successful public engagement is dependent on strong connections between the various stakeholders and on suitable structures and mechanisms for public engagement to be established. There is a clear need to ensure 'full' public engagement throughout the entire research process (technopolis [group] & Fraunhofer ISI 2012). The importance of the European Framework Programme support structures for research in this area has to be emphasized. This report finds that whilst there are good practices in developing responsible research amongst research funders, even in countries where there is a strong strategic commitment, much work remains to be done if CSOs are to be truly engaged in research.

Recommendations

Research Funders

Research funders who wish to consider public engagement with research with and for civil society organisations should:

Actively seek opportunities to exchange experiences on how to fund and co-fund research with CSO at both a country and European level. The development of an arena for funders to share good practice in this area on national and international level can support the necessary exchange

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Explore a formal model of engagement with CSOs where interests are shared

Consider reviewing the allocation criteria for calls for proposals and funding programmes to encourage research with and for CSOs in universities. Revised criteria could include an emphasis on transdisciplinary research or making citizen participation a condition of funding

Consider how to involve CSOs at all stages of the research process, from advising on and designing funding schemes, calls or projects, to evaluation of proposals and research outcomes

Increase the transparency of decision-making processes in the setting of research agendas in large research communities

In those cases where CSO participation is warranted, research schemes and calls should be designed in such a way that CSO characteristics can be accommodated. Participation procedures should be simplified and administrative obstacles minimized (Stahl 2013).

Universities

Universities and HEIs who wish to consider public engagement of research with and for civil society organisations should:

Embed public engagement with research as a concept in re-

search training at all levels

Consider mechanisms for co-ordination of citizens and university research, such as setting up contact points for civil-society groups to enable an active engagement in research with and for CSOs (eg Science Shops)

Consider international exchanges and mentoring on experiences and models of public engagement within the HEI context. For example this could include sharing practice on funding schemes for public engagement projects, on cooperation and networking, on agenda setting with an by CSOs, or curriculum development as a way to encourage dialogue and broaden the discussion of public engagement

Work with CSOs to ensure that benefits and drawbacks are clearly articulated

Civil Society Organisations (CSOs)

Civil Society Organisations (CSOs) who wish to become involved in research should:

Take every opportunity to lobby by attending meetings, talk to scientists, administration, and policy makers or write their specific requests into policy briefs

Examine ways of developing skills around commissioning and

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managing research and build up skills and knowledge to impact research agendas

Seek opportunities to become involved in developing and assessing research funding streams

Look out for small scale funding schemes which might support them to develop research partnerships

Co-ordination actions

Further research with CSOs is necessary to understand their views on how and where they impact research agendas.

There is a need for capacity building and improvement of communication between CSOs and research funders to build a better understanding of where agendas might be shared.

There is a need to share models of good practices across Europe.

Good Practice Examples

Co-ordination

In the United Kingdom, The National Co-ordinating Centre for Public Engagement [NCCPE] was established in 2008 as part of the Beacons for Public Engagement initiative. It aims to

co-ordinate, capture and share learning between the Beacons and across UK higher education institutions [HEIs] and research institutes and has provided support to many HEIs in terms of embedding public engagement with research (NCCPE 2012). It provides a range of resources on its website including guides to public engagement, case studies and research reports. It also runs an annual conference Engage. It recently received funding from RCUK and Wellcome Trust to continue this work until the end of 2013 (McKenna 2012). For further details see www.publicengagement.ac.uk.

In Germany the project Civil Society Platform – Change in Research initiates workshops and research activities to take a critical look at current directions of research funding. The platform then formulates alternatives that promote problem-oriented research and that support disciplinary and trans-disciplinary research involving more solution-oriented, integrated approaches. The platform includes environmental organizations, development agencies, health organizations, churches, trade unions and other civil society organizations. The office of the Civil Society Platform in turn is under the umbrella of the Federation of German Scientists. It was the first nation-wide coordination activity to formulate CSO views and needs on science policy transparency in the research agenda setting process (Plattform Forschungswende 2013).

Strategy

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In Ireland, the National Strategy for Higher Education to 2030 (HEA 2011) was published in January 2011. This offers a blueprint for the way ahead for higher education in the Republic of Ireland. It deals with all aspects of higher education, referring to engagement as one of the three core roles of higher education alongside teaching and research (Hunt 2011, Op.Cit. p.5.) The definition of engagement is broad 'engagement means taking on civic responsibilities and cooperating with the needs of the community that sustains higher education- including business, the wider education system, and the community and voluntary sector.' (Hunt 2011, p.74) It sees engagement as wide ranging and encompassing a full commitment by HEIs to engage at local, national and international level.(Hunt 2011, p.77)

Programmes

The Science in Society (SIS) Programme of the European Commission aims to promote research's engagement with society and vice versa. As a follow-up to the Commission staff working paper of November 2000 'Science, Society and the Citizen in Europe' (European Commission 2000), which established the basis for the debate on the relationship of science and technology with society, the European Commission published a Communication on 4 December 2001. This paper sets out the Science and Society Action Plan making the 'Science and Society' theme under Structuring the ERA in the Sixth Framework Programme (FP6) the first ever initiative of its kind on a Europe-

an scale. It helped increase awareness among research and industry of the need to bring a range of research-related societal issues to the top of the policy agenda. The role of the Science in Society (SIS) Programme now is more important than ever before. Its many activities represent the variety of responsibilities that this role encompasses; from better governance practices and more effective communication methods to the pursuit of a more diverse and robust science workforce in Europe (European Commission 2014). Science with and for Society has a budget of approximately 400 million Euro in Horizon 2020.

The Netherlands Organisation for Scientific Research (NWO) is the national research council. Their 'Responsible Innovation programme' (MVI) funds and encourages research in which the ethical and social aspects of new technology are considered right from the design phase (NOW 2013). One of the pillars is the social relevance: a civil society panel representing the business community and NGOs evaluates the research proposals for their social relevance. Public parties (ministries) and scientists laid the foundation for the programme. NWO provides the programme MVI an annual budget of 1,8 million for funding research available. In addition to the scientific advisory board also a societal panel reviews the grant applications.

Three regions in France have established annual calls for projects requiring a partnership between one or more public research structures and one or more civil society organisations.

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PICRI (Ile de France), ASOSc (Brittany) and Chercheur-Citoyens (Nord-Pas de Calais). They offer financial mechanism for a common research work and equal partnership between non-profit civil society organisations and academic researchers (universities, public research organisms) with annual budgets between 700.000 and 1.5 Million Euros.

Projects

A major development in the Science in Society funding scheme of the European Commission has been the launch of longer-term Mobilisation and Mutual Learning Action Plans (MMLs) since the 2010 Work Programme. The effective involvement and engagement of society in tackling the many challenges being faced requires mechanisms that facilitate cooperation between a diverse range of actors with different types of knowledge. MMLs are designed to bring together actors from research and the wider community (e.g. civil society organisations, ministries, policymakers, science festivals and the media). They collaborate on action plans that connect research activities for a chosen Societal Challenge. These plans encompass a series of SIS actions, such as public engagement, investigating ethics and governance, two-way communication, women in science, and science education. The emphasis is on mobilising all relevant actors and on mutual learning in order to pool experiences and better focus their respective efforts on finding solutions that develop and use scientific and technological

knowledge in the public interest. (European Commission 2010)

Science Shops across Europe and beyond have developed their experience in setting up and doing small scale research projects developed in collaboration with and for civil society organisations over the past 35 years. They are professional brokers creating win-win situations among CSOs, HEIs, researchers and students. They receive funding from various sources, like universities (e.g. Netherlands), Ministries or Regional Councils (e.g. Belgium, France). By supporting this infrastructure, the co-operation between researchers and CSOs is supported (Living Knowledge 2000).

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Building the University of the Village: connecting universities and rural communities in the age of network cultures

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Abstract

With the rise and availability of massive open online courses (MOOCs), the information technology revolution seems to have finally caught up with the ivory towers of the academy. Institutions such as MIT and Stanford offer online courses, in collaboration with edX and Coursera, for which everyone can enrol to study one of the many subjects offered in their growing portfolio. Taking advantage of the availability of existing web-based technologies, universities are able to reach out to the general public through streamed and online educational material in the shape of lectures, seminars and other media presentations. This has opened the possibility for universities to upscale their delivery and to reach diverse and non-traditional students in large numbers.

However, MOOCs are not without their critics. It has been argued that the MOOC is essentially a scaled-up version of the model which universities have always practised and as such they are not, in and of themselves, a radical rethinking of the pedagogical models in Higher Education (Bady 2013a; Daniel 2012; Hill and Waters 2014; Riddle 2012; Sharma 2013). The MOOC model is driven by economic factors (and specifically economies of scale), rather than a desire to explore how new technologies might lead to innovation in teaching and help us re-imagine the relationship between universities and community-based learners.

There are, however, examples of different approaches to teaching with online technologies, which actively make use of the collaborative and networked features of these technologies. One example of such an approach is the Distributed Online Collaborative Course initiated by FemTechNet, which involves instructors from fifteen North American universities and colleges which offer NODAL courses to their students (Balsamo et al. 2013)

This paper introduces the case study of 'The University of the Village', a pilot project funded under the Arts and Humanities Research Council's Connected Communities Programme in 2011 and 2012. The project investigated how superfast broadband capabilities can help universities to re-engage with rural communities through co-designed learning programmes that draw upon the resources of the community and turn the village itself into its own networked university campus. The focus has been on connecting with communities and groups of learners rather than just individuals. The 'University of the Village' promotes a blend of tools and environments in which learning takes place and recognises that expertise is distributed among the participants who engage together in learning situations and create and share knowledge. This paper will focus on the role universities perform in facilitating and supporting rural communities of learners through such pedagogical approaches.

Introduction

The emergence of the networked society, defined by the economic, societal and cultural changes brought about by the information technology revolution (Castells 2009) challenged the traditional structures of modern institutions. And universities, like the state, unions and similar modern organisations have been undergoing a major shift brought about by the technological and organisational changes (Hardt and Negri 2001). Like the factory before, it is now claimed that universities are the

site of struggle and major conflict (Caffentzis 2010; Edu-factory Collective 2009; Raunig 2013).

Many consider the university today to be a neoliberal institution which is characterised by the support of 'corporate competitiveness through their major role in the global, knowledge-based economy' (Slaughter and Rhoades 2000) where knowledge is considered 'something to be sold, traded and consumed' (Reay 2014). The instrumental model of teaching which arguably is increasingly practiced in universities, takes pedagogy as a 'mechanistic undertaking' (Giroux 2013). The increase in UK student numbers between 2004 and 2010 by 9% which has been accompanied by the increase in the number of managers working in HE by 33% (Reay 2014) seem to indirectly support such statements. With the birth of the 'entrepreneurial or enterprise university' the context of 'competition, marketization and global knowledge capitalism' is being further asserted (Masschelein and Simons 2009, p. 208).

Consequently the public role of the university is changing and the modernisation of higher education in Europe is closely associated with the task of producing active citizens through lifelong learning (Commission of the European Communities 2006). The call to promote and work towards creating active, global European citizens is a way in which universities consider fulfilling their public service which, as Masschelein and Simons claim, 'is being reformulated in terms of innovation' where

academics 'are required to regard their public role in terms of the innovation of society' (2009 pp. 210–211).

Thus the questions of what is a university and what kind of crisis we are experiencing in higher education today are not only still valid, but also require close scrutiny of the educational models being developed now both within and outside universities. Sixty years after the crisis in education was the subject of an essay by Hannah Arendt (2006 [1954]) there remains a need to look closer at the university as a public institution on the one hand, and at its changing role in this new context on the other. The challenge is whether the university can move beyond a functionalist understanding of creating active citizens whose participation in a democratic society is measured only by their employability.

In this work-in-progress paper our intention is to consider new models of knowledge delivery, distribution and production. These new ways in which it is possible to access education and/or create new knowledge have been made possible through the availability and access to modern technologies, such as Internet and superfast broadband. Models such as MOOCs, which are still relatively new, but have become increasingly familiar, will be discussed here briefly next to the Distributed Online Collaborative Courses (DOCCs) which have been proposed in response to the highly hierarchical and traditional model of knowledge delivery offered by MOOCs (Balsamo et al. 2013). These two

different types of knowledge distribution and production will offer a framework and context within which to situate and analyse the model proposed by University of the Village project.

The key aim of the project was to look at the ways in which universities can develop their relationship with rural communities through a delivery of its provision via superfast broadband. The focus was on the community rather than individual, and on developing a curriculum which would support a creative infrastructure and the creative economy of rural areas. The pilot was a collaboration between three British universities one in Cornwall, one in Wales and one in Surrey, and BT, as the industry partner, who are responsible for the rollout of superfast broadband in these regions. Each of the universities collaborated with a group of participants in the village in their local area. The focus of this paper is on the Cornish strand of the project where researchers at Falmouth University collaborated with 12 participants in St Agnes, a village on the north coast of Cornwall and delivered a film-making course via a superfast broadband connection to the class of students meeting in one of the village pubs on Tuesday evenings.

As practitioners working within a specialist arts university our approach is practice-led which means that the theories are immediately tested and corrected within our practice. The methodology used in this pilot research was based on a collective experiment where the roles of research team members

and participants from the rural community involved were necessarily and constantly negotiated, defined and modified. Interviews and conversations carried out with the participants of the project highlighted the tension between the expectations and demands of the traditional role associated with a university (teaching and research done by university staff) and the achievements resulting from active engagement and taking ownership of the project by the participants in University of the Village.

In conclusion this paper questions the business model based on economy of scale championed by MOOCs and argues for developing models which respond to more localised conditions in which it is applied. The focus of the project was on developing and testing ways in which universities can connect with rural communities in their areas and such an approach requires the bringing together of technological solutions which can support such aims in combination with knowledge and an understanding of the area and the people living there.

MOOCs and DOCCs: a structural comparison

Since MOOCs first entered the world of open education in 2008, over six million students have enrolled on courses offered by two out of the growing number of MOOC providers (Fowler 2013). The growing popularity of MOOCs in those early days, and their backing by such big and respected universities as Har-

vard, MIT or Stanford, very soon became a sign of an emerging revolution in higher education, a digital tsunami reaching the shores of higher education (Brooks 2012). After the increase of tuition fees and student debt rising in UK and US, MOOCs seemed to be the solution to the crisis in higher education by making knowledge available to everyone with access to computers and Internet, for no, or minimal, cost to the student.

The cost of starting what has been termed university 2.0 (DLD 2012- University 2.0, 2012) however, is not small. Not for profit edX was funded with \$60 million from MIT and Harvard. Coursera has had \$65 million of investment and Udacity \$21 million (Shumski 2013). The viable business model for MOOCs hasn't been invented yet, but the potential for money-making out of the increasing amount of data gathered about the users of MOOC platforms is one of the revenue opportunities under consideration. For now it is the promise of democratization of higher education and the ability to access thousands of students, that are mentioned as the main motivating factors behind such activities (Ng 2013). Famously, Sebastian Thrun who offered a course in Artificial Intelligence, reached 160 000 students after only a few days of the course being available as a MOOC (DLD 2012- University 2.0, 2012).

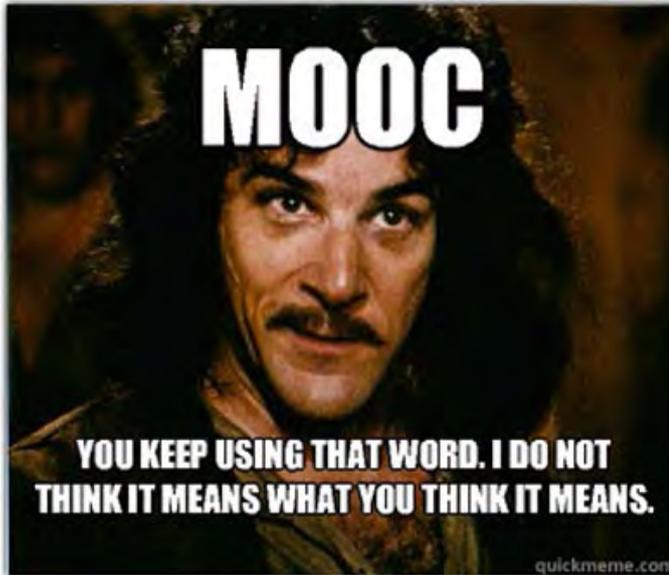


Fig. 1. source: <http://thenewinquiry.com/blogs/zunguzungu/the-mooc-moment-and-the-end-of-reform/>

At the same time the cost of producing the course by academic lecturers or university is rarely mentioned and often the university freely volunteering the content is one of the major forms of subsidy towards the production of MOOCs (DeJong 2013). It has been argued that once you go deeper into the logic of

MOOCs, it just doesn't make sense (Bady 2013b).

Yet, if we consider the very first MOOC offered in 2008 and compare it to the current direction of the development of MOOCs, what becomes apparent is the difference in the model of delivery and the principles behind it (Downes 2011; Siemens 2005). The Connectivism and Connective Knowledge course was offered to 25 fee paying students at the University of Manitoba and over 2000 students enrolled online with free access to the course. It was an online experiment testing the application of theories of connectivism in a massively open online course. The pedagogical model behind the connectivist approach is based on the understanding of knowledge and learning as 'the formation of connections' (Downes 2011) and therefore it is argued to be particularly suitable model of learning for the digital age (Siemens 2005). Connectivists claim that it is more important how we learn something rather than what we learn, as such an approach acknowledges 'the tectonic shifts in society where learning is no longer an internal, individualistic activity' (2005).

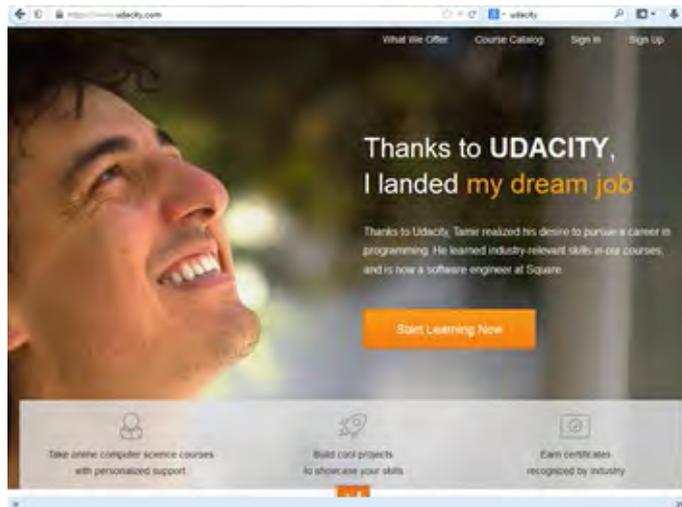


Fig. 2 Udacity Homepage <https://www.udacity.com/> [accessed 4 March 2014]

This approach to learning, focusing on making connections and recognising them as crucial to learning, requires engagement of the community involved. It is not about transferring knowledge to students in a traditional way, as if students were empty vessels to be filled with knowledge by wise professors, but about developing open-ended, distributed and creative process in which people learn together. Academic faculties in universities

traditionally have performed this function as living ecosystems with people (students and staff members) where knowledge is produced. The original experiment by lecturers from the University of Manitoba could be considered an attempt to extend this function beyond the faculty and distribute it with the help of technological networks.

The current MOOCs, however, are very far from such a model of learning and knowledge-making. Their primary concern is that of the individual, empowered by the availability of free courses which can ‘land’ him or her their dream job (Fig.2). In itself this result is highly desirable, however the design of MOOCs should take into consideration wider complexities without hiding behind the ‘innovation’ hype.

In effect the model of knowledge delivery offered through MOOCs has not changed radically, even if it does extend the reach to those who normally would not have been able to access higher education. However, such models do not include the collaboration of participants in knowledge production. It could be said that on the one hand there is a call to create active citizens as producers of knowledge, whilst on the other hand widely supported online educational models merely migrate the status quo into the online environment. Consequently it is done on a massive scale and without due consideration (Bady 2013a; Shah 2013).

A qualitatively different model was proposed and tested in 2013 by the FemTech network. The Distributed Online Collaborative Course is a networked learning experiment involving students and instructors from HE institutions in the USA. Together they created an online collaborative course on the subject of 'Dialogues on Feminism and Technology' which took place from September – December 2013. Underpinned by feminist pedagogies and cyberfeminist engagement and exploration of 'the use of the Internet for dialogue and participation across various socio-economic layers worldwide' ("DOCC 2013," 2013), DOCC is comparatively similar to the connectivist approach in that it also addresses 'the collaborative nature of learning in digital age'. However, it is done as part of a feminist methodology. This is how DOCC is introduced:

A DOCC is an alternative genre of MOOC. A MOOC is pedagogically centralized and branded by a single institution. The fundamental difference is that a DOCC recognizes and is built on the understanding that expertise is distributed throughout a network, among participants situated in diverse institutional contexts, within diverse material, geographic, and national settings, and who embody and perform diverse identities (as teachers, as students, as media-makers, as activists, as trainers, as members of various publics, for example). ("DOCC 2013," 2013)

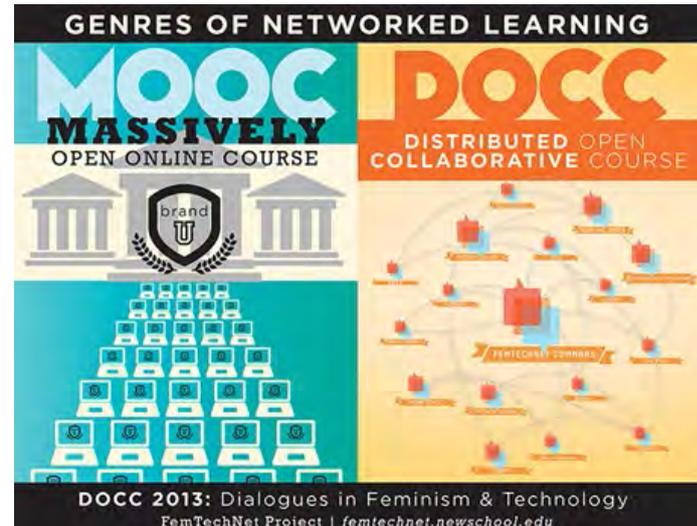


Fig. 3. Genres of Networked Learning

This collaborative model for learning and teaching online is especially interesting for number of reasons:

1. it is highly localised and situated within the wider context in which the student participates. It is done by distributing content via NODAL courses defined by the instructors based within

the participating institution and with the knowledge of students who might be interested in joining the course;

2. it is massively open in that all the content is available without the need to register or subscribe. Beyond the students enrolled on courses offered by the NODAL institutions there are also other types of students such as: self-directed learners, and drop-in learners;

3. recognition of different types of learners and the way in which they can access the content allows for making provisions for engaging them in the collaborative elements of the course;

4. designing and distributing information on how to make a video for the FemTechNet course directly engages participants in contributing to the content production;

5. through the shared pedagogical activity called Storming Wikipedia, all students are involved in collaborative activity which writes women and feminist scholarship of science and technology into web-based archives. Such an approach allows the situating of localised learning within collaborative and globally reaching activity, thus addressing the complexity of learning situations head on.

Although the FemTechNet experiment cannot provide high volume quantitative data which underpin the hype behind

MOOCs, it's usefully represented by the Genres of Networked Learning diagram (Fig. 3). The diagram visualises the problem in MOOCs and why the DOCCs proposal is a more sustainable model that can help in recognising the impact of co-creation and participation of citizens in knowledge production and distribution.

University of the Village: connecting universities with rural communities

University of the Village (Fig. 4) was a project which was driven by a very particular focus which combined several elements at its core. Recognising specific barriers facing rural communities in accessing resources and the support of universities, such as poor public transport infrastructure in rural areas, our interest was directed by the question what might new models of engagement between universities and rural communities look like?

The broad selection of additional questions with which we started the project allowed us to account for the complexity of circumstances which accompany learning situations in rural areas and which included public infrastructures such as transport and internet access, social and community history in the village, economic and demographic make-up of the area, etc. Considering the fact that Cornwall was one of the first regions in the UK where superfast broadband (that is, download speeds of up to

100 Mbps) was being rolled out, our interest was in testing how this new capability might be used to deliver university provision to rural areas.

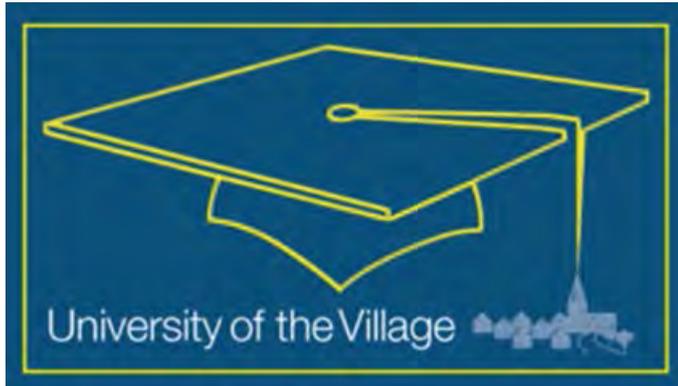


Fig. 4 University of the Village logo

With this in mind our investigation was concerned with the design of the course and particularly its co-design with participants. We were interested in the 'quality' of the learning experience when 'face-to-face' learning is done over the network and with the assistance of technologies. We were interested in how this engagement might facilitate social (and socialized) learning within rural communities and so contribute towards economic and social sustainability, helping in recognising the

specific value of delivering to communities, as opposed to delivering to individuals. Finally our intention was also to network all the villages participating in the project in different regions.

We started with a public meeting held in one of the pubs in St Agnes which was also where the course was planned to take place. About thirty members of the village attended this informational meeting about the project. The meeting took place in September 2011, incidentally just few weeks before the first cohort of students having to pay higher tuition fees entered British universities. Our meeting soon became a space for not only discussing our project but also debating current issues of public concern such as the value of university courses which are not accredited, the value of education which requires students to fall into increasing amounts of debt, and also the ethics of offering free education at a time of growing student fees. The participants included different demographic groups, such as retired and working people, many of whom work in creative professions, as well as recently graduated students. Because of the issues discussed the meeting was at times contentious. Introducing the project as an experiment allowed us to inject a positive approach where participants were invited to take ownership of the project and actively contribute to it.

This first meeting was already an indication of the kind of engagement that we could expect from the participants. The next public meeting which followed was also open to everyone and

was used to workshop ideas about what course people might want to engage in. The only limitation was the pool of courses offered by Falmouth University which is a specialist arts institution, offering courses in performance, including music and composition, journalism and English with media, design and fine art. Interestingly, the choices preferred by participants were all driven by the desire not only to learn, but to make something for the community. Suggestions included a public art project supported by fine art course, a village newspaper prepared as a part of journalism assignment and finally a film about the village of St Agnes helped by the film-making course.

These particular choices might have been a result of the fact that St Agnes has very active and entrepreneurial community with its own chamber of commerce association run by local members of the business community and it has a very vibrant community social life. At the time St Agnes Chamber of Commerce was seeking funding to create a village app for use by both residents and visitors and in the end the decision was made where the film-making course was the preferred choice, with a preference for it to be included in the app content. It was only after this second meeting that we were able to contact lecturers on the BA Film programme at Falmouth and ask for their support on the project and run this very unusual course.

At the same time with support from Learning Technologists at the University we developed a WordPress based site which

included information about the project and other villages involved. It also hosted all learning resources and other relevant links. This, however, was the least successful technological element of the course, as it was poorly visited and following the interviews with participants it was considered too much of a 'cognitive load', as one of the participant defined it. The fact that the site was not directly included in teaching in any form resulted in it confirming its status as a resource repository.

Much more effective were other technological solutions which were used directly in teaching and learning and which included: Skype for delivery of online sessions and connecting lecturers based on the Falmouth University campus with the group of students based at Driftwood Spars pub in St Agnes, two open source software for film editing- VideoPad and Swarm.tv, cloud data storage facility which was used for submitting films, and video tutorials on Vimeo. Indeed the more technology was part of the teaching process, the more it was used by the students.

Concluding thoughts

Whilst there were a range of significant challenges encountered in the delivery of the activities – some of which were technological, such as the inability to fully network the three participating villages, and other which were social – the real success of the project in St Agnes can be measured by the work produced by community members on the course. The film they

made can be seen at <https://www.youtube.com/watch?v=50X-bz4ujBmA> and a short documentary about the research process is available at <http://www.falmouth.ac.uk/research-case-studies/university-village>. After some early scepticism from course participants, most felt that the online engagement with tutors over the additional bandwidth made for an experience that had a high quality of co-presence and most were excited by the possibilities that the technology had to offer in bringing the university into their village community. Moreover, the landlady of the host pub was so excited by the possibilities offered by superfast broadband that she has now developed a series of wine-tasting dinners with live internet links to a range of international vineyards, so turning the educational experience into a new business opportunity.

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Environmental Governance and Heterogeneous Public Opinion: Finnish low carbon transport options

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Abstract

Public engagement in research and innovation policy is advocated by theorists and practitioners from a range of perspectives. Yet the matter of heterogeneous public opinion has been little addressed in this context. Here we first evidence in detail the heterogeneity of Finnish public opinion of low carbon transport innovation policy, showing how this is associated with material differences in demography and geography. Secondly, we use the same results to discuss the value of online opinion surveys as a means of public engagement in innovation policy, drawing on a social capital account of power and a framework from science and technology studies. We suggest that online surveys may play a useful role both in revealing areas of opinion heterogeneity and as a means of public engagement at different stages in policy development processes. The character and consequences of such use, however, would very much depend on the engagement rationale and any additional engagement activity.

Introduction

It is increasingly common for national and international research and innovation agendas to use the discourse of major societal or grand challenges in their rationales (Kallerud et al, 2013; Giesecke and Warnke, 2013). This discourse frequently makes reference to the associated need for societal participation, including but not limited to business involvement (Giesecke and Warnke, 2013). Often without acknowledging any particular philosophical perspective, this discourse readily connects with the long-standing ideals of participatory policy-making in scientific and technological research and innovation (e.g. Wynne 1973, Sclove, 1995). More recently, it also resonates with the socio-technological transitions management literature (Kemp and Rotmans, 2005; Kemp and van den Bosch, 2006; Kemp et al, 2007). This speaks of socially participative 'problem structuring, long-term goals and learning about system innovation' (Kemp et al, 2007). In transition management, change is conceived of as arising through the interaction between three types of governance activities (strategic, tactical and operational), which are intended to provide a structure for analysis (Kemp, et al., 2007: 82; Loorbach, 2007: 101). However the literature has said relatively little about the role of public engagement in governing transitions.

This notwithstanding, participation from across different sectors of society is assumed as an inherent ideal and practice in

the more normative strands of the socio-technical transitions literature. Moreover, in the science and technology studies literature more generally, successful innovation, social acceptance and use of a technology is considered to depend principally on how well the innovation becomes embedded in society and in social groups via processes of negotiation that eventually arrive at some degree of closure and stabilisation, even if temporary (Pinch and Bijker, 1984; Kline and Pinch, 1999).

In terms of the structure of the paper (which is work in progress), we first set the broader context of participatory rationales, processes and governance issues relating to innovation policy, principally from an STS (science and technology studies) perspective. We then discuss the governance issues raised by a set of opinion survey results on socio-technical options for lower carbon transport in Finland. Our focus is on the issues raised by opinion heterogeneity, which has received little attention in the context of public engagement. We suggest that the heterogeneity of public opinion regarding technological change - and the differing material factors that these reflect - can be seen as providing a case for public engagement in policy processes but also as requiring an appropriate response in terms of engagement processes. Accordingly, we reflect on the role of online opinion surveys as means of public engagement: their advantages, disadvantages and options regarding their manner of use. For this purpose, we draw on a social capital account of power by Healey et al (2003), which Walker and Shannon

(2011) show to be helpful in structuring thinking about the resources that people need in order to be effectively engaged in policy processes. We also draw on a framework previously used to structure thinking about STS work on public engagement (Delgado et al, 2011).

Public Engagement in Innovation Policy

Public engagement in scientific and technological research has been approached with a wide variety of motivations and from a variety of perspectives (the following overview draws on Upham et al, 2009). Bauer (2009) alludes to this variety in motivation when identifying three main scientific attitudes to lay 'common sense', as compared to systematically-derived, 'scientific knowledge'. The first is in the tradition of 'debunking', implicit in attempts to engage the public in order to dispel ignorance and misunderstanding. A second tendency is to view the public as the target of interventions intended to raise scientific literacy, mobilise favourable attitudes to scientific and technological innovation, change behaviour, and so on (ibid). A third approach recognises that the public's common sense is a resource of inspiration, oversight and legitimacy that may temper and moderate scientific and technological innovations with uncertain and potentially risky outcomes (ibid).

The first approach parallels that of the traditional 'knowledge deficit model', in which the public was viewed as largely igno-

rant of the ways of science. With the right information and education, the public would understand and accept the 'right' thing to do (as identified by experts). This approach, which arguably often remains prevalent, has been widely critiqued for failing to allow for different ways of interpreting and assessing expert information and for treating divergent views as the product of ignorance (Irwin and Wynne, 1996). In response, theorists from the perspective of science and technologies studies (STS), paralleling Bauer's third approach, have tended to argue for the acknowledgement of plural 'knowledges' and understandings as being as legitimate as scientifically-derived knowledge. Indeed Yearley (1995) argued for STS specialists playing a more active role in policy-making, given their understanding of the role of expertise in policy.

In both academic and policy circles there has also been much discussion of a crisis of trust relating to the role of expertise in decision-making, an issue that Collins and Evans (2003, 2002) term the 'Problem of Legitimacy'. This lack of trust or legitimacy has led to many calls for an increase in public 'participation', 'consultation' and 'engagement' (Collins and Evans, 2003, 2002, Stilgoe et al, 2006, Wynne, 1996, Irwin, 1995). Indeed, theorists of deliberative democracy have argued for more authentic public participation in public policy for at least two decades (Fisher et al. 2010) and science and technologies studies scholars have been concerned with the topic in a technology context for considerably longer (Wynne 1973). Overall, this trend is part

of a tendency towards more deliberative, pluralistic and inclusive policy processes across environmental policy and planning generally (Stirling 2008).

At the same time, STS analysts have also emphasised the tensions and difficulties with both public and stakeholder engagement. One way of thinking about these is provided by Delgado et al (2011), based on a review of STS literature and conference activity. The categorisation essentially asks the generic questions that are applicable to many social (and indeed non-social) processes- why, who, how, when and what – as a means of characterisation. Hence in this context Delgado et al (ibid) highlight the different rationales for engagement (e.g. instrumental or democratic); who should be involved (e.g. selected stakeholders or a more widely representative set of participants); how to organise engagement (e.g. top-down or bottom up); the timing (at what point in the technological development process); and whether the mode of engagement should seek to use universally applicable or context-specific methods.

Here, we reflect on the implications of online opinion surveys for each of these questions, using the results of a Finnish survey on low carbon transport innovation policy to illustrate some of the questions and issues raised, together with some possible options in terms of public engagement in policy processes. Contrary to much of the public engagement literature, we particularly focus on the heterogeneity of opinion:

on dissensus rather than consensus. As people need a range of resources to be effectively engaged in policy processes, we draw on a social capital-based account of power by Healey et al (2003), which Walker and Shannon (2011) also show to be helpful in structuring related thinking. There is a sizeable literature on social capital, which Healey et al (2003) condense to a three-fold, operationalised typology of (a) knowledge-related resources, comprising access to information, ideas and intellectual capability; (b) relational resources, comprising access to requisite networks and decision-makers; and (c) mobilization capacity, comprising the capacity to initiate, seek and sustain change through access to requisite techniques, institutions and actors (Healey et al., 2003, p. 65, in Walker and Shannon, 2011, p.3). With effective engagement so-defined, we consider the value of online polling as a means of engagement in innovation policy.

Survey Design

The survey data of our case comes from the FIPTrans project on low carbon, system level transitions for transport, funded by the Finnish Innovation Funding Agency Tekes, with Aalto University and the Finnish Environment Institute. Public opinion was elicited with an online survey instrument designed to take 20-30 minutes to complete and administered by a market research firm to 1,000 people in contrasting travel to work areas (TTWAs). In each TTWA, demographic representation

was sought in terms of gender, age and social class. The TTWAs themselves represent an equal number of urban, peri-urban and rural locations, which are assumed to have different patterns of transport use (and in fact do).

Question design

Several questions were drawn from the most relevant UK national surveys (Natcen, 2011; Yougov (2013), for reasons of standardised question phrasing, to allow comparison and inform thinking on research questions, hypotheses and statistical tests. The approach to data analysis has been largely exploratory, without pre-defined, theory-based hypotheses, though related, previous work was taken into account when selecting data categories for attention (e.g. gender differences and so on). Questions were selected and designed to focus specifically on Finnish transport innovation options, with variants also specific to the Finnish climate (notably a distinction between winter and non-winter in questions on transport practice).

Question selection and development was also undertaken so as to represent a range of technological, behavioural and legislative options, as summarily referred to in terms of transitions theory by Geels (2012) and in terms of transport policy options by Bannister (2008). Existing Finnish opinion surveys were also taken into account to avoid duplication and to provide additional context, notably an online public and stakeholder survey

conducted by the Ministry of Transport and Communications, which returned locally and nationally-specific context, and the results for Finland of a 2010 Flash Eurobarometer poll on the future of transport (EC, 2011).

The vehicle technology selection in the questionnaire is informed by several sources: a report for the UK Low Carbon Vehicle Partnership (LCVP) (PE International, 2013) regarding plausible vehicle types through to 2030; McKinsey (2009) on the relative global potential of a number of options and which makes the point that fuel efficiency measures would make up the majority of the CO₂ abatement potential globally and regionally through to 2030, but which also emphasizes biofuels, traffic flow improvement and driving style; VTT's (2012) Low Carbon Finland 2050 scenarios, which makes the fundamental observation that "land use and structure of the community has the closest correlation with the amount of passenger transport needed" (p.28); a stakeholder-supported report on the positive employment implications of low carbon technology innovation in passenger transport (European Climate Foundation, 2013); and the VTPI (2010) online transport demand management encyclopedia.

The scope of the questionnaire is also informed by, but intentionally not overly restricted by, the view of the incumbent automotive industry that: "the short to medium-term would continue to be dominated by further improvements to Internal

Combustion Engine (ICE) technology... even in the longer term, high efficiency internal combustion engines are expected to remain important for use in plugin hybrids and range extenders. Such views are consistent with the technology roadmaps from various organisations including the Automotive Council UK and EUCAR” (European Climate Foundation, 2013, p.20). The latter report notes that other, more immediately lower cost options are in development by auto manufacturers (e.g. flywheel energy recovery systems) and that these may well prolong the use of the ICE vehicle design template.

When selecting policy-technology options for the questionnaire we are also aware of the strong pressures to maintain the ICE with incremental modifications: the automobility regime remains strong ‘despite some cracks’ (Geels, 2012). As Geels also observes, the realisation of alternative transition paths: “would require several changes in actor attitudes and strategies: a willingness of national governments to introduce car-restraining policies, a stronger role of local and city governments, stronger innovation strategies by public transport actors, and a willingness of consumers to change mobility routines and use cars less” (ibid, p. 479). Rather than opting for a restricted set of policy options, however, we infer from this that the policy objects on which we should question need to be broader in scope than those focussed on technologies alone: niche-innovations need support, but they will not break-through to mainstream markets without enhanced selection pressures on the regime

(Geels, ibid).

In terms of the transport attitudes and behavior literature, this itself is substantial, though heavily biased to assumptions of micro-economic rationality and the conditions under which these assumptions apply. Goodwin and Lyons (2010) summarise selected themes from a large scale UK evidence review of over 300 studies conducted over the last 30 years, commissioned by the UK Department for Transport. These include attitudes to different policy interventions as inferred from individual studies and large scale repeat surveys outputting thousands of data tables (ibid). Attempting to draw general conclusions, Goodwin and Lyons (ibid) found: evidence of most people viewing traffic congestion as a national problem but less so for individual respondents and their families; evidence of large majority (but not unanimous) support for improvements to public transport, reductions in speed and restrictions on traffic in residential areas, although road building and road pricing are divisive and controversial; evidence of a gradation of willingness to change behaviour for environmental reasons, by which is meant that attitudinal segmentation looks likely and question framing is very important (ibid). At a deeper level, Goodwin and Lyons (2010, p.16) conclude “that just as transport and travel choices are rooted in the structure of activities undertaken by individuals and families, it follows sensibly that attitudes to transport must also be rooted in deeper values and aspirations of how people want to lead their lives.” This attitudinal embedment is

also explicit in sociological approaches to attitudes as intimately connected with practices.

In addition to these general conclusions, there are also precedent surveys on low carbon fuel and technology options in transport. However these generally make little reference to the wider policy context. A typical example is a large sample, six-country European study by Thiel et al (2012), who tested the familiarity of car drivers with electric vehicles (including hybrids), investigating their level of interest in purchasing such a vehicle, as well as inquiring about their priorities for improving the features of current electric vehicles. Anable et al (2006) review nine such studies of public opinion of hydrogen for transport.

More relevant to the present paper are studies that do include questions on the policy context of transport options. For example, Bellaby et al (2007) in the UK coupled a nationally representative opinion survey to focus groups, to investigate public opinion on hydrogen as a transport fuel. This sought to contextualise opinion in terms of questions on transport practice, climate change and wider impacts such as congestion, noise and local air pollution. Several aspects of the approach taken by Bellaby et al (2007) inform the present design, particularly the need to place environmental concerns in the comparative context of other, related concerns (Anable et al, 2006). As emphasised by Whitmarsh and Upham (2012) in a (largely UK but

also European) review of public opinion of energy and climate change, the latter have limited salience with publics in the abstract. When prompted, most people across Europe express concern about climate change, energy security and a preference for shifting to a renewable, low carbon future. However, only a small minority take these issues actively into account when making travel, purchase and lifestyle choices. In fact energy and climate change are often not closely linked in public cognition (ibid). It is for this reason that we probed demographic, transport practices and related concerns, as well allowing free entry of responses.

Survey Results

In this section and sub-sections we present a selection of the survey results, with discussion of the governance implications subsequently. Results are selected so as to enable subsequent discussion of the policy governance issues, specifically the matter of public engagement. For the descriptive data, all values are percentages. A full statistical report will be publicly available shortly.

Comparison of sample and census data

In each TTWA, demographic representation was sought in terms of gender, age and social class. In fact, as is common with panel surveys, the sample is significantly older, contains

more retirees, fewer students and is better educated than the census population (Figures 1, 2 and 3), $p=0.05$. Statistical significance is tested for with Mann-Whitney U tests: for 'age' that $U=0$, $p=0.02$; for work status, $U=0$, $p=0.02$; for education, $U=0$, $p=0.02$.

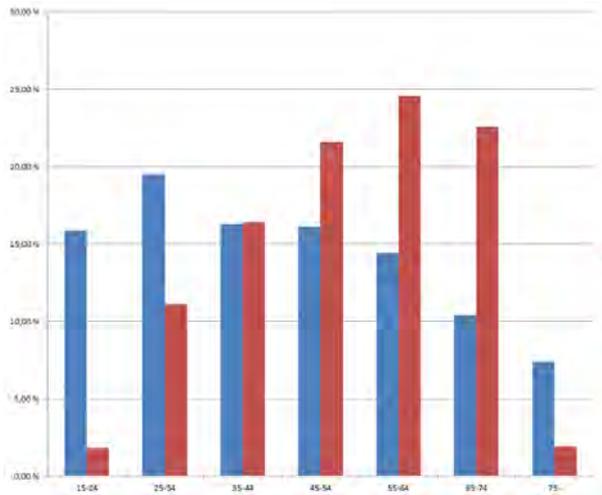


Figure 1 Age distribution: comparison of census and sample data

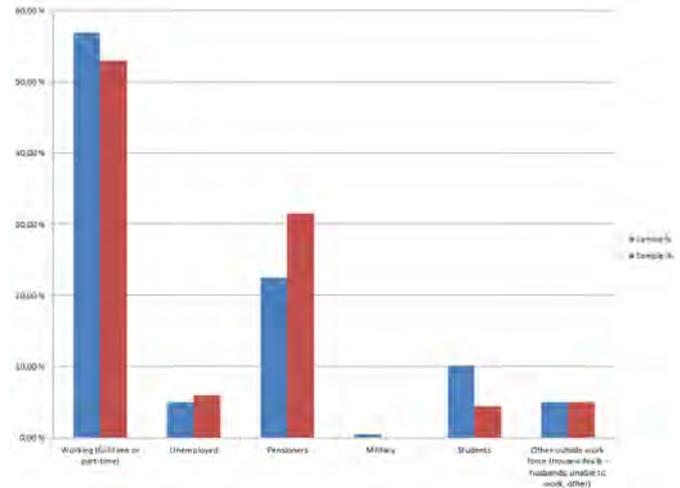


Figure 2 Work status: comparison of census and sample data

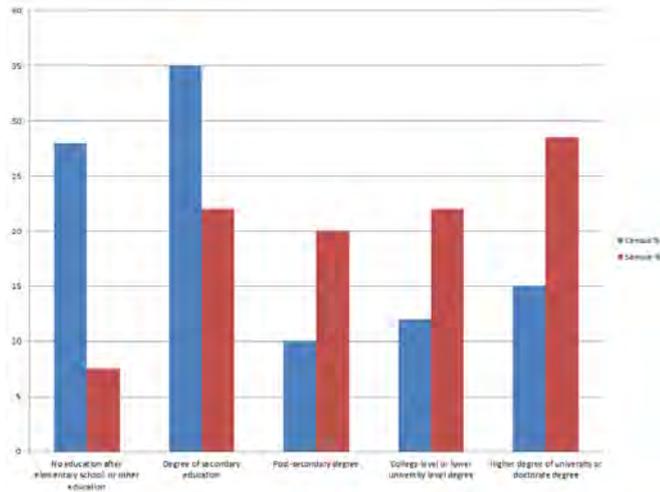


Figure 3 Education split: comparison of census and sample data

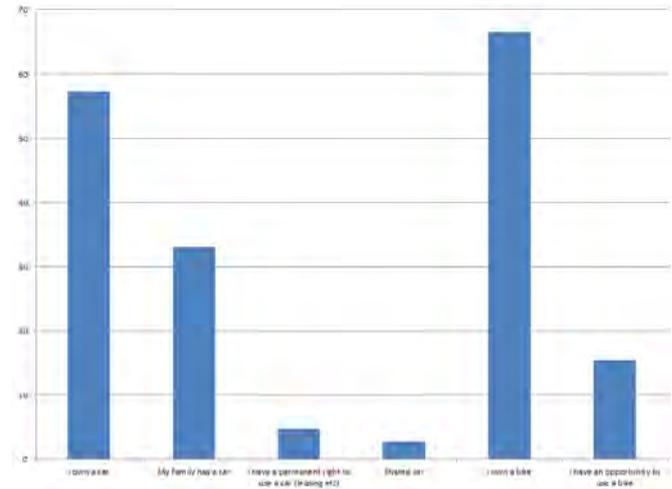


Figure 4 Qu 3c Ownership of vehicles: please tick all that apply

Public opinion in aggregate

The respondents' opinion can be read in aggregate, without examining relationships and differences within the data. The descriptive results are as follows, with the questions in the Figure titles. The questionnaire is also appended.

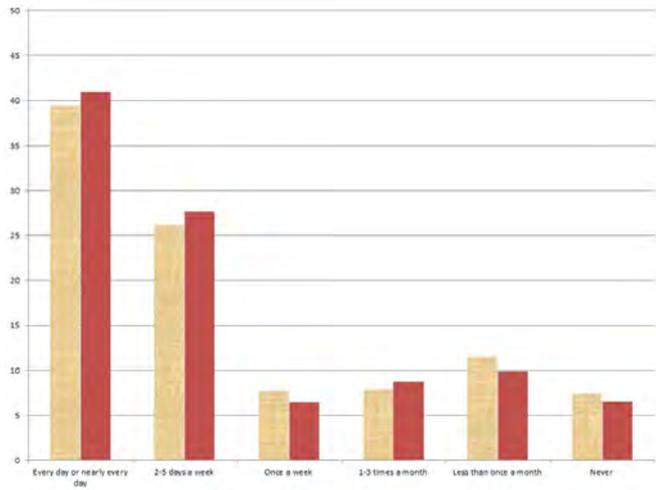


Figure 5 Qu 4 How often do you use a car? Winter or other time (Light =winter, dark =other time of the year)

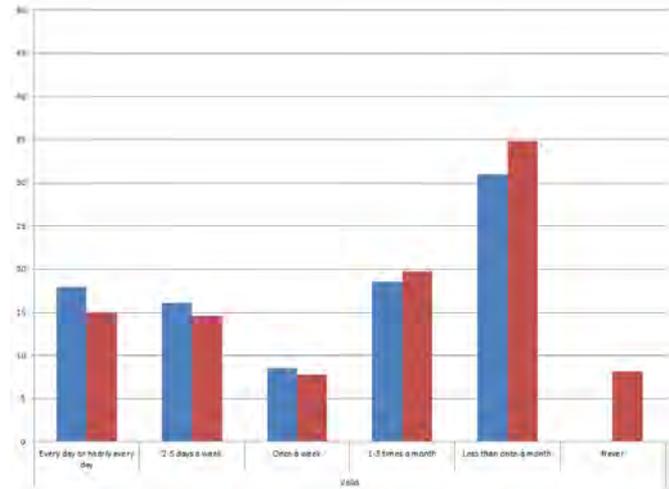


Figure 6 Qu 4b How often do you use public transport? Winter or other time of the year (Blue =winter, red =other time of the year)

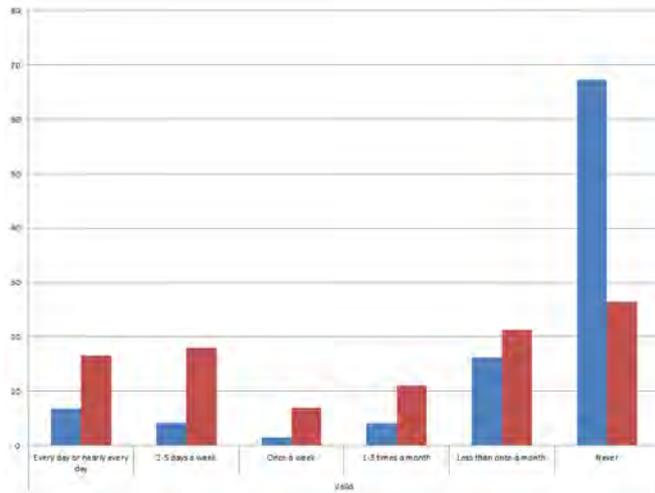


Figure 7 Qu 4c How often do you use a bicycle? Winter or other time. (Blue =winter, red =other time of the year)

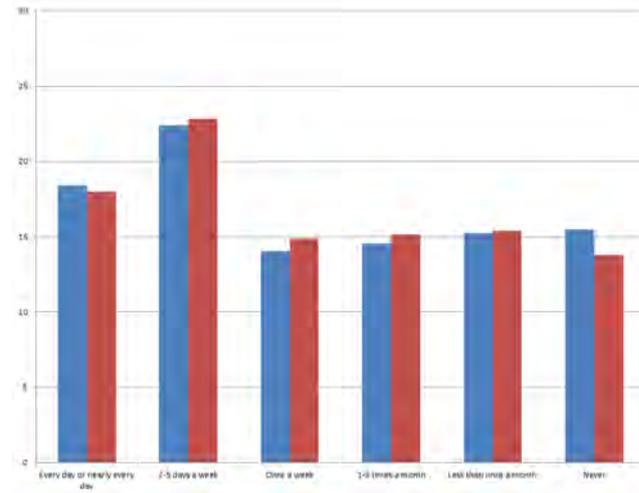


Figure 8 Qu 4d How often do you take care of daily businesses by walking without using other modes of transport? Winter and Other time of the year. (Blue =winter, red =other time of the year)

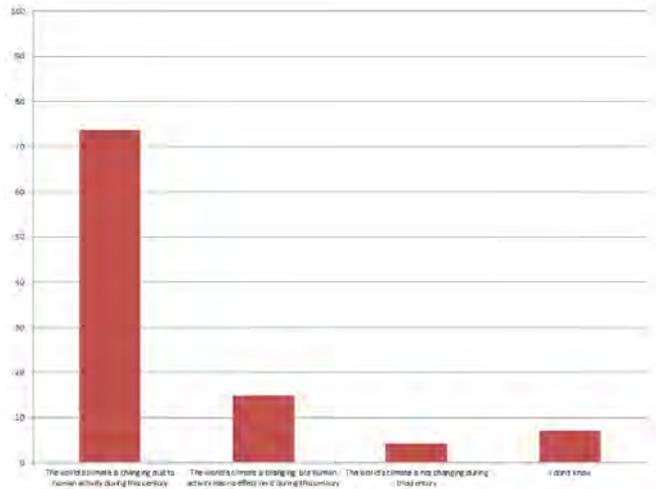


Figure 9 Qu 5 The next question is related to climate change. Please choose from following options...

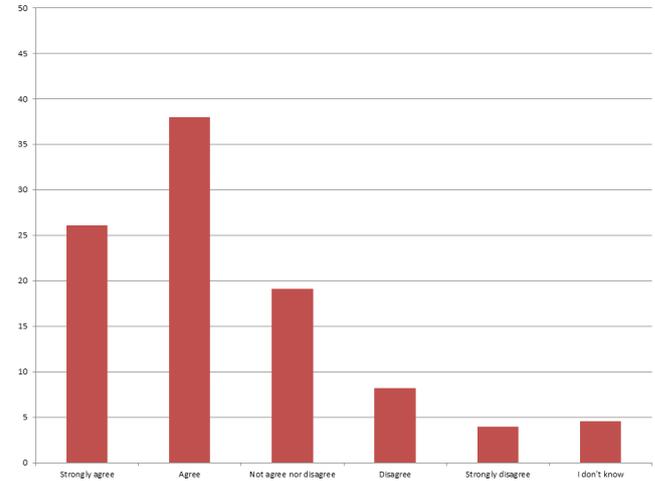


Figure 10 Qu 6a How much do you agree with following statement? 'Current level of car use has a serious effect on climate change'

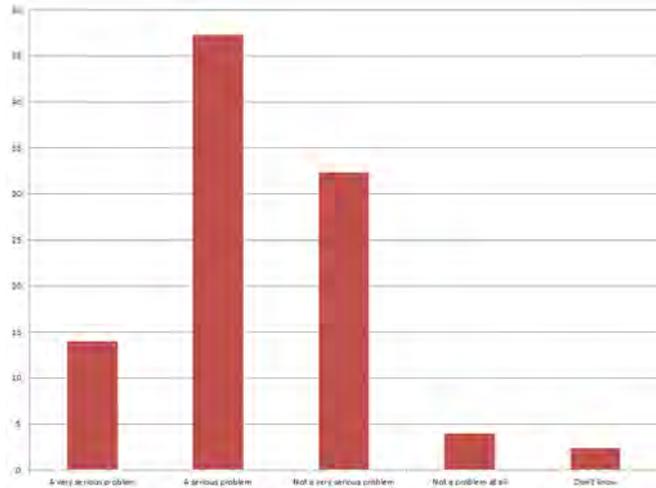


Figure 11 Qu 6b How serious a problem is traffic congestion in towns and cities in your opinion?

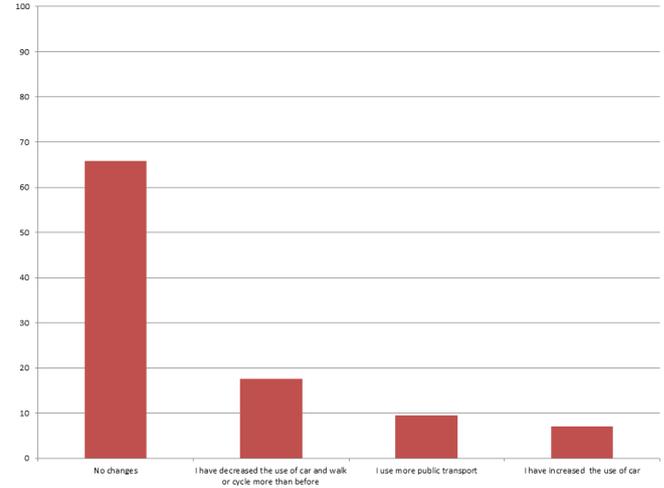


Figure 12 Qu 7 Compared with two or three years ago, has there been changes in your travel habits?

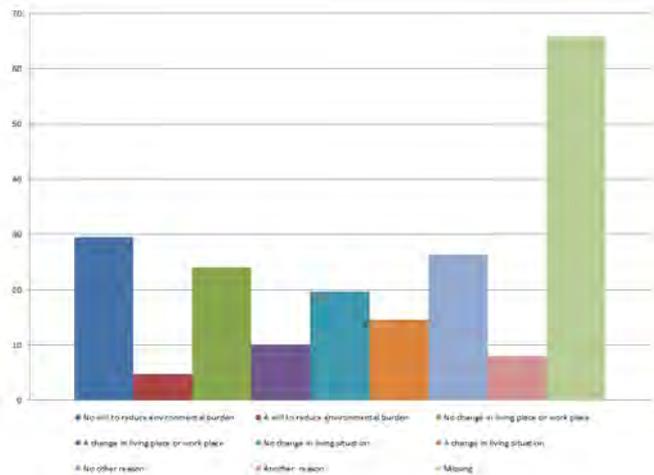


Figure 13 Qu 7b Was the change (if any) related to....

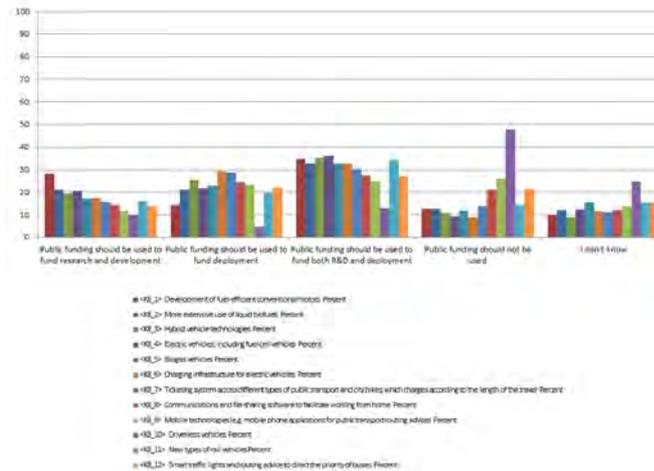


Figure 14a Qu 8 For each of the options below, please choose the best answer. Which technologies should be supported by public funding and at which stage?

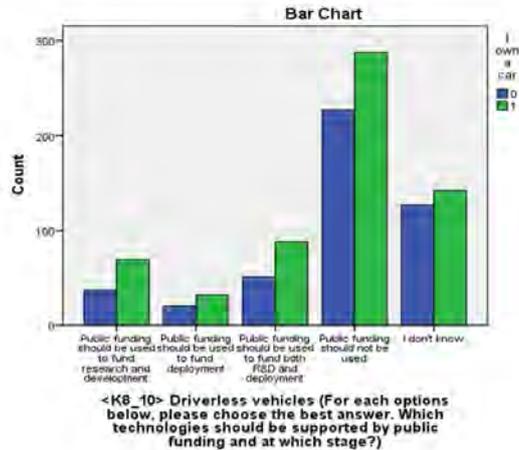


Figure 14b Negative opinion of publicly funded RD&D for autonomous vehicles, regardless of car ownership. 0 = no car owned; 1 = car owned

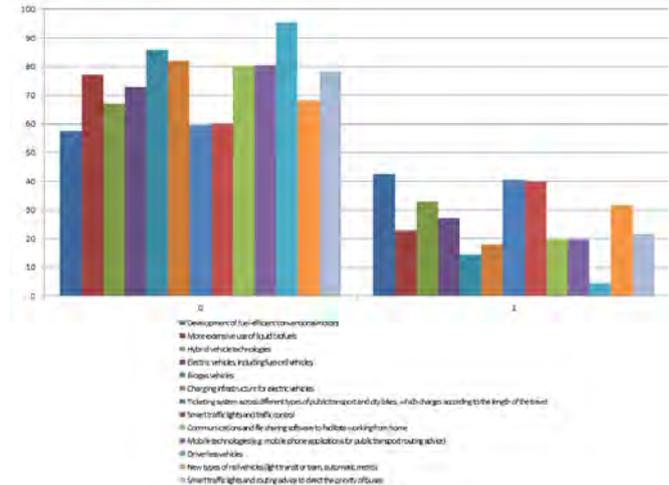


Figure 15 Qu 9: Thinking about the options listed in question 8, which do you think would make most difference (positive) to your own life? Please indicate the five options that you think would make most difference. 0 = no difference. 1 = positive difference

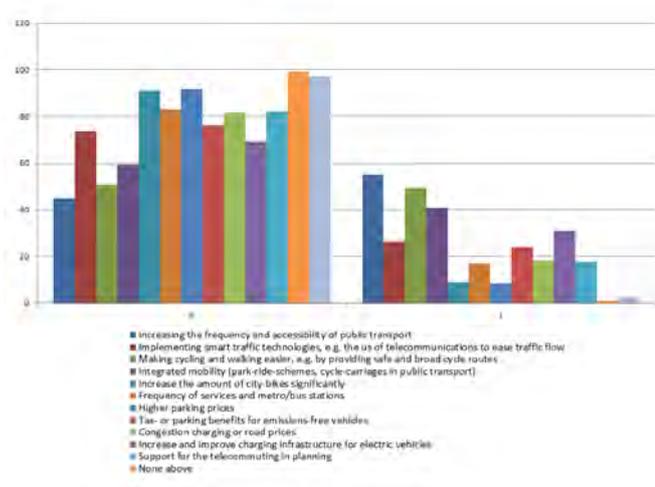


Figure 16 Qu 10: Below are “policies” that may help reduce the environmental impacts of urban travel. You may enter your own options too. Please choose five options that you think should be put into action (in Finland) over the next decade. Feel free to make any additional comments below. 0 = no difference. 1 = positive difference

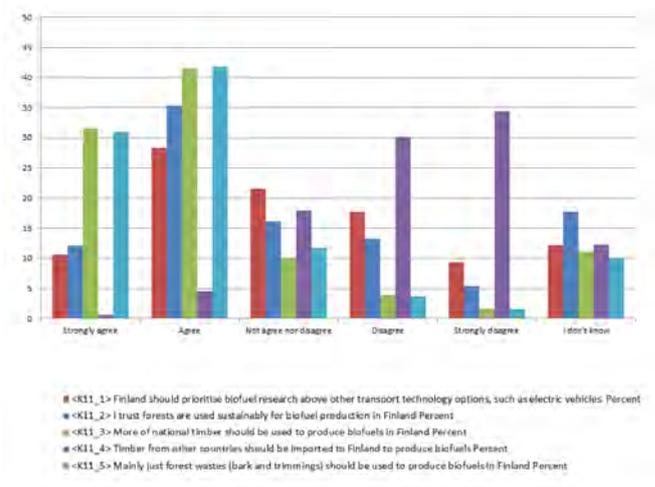


Figure 17 Qu 11: The bio-economy and transport: Please tell us to what extent you agree with the following...

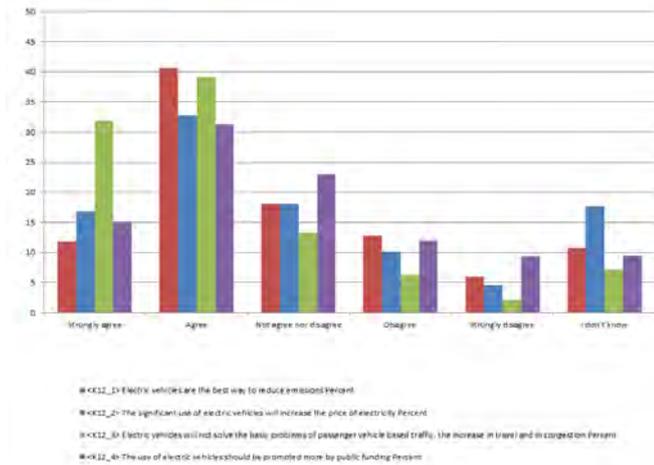


Figure 18 Qu 12: Electric vehicles and transport. Please tell us to what extent you agree with the following...

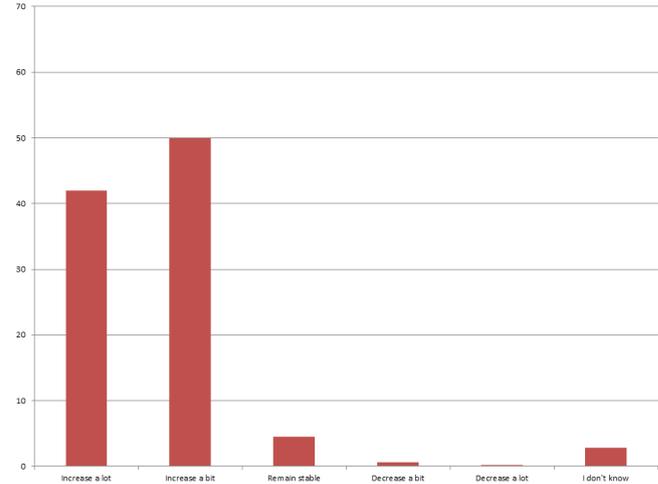


Figure 19 Question 13: In the next 5 years do you think the price of petrol and other fossil fuels will...

Regional differences

One of the key premises of the study is that dependence on differing transport modes may affect attitudes to innovation policy options. It is for this reason that we selected potentially contrasting travel to work areas, with the hypothesised potential for large samples of contrasting travel type. In detail, the

travel to work areas were: Helsinki home-to-work area (Helsinki, Espoo, Kauniainen, Vantaa); Tampere home-to-work area (Tampere, Ylöjärvi, Pirkkala, Kangasala, Orivesi, Ruovesi); Oulu home-to-work area (Oulu, Hailuoto, Kempele, Liminka, Lumijoki, Muhos, Tyrvävä, Ii). Helsinki is southerly located, a relatively cosmopolitan capital city with a bus, tram and metro network and a milder climate than northern Finland; Tampere is a regional city 90 minutes north of Helsinki by train; while Oulu is further north, smaller again and climatically sub-arctic.

A Kruskal-Wallis test was used to test for statistically significant differences between the regions and the results showed significant differences between regions across a wide range of responses. For transport mode use (Qu4), there is significant difference for all but winter walking. Taking the significant differences in turn, most people in Oulu use their car for their daily business throughout the year and few use public transport. Using transport modes other than cars is higher in Helsinki than in Tampere and higher in Tampere than in Oulu. While the foregoing might be expected, the situation for bicycle use is reversed. In winter in Helsinki, very few respondents said that they cycled: SPSS gives a median of 'never', with outliers at each of the other options. Similarly at other times of year, the frequency of bicycle use is highest in Oulu, then Tampere and lowest in Helsinki. Walking as a main means of transport at other times of year is engaged in by significantly fewer people in Oulu, while the medians for walking for Helsinki and Tampere

are very similar.

Turning to Qu5 on perception of climate change, the median for all three regions is similar and reflects majority acceptance of anthropogenic climate change. However, whereas Helsinki has only outliers for the other positions on this topic, Oulu and Tampere have similar upper quartiles of respondents who believe that 'the world's climate is changing, but that human activity has no effect on it during this century'.

Qu6a asks for the degree of agreement with the statement that 'Current level of car use has a serious effect on climate change' and Qu6b 'How serious a problem is traffic congestion in towns and cities in your opinion'. The questions are intended to allow examination of associations between perceptions of the environmental and social impact of car use and other views on forms of transport innovation. Responses to Qu6a do not differ significantly across regions but responses to 6b do. Inspection of pairwise comparison from the Kruskal-Wallis model shows that it is opinion in Helsinki that is the source of the significant difference, at $p=0.000$ for comparison with Tampere and $p=0.047$ for Helsinki compared to the Oulu region (for post-hoc, pairwise comparisons, SPSS provides significance levels adjusted via Bonferroni correction). The Kruskal-Wallis tests for Qu7 show no significant differences between regions for change in travel habits, neither per se nor for any particular reason. As stated, the closely related questions 8 and 9 are omitted for

their non-normal distributions.

Qu 11 asked for degree of agreement on various aspects of the bio-economy in relation to transport, this being widely viewed as a key area of innovation for Finland. The Kruskal-Wallis tests find significant regional difference for all but one question. Qu. 11a asks whether Finland should prioritise biofuel research above other transport technology options, such as electric vehicles. In aggregate there is a broad spread of opinion on this, with much uncertainty (a high level of neutral responses). Kruskal-Wallis test shows significant difference at $p=0.003$ and pairwise comparison shows the source of the difference to be respondents in the Oulu region. Qu11b asks whether respondents trust that forests are used sustainably for biofuel production in Finland. The Kruskal-Wallis test shows significant difference at $p=0.000$. Comparison of the medians shows one source of the difference to be a higher level of uncertainty and scepticism in the Helsinki region; pairwise comparison shows another to be opinion in Oulu.

Qu11c asks whether more of the national timber stock should be used to produce biofuels in Finland and there is stronger agreement with this proposition in the Oulu region than in Tampere or Helsinki ($p=0.001$). Pairwise comparison shows no significant difference between Tampere and Helsinki on this question. Qu11d asks whether timber from other countries should be imported to Finland to produce biofuels

and there is no significant difference in opinion on this, with most people disagreeing. Qu11e asks whether mainly just forest wastes (bark and trimmings) should be used to produce biofuels in Finland. The results are similar across regions, with pairwise comparisons showing no significant differences. Nonetheless the regional difference is just significant at $p=0.044$, with most people agreeing with the proposition.

Qu12 asks for views on electric vehicles. Qu12a asks whether electric vehicles are the best way to reduce emissions. Most people agree with this and there is no significant difference between regions. Q12b asks whether people think that the significant use of electric vehicles will increase the price of electricity. On this there is a significant difference between regions at $p=0.033$, with pairwise comparison showing the main difference to be between Oulu and Helsinki ($p=0.040$): more Oulu (and Tampere) respondents agree with the proposition that the electricity price will rise than do Helsinki respondents, who are mostly unsure (the Helsinki median is a neutral response). Qu12c asks for degree of agreement with the proposition that electric vehicles will not solve the basic problems of passenger vehicle based traffic, increasing travel and congestion. There was no significant difference in opinion between regions, with most people agreeing with the proposition. Qu12d asks for degree of agreement with the proposition that the use of electric vehicles should be promoted by public funding. There was no significant difference in opinion between regions, with most

people agreeing with the proposition but also with a substantial proportion of people registering neutral on this. Finally Qu13 asked for degree of agreement with propositions on the future price of petrol and other fossil fuels, so that various associations can be tested. Again there was no regional distinction, with the very large majority thinking that price will either increase a lot or a little.

Gender differences

Studies of environmental policy often find gender differences and this has implications for public support for policy. This is particularly the case in transport, where differing social roles based on gender and/or care-taking, both historic and contemporary, may lead to gender differentiation in transport use. This study is no exception and Kruskal-Wallis tests show significant gender differences for responses to several questions, with significant p values mostly in the 0.000 to 0.003 range.

Firstly, there are gender differences relating to access to and ownership of vehicles (Qu3c). Significantly more men than women say that they own a car, while men are much less likely to say that their family owns a car. Men are significantly more likely to say that they own a bike ($p=0.044$). However the distributions of having a permanent right to use a car, having access to a shared car and having the opportunity to use a bike are the same across gender categories.

With regard to Qu4, Qu5, Qu6: men make disproportionate use of car travel (use a car more frequently) in winter and non-winter. Men make correspondingly less use of public transport; men make more use of bicycles in winter and non-winter; fewer men walk every day or nearly every day in winter and non-winter (Qu4). Men are more climate-sceptic, being doubtful about either the effect or actuality of anthropogenic climate change (Qu5). Fewer men agree strongly that car use has a serious effect on climate change (Qu6a) and fewer men agree strongly that traffic congestion in towns and cities is a very serious problem (Qu6b).

In terms of the relationship of the bioeconomy and transport (Qu11), more men strongly agree that (Qu11a) Finland should prioritise biofuel research above other transport technology options, such as electric vehicles; notably more women registered 'don't know' on this question. Regarding trust that forests are used sustainably for biofuel production in Finland (11b), substantially more men strongly agree and substantially more women registered 'don't know'. Regarding the question of whether more national timber should be used to produce biofuels in Finland (11c), again substantially more women registered 'don't know', as they also did for Qu11d, the question of whether timber from other countries should be imported to Finland to produce biofuels (majority opinion was against this proposition by both genders). Re Qu11e, whether it should be mainly just forest wastes (bark and trimmings) that are used

to produce biofuels in Finland, women are more unsure and the ratio of agree to strongly agree is different for the genders, with a smaller proportion of men strongly agreeing. Overall the gender differences on this question seem to arise from differing levels of uncertainty and confidence in one's opinion (or perhaps knowledge) of the topic.

This theme is also evident in Qu12a on whether electric vehicles are the best way to reduce emissions, with more women being uncertain (registering don't know) ($p=0.015$). This was repeated for Qu12b, which proposed that significant use of electric vehicles will increase the price of electricity. It was also repeated for Qu11c), which posited that electric vehicles will not solve the basic problems of passenger vehicle based traffic, i.e. the increase in travel and in congestion, but remainder of the distributions were more similar and the difference not significant. For Qu12d), whether the use of electric vehicles should be promoted more by public funding, again more women were unsure but also less likely to strongly agree. For Qu13, which asks about the extent to which the respondent thinks the price of petrol and other fossil fuels will increase in the next 5 years, more men expect a slight increase (as opposed to a large increase) than do women.

Age differences

Many of the responses have age associations, both practices

and attitudes. This is firstly the case for bicycle use in winter, where 15-24 year old respondents cycle more frequently than other groups, as do 25-34 year olds to a lesser extent. In terms of cycling at other times of year, those who are 75+ years of age cycle more than the 55-74 age group and have a median cycling frequency the same as the 35-54 group. The 75+ group also contains individuals cycling as frequently as those in the 15-24 group, exceeding those of the other groups. This is not true of walking: 15-24 year olds are the most frequent walkers and the most frequent walkers in that age group are not matched by any other group. Nonetheless there are larger proportions of the 35-59 age groups who walk less than those in the 60+ groups.

Regarding opinion on anthropogenic climate change (Qu5), the 15-54 age groups appear to contain significantly more variety of opinion than 55+, who are more consistent in their acceptance of anthropogenic climate change (particularly the 75+). Regarding the proposition that the current level of car use has a serious effect on climate change (Qu6a), 15-34 year olds are more accepting of this than other age groups and 45-54 year olds have the highest level of lower acceptance. Responses to Qu6b, which asks how serious a problem is traffic congestion in towns and cities, shows an even starker age contrast, with 15-24 year olds being more likely to consider this a serious problem; 75+ year olds are the next most likely group – again these age extremes have similarities, with the broad 25-74 group

forming a different, but common bloc. However, the 25-34 age group are more likely than any other group to say that they use public transport more now than they did 2-3 years ago (Qu7), something that may simply reflect life stage. 15-24 year olds are also more likely to say that they now walk and cycle more, but this difference is not statistically significant.

Regarding Qu11 on the bio-economy and transport, we again see significant age differences on several of the response options. Qu11a asks about the extent to which Finland should prioritise biofuel research above other transport technology options, such as electric vehicles, and it is 15-24 year olds who are most averse to this and also most unsure. In fact the median for 15-74 year olds is a neutral position and it is only 75+ year olds who have a positive median. Qu11b asks about trust that forests are used sustainably for biofuel production in Finland and here the younger two groups (15-34) are in median disagreement and the older groups in median agreement, with middle age groups median neutral. Qu11c asks whether more national timber should be used to produce biofuels in Finland. Although there is median agreement for all age groups, in terms of the spread of opinion within each age group, there is a consistent trend of opinion shifting from negative to positive with increasing age. For Qu11d, regarding timber from other countries being imported to Finland to produce biofuels, there is no significant difference in terms of age: larger proportions of those 65+ are neutral but overall opinion is consistently

opposed in all age groups. Regarding whether mainly just forest wastes (bark and trimmings) should be used to produce biofuels in Finland, however (Qu11e), although there is a common median of agreement, there is variation across the age groups but with no clear trend.

Responses to Qu12 on electric vehicles are mixed. Qu12a on whether electric vehicles are the best way to reduce emissions shows a mixed response, with median agreement in most age groups, neutrality in groups 25-54 years and strong agreement in the 75+ group. No significant difference in age groups was recorded for Qu12b on whether the significant use of electric vehicles will increase the price of electricity; nor Qu12c on whether electric vehicles will solve the basic problems of passenger vehicle based traffic, the increase in travel and in congestion; nor (Qu13) the extent of the fuel price increase over the next 5 years. Significant difference was observed for Qu12d on whether the use of electric vehicles should be promoted more by public funding, with mixed views: median neutrality in the 15-34 and 60-74 groups, agreement in the 35-59 and 75+ groups.

Income-related differences

There are significant, income-based differences on all of the sub-questions of Qu4 on daily use of transport types. For winter and non-winter, Qu4a asks how often people use a car in winter

and (Qu4b) non-winter. For both, there are consistent group differences, with median usage increasing with income, more so for non-winter. Pairwise comparisons show the differences to be less marked for the middle income brackets. Conversely, for public transport (Qu4b) in both winter and non-winter, pairwise comparisons show the main difference is between the 20,001-35k and 45k+ brackets, with the lower paid of these groups being more frequent users of public transport. There are no income group differences for cycling but there are for walking and this is most marked in winter, particularly for those earning 45k+ euros. It should be noted that causality here may be related to age rather than, or as well as, income.

Income differences are not significant for Qu5 on views on anthropogenic climate change. Income differences are however significant for views on whether the current level of car use has a serious effect on climate change and for how serious a problem traffic congestion is. People in the lower income brackets agree more strongly with the proposition that the current level of car use has a serious effect on climate change and regarding traffic congestion, pairwise comparisons show a difference between the lowest and highest income groups and (this is not visible in a graphical median comparison and again causality may not be simply income related). Qu 7 asks about changes in travel habits and the responses are not significantly different on an income basis. Re Qu11 on the bio-economy and transport, there are significant income differences for trust in Finnish for-

ests being used sustainably and timber imports for fuel. In both cases, the highest income group is more positive, though the median of that group is still opposed to imports. There are no significant income differences for prioritising biofuel research above other options; for using more national timber for biofuels; or for using mainly timber wastes for biofuels.

Qu12 about electric vehicles and transport finds two income related differences. Regarding views on the likelihood of electricity price increases, pairwise comparisons show that the highest and lowest income groups are significantly different, with the higher income group more likely to agree that price increases are likely. Regarding the potential of electric vehicles to address issues such as increasing travel and congestion, lowest income group is more optimistic than the others. Views on whether electric vehicles should be promoted with public funding are not significantly differentiated by income; nor are views on the likelihood of oil price increases (Qu13).

Finally regarding vehicle ownership (Qu3c), there are significant income-based differences for 'I own a car', 'my family has a car' and 'I have permanent right to use of a car'. In all cases the differences are particularly between the highest and lowest income groups. There are no significant income-related differences in responses to questions on access to a shared car, ownership of a bike or opportunity to use a bike.

Differences relating to having children at home

Hypothesised differences and associations with the presence of children at home (CH) include influences on and of car ownership (for transporting children); awareness of financial costs and environmental risks. In fact there are several significant differences on this basis. CH is involved in differences in car use, public transport use and walking (but not cycling) in winter and non-winter (Qu4a, b, d). Those with CH appear more likely to use a car, less likely to use public transport and less likely to walk. CH is also involved in differences relating to the willingness to reduce environmental impact (Qu7b), apparently being less likely to say that this has been for environmental reasons.

Discussion

It is clear from the survey results that there are significant opinion differences linked to both demography and geography regarding the different ways that the Finnish state might support low carbon innovation policy for transport. While aggregate and majority views are discernible, in and of themselves they obscure these differences. Use of multiple regression did not yield any reliable, statistically significant model that might account for these, though age appears to be an important variable, likely related to the differing needs of people at different life stages. As such, follow-up qualitative work would doubtless be informative in further understanding reasons for differences.

Table 1 below summarises the group differences, to facilitate a discussion of their various implications for engaging the public in innovation policy and for low carbon transport innovation policy itself.

Survey result	Issues and implications for engagement and policy	
Aggregate survey results		
Respondents older & more educated than the census population	Issues of representativeness and target population	Transport practices may be reflecting the availability of public transport infrastructure, particularly the tram, bus and metro system available in Helsinki
In terms of the adverse environmental effects of car use, there is more agreement on congestion than climate change	Immediately tangible environmental impacts may be seen as higher priorities than those perceived as geographically and temporally remote	As above, possibly more so outside of Helsinki
Most use a car frequently, but support innovations that facilitate public transport, cycling and walking	Indicates support for policy that is inclusive rather than exclusive of options	On perception of climate change, while the median for all three regions is similar, Oulu and Tampere have similar upper quartiles of respondents who believe that 'the world's climate is changing, but that human activity has no effect on it during this century'.
A large majority are supportive of a self-reliant Finnish bio-economy for transport, particularly where waste timber is used. However, fewer than half (47%) agree or strongly agree that Finnish forests are currently being used sustainably for biofuel production	Finnish state agencies and research organisations emphasising the development of lignocellulosic biofuels probably do so with general public legitimacy. However there is substantial concern and uncertainty about the environmental performance of current forestry practices	As above, raises issues of centre-periphery differences that merit further investigation
Electric vehicles are seen as important but do not have the same level of broad support as biofuels	Relative to electric vehicles, State support for Finnish-sourced, second generation biofuels may garner a higher level of public support in the short to medium term	
Public investment in integrated ticketing for public transport and cycling is viewed as likely to make as much difference to respondents' lives as almost as the development of more fuel efficient conventional vehicles	Again indicates support for policy that is inclusive rather than exclusive of options	Gender Significantly more men than women say that they own a car, but gender distributions of having a permanent right to use a car do not differ. However men make disproportionate use of car travel
Although anthropogenic climate change is accepted by the large majority (74%), 15% think that climate change is not due to human activity; another 4% think there is no climatic change; 7% don't know	For a quarter of the population, anthropogenic climate change may not be a convincing policy justification	Men are more climate-sceptic, being doubtful about either the effect or actuality of anthropogenic climate change.). Fewer men agree strongly that car use has a serious effect on climate change and fewer men agree strongly that traffic congestion in towns and cities is a very serious problem
Group and population differences		
Geography		
Higher car use and lower public transport use in the Oulu region; stronger environmental concern in the Helsinki region.	If representativeness is an objective, geography is significant; environmental concern may parallel transport practices, with associated implications for policy legitimacy	Women are significantly more likely to register don't know as a response to whether the State should prioritise biofuel research above other transport technology options and to related questions on the use of timber for biofuel production

Age	
The youngest and oldest groups cycle most; the youngest group (15-24) walks the most	Likely in part reflecting differential access to vehicles, differing practices have implications for the distribution of policy impacts and legitimacy
The youngest group (15-24) are most averse to prioritise biofuel research above other transport policy & technology options	As above
Income	
There are significant income-based differences for 'I own a car', 'my family has a car' and 'I have permanent right to use of a car'. In all cases the differences are particularly between the highest and lowest income groups	As above. Note that in this and the next several differences, the low and high income brackets are, respectively, 20-35k and 45k+ euros. In other words, the difference is barely a factor two.
Median car usage increases with income, more so for non-winter. People in lower income brackets are more frequent users of public transport	As above
People in the lower income brackets agree more strongly with the proposition that the current level of car use has a serious effect on climate change and regarding traffic congestion	As above and also implying the possibility of a link between transport practice and environmental attitude

Table 1 Selected survey results and implications for engagement and policy

In terms of public engagement in innovation policy, and considering both the social capital-based account of power by Healey et al (2003) and the set of issues identified by Delgado et al (2011), online polling by an independent body can function as only one, limited element in a participative process. Polling is a one-way, relatively centralised method of eliciting opinion. By itself, it is typically a means of consulting or polling, rather than co-producing policy. In principle, though, surveys may use

questions developed through more participative and decentralised processes (e.g. physical or online focus groups or citizens' panels provided with information, expertise and lines of communication to decision-makers), which would better satisfy the criteria provided by Healey et al (2003). The more control given to a community in this regard, the more fully the criteria of Healey et al (ibid) would be satisfied.

To consider these matters further and with Table 1 in mind, we take in turn the why, who, how, when and what of engagement identified by Delgado et al (2003). The why, the rationale for engagement, is perhaps the most important, as this drives the others. Consultation by polling may be undertaken simply in the search for policy legitimation, rather than to actively shape or inform policy or as a means of expressing democratic norms. Yet, if undertaken prior to other engagement processes, online polling can direct attention to differences within a population that merit closer attention. These differences are likely to relate to differing perceptions of policy impact and hence differing support. In turn this may inform different design, or, depending on the purpose of the consultation, different presentation, of policy proposals. Hence online polling may function as a form of consultation or as a form of engagement, depending on the rationale and context. The same applies to polling undertaken to reveal aggregate (majority) opinion, which is of course routinely undertaken by political analysts.

Turning to the question of who should be involved, matters concerning the engagement of plural opinion in sustainability transitions are of widespread interest (Stirling, 2011). As Delgado et al (2011) observe, political science and philosophy have long given serious attention to democratic rationales, as have environmental planning and management. Assessing a range of public engagement methods, Rowe and Frewer (2000) rate opinion surveys as performing relatively well in terms of public representation, in the sense that it is generally possible to obtain a reasonable level of representation for a target population, at least in terms for which numerical data is available. It should be noted that a strict level of representation may require some element of weighting by census response or top-up sampling, as particular sub-groups can be difficult to reach. This, though, applies to other methods of consultation and engagement too. More problematic, but again a feature of all engagement methods, are situations in which data on the characteristics of interest are not known in advance of a survey. However a survey can help to reveal characteristics of interest that can then be followed up with an additional survey or qualitative methods. A follow-up survey of a sub-group should then be capable of representing the views of that sub-group, though only in the terms of the survey (which will likely be more constrained than qualitative methods allow).

This brings us to the how of engagement: in principle the terms of a survey (the question themes and phrasing) can be deter-

mined in partnership with the populations or constituencies concerned. Such discussion will likely enhance the legitimacy of the results and outcomes, through enhanced transparency of the process (Rowe and Frewer, 2000). With a participative approach to question design, a balance will likely need to be struck between meeting an affected community's expressed demands or interests and ensuring that questions are phrased so as to avoid various biases. Selection of participants with whom questions are designed could in principle be done through a randomised method applied to the population, assuming that population is readily identifiable. Self-organisation of a survey by a community is also possible, providing there is access to the necessary financial resources. The necessary intellectual resource, if only compliance with survey norms to facilitate the wider legitimacy of the outcome, can also in principle be purchased if required (again assuming the necessary financial resource is available).

The timing of engagement (at what point in the development of a given process engagement takes place) will depend on the purpose, context and constraints of the situation. Parts of an affected population may want early and on-going input to a decision process, indeed maximum influence over that process, but this may or may not be politically and institutionally possible. Decision-making institutions, organisations and procedures in general control access to decision-making and policy implementation processes, reserving this to those appointed

or elected. Commercial organisations typically have formal accountability limited to boards and shareholders and again have legally protected and controlled access to resources. Given this context, public engagement is rarely on an equal basis and timing may well not be under the control of citizens. In principle, early engagement gives more time to shape decision-making, but ultimately engagement at any stage only serves the ends of those engaged if those entitled to take implementing decisions choose this to be so. As ever, engagement takes place in the context of particular distributions of power, however one chooses to define this.

This leads to the final question of Delgado et al (2011), namely whether engagement should be of a universal or context-specific nature. Opinion surveys are an example of a limited-engagement technique that to some extent travels well across contexts (Einsiedel et al, 2001), though with the many provisos expressed above. These include the need for identifiable populations that can be sampled and the need for additional techniques and measures (including access to various resources) if the use of surveys is to satisfy broader democratic purposes. It is the combination of measures and the tailoring of questions to specific contexts that is likely to lend specificity to survey use as a contribution to innovation governance.

Conclusions

We have provided detailed evidence of the heterogeneity of public opinion regarding policy intended to foster socio-technical change towards low carbon transport, showing that this relates to material differences in demography and geography. We have then used these results to discuss the value of large scale, online opinion surveys as part of public engagement processes. Designed, administered and analysed away from the populations influenced by a particular policy arena, online polls are a weak form of engagement, amounting at best to one-way consultation. Yet such polls may also be used to highlight areas of public dissensus, enabling additional engagement activity with sub-groups for different reasons, be this to understand and to inform policy or, depending on the objective, context and version of democracy that one subscribes to, to persuade and pre-empt opposition.

In further work, these thoughts will be extended to connect explicitly to the transitions management literature. The heterogeneity of public opinion matters in pathways of socio-technical change, not least because public opinion helps to legitimate the policy support that new technologies and social innovations need in order to compete with incumbent, path-dependent systems. There is plenty more conceptual and empirical work to be done at the interface of policy analysis, public engagement and the theorisation of socio-technical transitions.

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Success Factors of Social Innovations by a Community-Based Learning Course (CBLC)

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Abstract

This is the success story of a community-based learning course (CBLC) project addressing the concerns of the international community of students and staff of Wageningen University and Research Centre (WageningenUR). A joint effort of this community, WageningenUR and social entrepreneurs resulted in social innovations for this community: an informative website and film about the available healthcare, explaining cultural differences. The film had 1,671 views (at 28-02-2014) and became part of the introduction programme of WageningenUR.

At WageningenUR every year over 150 teams execute a 'real-life' project in the CBL course 'Academic Consultancy Training'. In this course advanced Master students execute assignments commissioned by external commissioners in multidisciplinary and multicultural teams. What can be learned from this particular case of CBLC that successfully resulted in social innovations?

The following factors contributed to the results of this CBLC project:

1) Collaboration and/or involvement of stakeholders in the different steps, before, during and after the CBLC project 2) Every step fitted within an interest or existing initiative of stakeholders involved 3) The CBLC team made the stories of international students about healthcare explicit 4) The stories reached the WageningenUR board 5) The CBLC team proposed constructive recommendations which supported follow-up action 6) The social action-oriented commissioner with network enabled follow-up action 7) The commissioner discussed sensitive issues.

Lessons learned for the selection and guidance of future CBLC projects:

1) This case confirms the importance of attention for stakeholder involvement in the projects; 2) Projects in which stories of a community are made explicit, can be powerful in raising concern for this community; 3) Importance of formulation of constructive action-oriented recommendations; 4) Probe potential commissioners about how they expect they will share and use the results within their network.

1. Introduction

This is the success story of a community-based learning course (CBLC) project. Within Wageningen University and Research Centre (WageningenUR) every year more than 150 student teams participate in the CBLC called 'Academic Consultancy Training'. The particular CBLC project that is subject of this paper, addressed the concerns of the international community of students and staff of WageningenUR about healthcare available for them. A joint effort of the international community, WageningenUR and social entrepreneurs resulted in social innovations for this community: an informative website and film about the available healthcare explaining cultural differences and an online appointment system with the General Practitioner.

The research question for this paper is: What are success factors for social innovation within the organisational framework of the CBLC Academic Consultancy Training?

The paper is organized as follows. Section 2 provides a description of the way CBLC projects at WageningenUR are organized. Section 3 gives a theoretical background on Social Innovation and Innovation Processes. Section 4 describes the Methodology. Section 5 consists of a description of the Social Innovation Process including this particular CBLC project's process. Section 6 concludes with a description of success factors derived from the CBLC case description and discusses implications for CBLC

projects aiming to support social innovation.

2. 'Academic Consultancy Training'; CBLC projects at WageningenUR

At WageningenUR, every year over 150 teams of six (plus or minus one) students execute a 'real-life' project in the CBLC 'Academic Consultancy Training'. In this course, advanced master students from a majority of masters programs of WageningenUR, execute assignments commissioned by external commissioners in multidisciplinary and multicultural teams (Scheepers et al. 2012). The course starts five times a year and lasts eight weeks. Commissioners provide a project description and pay the out-of-pocket costs, like travel expenses, print costs, etc. Students apply to a project by writing a formal application letter, subsequently indicating their first, second and third choice of project. In addition to that they will have to express their preference for one of the team roles: manager, secretary, controller or member.

All teams have their own work space within the university, and are assigned a process coach and a content coach. The process coach is a trained teacher who has 65 hours available for this task. Though students manage their own work, the coach can intervene if necessary. Also, he or she is coaching students' reflection process. The content coach, also called expert, is a university researcher guarding the academic quality of the work.

This person has 10 hours in total, to help the students with literature suggestions, ideas for informants and information on applicable methods. When finished, the experts mark the final reports. If needed, students can consult teachers/researchers of the Research Methodology Group, to help them with methods of social research – research design, data collection, data analysis, both qualitative and quantitative.

Special workshops support the students' learning process. The proposal writing workshop prepares them for their project proposal, in which activities and budgets are defined, to be approved by their commissioner. Conducting a stakeholder analysis and designing a logical framework are part of this workshop. Workshops Communication and Personal Development address issues of team work, team roles, and reflection. In addition to that there is a short introduction for team managers.

The course presents complex problems, requiring both interdisciplinary and intercultural collaboration and self-reflection to solve them. Self-reflection provides the opportunity to describe and explore both personal and team qualities. This approach relates to the design of the course, which connects competencies through scientific research, projects, and collaboration (Scheepers et al. 2012).

3. Social Innovation Processes

Social innovation is a key word in this paper. As to guide research Pol and Ville suggest that an innovation is termed a social innovation if the implied new idea has the potential to improve either the quality or the quantity of life (2009). The social innovations described in this paper aim to improve the quality and quantity of life of international students and staff of WageningenUR.

In thinking about innovation the linear model has been dominant from 1950-1980. The linear idea is that innovations are developed by scientists, disseminated through intermediaries and put into practice by users (Leeuwis and Aarts 2011). Later modes of thinking suggest that innovations are not one-dimensional and do not just consist of new technical devices, but also contain new social and organisational arrangements. These are integral parts of an innovation. This implies that there are often many stakeholders and networks involved in an innovation process (Leeuwis and Aarts 2011).

The thinking about planning of an innovation process has also changed over the past decades. There was a strong belief in the possibility of planning and predicting innovation. A current viewpoint is that change is often affected by complex interdependencies, unintended and unforeseen developments and interactions, coincidence and dynamics of conflicts (Leeuwis

and Aarts 2011). The typology of planning approaches of Whittington (2001) reflects these different viewpoints on planning. Whittington (2001) observed four successful planning approaches in the corporate world: With a 1) Classical strategy, a goal is set for a precisely planned outcome, assuming a predictable environment. With an 2) Evolutionary strategy, a variety of initiatives are launched and the 'best fitting' survive. With a 3) Systemic strategy, the local social system determines the goals and means of the plan. This strategy therefore requires collaboration and participation. Within a 4) Processual strategy, planning is a step-wise process, guided by a 'strategic intent'.

These four different types of planning have also been observed in the practice of health promotion (Wink et al. 2007, Lezwijn et al. 2011). However, in health promotion, approaches other than the classical planning approach are often not made explicit (Lezwijn et al. 2011). This paper will make explicit how social innovations in this particular case have evolved.

4. Methods

A case description of the process, from community concerns about health services in Wageningen to social innovation in the form of a video, serves as a basis to answer the research question. The description is based on direct observations of Goris and Wink and supported with findings from literature and in process documentation like the programme and summary of

the Global Café meeting. This particular case can be regarded as exemplary for social innovation through Community-based Learning. The advantage of a case study is that it yields rich information, showing all perspectives on that particular case. The obvious disadvantage is that generalisation is rather difficult, since only one case has been studied (Flick 2009).

As evidence for success we provide evaluation results of the film. Evaluation results were collected with a combination of methods: 1) Every year WageningenUR asks all international students to evaluate services of WageningenUR by an online questionnaire called the International Student Barometer™, a service of the International Graduate Insight Group (i-graduate.org). This barometer also included two questions about the film. 2) 16 international Master students were interviewed by one of the film producers (Wink, Van Tuyll and Goris) directly after they watched the film as part of the introduction day's programme of WageningenUR (14-02-2014). Interviews were semi-structured; guided by a list of 10 questions and recordings were transcribed.

5. The Social Innovation Process; a CBLC project case study

This process story describes the steps from community concern to the resulting social innovations. Steps are: 1) a Global Café meeting 2) a CBLC project 3) Sharing the Stories 4) the Social Innovations. Subsequently we zoom in on the film production

and the film evaluation results. Table 1 gives an overview of the involvement of the multiple stakeholders in the different steps in the social innovation process.

Global Café

In 2011 OtherWise started monthly Global Café meetings for the international population of Wageningen, as to bring people together, exchange views and make Wageningen an even better place for everyone. OtherWise is a non-profit organization linked to WageningenUR facilitating Dialogue for Social Change (www.st-otherwise.org).

During the first Global Café meeting, OtherWise asked attendants to write their thoughts and wishes about living in Wageningen on cards and to put these in a 'Tree of Hope'. Members of the international community of Wageningen expressed their concern about healthcare in Wageningen. The participants mentioned that they were not familiar with, or even amazed about how healthcare is organised in Wageningen (OtherWise 2011a).

Therefore the second Global Café meeting (March 2011) addressed the topic of healthcare in Wageningen, 'Do they care about us?' The approximately 30 attendants were invited to share their experiences by means of a 'Cross the line' activity and to ask questions to practitioners in two 'Table rounds'

(OtherWise 2011b).

Process Steps/Activities v	Stakeholders v	OtherWise (non-profit foundation supported by WageningenUR)	Margriet Goris, coordinator OtherWise + filmmaker at Cocreation Productions	International community of students and staff of WageningenUR	WageningenUR Policy Officers Internationalisation Process	Student psychologist of Student Service Team of WageningenUR	General Practitioners - WageningenUR Vaccination Centre	Gerda Wink Wink Works for Healthy Communities + CBLC team coach - WageningenUR	CBLC project coordination WageningenUR - inc. Gerda Casimir WageningenUR	CBLC Proposal Writing teacher - WageningenUR	CBLC project expert - WageningenUR WageningenUR	Executive Board WageningenUR	Resource WageningenUR newspaper	Student Council - WageningenUR	FAIRBredproduces (video producing social enterprise)	Municipal Health Service	Regional hospital
Global Café 1 st meeting with 'Tree of Hope'		X	x														
Global Café 2 nd meeting Healthcare in Wageningen		X	x	x	x	x	x										
Submitting case description for CBLC project		X	x					x									
CBLC project - proposal writing		x		x				x	x								
- research activities		x		x	x			x	x								
- presenting advice report		x	x		x												
Sharing and discussing results + recommendations		X	x		x			x		x	x	x	x	x			
Improving information on WUR healthcare website					X												
Improving appointment system of GP (online)								X									
Producing an informative film on healthcare - WUR			X	X	x	X	x	x	X							x	x
Sharing of film			x	x	X	X	x	X								x	x
Evaluating film			x	x	X	X	x	X									x

Table 1 Overview of stakeholder involvement in the different activities in the innovation process. The main stakeholder enabling the activity is marked with x

During the 'Cross the line' activity a quiz master asked questions like: 'Did you know that women who are pregnant are supported by a mid-wife and not in first instance by a gynaecologist? If you knew, cross the line.' Subsequently attendants could cross a line drawn on the floor of the Global Café venue. This activity allowed participants to share their experiences without having to speak in front of an audience (OtherWise

2011a). It also gave a rough impression of the knowledge or experiences of the attendants, for example: few international attendants turned out to be aware of the role of a mid-wife in the Dutch healthcare system (OtherWise 2011a).

During the 'Table rounds' participants asked questions and discussed with 1) a nurse from the Vaccination Centre 2) a WageningenUR related Student Psychologist 3) a WageningenUR related General Practitioner and 4) the Policy officer Internationalization@Home of WageningenUR (OtherWise 2011b).

Having heard the stories from the international community of Wageningen, OtherWise provided a project description to the CBLC coordination. WinkWorks provided scientific input to this project description. OtherWise requested a CBLC student team to further explore what their fellow international students identify as barriers to and opportunities for quality healthcare in Wageningen.

CBLC project

The CBLC course coordinator accepted the project, the project description was posted on the course website and students applied for the project. Out of the applicants, the course coordinator selected a team of seven Master students with seven nationalities and from three different Master programs. Starting in September 2011, this CBLC student team proposed

and executed a qualitative study in the form of semi-structured interviews with 15 international students of WageningenUR (Alijagic-Boers et al. 2011). The team was guided by a process coach (author of this paper) from WinkWorks. During the project the team had regular contact with their commissioner and also talked with the Policy officer Internationalization@Home of WageningenUR.

The team delivered a written report (Alijagic-Boers et al. 2011) with the qualitative narratives of the interviewees. International students identify three main barriers to quality healthcare in Wageningen: 1) inadequate healthcare insurance procedures; 2) inflexibility in making appointments and 3) insufficient information provision. Data suggested that effectiveness of healthcare is primarily hindered by cultural misconceptions. The student team suggested increasing transparency in health communication to students by creation of one website dealing with healthcare issues for students. The team formulated concrete recommendations on the topics this website may include (Alijagic-Boers et al. 2011).

The CBLC team finalized their project with an interactive presentation of their findings and recommendations. The audience consisted of the OtherWise coordinators and commissioner, international students, the Policy Officer Internationalization@Home of WageningenUR and the process coach.

Sharing the Stories

As to ensure follow-up on the research findings, OtherWise shared the report with a request for follow-up to: 1) the Student council as they are responsible for yearly evaluation of healthcare for students, including job evaluation conversations with the WageningenUR attached General Practitioners 2) the Executive Board of WageningenUR and 3) Resource, the Wageningen University newspaper, which resulted in an article (Resource 2011). In this article the spokesman of the Executive Board of WageningenUR acknowledged that improving communication can be helpful in explaining cultural differences.

In the research period and directly after sharing the research findings the commissioner noticed the sensitivity of the issue. Some of the stakeholders felt offended and the commissioner had to take an active role in mediating and explaining the aim of the process; to improve the current situation and not to criticize any of the parties involved.

Social Innovations

The previously described steps resulted in three social innovations:

1) The Policy Officers Internationalization@Home of WageningenUR took up the recommendation of a comprehensive

informative website (<http://www.wageningenur.nl/en/International-students-and-staff/Healthcare-1.htm>) which includes the topics recommended by the CBLC student team.

2) The WageningenUR attached General Practitioners made it possible to schedule appointments with them via an online system, which widened the opportunities for students beyond limited telephone contact hours (during classes).

3) A film for (newly arrived) international students and staff on healthcare in Wageningen (<http://www.youtube.com/watch?v=jREOGISxabM>) which is available on the informative website of WageningenUR as well as on the website of the General Practitioners attached to WageningenUR. The film is also part of the programme of the introduction days of WageningenUR. This programme is offered to all students who start their studies in Wageningen. The link to the film has been shared via Twitter (amongst others by the spokesman of the board of WageningenUR), LinkedIn and Facebook. The film has been shared by e-mail with all study advisors of WageningenUR, with WageningenUR related health professionals and with all international students and staff involved in the production process of the film. The next section gives more details on the steps in this film production process.

Film production

Wink and Goris (authors and social entrepreneurs) suggested to the Policy Officers Internationalization@Home of WageningenUR the idea of making a film on healthcare for the international community in Wageningen. They were inspired by the film 'Small gestures, big effects' in which seven physically challenged students of the University of Groningen share their experiences. This film is still used by study advisors, eight years after production (Goris and Witteveen 2013).

By the end of 2012, Wink asked the former CBLC student team members for their thoughts about the idea of a film production about healthcare in Wageningen. Reactions were positive: 'I think students would like to hear stories from others who are in a situation somehow similar to themselves' and 'students can easily learn from others' stories'. Former student team members suggested the video should address cultural differences (Wink & Van Tuyl 2013). In May 2013 the Policy Officer Internationalization@Home of WageningenUR gave Wink from WinkWorks and Van Tuyl from FAIRBeeldproducties (filmmaking social enterprise) the assignment to produce a film about healthcare for international students and staff of WageningenUR.

The Policy Officers Internationalization@Home of WageningenUR, WinkWorks and Fairbeeldproducties jointly developed

the film script, based on the CBLC report and interviews with practitioners like the Vaccination Centre and the General Practitioner related to WageningenUR. The Municipal Health Service (part of WinkWorks' network), the Regional Hospital and the former members of the CBLC team all provided feedback on the script. Goris (as OtherWise coordinator), a former CBLC team member and the Policy Officers all found international students and a staff member who were willing to tell their story in the film. The former CLBC students and other international students of WageningenUR provided feedback on a raw version of the film. This resulted in a film in which four students and a staff member of WageningenUR tell about their experiences with healthcare in Wageningen. It shows a visit to a General Practitioner, a Pharmacy and a Student Psychologist, who explain the way they work. In line with the recommendations of the CBLC report, the film addresses: the health assurance and billing system, emergency procedures and how and when to register at the General Practitioner.

The film producers deliberately choose to film 'real' stories, as authentic personages and realistic storylines are important aspects of an effective narrative (Goris and Witteveen 2013; Boeijinga et al. 2013). When spectators can identify with a person telling a story and doing something, the spectators feel they can do it too (called self-efficacy in the Social Cognitive Theory of Bandura, 1986). Therefore it is important to choose for personages with which the target audience can identify

(Nagelhout et al. 2014).

Film Evaluation

As evidence for success of the film we provide observations about the reach of the film, results from the International Student Barometer™ and results from semi-structured interviews with international students after they watched the film.

Observations about reach: During the WageningenUR introduction days, this film is shown to newly arrived students (approximately 400 in August 2013 and 100 in February 2014, as observed by Wink and Goris). In addition, the film had 1,671 views on YouTube (on 28-02-2014).

International Student Barometer™ results: All international PhD, Master and Bachelor students of WageningenUR were asked to indicate whether they had seen the film and if so, whether they were satisfied with it. With a response rate of 13%, the survey results show that 85% of the students who saw the film were satisfied. When we split this percentage into European and Non-European respondents: 77% of the European respondents and 92% of the Non-European respondents were satisfied with the film (I-Graduate, pers. comm. by Policy Officer Internationalization@Home 28-02-2014).

Interview Results: The 16 respondents were all students (12

European and 4 Non-European) who had arrived two weeks or less before they saw the film. The respondents appreciated to be informed about the film shortly after arrival, as one respondent put it: 'My big question, number 1 is, when I get sick, what should I do'. Most respondents were able to mention things they learned from the film, like: 'the choice of a male or female doctor is a free choice' and 'the 112 number'.

As identification is important for an effective narrative, we asked the respondents whether they could relate to the students in the film. Some of the (European) respondents indicated that the Dutch healthcare system is very similar to the healthcare system in their own country. So they did not feel related to the experiences of the students in the film 'their questions were not my questions' (Belgian respondent). This probably explains the difference in satisfaction rate between European (77%) and Non-European respondents (92%), as found by the International Student Barometer™. Most students could explain in what way they felt related to the students in the film.

All 16 respondents would recommend to watch the film to other international students, particularly to 'students a longer way from home'. Or as a respondent from Zimbabwe put it: 'I strongly recommend it, if you come here this is the basic information you need to know.' The reach of the film plus the satisfaction rate of 85% and the findings from the interviews, provide support to describe the film as a successful social

innovation.

6. Conclusions

What are success factors for social innovation within the organisational framework of the CBLC Academic Consultancy Training? We will answer this question by outlining success factors derived from the CBLC case description and discuss implications of these findings for future CBLC projects aiming to support social innovation. But first, we relate our findings to theory about innovation processes and planning strategies.

Leeuwis and Aarts (2011) suggest that innovations are not one-dimensional and do not just consist of new technical devices. New social and organisational arrangements are an integral parts of an innovation, which implies that there are often many stakeholders and networks involved in an innovation process.

The case study as described in this paper (including the table indicating the involvement of stakeholders in each step of the process) clearly illustrates this latter mode of thinking about innovation. Multiple stakeholders and networks were involved in the innovation process. The resulting 'technical devices' like the film and the website, would not have evolved nor have the quality it reached, without the involvement of these stakeholders and networks.

The processual, systemic and evolutionary planning approaches (Whittington 2001; Lezwijn et al. 2011) could be observed in the described social innovation process: The social innovations evolved in a stepwise process in collaboration with stakeholders; the next step was dependent on reactions after the previous steps (Processual, strategy 4). Goals, like the specific content of the website and the film, were defined during the process in close collaboration with the international community but predefined by professionals (Systemic, strategy 3). The Evolutionary (strategy 3) aspect of the planning process can be seen in the selection of the CBLC project. The CLBC coordinator accepted the project and students applied for it. Also not all scenes in the raw version of the film were acceptable to the international community.

The Classical (strategy 1) approach to planning (Whittington 2001, Lezwijn et al. 2011) with predefined health goals and processes, has less fit with the described social innovation process. The social innovations as described were not predefined at the start of the CBLC project. This is related to the degree of complexity and dynamics of the context, like the multitude of stakeholders involved. This applies in particular to the type of projects and processes WageningenUR is dealing with, addressing issues of sustainability, rural development, health and society and other (Casimir et al. 2008, Jacobs 2001).

Success Factors

The following factors contributed to the innovations resulting from this CBLC project:

1) Collaboration and involvement of multiple stakeholders in the different steps, before, during and after the CBLC project 2) Every step fitted within an interest or existing initiative of one or more of the stakeholders involved 3) The CBLC team made the stories of international students about healthcare explicit 4) The stories reached the WageningenUR board 5) The CBLC team proposed constructive recommendations which supported follow-up action 6) The solution-oriented commissioner with network enabled follow-up action 7) The commissioner discussed sensitive issues.

These factors (especially 1, 2 and 6) are in line with findings of Millot & Buckley (2013) on organizing scenario workshops to develop partnerships between researchers and civil society organisations. They state that the prerequisite for success is that commitment to the implementation of a solution is strong and shared by all and that each of these actors has practical means of intervention in their own domain. In line with factor 7, Millot & Buckley point out that in action plan phase mediation work is crucial.

Leeuwis (2013) points out that meaningful change is dependent on changes in discourses, representations and storylines that are mobilised by interacting social actors. This is in line

with factor 3 and 4. Narratives were also a major constituent of the film.

Leeuwis and Aarts (2011) argue that three processes deserve particular attention in order to support innovation. These are network building, supporting social learning and dealing with dynamics of power and conflict. The listed success factors are in line with communicative strategies that can enhance these basic three processes and strategies, as described by Leeuwis and Aarts (2011).

Relevance for CBLC aiming for Projects resulting in Social innovation

Lessons learned for the selection and guidance of future course projects:

1) This case confirms the importance of attention for stakeholder involvement in the CBLC projects. During the proposal writing workshop which is part of the CBLC at WageningenUR, the Proposal Writing teacher stresses the need to plan for regular contact moments with the commissioner, often the major stakeholder. The Proposal Writing teacher also asks the student teams a) to indicate which stakeholders play a role b) how they might benefit or be affected by the project and c) who has impact on the project (Hendriksen & Heijmans, 2007). We suggest the following additional question for discussion by

the student teams: how will you involve your stakeholders in the project process?

2) Projects in which stories of a community are made explicit can be powerful in raising concern for this community. For this particular case they also proved useful as a basis for the film production.

3) In the case described, the CBLC team provided constructive recommendations. These recommendations legitimised and provided content for the film and the website. The constructive, action-oriented recommendations proved to be very supportive for the innovations that evolved.

4) Potential commissioners might be probed about their intention to use the CBLC results and their network to enable innovation. We suggest to the CBLC organisation to add a questions to the current CBLC project description form for submission of assignments (Stomph 2013). Questions could be: a) how do you plan to use the results of the project? b) with who do you expect to share the project results? Similar questions are already part of the research project application forms of OtherWise and the Wageningen University Science shop (Science Shop WageningenUR 2013, OtherWise 2013).

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