

Supporting sustainability transitions by enhancing the human dimension via empowerment, social learning and social capital

*Niko Schöpke¹ Ines Omann² Miriam Mock³ Julia Wittmayer⁴
Anneke von Raggamby⁵*

¹Leuphana University Lüneburg; Niko_Schaepke@web.de

²Sustainable Europe Research Institute (SERI)

³Sustainable Europe Research Institute (SERI)

⁴Dutch Research Institute for Transitions (DRIFT)

⁵Ecologic Institute

Abstract

In sustainability transitions, as answers to persistent problems and societal challenges, local initiatives are assumed as having an important role. Their success is supposed to be depended on a variety of drivers. Among others, social and particularly higher order learning is proposed as a key instrument to deal with uncertainties and complexity in sustainability transitions. Empowerment is forwarded as a core aim of governance approaches to facilitate sustainability transitions, due to enabling citizens to shape sustainability locally. Finally social capital is proposed as important precondition for joint local action when addressing societal challenges. This paper explores the meaning of social learning, empowerment and social capital for sustainability transitions at local scale and analyses how a development of all three factors can get facilitated by local transition management.

In a first step we define and conceptualize social learning, empowerment and social capital in the context of sustainability transitions. We then present the results of three transition management pilot projects in local communities with regard to strengthening social learning, empowerment and social capital amongst participants. In a last step the orientation of the facilitated process towards sustainability is analysed along four dimensions: environmental thinking, social thinking, interregional and inter-temporal thinking. Results show that in all three pilot projects social learning, empowerment and social capital development took place and the processes had a clear orientation towards sustainability.

Introduction

More than 20 years after the international community agreed upon sustainable development as a major principle to jointly strive for (WCED 1987, UNCED 1992) the environmental, social and economic challenges addressed by it have not lost their relevance. Rather the contrary can be stated: The impact of human actions on the earth systems reached a level where they become equivalent to a geological force (Crutzen 2002). Recent studies focussing on essential building blocks of assuring a safe operating space for humanity have revealed that human actions already have crossed thresholds for some of them (Rockström et al. 2009). Long-term societal stability and well-being will depend on pro-actively addressing environmental pressures such as climate change and impacts of resource consumption, social equity and ensuring viable economic activity that supports human flourishing.

These societal challenges are characterized as being complex, highly interrelated, are subject to uncertainties and unfold their impacts over long time horizons. Challenges are related to solving 'wicked' or 'ill-defined' problems, which are defined, perceived and valued differently and persist over time (Grin et al. 2010, Rittel & Webber 1973). Changes in societal systems, including human-nature interrelations, do appear frequently. But prevailing incremental changes nevertheless are not considered substantial enough by many scholars to cope with today's sustainability challenges (Markard et al., 2012, p. 955). Therefore transitions, as radical and structural change of societal (sub)-systems attracted large interest in the scientific community and beyond in recent years (Rotmans and Loorbach 2009: 2; Grin et al. 2010, Markard et al. 2012, Geels and Schot 2007, Berkhout et al 2004).

Transition research proposes that 'wicked' problems require a fundamental change in the structures, cultures and practices of a societal system for the system to become (more) sustainable (Frantzeskaki and Haan 2009). Transitions appear frequently, but they do not automatically lead to sustainability although an adequate facilitation, as aimed for by Transition Management, may work in favour of it (e.g. Rotmans and Loorbach 2009: 2). Rather than assuming that societal change processes can actually be 'managed' as the name 'Transition Management' (TM) implies, TM holds that sustainability transitions cannot be governed in a regular way. Due to their open-endedness, non-linearity and uncertainty they require an iterative, reflective and explorative way of governing aimed at societal learning.

Still, TM processes can contribute to transitions as radical changes. A key instrument to facilitate radical change in TM is the systematic development and empowerment of alternatives, in societal niches and by working with so called frontrunners as engaged and creative individuals (Frantzeskaki et al. 2012, Loorbach 2010). "The ultimate goal of transition management should be to influence and empower civil society in such a way that people themselves shape sustainability in their own environments, and in doing so contribute to the desired transitions to sustainability" (Loorbach 2007:284).

In the process of development and empowerment of frontrunners and niches learning plays an essential role. Participatory processes of joint deliberation and reflection, can "initiate social learning processes that go beyond individual and often predefined interests and / or values and create opportunities for a shared understanding and joint action" (Garmendia and Stagl 2010: 1713). At the individual level, social learning can contribute to empowering individuals as well as to raise their awareness and motivation for sustainability-related activities. At the niche level, learning can contribute to the development of alternative and innovative ways to jointly solve complex challenges and – indirectly and potentially - to the empowerment of the niche. Finally on a macro-level

social learning as facilitated by TM appears to be of core importance for societal systems to build up resilience as the capacity to buffer perturbations and take an active role in shaping transitions (Folke et al. 2002, Rammel. et al 2007).

As the TM methodology proposes an open-ended process it puts the concrete approach to sustainability into the hands of participating frontrunners. These frontrunners essentially shape the understanding and valuation of sustainability in the TM process (Rotmans & Loorbach 2009: 10) and therewith have a crucial role in directing the process towards sustainability. This practice that has not been without critique. Rauschmayer et al. (upcoming) e.g. draw attention to the need to design a proper process allowing to make sustainability meaningful to the frontrunners and to later critically evaluate the developed vision and understanding. They as well point out the essential role of addressing values, awareness and sustainability motivation of participants when facilitating social learning via TM.

Research background and approach

Applying Transition Management in three communities

This exploration focuses on the application of a new TM approach called community arena (e.g. Wittmayer et al 2011), which was developed as part of the EU FP 7 research project InContext. The 3-years project started in late 2010 and includes theory development, case studies and pilot projects. Within the InContext pilot projects participatory processes got applied that systematically facilitated a collective search to explore new opportunities of joint action. Building up a community arena, a protected communicative space for societal learning where participants meet outside of their usual habits and roles (Loorbach 2010), stood at the core of this process. The process used was explicitly based on deliberately defining visions for the future of the communities as well as doing a participatory back-casting to concretize steps for realizing future visions. Setting up experiments as to realize these steps was a concluding part of the pilot project processes. The processes were participatory and reflexive in nature, aiming to allow for intensive learning amongst participants. Reflexive elements included a focus on the values, needs, thinking and feeling as what was termed the “inner context” of the participants, as they were supposed to be essential drivers for behavioural change and collective actions. Community arenas can get understood as pre-niches which are not there yet. The community arena process therefore primarily focussed at the interplay of the individuals and the group.

Three concepts stood in the centre of the process-facilitation in the arenas: empowerment, social learning and social capital (for an in-depth discussion see Wittmayer et al 2013b):

The concept of **social learning** captures the processes of individual and collective experimentation and reflection. Social learning as well is connected to changes in values, assumptions and worldviews and relates to the awareness and valuation of sustainability topics in the arena process. The concept of **empowerment** captures the idea of finding (new) ways to at (I) an individual level meet needs (sustainability) and (II) a collective level make the developed visions for (sustainable) communities turn into reality. Another aspect which turned out to be of critical importance during the pilot projects with regard to the co-creation process was the development of **social capital** by building trust, good relations and networks among participants. In their interplay social learning, empowerment and a strengthened social capital are considered to be essential contributions to enhance the communities potential of shaping sustainability locally and enhancing possibilities to deal with societal challenges: via increasingly motivated and skilled arena participants which are increasingly connected and acting as a group when

experimenting with and find innovative solutions to societal challenges (cp. Wittmayer et al. upcoming for a more conceptual discussion of building blocks of communities transformative potentials). In principle the process of social learning and empowerment can contribute to realizing sustainability aims of the TM process in two basic directions: (1) participants can discover new or more effective ways of (jointly) realizing an (already) intended sustainable development and (2) participants can gain insights which make them more aware of sustainability issues and more motivated to address them in the TM process. Therefore learning processes that lead to changing values can play a core role.

The three pilot project communities are (taken from Wittmayer et al. 2013a):

Carnisse is an urban neighbourhood in the city of Rotterdam, situated at the Western coast of the Netherlands. Some 10,000 (out of Rotterdam's 600,000) inhabitants live in Carnisse. It is known as a deprived neighbourhood scoring low on a number of municipal indexes, marked by a high turnaround of inhabitants which together represent about 170 nationalities. Severe budget cuts of the municipality are threatening the continuation of social work as well as community facilities. The focus of the community arena process was on the quality of life in the neighbourhood and it was co-financed by the Dutch government. The vision is put into practice by a group that aims to re-open one of the community facilities in selfmanagement. Members of the community arena are also organising a number of deliberative meetings with different stakeholder groups.

Wolfhagen is a rural town situated in the centre of Germany in the federal state of Hesse. It comprises a core city and eleven rural districts, which leads to a high amount of commuters. The city, while being a frontrunner in the development and use of renewable energy, is marked by a vacated city centre and a decline in population (currently some 13,800 inhabitants). The focus of the community arena process was on the quality of life in the inner city. The vision process is put into practice by the arena group that aims to open a multi-faceted community centre in a historically important building in the inner city.

Finkenstein am Faaker See is located in Austria, on the border to Slovenia and Italy. It is one of the largest communities in Carinthia (one of the nine Austrian Länder). About 8,500 people live in Finkenstein - distributed over about 28 villages and settlements and divided into a Slovenian-speaking minority and a German-speaking majority. Main economic sectors are tourism and (small) industry and agriculture. The focus of the community arena process was on quality of life. The process was co-financed by the municipality of Finkenstein and the vision is put into practice through action-oriented projects or deliberative processes in a number of Working Groups, e.g. on economics, sustainability, and social issues.

The aim and structure of this paper

This paper analyses the experiences of the action research done in three pilot projects building on core synthesis documents of the project (e.g. Wittmayer et al 2013a, Wittmayer et al 2013b) as well theoretical considerations (Schäpke und Rauschmayer 2010, 2011, 2012). Our aim in this analysis is to provide insight in the empirical results of the action research done and engage in a reflective discussion with the theory. We will address the described interrelations by starting with a definition of the core concepts (empowerment, social learning and social capital) and analyse in a second step the impacts of the community arenas regarding the core concepts of empowerment, social capital and social learning. In a third step we reflect on the orientation of the pilot project processes towards contributing to sustainable development on three levels: first with

regard to raising awareness and sustainability learning in the process, second with regard to the representation of sustainability in the vision developed by the community arena and third with regard to the action already started by arena participants. Discussion and outlook form the last part of the paper.

Core concepts: social learning, empowerment and social capital

This section provides a brief overview of the relevant analytical core concepts “Empowerment”, “Social Learning” and “Social capital” and the role of values.

Empowerment

The concept of empowerment is addressed by different disciplines such as management studies, critical theory etc. in quite diverging ways. For the evaluation of the pilot studies we found Avelino’s definition (Avelino 2009, based on Thomas/Velthouse 1990) very helpful as it relates empowerment to transition theory. In this cognitive model, empowerment is seen as an increased intrinsic motivation strongly dependent on positive task assessments. The assumption is that the experience of positively fulfilled tasks leads to a person’s belief that she or he is able to direct own actions to a desired end. The concept is based on following four intrinsic ‘task assessments’ (cf. Avelino 2009: 64):

- 1 Choice: Asks whether a person's behaviour is perceived as self-determined.
- 2 Impact: to which degree people perceive their behaviour producing intended effects.
- 3 Meaningfulness: the value of the goal of the task in relation to the individual's values.
- 4 Competence: the degree to which a person can perform task activities skilfully.

The feeling of being empowered in turn depends on the way individuals evaluate their actions, attribute them to others, and think about future actions (Avelino 2009: 385). Schöpke and Rauschmayer (2011, 2012) highlight the role of values and awareness when it comes to how people ‘use’ the perceived empowerment: engaging for sustainability or not.

Social Learning

Social learning is seen as a process through which to deal with complexity and uncertainty. Although learning may be understood in different ways, at its core it involves a lasting change in the interpretive frames (belief systems, cognitive frameworks, etc.) guiding the actions of a person (Grin and Loeber 2007; Grin et al. 2010). The kind of social learning most relevant for InContext can be defined as second order learning. It indicates learning processes aiming at changes in underlying values and assumptions which contribute to the actual behaviour. Several authors have emphasised the relevance of this type of learning as a way to adapt to a continuously changing and increasingly complex environment through collaborative action and dialogue (Isaacs 1993; Schein 1993; Kofman and Senge 1993; Garmendia and Stagl 2010). Contrarily, in first order learning, fundamental assumptions, values and identities do not change (Argyris and Schön 1978; 1996). This is the simplest mode of learning and has to do with the acquisition of new cognitive knowledge. We assume that second order learning is one possible precondition for voluntary intrinsic behavioural change. The most important conditions for second order learning work are a) surprises, b) outside views, and c) safe spaces (Grin and Van de Graaf 1996; Grin and Loeber 2007). Schöpke and Rauschmayer (2012) put forth that (social)

learning can be understood as one major source of empowerment (e.g. via new skills or insights in new possibilities for action). In how far an empowerment via social learning has a positive impact on the awareness on sustainability related issues is not per se clear, but may be part of changing values and assumptions in second order learning.

Social capital

Social capital describes relationships, relations of trust, reciprocity, and exchange; the evolution of common rules; and the role of networks. It encompasses the involvement of civil society and collective action. Social capital theory provides an explanation for how individuals use their relationships with other actors in societies for their own and for the collective good (e.g. Adger 2003). Important dimensions of social capital, according to Gehmacher et al. (2006), are Bonding-Bridging-Linking. Bonding describes the relationship between people within a group, whereas bridging refers to the relation between different groups and linking to their connection to other levels (like the state or the broader public). A community arena has the potential to raise all three: bridging, bonding and linking social capital of a community and can enable the development of meaningful relations.

The relation between social capital development and sustainability is not fully straightforward, but there are some indices. Chang (2013: 232) points out the critical role of social capital to sustain and develop community initiatives and environmental protection efforts. Crompton (2010) shows that people with high intrinsic values (e.g. affection, benevolence) tend to have more and better social relations (social capital) and use less resources. The concrete relation between a development of social capital and sustainability awareness and motivation would need to get further assessed.

Empirical analysis of core concepts

This section investigates in how far the community arena process empowered participants, created learning experiences (i.e. social learning), and connected participants within their own social groups and to other groups (i.e. social capital). This section is mainly based on data from the final evaluation and the process-accompanying monitoring interviews, the participatory evaluation session, and participant observation. It reports on the perceptions of the participants in the three pilot areas (for a more in-depth analysis see Wittmayer et al. 2013b).

Making a difference: from wish to reality

Analysis of the empirical material, from the perspective of empowerment (defined as increased intrinsic motivation), shows that the community arena had positive effects on all four intrinsic 'task assessments'. Having analysed the material, we can argue that the participants self-reported that the community arena contributed to an ongoing learning and empowerment process in the pilot areas.

Regarding the 'task assessment' "choice", the fact that the process had an open agenda contributed greatly to the participants' feeling of self-determined behaviour. It gave people the feeling of being able to choose what to put on the agenda and that no certain policy agenda was "imposed" on them (which they feel is often the case). For participants of the pilot project of Carnisse, this also positively distinguished this project from other processes carried out in the neighbourhood in recent years.

In terms of the category "impact", the wish to make a difference in the local environment can be traced back to the reported motivations for joining the project, e.g. to gain a better

picture of the own living and working context (Carnisse) or to co-creating their environment (Finkenstein). Asking participants from Finkenstein in the evaluation phase if they believe they can have an impact on the local environment, most of them responded in a positive way, although there is also some scepticism. This was addressed through the learning process, emphasising that transitions occur in small steps and need time. Differing in Wolfhagen, all the participants had already gained positive experiences in different community-based processes and were (already) convinced that their actions are fruitful.

The third intrinsic ‘task assessment’ leading to empowerment is “meaningfulness” – is based on the assumption that if a project’s goal links to the ideals of the individual participants, this has an empowering effect. The scores participants gave for being able to bring in their own input and topics they felt strongly about, were good in all pilots. This positive assessment is also clearly related to the open agenda of the process as this made it possible to meet the different senses of urgency.

The ‘task assessment’ for “competence” was closely linked to the second one on “impact” as well as to the results we report in the next section about “social learning”. In summary, participants felt they can have an impact on their community, although some were also sceptical and claimed that more time, people, money, and political support would be needed. In terms of social learning, people gained competence in a series of different skills (e.g., speaking in front of many people, working together) and also changed some underlying values and assumptions (i.e. related to people with different backgrounds). All of this strengthens the perceived competence and therefore has an empowering effect.

In sum, the community arenas addressed all four task assessments – choice, impact, meaningfulness, and competence in a variety of cases. Through social learning processes, the participants’ belief that they are able to direct their actions to desired ends could at least in many cases be strengthened; thus, we can assume that empowerment took place.

Learning to change values and assumptions

In the evaluation interviews as well as in the participatory evaluation meeting, participants of all pilot projects reported several learning experiences, including first as well as second order learning. In Carnisse as well as in Finkenstein people, e.g. reported that they learned about their possible impact (see above) and their roles and the roles of others in the project. This increased awareness about the own impact lead many participants of the community arena in Finkenstein to a changed attitude towards the future in a positive way. A very important learning experience shared by all pilot project participants was the experience of working together in a respectful and constructive way even with previously unknown people and in a very diverse group. In Finkenstein people reported an increased self-reflexivity and attention in contact with other people. Some participants described themselves as being more open and having fewer prejudices in interactions with others. All learning experiences mentioned so far can be defined as second order learning processes as they all touch underlying values and assumption e.g. on the future.

These second order learning processes are complemented by more first order learning processes which centre on concrete skills. Examples for these are: speaking one’s own mind in public and speaking in front of a large group of people (e.g. 100 people), facilitating meetings, working respectfully together in diverse groups and the whole array of legal, financial and institutional know-how related to keeping open a community centre. As also mentioned above, stimulating factors for second order learning are a) surprises, b) outside views, and c) safe spaces. For all community arenas, the integration of outside

views seemed to trigger second learning in a special way. In establishing the community arena, all research teams were very attentive to building trust among the participants and especially between the participants, the research team, and local policy makers. These trust-building processes were successful in all pilots and guaranteed a safe space for fostering second order learning. Participants from Finkenstein also explicitly reported some surprises ('eureka moments') they came across during the project, e.g., the insight that some apparently individual worries (but also ideas) are shared by others.

From single individuals to connected groups

The community arenas enriched the social capital of the participants in all pilots as new relationships and networks could be established. A participant from Finkenstein described the networks: "Through the process the group got stronger than the sum of its single members." Via relationships and networks, new ways of working together for the collective as well as the individual good could be found and tested. Two aspects form the bottom line for these attempts to shape the local environment: a trusted atmosphere in the community arena as well as the insight that there is a shared understanding.

In composing the arena, all research teams specifically tried to mix people with different socio-cultural backgrounds (bridging). Although it was difficult to achieve an ethnically mixed group in Carnisse as well as in Finkenstein (see section 4), groups were quite diverse in terms of age, gender, professions, etc. This diversity was appreciated by the participants themselves as it gave them the possibility to gain new perspectives and unconventional insights, a very important condition for social learning. Participants of the community arenas also connected with other groups (linking). In Finkenstein, these were primarily policy makers (as part of the transition team) and the general public. In Carnisse, contact with other groups actively engaged in the neighbourhood and also the local government was established through an outreach event. In Wolfhagen, the group got in contact with the owner of the vacant building they identified as a possibility for the community centre.

From another point of view, bonding relationships could be established as well. People of all arenas reported appreciation of the exchange and collaboration with "like-minded" people and perceived themselves as "one group". For this perception, the vision-building process was probably decisive as it contributed a lot to a group feeling, giving the group a shared aim. In sum, social capital via "bridging", "bonding" and "linking" could be enhanced for the participants and thereby also the social capital of the communities.

Closing remarks and intermediate conclusion

Working with the instrument of the community arena brought changes in the inner context of the participating individuals: through social learning processes, changes in underlying values and assumptions occurred. People feel, for example, more able to direct their actions towards desired ends and to have an impact on their local environment – thus, they were empowered. Also, not really visible but of great importance are the variety of social contacts and connections (social capital) that were established. Three aspects were especially important in triggering changes in the inner context: The open agenda was very helpful in empowering the participants as it gave them a sense of meaningfulness and choice. The diversity of the groups was decisive for successful social learning and (bridging) social capital. Finally, the intense trust-building phase and trusted atmosphere in the small group of the community arenas established an environment conducive to learning. As all three aspects, social learning, empowerment and social capital development, got enhanced in the three pilot projects, an enhancement of the communities' transformative potential is likely. Unclear remains the relation of this

enhancement to strengthening sustainable development. As outlined above there are two basic contributions to targeting sustainability at community level possible: first via empowerment, social capital building and social learning the effectiveness of reaching already intended sustainability targets is raised, and second, sustainability as a possible target becomes more important to the participants via raising awareness and motivation. In the following we foremost investigate first, the meaning participants give to sustainability as a target of the process. The second possibility is addressed as part of the outlook on the role of value change, e.g. towards more intrinsic values, for sustainability.

Analysis: Transition and sustainability

In this step we reflect on the orientation of the pilot project processes towards contributing to sustainable development on three levels: first with regard to the representation of sustainability in the vision developed by the community arena and second with regard to the action already started by arena participants. Both is done by an analysis of the researchers. Third we report on the self-evaluation of participants on the importance of sustainability to them and the inclusion of the concept in the pilot project visions and actions, allowing for assumptions on the sustainability awareness and learning of participants.

Sustainability and concepts that matter locally

Transition processes do not automatically lead to sustainability, although an adequate facilitation may work in favour of it (e.g. Rotmans and Loorbach 2009: 2). To facilitate a community arena for sustainability, one might first want to define what sustainability means. As with many other normative concepts (e.g. justice, human rights), sustainability is in itself an inherently ambiguous and contested concept. The InContext consortium had a number of discussions on the meaning of the term, as well as on the way it should be used within the project as a whole and within the pilot projects in particular. This did not, however, lead to one fixed definition or one single idea of what sustainability means or should mean. On the contrary, a plurality of ideas persisted with common denominators, e.g. long term thinking.

A predefined sustainability goal with targets for the pilot projects would be counterproductive to the idea of having an open agenda for the process (and would have prevented empowerment for example). Because of the ambiguity of the concept, the impossibility of monitoring outcomes (such as behavioural change or its impacts on individual or community level) within a three year research project and the need for a locally emerging understanding, the community arena approach focused on sustainable development as a process (as opposed to a pre-determined ultimate goal). The processes were conceived as learning journeys which render the concept meaningful in the local context. Rather than focusing on the term and concept of sustainability, the community arena process aimed to play into local dynamics and was centred on a good quality of life for all now and in the future – herewith hoping to catch the essence of sustainability without falling into quarrels about the notion itself. The researchers operationalized the concept of sustainability in four dimensions:

- 1) environmental thinking (awareness of nature and natural resources),
- 2) social thinking (consideration and acknowledgement of self and others),
- 3) time horizon (short and long term) and
- 4) interregional thinking (connection with other parts in the world, near and far).

These dimensions of sustainability thinking were to be used in the facilitation of the processes (Wittmayer et al. 2012). For the action research practice, this meant that the

researchers provided space to the participants to decide what is important for them and for their community locally. In the discussions the four dimensions were used to motivate people thinking into directions of sustainability (for details see Wittmayer et al. 2013b). The term sustainability was thus in general not prominent in the process of the three pilots, although in Finkenstein it was more frequently used than in the other pilot projects. In order to see to what extent the four dimensions that were used in the facilitation of the process also had an influence on the outcomes of the community arena we look at two things. Firstly, we explore how the four sustainability dimensions can be traced back in the visions (see table 1) and the implementation projects of the pilot areas. Secondly we present a self-evaluation of visions and planned activities done by the pilot project participants with regard to the four sustainability dimensions.

Envisioning sustainable communities

Dimensions	Wolfhagen 2030	FinkenSTERN	Blossoming Carnisse 2030
Social thinking: consideration and acknowledgement of self and others.	Possibility to find and meet people with shared interests. Creation of networks for activities Active and lively/vital city Inclusive meeting places Reviving cultural aspects Generation-spanning living	Active cooperation of whom Teambuilding btw whom? Binding through culture Diversity Sharing with and supporting each other Independency (through science) Living together Intergenerational living Politics (transparent, cooperative) Care places Creation of participation	Living together Social relations Language and diversity Helpfulness and respect Safety Creativity: thinking beyond the conventional Activity: individually and in groups Cohesion Flexibility in choosing residence Knowledge building Inclusive meeting places Local economy, sharing and employment
Environmental thinking: awareness of nature and natural resources.	Reduction of traffic: Car sharing, riding along. Creation of green areas. Environmental friendly mobility: cycle paths, car free city? Renewable energy Greening the surrounding	Awareness of nature Preservation, development and improvement of nature Renewable energies Alternative mobility Local production Working group on sustainable development	Renewable energies Emphasize nature and how it should be treated Knowledge?? Re-use of space Greening of the neighbourhood Natural diversity Local economy
Interregional thinking: connection with other parts in the world, near and far	Role model Expansion of the cycle paths between core city and rural districts.	Role model for neighbouring regions Tourism Infrastructure/ accessibility (roads, public and private transports)	Attractive neighbourhood History building
Time horizon: ability of future generation to live the way they want	Generation specific aspects (care for elderly, childcare) Renewable energies	Renewable energies Preservation of existing resources Working group on SD including the future	Renewable energies Building renovations Connecting long term thinking and doing in the present

Table 1: Analysis of all three visions along the four dimensions of sustainability (Source: Wittmayer et al 2013b)

Drawing straightforward, meaningful conclusions on the basis of Table 1 is problematic. The researchers used the prompting of the four dimensions in their facilitation in a flexible way and not in a way that makes direct comparison possible – also in this table we only compared the vision documents and did not include an analysis of the vision discussions. From the analysis of the vision documents in Table 1, we can see that aspects of social thinking gain prominence in the future narratives of the three communities. Aspects of environmental thinking are present while interregional thinking aspects were only touched upon. It would be interesting to look further into this and investigate whether the fact that the community arena process is organized as a place-based process enhances the identification of the participants with the immediate surroundings rather than the global world that this place is embedded in.

Implementing and reflecting sustainability

We can trace the four dimensions of sustainability thinking not only in the visions, but also in the implementation projects that are initiated by the community arena groups. In both Wolfhagen and Carnisse, the implementation projects, being the opening of community centres, contain aspects of social thinking (communication, social cohesion, social learning etc.), environmental thinking (re-use of existing buildings, promotion of regional products, etc.) while interregional thinking and long-term thinking play a minor role. In Finkenstein, the working groups and the measures that are already implemented or are planned take into account all dimensions except the long-term: social thinking (integration, civic participation, bringing young and old people together, participation workshops, building social capital, a new culture of communication, integration, exchange, etc.), environmental thinking (public transport, bicycle lanes, land use, organic agriculture, renewable energy) as well as on interregional thinking (Finkenstein together with two other communities has recently become a "climate-energy-model region"; an exhibition around the issue of sustainable culture and quality of life is planned with two other regions). From the working groups in Finkenstein, one is prominently named "Sustainable Development" and covers energy, mobility and others topics. The long term thinking is only implicitly part of the projects as they should contribute to better living in the communities now and in the future.

In addition to the visions and the implementation projects, we can turn to the self-evaluation of visions and planned activities by the pilot project participants with regard to the four sustainability dimensions. The participants were asked a few questions with specific reference to sustainability during the evaluation interviews. In Carnisse, most of them indicated that sustainability was very important to them. To them, sustainability mainly refers to the environmental dimension or to aspects of energy saving as well as the long term aspect. For most of the interviewees the vision of Blossoming Carnisse is linking to sustainability, either in its role — hinting towards the future (the year 2030) — or through its topics e.g. housing, green surroundings and being in contact with nature. One of the six pathways of the local vision actually has sustainability in its name: "... green sustainable oasis". In Finkenstein, the participants reported a strong relationship between the vision and sustainable development. The objectives of the vision are focused on a high quality of life for all now and in the future. It is based on gratitude for and awareness of the already high quality of life in Finkenstein, due to good environmental conditions and the positioning of the village in the midst of mountains, with the lake Faak in the middle of the region. The participants are aware of the importance of protecting these local treasures to ensure the high quality of life for a common future. They see also a strong relationship between the whole project and sustainability: 9 out of 15 participants state that the project implements measures that are not just good for the moment but also the

far future and that they are not just good for Finkenstein but also for other parts of the world.

Closing remarks and intermediate conclusion

The focus in all processes, judging from the visions, the implementation projects and the discussions in the arenas, was on the dimension of social thinking. With the theme being quality of life for all now and in the future, the 'social thinking'-dimension was the entry point and led to aspects of the 'environmental thinking'-dimension that emerged at a later stage of the process. Operationalizing sustainability in four concepts was meaningful especially in putting social and environmental thinking on the table. It supported the action researchers in playing into local dynamics (e.g. issues of social cohesion) and linked these to the other three dimensions of sustainability without referring to the term at the outset.

There is an interesting contrast visible between the evaluation of vision and actions done by the researcher and the self-assessment of the participants done with regard to long-term thinking: while long-term thinking is explicitly mentioned as part of the visions to a very little extent, participants still strongly connect visions and activities to long-term thinking. In sum it becomes clear that sustainability played a major role in the community arena process and that there is a strong sustainability awareness and motivation of participants given which is transmitted into the developed visions and activities.

Discussion and outlook

Our approach in this analysis was to provide insight in the empirical results of the action research done and engage in a reflexive discussion with the theory. The aim of the arena process was to address societal challenges and raise awareness on sustainability related topics. The process aimed to strengthen social learning, empowerment and social capital which in their interplay are considered to be essential contributions to enhance the communities' potential of shaping sustainability locally and to deal with societal challenges. Next to having analysed the impacts of the community arenas regarding the core concepts of empowerment, social capital and social learning we reflected on the orientation of the pilot project processes towards contributing to sustainable development. We did this by analysing the representation of sustainability in the vision developed by the community arena and the activities already started by arena participants as well as a self-assessment of the participants on the importance of sustainability for the arena process and vision.

Our analysis suggests that the three pilot projects contributed to the enhancement of the communities potential to respond to societal challenges and shape sustainability locally: not only social, second order learning and empowerment but also the development of social capital as increased networks, trust and friendships amongst participants and beyond took place. Furthermore there was an orientation of the community arena process towards the aim of sustainability. The involved action researchers did not or did only initially and rather broadly introduce sustainable development as an aim or topic for the arena process, but focussed on related the discussion to it via four basic dimensions: Environmental, social, interregional and long-term thinking. Participants themselves developed the community arenas vision and activities and in the evaluation related them to the goal of sustainability, broadly captured in four dimensions as outlined above. It can as well be stated that the engaged citizens have already started to set up experiments and actions connected to the aim of sustainability. Taken together with a successful strengthening of social learning, empowerment and social capital, the arena processes are

very likely to have contributed to shaping sustainability locally and to raise the potential of the communities to solve societal challenges. The impacts of this success though have not fully understood as they will probably only become visible in the long run, and therewith are promising targets for future investigations.

Not fully clear is the impact of the arena process on strengthening the sustainability awareness as the analysis of the visions and (planned) activities does not focus on changes in sustainability awareness, motivations or values changes of participants. There has no before-and-after comparison been done. A critical assessment if the introduction of sustainability into the process via the four dimensions mentioned above was the most efficient way to secure the direction of the process towards sustainability therefore cannot be done in this case but most be left for future investigations. Furthermore not all dimension of sustainability as introduced by the action researcher can clearly be tracked in the developed visions and activities. While issues attributed to social thinking are very strong and to environmental thinking as well are very present, interregional and long-term thinking aspects are addressed only to a little extent. It would be worthwhile to investigate if this as well can be found in comparable processes or if it is a specificity of the InContext project, where social aspects had a strong relevance to local dynamics, e.g. in the deprived neighbourhood of Carnisse. This may reveal insights on good entry point for starting the learning journey towards making sustainability meaningful locally. An entry point for taking first steps which are needed in every journey, although it remains important to stay aware of the need to take the other steps, too.

In InContext participants themselves attribute the developed vision and activities strongly to long-term thinking, making it plausible that developed environmental and social activities are implicitly linked to the long-term. O'Riordan suggests that social issues are a worthwhile entry point for addressing sustainability in times of austerity and crisis: "Sustainability is now about creating a sense of trusting companionship between humans. Through this process, sustainability extends between compassionate humans treated fairly and with respect, and their natural world" (O'Riordan 2011: 161). Possible reasons for this are learning processes including value changes, e.g. making intrinsic values (e.g. caring, benevolence, compassion; e.g. Crompton 2010) more important. Changing values are one possible link between learning and empowerment process needs to a raising awareness and motivation on sustainability issues (cp. Rauschmayer et al. forthcoming, Schäpke & Rauschmayer 2012). Social learning in general encompasses this change, as it is not just about finding "new facts and a better understanding of relations and impacts but [...] a way to shape our values and reflect on assumptions and limitations behind our knowledge" (Garmendia & Stagl 2010: 1714). But: again not all kinds of learning including value and worldview change can be considered to be connected to sustainability awareness and motivation. Rauschmayer and Omann e.g. highlight the need for deep changes including strengthening the intrinsic sustainability motivation of actors (2012) in opposite to extrinsic motivations (Crompton 2010). Hedlund-de Witt (2013) very recently showed how only certain worldviews are positively related to sustainability motivation and behaviour. A further investigation of the impact of community arena processes on the values of participants appears promising as to further develop facilitation techniques that allow for second-order learning that works towards empowerment and raising sustainability awareness and motivation like. E.g. the link between building social capital, as trust, friendship and networks, and strengthening intrinsic values could form a valuable part of this investigation.

Finally, as the action research in the InContext pilot projects contribute to social learning, empowerment and social capital, only partly under an umbrella of sustainability as a broad aim of the process, it is of interest in how far the process lead to an increased

resilience of the communities at hand. And therewith to the resilience of society at large. Originating in ecology, the concept of resilience has developed to be referred to in many disciplines and ways. Core of all understandings is that resilience means the ability of a system to deal with disturbances, while the terms “ability” and “deal with” are filled with different ideas (see Brand and Jax, 2007 for an overview). As diverse as the understandings of the exact meaning of resilience are, a number of characteristics exist that contribute to the resilience of systems. These include for example strengthening response capacities, supporting self-organisation, (both relating to the core concept of empowerment and social capital) fostering learning, encouraging adaptation (related to social learning) and redundancy. Of course these characteristics are not set in stone and either judging a system’s resilience or taking action with a view to increasing its resilience need to be based on a sound and detailed analysis of the system and its specific characteristics. For InContext this clearly goes beyond what we can and want to provide at this stage but still we can assume that by touching on each of the above mentioned characteristics the pilot projects have increased social resilience. This way, and with a view to a greater perspective, the pilot projects help shaping a society that can deal with crisis and absorb external shocks and therewith increase society’s ability to respond to existing and probably even more importantly future societal challenges.

Acknowledgments

The present has been developed as part of the InContext-project, funded by the EU under its FP7 programme (THEME ENV. 2010.4.2.3-1: Foresight to enhance behavioural and societal changes enabling the transition towards sustainable paths in Europe) (Grant Agreement number: 265191). For more information on the project: <http://www.incontext-fp7.eu/>

References

- Adger, W. (2003) Social capital, collective action, and adaptation to climate change. *Economic geography* 79(4): 387-404.
- Alkire, S. (2002) Dimensions of Human Development. *World Development* 30: 181-205.
- Argyris, C. & Schön, D. (1978) *Organizational Learning: a theory of action perspective*, Reading MA: Addison-Wesley.
- Argyris, C. & Schön, D.A. (1996) *Organizational Learning II: Theory. Methods and Practice*, Reading, MA, Addison-Wesley.
- Avelino, F. (2011): *Power in Transition. Empowering Discourses on Sustainability Transitions*. Erasmus Universiteit Rotterdam.
- Berkhout, F., Smith, A., Stirling, A. (2004): Socio-technological regimes and transition contexts. In: Elzen, B., Geels, F.W., Green, K. (Eds.), *System Innovation and the Transition to Sustainability: Theory, Evidence and Policy*. Edward Elgar, Cheltenham, pp. 48–75.
- Brand, F. S., and K. Jax. (2007) Focusing the meaning(s) of resilience: resilience as a descriptive concept and a boundary object. *Ecology and Society* 12(1): 23. [online] URL: <http://www.ecologyandsociety.org/vol12/iss1/art23/>
- Burt, R. (1992) *Structural Holes: The Social Structure of Competition*. Cambridge, MA: Harvard University Press.
- Chang, C., T., (2013) The disappearing sustainability triangle: community level considerations. *Sustain Sci* (2013) 8:227–240
- Crutzen, P. (2002): Geology of mankind. *Nature* Vol 415 (3).

- Folke, C., Carpenter, S., Elmqvist, T., Gunderson, L., Holling, C., Walker, B. (2002): Resilience and sustainable development: building adaptive capacity in a world of transformations. *Ambio* 31: 437-440.
- Frantzeskaki, F., De Haan, H. (2009): Transitions: Two Steps from theory to Policy. *Futures*, 41: 593-606.
- Frantzeskaki, N., Loorbach, D., Meadowcroft, J. (2012): Governing Societal Transitions to Sustainability, *International Journal of Sustainable Development* 15(1-2): 19-36.
- Garmendia, E. & S. Stagl (2010) Public Participation for Sustainability and Social Learning: concepts and lessons from three case studies in Europe, *Ecological Economics* (69): 1712-1222.
- Geels, F., Schot, J. (2007): Typology of sociotechnical transition pathways. *Research Policy* 36: 399-417.
- Gehmacher, E., Kroismayr, S., Neumüller, J., Schuster, M. (Eds) (2006) *Sozialkapital: Neue Zugänge zu gesellschaftlichen Kräften* -Vienna: Mandelbaum.
- Grin, J. & H. Van de Graaf (1996) Implementation as communicative action: an interpretive understanding of the interactions between policy makers and target groups, *Policy Sciences*, 29 (4): 291-319.
- Grin, J. & A. Loeber (2007) Theories of learning. Agency, structure and change, chapter 15 (p. 201-222) in Frank Fischer, Gerald J. Miller, Mara S. Sidney (eds.) *Handbook of Public Policy Analysis. Theory, Politics, and Methods*, CRC Press, New York.
- Grin, J., Rotmans, J. & J. Schot (2010) *Transitions to Sustainable Development: new directions in the study of long term transformative change*, Routledge, New York.
- Hedlund-de Witt, A. (2013) *Worldviews and the transformation to sustainable societies. An exploration of the cultural and psychological dimensions of our global environmental challenges*. Vrije Universiteit.
- Isaacs, W. (1993) Taking flight: dialogue, collective thinking, and organizational Learning, *Organizational Dynamics*, 22 (2): 24-39.
- Crompton, T. (2010) *Common Cause. The Case for Working with our Cultural Values*. WWF UK. http://assets.wwf.org.uk/downloads/common_cause_report.pdf
- Kofman, F. & P. Senge (1993) Communities of commitment: the heart of learning Organizations, *Organizational Dynamics* 22 (2): 5-23.
- Lehtonen, M. (2004) The environmental-social interface of sustainable development: capabilities, social capital, institutions. *Ecological Economics* 49 (2): 199-214.
- Leßmann, O. 2011. Sustainability as a challenge to Sustainable Development. In Rauschmayer, F., Omann, I., Frühmann, J. (Eds.), *Sustainable Development: Capabilities, Needs, and Well-Being*. pp. 43-61. London: Routledge.
- Loorbach, D. (2007). *Transition management: New mode of governance for sustainable development*. PhD thesis. Erasmus University Rotterdam, Utrecht: International Books.
- Loorbach, D., ROTMANS, J., (2010): The practice of transition management: Examples and lessons from four distinct cases. *Futures*, 42(3), 237-246.
- Markard, J., Raven, R., Truffer, B. (2012): Sustainability transitions: An emerging field of research and its prospects. *Research Policy*, 41(6), 955-967.
- Max-Neef, M., 1991. *Human scale development: conception, application and further reflections*. The Apex Press, London, New York.
- Nussbaum, M.C., 2000. *Women and human development: The capabilities approach*. Cambridge: Cambridge University Press.
- Nussbaum, M.C., 2011. *Creating capabilities: The human development approach*. Belknap Press.
- O'Riordan, T., 2011, Sustainability in an age of austerity. *Environmental Law and Management* 23. 160-165.
<http://www.lawtext.com/pdfs/sampleArticles/ORiordanFINAL14112011.pdf>

- Pick, S. & Sirkin, J. 2010. *Breaking the Poverty Cycle: The Human Basis for Sustainable Development*. Oxford: Oxford University Press.
- Rauschmayer, F., Omann, I., Frühmann, J. (Eds.), *Sustainable Development: Capabilities, Needs, and Well-Being*. London: Routledge. Avelino 2009,
- Rittel, H., Webber, M. (1973): Dilemmas in a General Theory of Planning. In: *Policy Sciences* 4, 155-169
- Rotmans, J., Loorbach, D. (2009): Complexity and Transition Management. *Journal of Industrial Ecology*, 13(2), 184-196.
- Rammel, C., Stagl, S., Wilfrid, H. (2007): Managing complex adaptive systems - A co evolutionary perspective on natural resource management. *Ecological Economics* 63:9 - 21
- Rockström, J., Steffen, W., Noone, K., Persson, A., Chapin, F. S., Lambin, E. F., Lenton, T. M., et al. (2009): A safe operating space for humanity. *Nature* 461(7263), 472–475.
- Schäpke, N. & F. Rauschmayer (2010) *The Cornerstones of InContext – Individuals in Context*. [Projekt internal discussion Paper]
- Schäpke, N. & Rauschmayer, F. (2011) *InContext: Foundations of a common approach*. Project report – Systematic Reflection and Theory Building – Protocol/ Handbook on Common Approach. http://incontext-fp7.eu/sites/default/files/D2.1_Common%20Approach_0.pdf 18.07.2012.
- Schäpke, N., Rauschmayer, F., (2012): Addressing sufficiency – including altruistic motives in behavioural models for sustainability transitions. *UFZ-Diskussionspapiere* 17/2012. Helmholtz-Zentrum für Umweltforschung GmbH - UFZ, Leipzig, 25 pp.
- Schein, E. (1993) On dialogue, culture, and organizational learning, *Organizational Dynamics* 22: 40–51
- Sen, A.K. 1985. Well-being agency and freedom: The Dewey Lectures 1984. *Journal of Philosophy* 82: 169-221.
- Thomas, K.W. and Velthouse, B.A. (1990) “Cognitive Elements of Empowerment: An “Interpretative” Model of Intrinsic Task Motivation”, *Academy of Management Review*, 15(4): 666-681
- UNCED (United Nations Conference on Environment and Development) (1992): Agenda 21.
- WBGU Berlin 2011 Flagship report. *World in Transition: a Social Contract for Sustainability*. http://www.wbgu.de/fileadmin/templates/dateien/veroeffentlichungen/hauptgutachten/jg2011/wbgu_jg2011_en.pdf
- WCED (United Nations World Commission on Environment and Development) 1987. *Our Common Future*. <http://www.un-documents.net/wced-ocf.htm> 03.04.2010.
- Wittmayer, J., Baasch, S., Mock, M., van Steenbergen, F., Omann, I., Schäpke, N., 2013, *Taking stock – Three years of addressing societal challenges on community level through action research*. Pilot specific synthesis report. Berlin. http://lebensklima.at/wp-content/uploads/20130909_Deliverable-4-51.pdf
- Wittmayer, J., van Steenbergen, F., Mock, M., Omann, I. (forthcoming) *Exploring the transformative potential of communities*. Discussion Paper to be presented at InContext Workshop, “Pathways to low carbon and sustainable lifestyles”, Rotterdam, 7 & 8 October 2013.
- Wittmayer, J., Schäpke, N., Feiner, G., Piotrowski, R., Steenbergen, F. v., Baasch, S., 2013a, *Action Research for Sustainability Reflections on transition management in practice*. Berlin, http://www.incontext-fp7.eu/sites/default/files/InContext-ResearchBrief-Action_research_for_sustainability.pdf, accessed 21.09.2013.
- Woolcock, M. (2001) *The Place of Social Capital in Understanding Social and Economic Outcomes.* In John F. Helliwell ed. *The Contribution of Human and Social Capital to Sustained Economic Growth and Well-Being* (Ottawa: HDRC)(Proceedings of an OECD/HRDC conference, Quebec, March 19-21, 2000).