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# **Social learning in alternative food networks creates pragmatic changes for community based agrarian resource management**

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## Abstract

The need for more sustainable management of natural resources is becoming increasingly important as the global population increases. The implementation of management strategies are showing signs of change as a response to the shortcomings and discontent that have accompanied different paradigms. Community based resource management (CBRM) is emerging as a response to this discontent, it is a strategy that promises to develop more inclusive and equitable management of resources. The objective of this research is to contribute to the understanding of how collaborative learning can aid the development of CBRM, whilst also identifying some challenges to the application of this management approach. As an action oriented case study, I will be investigating how this strategy can be applied to our agrarian resources. I follow the journey and progress of participants looking to initiate an alternative food network with a community management agenda. The participants were guided through a collaborative learning environment promoted by the use of soft systems methodology, I evaluate the efficacy of this participatory process through a mixed methods approach where both qualitative and quantitative data were collected. The results show that the experiment and methodology were successful in promoting this learning and resulted in pragmatic action towards collaboratively defined goals. Learning was encouraged through the structure of the workshops and the dialogue that it encouraged. Participants demonstrated an ability to think critically of their actions, build upon ideas and share new knowledge with others - which are considered beneficial attributes towards positive CBRM outcomes. The extent of the action however, was limited by a relegated level of participation, hindered by undemocratic actions and were in turn, influenced by an asymmetry in learning. Despite the setbacks the resulting action was forged and moulded by the participants who also demonstrated an ability to move around problems. This is suggested to be a consequence of the freedom and ownership of ideas that the investigation promoted.

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## Abbreviations

AFN – Alternative food networks

CBRM – Community based resource management

CSA – Community supported agriculture

SSM – Soft systems methodology



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## Introduction

Natural resource management, whether we are conscious of it or not, is a crucial part of our everyday lives. In our anthropogenic biomes, management of natural resources is critical to maintain their functioning which in turn provides us with the ecosystem services that sustain the development of humanity. The increasing demand for these natural resources, caused through population growth and unsustainable consumption is diminishing the resource base upon which we depend. Sustainable management of these resources is fundamental to ensure the wellbeing of our planet and society, for both ourselves and future generations.

Agricultural ecosystems are now utilising over a third of the area that is deemed suitable for this land use and this is anticipated to increase towards 2030 (Bruinsma 2003). This resource base not only supplies us with direct services such as the food, fibre and medicines invaluable for human wellbeing, but also has implications upon other less obvious ecosystem functions such as the hydrological cycle and buffering rates of greenhouse gas emissions. Evidently the sustainable management of our agroecosystems and the food system it supports requires our close attention.

Fortunately, some of these food systems are undergoing a period of transition towards more sustainable models, and recognition of the need to do so is becoming more prominent on political agendas (FAO 2016). Spurred by the discontent and disconnections that have arisen from a global, industrialised and market driven agriculture, people have now begun to seek alternatives which emphasise more than an economic bottom line. These systems are being labelled as alternative food networks (AFNs) and are touted for their ability to provide socioecological benefits that surpass those of the conventional system.

From their conception, many of these new AFNs have become subject to political and market forces which have shaped and coaxed them back towards the conventional system, where their true potential as agents of change becomes convoluted amongst existing political and economic structures (de Molina 2015; Best 2008; Galt et al. 2015). For better and for worse these changes have moulded the alternatives into what we observe today. The possibility and necessity of doing so is forged by a separation between the consumers, the farm(er) and their food that Lieblein, Francis & Torjusen (2001) describe as temporal, spatial and psychological distances. This separation and the political economy of our existing food system has resulted unsurprisingly, in systems that may not represent the wishes or needs of farmer or consumer, putting progress towards more sustainable practices in a stiff grapple and is simply perpetuating the problems within the current system.

If new alternatives which declare an improvement upon the existing systems are not designed to address these distances, then we leave them open to the same forces that have derailed their predecessors (Holt-Giménez & Altieri 2013) and have limited the scope of development (Wiskerke 2003). The changes we are observing today, perceived as positive, should be thoroughly re-evaluated and de-coupled from what we declare as progress; are we sure we are not simply seeing a trend afforded through affluence, and if so, what longevity can we expect in these movements? The transitional process to these alternative food systems and their flourishing numbers may have obscured us from identifying and addressing important underlying qualities of AFNs, which deserve our *astute attention*.

The idea that the technologies, including new models for agriculture, will successfully guide development is an assumption to be avoided. If we do not promote the parallel and complementary changes in our institutional or social arenas, then the potential for real progress is hindered and its longevity becomes questionable. Promoting this type of change requires an involved and holistic



approach to the interventions, one that can deal and work in combination with the complexity of human-resource interactions.

Agroecology provides some hope for realigning social attitudes and technological innovations. Agroecology is a transdisciplinary, participatory and action oriented approach to intervention within our food systems, it incorporates a critique of the existing political-economic structures in our agri-food systems, and as an action-oriented approach it seeks to redirect these systems towards sustainability (Méndez, Bacon & Cohen 2016). Agroecological thinking dismisses the view of the agroecosystem and broader ecosystems as simple and controllable. It embraces and respects the complexity of the socio-ecological world and sees this as an asset, not a liability and because of this, it recognises that prescribed technological innovations alone are insufficient for promoting sustained development.

In an agroecological interpretation of our food systems, the farmer, consumer and all other actors are viewed and valued as co-learners in a process of collaborative investigation. They navigate through a complex world by trial and error, they base their own actions upon their findings whilst learning their own ways to operate their world and solving their own problems. This puts people in the driving seat, they have more control over constructing the knowledge and action that works best in their local context, and become empowered. They are seen as more than objects to which a prescribed technology can be given; they are the essence of technology, a purposeful whole which only together has an intentionality.

Complicating this collaborative process, within our social worlds life is seen from a multitude of perspectives which are constructed through the lenses of individuals who may or may not necessarily see eye to eye. This becomes the elephant in the room for those involved in developing and managing agri-food systems. Agroecologists, through their holistic action oriented approach are interested in how to address this: how can we construct and improve new food systems and technologies so that they incorporate and reflect the many perspectives and agendas that exist within them, and what benefits can we expect from doing so?

From the researchers to the farmers and the consumers, notwithstanding, the vast differences that can occur among the individuals of these groups, balancing and negotiating the views of people provides numerous hurdles for the management strategies of agroecosystems. By framing the management of our agroecosystem and alternative food networks into higher hierarchical arrangements, we can discover the insights created in an existing body of knowledge that has already established and expanded the aperture and basis of contemporary scientific, managerial and political spheres. These insights are found in the turbulent and evolving story of natural resource management.

### Historical context to contemporary resource management

The centralisation of management was the dominant scientific paradigm of resource management during the latter half of the 21<sup>st</sup> century where Hardin's (1968) influential paper "*The tragedy of the Commons*" popularised the theory that communities engaging in the collective use of resources were locked in a malevolent battle against their own selfish wills, eventually surmising in the tragedy of resource depletion and collapse.

Hardin's fable of the farmers upon the commons sets agriculture at the heart of his argument. In his view, rational pastoral farmers would inadvertently exhaust the resource they depend on because the benefits of adding one more animal are gained by an individual whilst the costs of doing so are borne by many. Hardin drew the conclusion that the tragedy of the commons could be avoided

through “Mutual coercion mutually agreed upon.” and proposed that unfettered private actions should be controlled simultaneously by authoritarian governance and through private ownership by those who have a vested interest in the stewardship of their land.

In reality, the conjunction of authoritarian control, private interests and our current political economy have led our agroecosystems down a dangerous path where the problems are now endemic and innumerable. Contrary to his poignant statement “freedom upon the commons brings ruin to all” (Hardin 1968) there exists both contemporary and historical evidence that suggests otherwise. Perhaps justly, Hardin’s analogy of the pastoral farmers received thorough scrutiny and numerous cases were documented where farmers had been managing their common grazing resources effectively and autonomously for extended periods (e.g. Bjørklund 1990; Lane & Warming 1990).

Further contradicting Hardin’s view, there is sufficient evidence showing that authoritarian control of agricultural resources and the prevailing political economy has had profound and negative consequences in both historical and contemporary civilisations (2008 global food crisis: Holt-Giménez & Altieri 2013; The French revolution: Doyle 2001; The Roman empire: Evans 1981).

Fortunately, Hardin’s errors helped to fuel the creation of a vast body of research which popularised theory of a third alternative to commons resource management - to enclose resources in formalised institutions. Emerging from the once dominating paradigm of coercion, community based resource management (CBRM) became a highly regarded and promising organisational approach to these resource problems. CBRM is viewed as a resource management approach to address:

“Both environmental and socio-economic goals, requiring some degree of devolution in decision-making power and authority over natural resources to communities in which the regimes are expected to address critical issues related to the access and control over commons resources by the local community” (Armitage 2005).

Relating this approach to resource management in our agroecosystem and AFNs, and crucially, a model possessing the ability to move agroecosystem management away from the political economy of existing food systems is community supported agriculture (CSA) (Hvitsand 2016). It provides a striking resemblance and similar outlooks to that of CBRM. A commonly cited resource describing CSA (Soil Association 2012 p. 3-4) states:

“CSA is a shared commitment to building a more local and equitable agricultural system, one that allows farmers to focus on good farming practices and still maintain productive and profitable farms... Consumers participate in, or may even run the scheme working closely with the farmer who produces what they want.... Consumers may co-own land and other resources with the participating farmer(s) and work together to produce and distribute food.”

CSA is a relatively new approach to agricultural resource management and in comparison to its parent field has attracted comparably little attention from an ecological resource management perspective. By taking an approach informed from CBRM this emerging and flourishing field can avoid the same pitfalls that have been experienced by its more established counterpart. What then can this approach offer to new AFNs within industrial, globalised agricultural systems?

### Fundamentals of community based resource management: The paradigm shift

A pivotal piece of work in moving away from a coercion paradigm and the development of CBRM institutions was that of Ostrom (1990). Her now well established principles (Table 1) have been the focus of many empirical studies. From arrays of case studies (examples see: Armitage 2005; Kellert

et al. 2000) and experimental modelling (examples see: Madani 2010; Van der Wal et al. 2016) much progress has been made in understanding some of the underlying interactions that influence successful institutions for community resource management and also when and why these institutions fail (Kellert et al. 2000; Maarleveld & Dabgbégnon 1999). This research has been invaluable for understanding what constitutes effective, efficient and sustained use of community based resources in an institutionalised setting by allowing us to anticipate circumstances and apply foresight into managerial and policy decisions.

### **Principles of community-based management of commons**

Clearly defined boundaries to the common pooled resource and the individuals with access

Rules governing the use of common resources are appropriate for local content and conditions

Individuals affected by the operational rules can participate in modifying them

Monitoring of resource uses is undertaken by and/or accountable to the users themselves

Sanctions are graduated for those who violate the rules

Community members have access to low-cost conflict resolution arenas to resolve disputes

Communities have the right to design their own institutions, externally from governmental organisation

Community enterprises are organised in nested layers or arrangements

*Table 4 Ostrom (1990) principles for resource management institutions.*

These models and many case studies however, still have their roots in the reductionist paradigm, a paradigm that values scientific knowledge over all else. Models show how simple rules of interaction could explain macro-level phenomena such as levels of cooperation, but do not go beyond a proof of concept (Janssen & Ostrom 2006). Whilst in traditional qualitative case studies of resource management institutions, the diversity and dynamism of human-resource interactions is not truly respected; they provide only a snapshot of real life scenarios and are not appropriate in circumstances where social conditions are an important factor affecting behaviour (Janssen & Ostrom 2006).

The idea that there is an absolute and objective reality that is driven by almost fixed laws must be reconciled. Science and management of natural resources is not neat, it is inadvertently affected by existing values of researchers and managers, and often reflects their own agendas (Pretty 1995). This has led to the implementation of technologies, policies and action plans with little regard for those it will affect.

The governance of natural resources can never be a set package or model imposed upon those participating, it is case and context dependant (Ostrom 1990; Pretty 1995). Agreed change must be as rich, heterogeneous and dynamic as the diverse systems which it has to encompass. The positivist and generalist approach alone with its aim for absolute laws is inadequate here. Emerging from this thought is the recognition that in order to achieve sustainable outcomes in resource management problems, we should shift the focus from that of understanding *what constitutes sustainability*; trying to find a means to an end, and onto the *creation processes themselves* (Pretty 1995). For more sustainable outcomes to prevail, the ability of societies to perpetually adapt to the prevailing conditions is of paramount importance (Armitage 2005).

### **Developing the new paradigm**

Although the principles for CBRM (Table 1.) provide a strategic starting point to base management institutions upon, they are not explicit or receptive to fluxes occurring within these systems. The principles could be, and have been interpreted to portray that static resolutions to CBRM can suffice.

Resource management problems are never simple or static, they are multifaceted and are perceived differently by each and every individual. For successful resource management to prevail the fundamental conditions for collective action should be maintained, but most importantly the institutions must also be responsive and flexible to the dynamic and open interpretation of evolving problems (Armitage 2005).

Those Institutions that are able to evolve and accommodate this dynamism are characterised by a greater recognition of different needs among the stakeholders, they continually build upon rules and norms, they promote social networks and they enable the shared development of different knowledge between stakeholders (Armitage et al. 2009). The characteristics require learning to be a prominent part of the mechanics of resource management institutions. Knowledge generated through a collective learning process can promote and heighten the adaptability of Individuals, managers and researchers as conditions, opinions and resources change (Pretty 1995).

Collaborative learning and group deliberation in the management of natural resources have proved successful in a wide range of resource management cases (Canadian artic: Armitage et al. 2011; Sand dune ecosystems: Daniels & Walker 1996; and lake ecosystem management Schusler, Decker & Pfeffer 2010). The successes here can be attributed to the ability of participants to experiment, exchange ideas and gain new perspectives, whilst doing so in a rich collaborative environment that fosters social capital (Armitage et al. 2009, Pretty 2003). Developing social capital is essential for community resource management programs because it facilitates cooperation by lowering the cost of working together, it develops a sense of community by increasing the value of collective activities whilst limiting the likelihood that people will defect from the existing management strategy (Pretty 2003).

Learning experientially, or “learning by doing” is an appropriate device to generate the knowledge needed for collaborative learning; it is the “Process whereby knowledge is created through the transformation of experience” (Kolb 1984). As a definition this includes the recognition that learning is a process of adaptation to new experiences and perspectives; and that knowledge is a transformation process in perpetual re-creation, something that cannot be transmitted directly or filled into empty vessels (Kolb 1984). Knowledge created experientially in CBRM is inclusive and accessible; people learn by doing, in pursuit of improved situations for themselves and for others within groups. Active participation for experiential knowledge generation in CBRM is not a mere nicety but an absolute necessity, one that builds resilient and self-mobilising communities (Pretty 1995).

Participatory action research employs experiential learning as its knowledge generating mechanism. It aims at problem analysis and problem solving in context. Action research respects the uniqueness of every context, understands the ethical and democratic reasons for not separating theory and action, and believes the most rigorous test of any theory is its ability to work with problems in real-life situations (Greenwood & Levin 2006 p. 62). It involves a critique of traditional social science which devalues informal forms of knowledge in resource management and speculates from a quasi-objective perspective.

In participatory action research, common understanding is gained through involved attempts to invoke change in particular directions (Greenwood & Levin 2006 p. 18). Action research requires the involvement of multiple stakeholders, who are responsible for conducting and directing their own research and learning. It values and manages complexity and by immersing the researcher in the

investigation, to produce knowledge that is both of higher moral standing and is tailored by the context being investigated.

Working with the philosophy of action research, my desire here is to discover and test *what* is required to make the process of deliberation and development in agrarian resource management more sustainable. By introducing a platform to promote learning I will evaluate the technique and its efficacy, identify some important aspects in its application and contribute to understanding *how* these aspects may influence a projects outcome. Overall, I aim to provide insights that contribute to *what collaborative* learning can contribute to the research and improved management of community resources.

#### *Research questions:*

How can collaborative learning promote the development of sustainable approaches to agrarian resource management?

What considerations need to be taken into account when promoting a collaborative learning environment?

What can collaborative learning contribute to the development of community resource management?

Through an action oriented case study, I will be investigating a contemporary phenomenon in depth and within its real-life context (Yin 2009, p.13). As a point of departure for this research, I introduce the historical context to a case study of a CSA start-up project; in which promising new insights to researching CBRM are found.

## Case materials - Agricultural resource management problems in southern Norway:

### Contemporary management of agricultural resources in Ås Norway.

The municipality of Ås and surrounding county of Akershus encompass an agricultural production system that has significance for the whole of Norway. Its primary production is of grains and oilseeds that occupy approximately 81% of its agricultural land (Statistisk sentralbyrå 2016.a) which is scattered amongst a mosaic of urban areas and coniferous forests. The rolling topography and temperate climate are well suited to the production of these grains, and since the late 1960's this has become a designated area for grain production. This label has been assigned through Norwegian governmental policy which as part of a strategy aiming for self-sufficiency, focused the majority of grain and livestock production into separate regions; with the majority of grains sown to the best land under the most stable climates, and the livestock into the less favourable land in the mountains, valleys and challenging climate of the west.

Within the last 15 years alone, the number of holdings that produce these grains in region has decreased by more than 40% from 2,885 to 1,657 (SSB 2016.b), figures which are also mirrored in the size of the farms (Figure 1, SSB 2016.c), with a stark increase in the number of larger farms and the diminishing number of the traditional Norwegian small holdings. These changes reflect upon the highly industrialised, consolidated and centralised grain supply systems that have evolved in industrialised, capitalistic economies (Gliessman 2016).

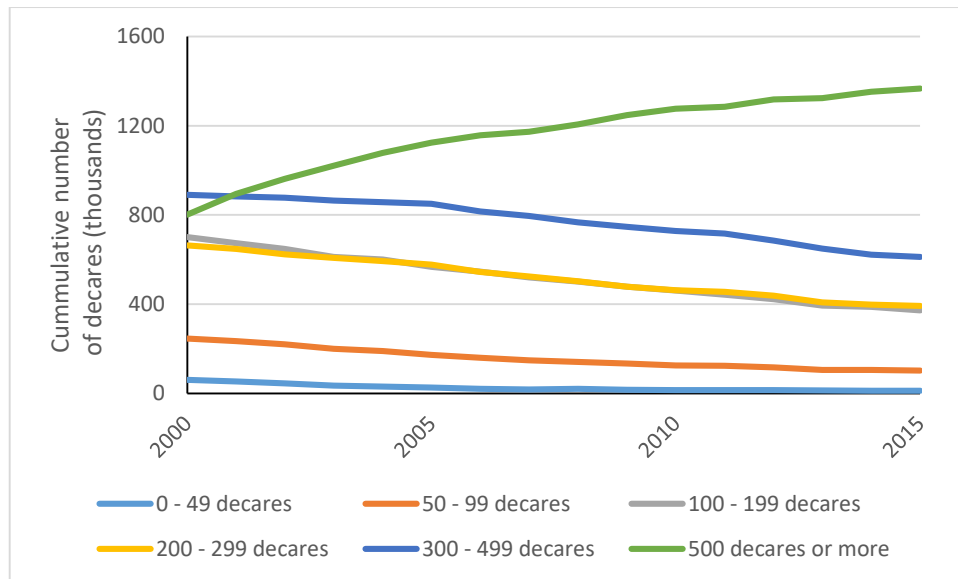


Figure 1 Changing structure of Norwegian grain farms expressing the size distribution of existing farms during the last 15 years. Data from (SSB 2016.c)

The apparent change is also not limited to the structural aspects of agriculture in Norway. Biological changes have also been observed in the diminishing agricultural biodiversity of these areas, which is a foreseeable problem that accompanies monocultures and the production of few commodity crops (Gliessman 2016). Through the intensive production of cereals and oil crops, consequences for the environment have arisen including excessive soil erosion, soil degradation and run off of pollutants which have blemished the broader ecosystems that bound our agricultural systems. A problem that has been given considerable attention in this region, is the environmental impact of agriculture upon local water courses (for example: Sørensen, 2007)

Social separation from food and apathy are also a symptom of a global and industrialised system (Buttel 2003). Leiblein, Francis & Torjusen (2001) describe the root of these problems in terms of distance, where the separation between consumers and their food is now spatial, temporal and psychological. These distances are contributing to the degradation of a resilient agroecosystem through a widening gap of knowledge between the consumer and their food supply. The combination of these three factors creates a potent concoction of problems, which if left unaddressed, will only proliferate themselves further.

Despite these issues, Norwegian grain production has a prominent role to play in maintaining the sustenance of the country. Development and research into new varieties and improving agronomic practices are moving this production towards more sustainable methods.

### Ås as a distinctive hub for developing resource management strategies

Evidently grain production has a prominent role to play in Norway's goal to become self-sufficient and employ more sustainable food production methods. Ås is certainly a key contributor in attaining these goals. What sets the agroecosystem of Ås apart from the rest of the Norwegian grain production regions is that it contains Norway's agricultural university - The Norwegian University of Life sciences.

The University has a strong influence and important role to play for the human component of the Norwegian agroecosystem. This institution helps shape the community by creating an environment that is a melting pot for ideas, innovation and development. This lively pot inevitably spills over into

broader contexts, both through research which influences national policies and through the students who become enriched through the experiences they gain during their time at the university, who eventually take these experiences outside to the broader community of Ås, and home to their respective towns, regions and countries.

Even with the vast knowledge on tap and a keen focus on environmental issues, improvements towards more sustainable food production systems in the local area are restrained through a lack of communication, comprehensive and inclusive action towards the environmental problems. This sentiment is shared by Schusler, Decker & Pfeffer (2010) who suggest how wider and more inclusive deliberation and social learning could benefit resource management problems in the area:

“Scientific knowledge is necessary for sound natural resource management but it is not sufficient... when deliberation enables social learning, individuals and groups evolve in their understanding of issues, relevant facts, problems and opportunities, areas of agreement and disagreement, and – perhaps most importantly – their own values, providing purpose and guidance for policy and action.”

When we begin to encourage the engagement of various actors within the community of Ås, we can define relevant action that can bring change to the existing structures and values that have evolved through our existing food systems, and in doing so provide a challenge to some of the previously mentioned local issues.

### Innovations towards sustainable resource management in Ås

Student groups in Ås have played an important role in developing and introducing alternative food regimes into the local area. The student demand for, and their knowledge to why these alternatives are desirable have helped fuel some transitional movements. Innovation and alternatives to the conventional food system are also crafted by local entrepreneurs looking to diversify their revenue streams, and build a local alternative food movement that can bolster their existing businesses. Despite having similar goals these alternatives operate in relative isolation, where local products exceed student budgets and student movements have limited scope for business aspirations.

An example of a recent innovation in the agricultural ecosystem of Ås, and one that provides opportunity for a wider engagement from diverse local actors, is the addition of CSA. The project became operational in spring 2015, and was initiated by a local farmer and his family as a response to threats that would see urban development of the farm, potentially losing some of the farm’s most fertile land.

This CSA project was initiated on the back of rapid growth in the Nordics. CSA has been suggested to provide a diversion away from the conventional system whilst solidifying personal values into practical action (Hvitsand 2016). Given this assertion, and the reservations agroecologists have against technologies or models alone promoting positive change, an important underlying question becomes are these schemes, as suggested; building a moral community or are they simply providing an alternative consumer choice? (Cone & Kakaliouras 1995).

In their youth, CSA projects in Norway can hold some optimism about their future, but research from more established countries operating CSA’s, and some studies within Norway, there are many challenges to overcome, including defection – high membership turnover (Grande 2009; Goland 2002), exploitation of farmers (Galt 2013; personal communication) and the emergence of middlemen to market products from the CSA (Moskin 2016). These challenges suggest that there is potential for considerable dilution in the values that CSA promote and that perhaps the schemes in Norway are showing naïveté towards.



The positive outlook for CSA was reflected in the project that was initiated in Ås. It generated much enthusiasm in the local community and in its first year attracted 209 members, who participated by providing a set membership fee, entitling them access to a communally operated plot. Executive decisions for the project were made by a board who were appointed in an election and then appointed a head gardener, who was designated the responsibility for planning the season's growing schedule, a consequence of a late start to this first year.

The first season was generally successful and was a big learning process for all involved. One of a few problems that were encountered was the prevalence of club root caused by the fungus *Plasmodiophora brassicae*. In searching for a remedy for this problem an agricultural extension agent suggested moving the whole plot or increasing rotations within the plot. It was decided that increasing the cropping rotation was a more appropriate and achievable strategy. Communication of this was expressed to me by both members of the board and family members of the farm. This resulted in a rally of emails in which I expressed my interest in facilitating a process that would see grains introduced to the CSA. This in turn presented a promising opportunity to research CBRM within these schemes.

The process was designed in such a way that it would enable those involved the opportunity to create communal action towards a commonly conceived plan. The process was catalysed by my involvement and consisted of attempts to bring together people from diverse areas of the community. Below I recall these efforts and outline the design of this investigation, and describe the specific methods used within the methodology. The analyses of the results will then be used to discuss *why* these findings are valuable for future developments of CSA and its parent field of CBRM.

## Methodology and methods

### Selection and description of methods

My research follows an embedded mixed methods case study design (Creswell & Clark p. 91), This approach is suited to situations where the research aims to answer *How? What? Or Why?* Research questions, there are more variables than data points and the researcher has little or no control over the outcome of the investigation (Yin 2009 p.9). Within the embedded design the primary qualitative data was collected through a specific research methodology and the quantitative data provides a supportive secondary role in the study (Creswell & Clark p. 91). The qualitative methodology is based upon soft systems methodology (SSM) (Checkland & Poulter 2006). Data collected includes recordings (audio and video), field notes from facilitators and my own personal reflections.

The supportive quantitative data was collected both preceding the initiation of the qualitative phase; as a consumer survey and also as the intervention progressed. These were conducted through two participant surveys evaluating the outcomes of workshops (See Appendix: page 64). All surveys were created with the online survey tool *surveymonkey* ([www.surveymonkey.com](http://www.surveymonkey.com)). A basic overview of the experiments design is given below:



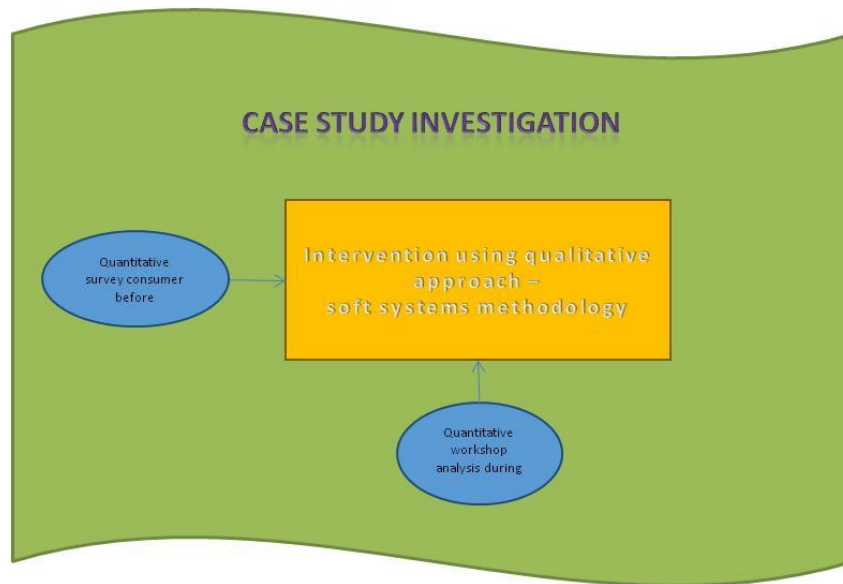


Figure 2. Embedded Mixed methods case design. Adapted from Creswell & Clark (2011)

The reasons for taking a mixed methods approach is guided by the premise and recognition that there are limitations to only using one approach to address all aspects of the research (Zweck, Paterson & Pentland 2008, Creswell & Clark p. 91). In addition to this, triangulation of these two data streams provides a heightened level of trustworthiness to the investigation (Eisenhardt 1989, Pretty 1995, Yin 2009). There is also pragmatic reasoning to this approach as advice currently given by extension agencies suggests that both qualitative (from workshops) and quantitative data (from surveys) are valuable in managing community supported agriculture projects (The Soil Association p.15). The embedded approach has proven valuable in cases where a researcher wishes to examine the process of an intervention and also to explain reactions to participation in an experiment (Creswell & Clark p. 91).

The adoption of a soft systems methodology was desirable as it not only enhances the trustworthiness of the data, but also in the case of SSM allows researchers to adapt the methodology to suit the specific context in which it is to be used (Checkland & Poulter 2006, Pretty 1995). The SSM approach was adapted according to four classes set forth by Pretty (1995) (represented in Table 2) where tailoring can be made to match the bespoke needs of the study.

Below I provide an explicit description of the methods I have used within this particular case study and give additional justification to my aforementioned choices. The reporting of the methods follows a chronological order representing the four classic kinds of activity involved in soft systems methodology (Checkland & Poulter 2006 p.13). Following from the description of methods used during data collection I outline the analysis strategy of hermeneutic phenomenology. A summary of the methodology and its adaptations are given in *Table 2*. A diagrammatic representation of the methodology combined with the analysis is used to illustrate the utility of the approach taken (Figure 5).

## Project initiation

Data collection and contact with the wider community was initiated through communication and membership on social media ([www.facebook.com](http://www.facebook.com)), through email with existing CSA members and through strategically placed flyers throughout the town (Appendix: Flyer). This approach created a purposeful sample and prompted chain-referral sampling, which identified and selected individuals with an explicit knowledge or interest in a particular area, and ensures the presence of information-laden individuals that have the ability to inject rich experiences into the investigation (Palinkas et al. 2015). This approach combined with sequential sampling was deemed suitable for this study because resources were limited and the intervention required the active involvement of the individuals sampled (Teddlie & Yu 2007).

A sequential sample from the primary group was made through a consumer survey which promoted a gradual selection of individuals and allowed the generation of a sample who were more capable of addressing the research questions (Teddlie & Yu 2007). The consumer survey was inspired by a similar survey conducted into the feasibility of a meat CSA (Central Oregon Intergovernmental Council 2011) and was implemented to test the validity of current advice given to the management of CSA, whilst also providing a valuable device for triangulation within the case study. Sequential sampling can also be considered to fulfil an initial requirement of SSM practitioners to: "Make sure that the resources needed to carry out the investigation are in line with its ambition." (Checkland & Poulter 2006 p. 28).

The survey was released in both English and Norwegian on the 07/03/2016 and was promoted on social media and through email contact with existing CSA members. The survey remained open throughout the first and second workshops so that participants in these events could be prompted to complete the survey if they had not already done so.

## Workshop one

This Stage of the investigation involved a participatory workshop where participants were sequentially sampled from the primary sample by an open invitation on social media and through emails to existing CSA members. The workshop (held on the 03/04/2016) was structured around the initial steps of soft systems methodology, this involved facilitating a group investigation into the existing grain system, identifying the participants involvement in this system, and their motivations to create a grain CSA. This stage is deemed to satisfy Checklands & Poulter's (2006 p.23) Sage of SSM: finding out about the existing situation, which corresponds strongly to the modes of Concrete experience and reflective observation upon Kolb's (1984) learning cycle. Illustration of the relationship between SSM and Kolb's learning cycle is provided in *Figure 3*.

The workshop process began with an initial team building method outlined by Chambers (2002), where participants were able to simultaneously introduce themselves to others, whilst also learning and sharing knowledge of some commonly used grains and their production. This was the first step in building group and team dynamics which would hopefully improve the efficiency of group interactions (Pretty 1995).

Attendees were then asked to form groups and try to arrange themselves with others who they were not well acquainted with. This would help accentuate the quieter voices of the group and improve absorption of new information (Chambers 2002). These groups were then assigned a facilitator, who had received prior training into this practice. Facilitation is recommended as a means to help people carry out an investigation of their own situation, arrive at a collaborative result and can include facilitators as participants themselves (Pretty 1994).

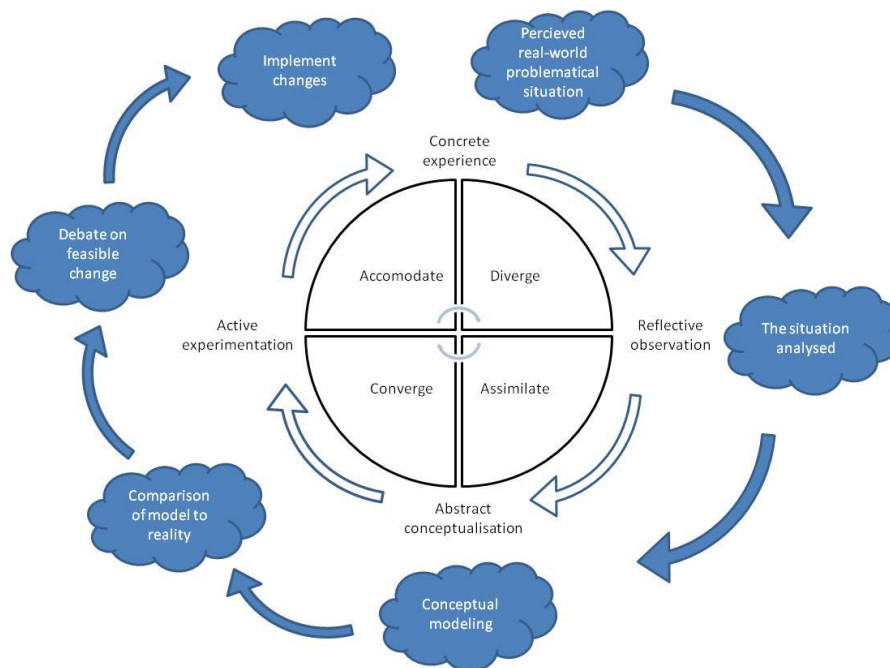


Figure 3. Relationship between SSM and Kolb's learning cycle

Once settled in their groups a plenary to the project was delivered which expressed the aims of the meeting and the techniques that would be used. Aims were expressed as being:

- Discover more about one another
- Learn from each other
- Explore and understand the existing grain system
- Explore changes that would be desirable
- Think about strategies to make changes possible
- Motivate to make changes

The first task was used to surface and share some worldviews, whilst also familiarising themselves with the unconventional approach of the workshop. Participants were asked to draw a rich picture of themselves and express their motivations, interests and competencies relating to the project. Being explicit about these factors was used to consolidate the thoughts of the participants, and highlights where individuals may have particular interests in the project.

Discussions were encouraged throughout the exercise by the facilitators, who were also responsible for documenting the conversations being held through notes and audio recordings. Following the completion of this task, a round of presentations was heard within the groups, which encouraged everybody to make their inputs. Presentations allowed other participants to consider different perspectives of the problem being addressed and facilitators were used to balance and direct the discussions taking place.

The focal piece of work from the workshop was a rich picture that represented how the existing grain system in Ås functioned. This task asked the participants to work in teams to create a shared impression of the grain system. This diagramming exercise was used to capture the main entities, structures, viewpoints and interactions of relevance in the situation (Checkland & Poulter 2006 p.25). The representation of the system in a diagrammatic form moves the enquiry away from the

biases and questions of the researcher, and gives the participants a share in the creation and analysis of knowledge (Pretty 1995). Crucially, this picture then also served as an instrument to structure discussion (Checkland & Poulter 2006; Pretty 1995).

In concluding the workshop, a SWOT analysis was conducted. SWOT analysis can be used to create a better understanding of the strengths, weaknesses, opportunities, and threats that the community may have. In doing so, planned changes and actions are likely to be more effective, empowerment and motivation can also be incited, as it enables users to “Reverse” and transform perceived threats and weaknesses into opportunities and Strengths or vice versa (Craig 2000 pg. 110).

One week after the first workshop, the participants were asked to complete an evaluation survey which would help determine the utility of the approach, and help me look for areas of improvement for the next workshop. Participants were prompted to complete the survey one week later if not already done so, until a census sample was reached. To maintain engagement between the two workshops, communication of the outcomes was made with the primary sample through a presentation using an online tool (Appendix: Prezi presentation). This was posted on social media and to existing CSA members to inform them of the progress of the project.

## Workshop two

Invitations for workshop two were created soon after the first workshop, which was scheduled to take place on the 17/04/2016. The sampling procedure mirrored that of workshop one. An additional participant was also recruited in an opportunistic fashion as I was invited to attend and present at a CSA meeting.



Figure 4 Participant energiser

The meeting began with a grain related energiser which required active participation from the participants (Figure 4).

Again, a plenary was conducted which discussed the first workshop, its aims, the process and the outcomes. The opening activity for the workshop was a visioning session. The visioning session was used to promote unrestrained thinking (Schusler, Decker & Pfeffer 2010). Parker (1990 p.2) describes the development of personal visions as:

“Visions are our deepest expressions of what we want to create. They are compelling and provide an overarching framework which guides us in making choices – choices that will transform our visions into today’s realities”

The aim of visionary thinking was to encourage people to deconstruct the constraints when thinking about change and create a vision that can move their thoughts into new territories. The visioning session involved participants being led through a meditation monologue, which transported their thinking into an imagined future situation, where the participant was a member of their ideal grain CSA.

Following the visioning session, people were asked to share their personal experience with the rest of the group. Sharing the vision would help unite diverse activities and people, in doing so, these people are more likely to take responsibility and break free of convention (Parker 1990). This was desired for the next exercise where a rich picture would be created to combine the visions of the participants. Rich picturing is an apt technique to follow the visioning session as it promotes creative

thinking and the image produced enables everyone to look at one document, and see how all the ideas may fit together (Margulies & Maal 2002).

Building from this shared image, the pieces of the puzzle were further consolidated in a conceptual model of purposeful activity (Checkland & Poulter 2006), which represented the collaborative visions of the group of participants in a chronological order. These diagrams were then presented to the assemblage and a round of comments or questions was welcomed from the audience. This concluded the second workshop and again an evaluation survey was made available one week after the event.

### Model comparisons

This part of the investigation tackled the crux of SSM; the comparison of conceptual models to reality and the formulation of a plan to base new actions upon. Following a mishap in the original plan for the model comparison stage, the initial meeting was rescheduled and comprised of participants who attended both workshops, all of the participants meeting these criteria were invited to this informal meeting. This was decided to be appropriate as this group had a better understanding of what had occurred in the previous workshops and could interpret the information accordingly.

The meeting was conducted in the informal approach described by Checkland & Poulter (2006 p.51), which involved hanging the models and other information upon the walls to serve as a point of reference for the discussion. The aim of the meeting was to create a mission statement and season plan to move the project forward.

### Parallel observations

Persistent and parallel observation (Pretty 1994; 1995), was afforded through prolonged and/or intense engagement with the phenomenon and its context. Parallel observations increase the depth of understanding and the breadth of the realities that are encountered (Pretty 1994).

My involvement in the existing CSA was from an early stage, initially through following the developments of a case study conducted by student agroecologists, and eventually through my employment on the farm which would later become the site for the existing CSA. During this time, I had close contact with the family operating the CSA, regularly discussing my research project and the CSA with them. A friendly relationship was established with members of the board in both the first and second season. My relations with these members of the local community afforded me a diverse perspective on the CSA, which was highly valuable in understanding many aspects of the situation.

These observations and interactions took place in parallel to the traditional embedded design shown in *figure 2*. I used multiple sources of information and this helped triangulate some of the interpretations. These sources included close reading of related material; including text from emails, web-material, there were conversations with existing CSA participants and I drew on direct observations and personal experiences. This data forms the basis for my personal reflections on the investigation. Data was recorded through notes in reflexive journals or if experiences were undocumented, participant checking was used to validate my interpretation of the given phenomenon.

	<i>Group and team dynamics methods</i>	<i>Sampling Methods</i>	<i>Interviewing and dialogue</i>	<i>Visualisation and diagramming methods</i>
<i>Stage 1- Participant sampling and consumer survey</i>	Formation of ambiguous group, <b>Prolonged engagement</b> through forum	<b>Purposeful sampling</b> – social media, existing members, public outreach (Primary sample) <b>Chain referral sampling</b> – Sampling through “snowballing interest”	dialogue encouraged on social media	Social media distributed information of interest
<i>Participatory workshop, finding out about the existing situation. embedded quantitative study</i>	<b>Meeting and mixing</b> – Seed game (Chambers 2002), Expression of motivations and interests and competencies. <b>Group work</b> – Combined analysis <b>Energizers</b> (Chambers 2002) – workshop events, presentations and exhibitions. <b>Structured group forming</b> – workshop teams	<b>Purposeful sampling</b> – social media, existing members, public outreach. <b>Sequential sampling</b> – gradual selection of those with explicit interests <b>Structured group forming</b> – workshop teams (Chambers 2002) <b>Census sampling</b> – workshop evaluation.	<b>Semi structured dialogue</b> - guided by the tasks of the workshop, based on SSM. <b>Facilitated dialogue</b> – Notes and recordings taken by facilitators	<b>Rich pictures</b> (Checkland & Poulter 2006) – self exploration, grain system analysis <b>SWOT</b> – Community attributes (Craig 2000)
<i>Stage 3 – Participatory workshop – Creating a shared vision of an idealistic future. Embedded quantitative study</i>	<b>Meeting and mixing, group work</b> – Participatory kneading event, and food preparation of grain based foods. <b>Visioning session</b> – for example see (Lieblein, Francis & Torjusen 2001)	<b>Purposeful sampling</b> – social media, existing members, public outreach. <b>Sequential sampling</b> – gradual selection of those with explicit interests <b>Opportunistic sampling</b> – presence at CSA meeting <b>Census sampling</b> – workshop evaluation.	<b>Semi structured dialogue</b> - guided by the tasks of the workshop, based on SSM. <b>Facilitated dialogue</b> – Notes and recordings taken by facilitators	<b>Rich pictures</b> (Checkland & Poulter 2006) – shared vision of idealistic CSA <b>Flow diagram</b> – Consolidation of ideas (Craig 2000)
<i>Stage 4 – Structured discussion of Ideas for change</i>	<b>Meeting around a social activity</b>	<b>Purposeful sampling</b> – selection of individuals who had attended both workshops	<b>Structured Dialogue</b> – guided by all information provided in the methodology	<b>All visual diagrams were used as references.</b>
<i>Parallel data collection</i>		<b>Ethnographic research with opportunistic sampling</b> - Attendance of public meetings, analysis of public (web material) and personal (emails) texts.	<b>Structured conversations</b> – with workshop participants and peers	

Table 2. Main factors contributing to the adaption of SSM



## Analysis

The analysis strategy taken in this investigation utilises sensitive and thoughtful mechanisms that can help a researcher put sensible meaning to the overall picture that is emerging from its many separate parts (Lavery 2003). Texts can include such things as written or verbal communication and visual arts such as rich pictures (Lavery 2003).

Given the mixed methods approach, the range of texts that are produced in this investigation and the many perspectives that the stakeholders provided me with, hermeneutic phenomenology is a fitting approach to deal with the complexity of the research (Zweck, Paterson & Pentland 2008).

Hermeneutic phenomenology can use any means that are responsive to the research questions, it encourages reflection and continual dialogue that seeks new perspectives upon the interpretations (Lavery 2003; Zweck, Paterson & Pentland 2008). Crucially this occurs in a cooperation between researcher and participants and compliments the ethical goals of action research. Emerging from the process are new enlightened views that incorporate and reflect the heightened understanding of both the researcher and the participants, this represents many constructions of the multiple realities in the investigation (Lavery 2003).

Data from the workshops came in the form of audio and visual recordings of the event as well as field notes from the facilitators of the intervention. Audio data was first interpreted by listening intently to the recordings on repeat over a period of two weeks, this promoted a deep understanding of the text. In this process I reflected upon what was said, how this was articulated and gave thought to the context in which it arose. This reflection and the cyclical process was successful in evoking new feelings upon the phenomena I was observing.

Whilst listening to the recordings, notes were taken and timestamps given, notes were consequently revised and added as my thoughts evolved. Finally, the combination of the notes and a final listening were used to identify the most evocative parts of the workshops that would provide the evidence necessary for my research questions. Transcriptions of these moments were subsequently taken. This final process promoted close familiarity with the data, and helped me methodically conceptualise meaning from the dialogue that had taken place (Lapadat 2000).

Moving forward from these interpretations, my task was then to seek reliability and further reflection upon the results. This was obtained through the supportive quantitative results and by seeking the perspectives of key informants, my peers or participants themselves; asking for their interpretations on the events that unfolded. In this process I worked together with others to bring life to the experiences I was exploring, paying close attention to the texts and the perspectives of others. This challenged my perceptions of the event and was a continual process throughout the investigation, it provided a broader range of vision from multiple vantage points, referred to as horizons:

“A person with no horizon does not see far enough and overvalues what is nearest at hand, whereas to have a horizon means being able to see beyond what is close at hand.” (Lavery 2003).

Finally, with a more or less consolidated view of the intervention the process of writing these results began. The results I present below are also a product of an auditing process in which select quotations from the phenomenon investigated have been validated and revised, firstly with the facilitators of the respective groups and then with the specific participants.

The delivery of my interpretations to the participants followed the procedure of presenting an extract from the results and asking the participants, “Does this adequately represent your experience/feelings of the event and would you like to contribute further details or improvements?” Where possible the quantitative data from evaluation surveys was also provided to participants. An illustration of how the analysis was conducted is provided below:

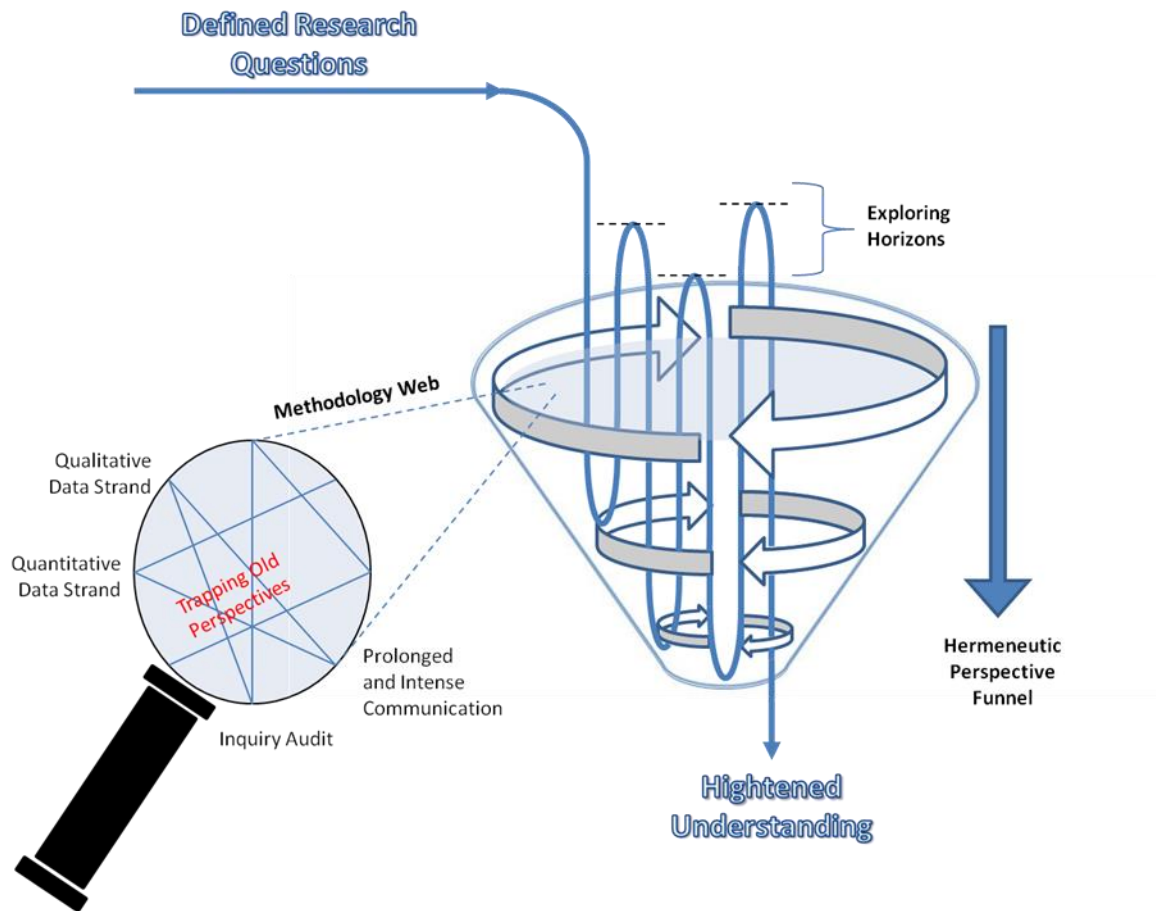


Figure 5 Illustration of hermeneutic analysis strategy



## Results

### Experiences during workshop one

At the time of commencement for workshop one, there was a list of 21 confirmed attendees and a further 80 who had expressed formal interest in the event. Obviously I was not anticipating all of these attending but it was encouraging nonetheless. Attendees began arriving soon before the event was scheduled to start and were still joining after we had begun our introductions, the total number of participants reached 20. After the initial energisers and an introduction to the project, the participants were split into groups of 4 +/-1. As a warm up participants were asked to create a rich picture of themselves and their interests and involvements with grains. This was followed by people's expressing their motivations to join the event.

Discussions and presentations during this exercise were fruitful, people were given the opportunity to openly express themselves and in turn listen to others. The discussions were balanced, informative, educational and often times with good humour, which was helping to develop the desired sense of community and empowerment. People shared their connections to grains, from their uses as a food source, their cultural value and their aesthetic significance in the landscape.

The motivations of participants also varied from a vague curiosity in the project, to personal interest in certain aspects such as brewing, baking or the desire to learn how to cultivate crops. Wider ranging community based aspects such as enhancing environmental consciousness, increasing community resilience, sharing ideas and engaging in dialogue also formed part of people's motivations. Some motivations were of a more philosophical nature and expressed sound reasoning into the desire to take part in this project:

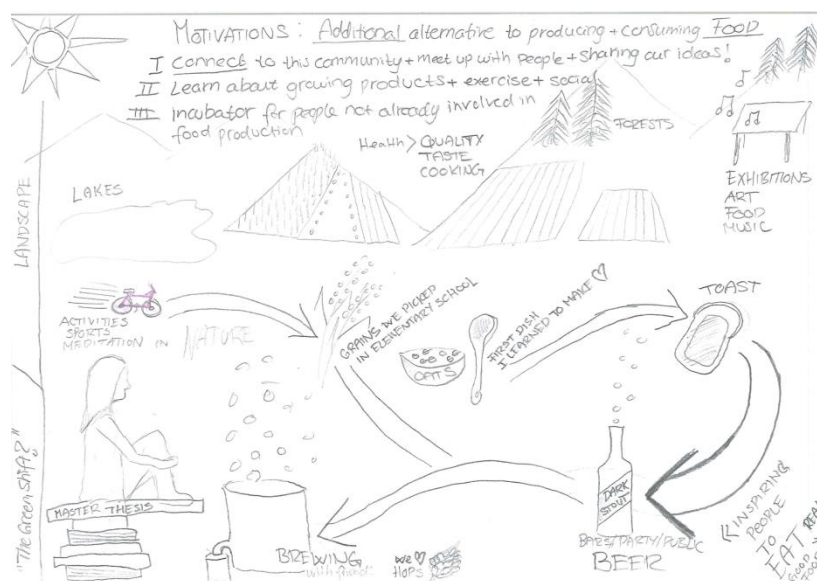


Figure 6. Participant's personal picture, motivations and interests

Figure 6. "I think it is not only about being against, we are not working against anything, it's not an aim to be against something, my aim is to be coming up with additional alternatives to the food system which we have, because you can combine them, and not always to be thinking I'm against them, so I see this as an additional alternative to producing and consuming food."

Another participant reflected upon their personal actions and values conceding that:

*“I’m just a scientist in a Lab, very removed from actual farming. So being part of a CSA would expose me to questions that the active farming would bring.”*

These ‘nothing held back’ responses were always met positively by the other participants, there was an openness and sincere appreciation of the needs and views of others, people were observed to be deeply involved in the act of exploring the meanings behind both their actions and those of their fellow participants, this brought to light new perspectives on prominent issues surrounding current farming and consumption patterns.

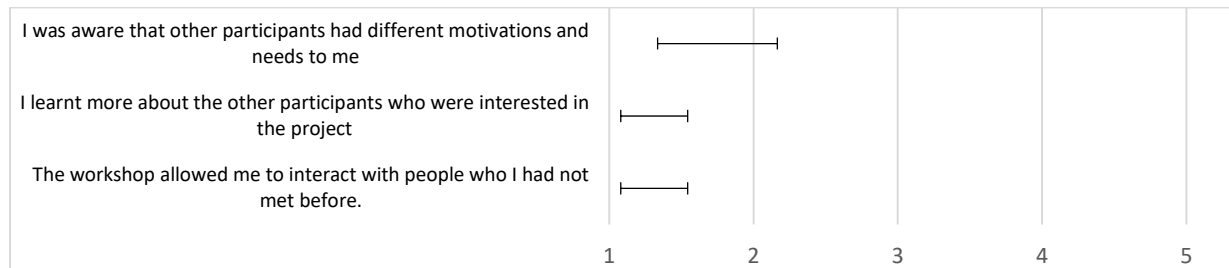


Figure 7. Responses to statements about participant introductions  
- Likert Scale - 1 (strongly agree) to 5 (strongly disagree) +/- S.D

These responses also promoted contributions on related topics, in turn this began to encourage participants to work together combining their own competencies, making connections and reflecting on the issues at hand with the current state of grain production in the local area, in Norway and in a more universal context.

An illustration of this was given in a discussion between one group who mentioned the ironic nature of their situation; despite their competencies and the vast potential and resources of the university to influence change and create action, progress was deemed unsatisfactory.

The example being addressed was the pollution of the lake Årungen, a stone’s throw from the University campus. Which due to modern agricultural practices and pollution from urban areas, the lakes now present a concoction of problems reflecting modern agricultural use and urbanization. these include increased erosion, bioaccumulation of organochlorides in fish stocks and algal blooms causing eutrophication. The participants then made the connection between these agriculturally borne problems and their negative impact upon the community; as the severity has prompted bans on some recreational use of the lake. In conclusion of this topic one participant gave an insight into the importance of community in righting these wrongs:

*“I think that what is also important in addition to the expertise that we have is community. That we are connecting and learning about this and are able to tell others what it is, and get people interested and involved.”*

This was a sentiment shared by a contemporary who added:

*“It’s cool to connect the people like today because normally we would not, so this is one way that people from different backgrounds, even if they know each other from before, have a chance to just sit and talk, and that’s valuable.”*

This example would later make an appearance in the groups collaborative work. It showed that even before prompting, groups were already engaging in dialogue which would help them make sense of their own situations, and understand the wider systemic implications of current production and consumption models.

Following this introduction round, participants were asked to move onto less familiar grounds. As a group, participants began to plot a representation of the existing grain system in Ås and Norway as a whole. This exercise as expected proved to be a little more challenging for the participants. Apprehension was visible on the faces of some people and conversation was muted especially from those without a background in agriculture or those from outside of Norway.

This did not deter the participants from making progress, by working together they began to piece together a model with features which had resemblance to reality. This process although challenging resulted in a combined state of knowledge, and created a higher level of understanding amongst the participants (figure 8). Participants discussed many issues in grain production and its associated food systems: from environmental concerns - biodiversity and loss of genetic diversity, pesticide use, and excess fertiliser application, to social implications - including disconnection with food, policy implications, foreign worker’s rights, a loss of local knowledge, social injustice and gender equality. The uncertainty also resulted in speculation on certain topics and in some cases this speculation was misguided; this was not surprising given the disconnected nature of the consumer and grain production systems.

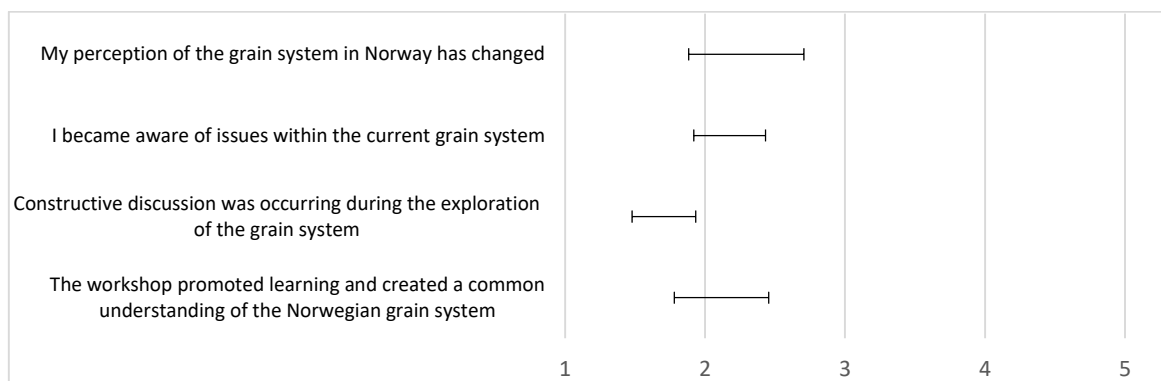


Figure 8. Responses regarding the creation of rich pictures  
- Likert Scale - 1 (strongly agree) to 5 (strongly disagree) +/- S.D

In one instance a lengthy conversation stemmed from the question of one individual who asked:

*“So ‘monoculture’ what do you mean with that?”*

Following the explanation by the participant’s contemporaries; who each provided a contribution to the issue, the conversation diverged into the implications of monocultures for biodiversity and the need for a higher level of inputs to control incidences of disease and pests. One participant was clearly eager to elaborate on this and an in depth explanation ensued, where a hypothetical scenario followed:

*“For example, they are using fertiliser which is nitrogen, potassium and phosphorus to feed the plants and then the plants grow very quickly, then in order to force the plant to put more energy to the grain rather than the stalk they use another chemical, to make it not grow too tall and then sometimes, I don’t know if they do it in Norway, they use another chemical that suddenly makes all the grain ripe because they might not ripen at the same time - so it’s easier to harvest them... It’s quite impressive!”*

This was met with murmurs of approval from all the participants who had seemingly gained new insights into the production of their grains. Following from this, the discussion led onto fertiliser and chemical production and the supply chain of these inputs.

Even with the uncertainty often expressed, the structure of the workshop allowed groups to communicate and probe others for answers. Presentations followed which allowed the participants to share, compare and contrast their own works with those of others. Rounds of questions and comments were welcomed after these presentations which would again aid the participants filling in any missing pieces and provide additional information on certain topics.

The rich pictures and presentations fulfilled my desire to have people visualise and discuss the system in which they are inadvertently a part of. In doing this, people could see the relationships between the different parts and how these function together to make the whole. People could recognise that parts were isolated, such as the existing CSA and microbreweries, and that some connections are linked only through a spatially and temporally separated value chain. This contention was expressed in one presentation where a participant who works at a local microbrewery commented:

*“I didn’t realise that [the microbrewery] was so disconnected... at the same time we are trying to gain support from the locals but we are just so disconnected.”*

In making this comment the participant elaborated and gave the example of how Norwegian malt is obtained within the current system:

*“Nowadays we don’t have this in Norway, [A place] where we can malt the grains. You know, we have the grains but we have to send the grains to maybe Finland or Germany and then return the grains to use for brewing here.”*

Further to this, the participant explained that everything except the water in the local microbrewery was imported from abroad:

*“The yeast is from America... The malt from England... even the bottles are brought from abroad, we use the local water, we sell at the local market, so in fact when you analyse the big picture and how it is connected with the local community, it looks like it is completely disconnected.”*

This participants’ communication demonstrated a critical appraisal of his situation, the state of the existing system, and showed that this realisation had been aided by the processes of the workshop including, rich picturing the problem and the constructive dialogue within the group. This instance highlighted the lack of transparency and traceability that comes along with grains and an industrialised commodity chain, its communication to the other participants provided valuable and constructive information that challenges our ideas of ‘local’. The name that this particular group had given their picture aptly summed up many of the participant’s views of the existing grain system in Norway “Connections and disconnections.” (Figure 9).



Figure 9. Connections and disconnections, A rich picture of the Norwegian grain system

Following the groups' presentations, the participants were asked to complete some additional tasks that related to their representation of the grain system; with the hope of gathering a deeper understanding of this system. However, by this time the preceding events had taken their toll on the participants and I. We were now pushed for time.

Some pre-planned exercises were shelved and the attempts at some were not as fruitful as hoped. One particular example of this was during an analysis which looked at the politics of the grain system, this aimed to expose where the disposition of power lies and explore how participants would like to see this change. The aim of this exercise was to help people reveal the top down nature of management within this system. Unfortunately, diagramming this was largely unsuccessful, with only a couple of groups managing to complete the task (Appendix: Importance/influence graph). Despite these difficulties some of the discussions had challenged the existing system and prompted ideas for change (Appendix: Notes from facilitator).

Having explored the grain system from comprehensive perspectives and seeing the broad spectrum of topics and issues, it was time to zoom into more familiar territory and to wrap up the day's proceedings. This was achieved with a SWOT analysis where people were asked to explore the attributes of the community, and how these could influence the development of a grain CSA. There were varying levels of success here too but most produced comprehensible outcomes. In a conversation with a facilitator it was mentioned that this was the most valuable aspect of this workshop. This was also reflected in the evaluations for this section of the workshop (figure 10).

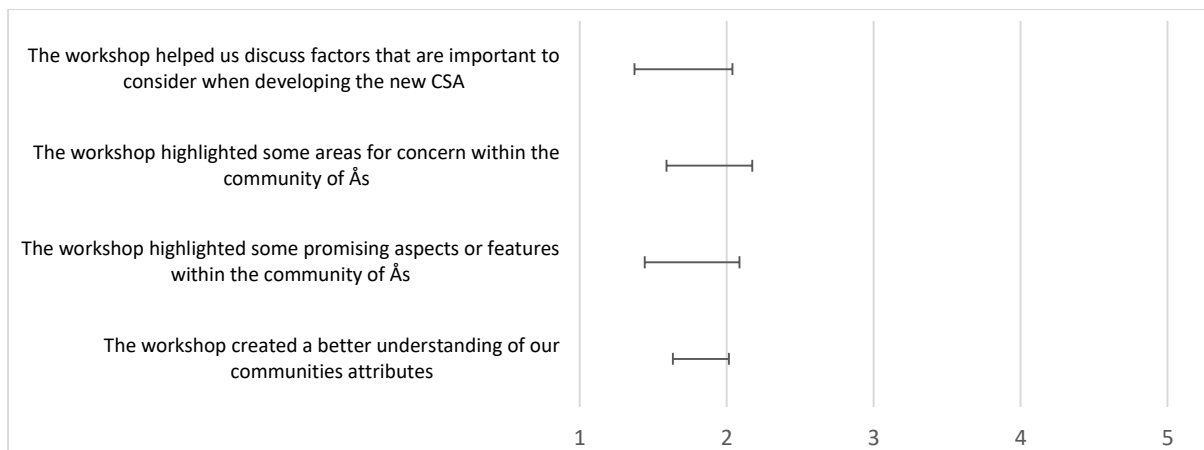


Figure 10. Responses to statements regarding the use of SWOT diagramming in the workshop  
- Likert Scale - 1 (strongly agree) to 5 (strongly disagree) +/- S.D

Upon reflection, the SWOT analysis encouraged participants to evaluate and re-evaluate aspects of their community that would be affected by the development of a grain CSA. For example, although the threat of apathy from the wider community would halt a successful project, this could also be seen in a positive light when it was re-considered to be an opportunity to engage those without interest in the production of their food. Similarly, the growing population of Ås could be seen as a threat when it creates urban sprawl but also as an opportunity when it is possible to engage new people into sustainable initiatives. The interplay that exists between the categories of the SWOT diagram helped people reflect upon an overall picture (which may seem daunting at first) but then in a structured and deliberated manor allowed participants to decide on some key issues to address. (Appendix: SWOT matrix)

### Experiences during workshop two

The second workshop was held approximately two weeks after the first. Again there was a good number of attendees who had signed up on social media and an additional participant, who had been recruited through the attendance of an existing CSA meeting in the town. There were a total of 16 participants of which 9 had attended the first workshop. Workshop groups each contained four people.

Following the energiser and a plenary, the participants were led through a short visioning session where they were encouraged to think idealistically about their desired grain CSA. During this exercise it was encouraging to observe that wry smiles appeared and head nodding was occurring, which suggested that the task was stimulating and promoted new ideas, this was a feeling shared by the participants in the evaluation who responded positively to the statement that “The visioning session was a valuable tool to share and discuss our ideas for the CSA” (-Likert scale- Mean 1.6, S.D 0.3).

After creating these visions, participants were asked to record these visions in text and finally to share these with the rest of their group. Reading over what people had recorded it can be seen that there was varying detail provided, these range from elaborative narratives to bullet points and drawings (Appendix: Participant visions).

These visions showed innovative, thoughtful, idealistic and socially oriented ideas. The social aspects of these visions shone through in numerous cases and community building was a key aspect in peoples envisioned future. One participant conveyed the desire to “Spend more time on important basic things like growing, cooking etc. in a community”, others delved deeper and wanted to “Dream

up recipes using the ingredients from the farm". Experimenting was also a prominent theme, with people seeking a greater diversity of grains and a better variety of products than those which are commonly available in the existing system. Some participants took these community building aspects further, having a more radical outlook, suggesting ways in which the project could eventually reach out to broader horizons such as having a local bakery and brewery, which could create an avenue in which to engage with the general public.

Reasons for the focus upon social aspects of the CSA was given in one participant's discussion of her vision, where it was stated that:

*"I think naturally my thoughts went more towards the community aspect of a CSA than the sowing, planting, weeding, harvesting, storage aspect, and that might be that I just know less about that with grains, I haven't really been close to grain production ever, I was imagining more of the social aspects of the CSA which I see as very optimistic I guess... I don't like to make big claims about society as a whole but I guess I do feel that a lot of people would benefit from having a stronger sense of belonging in a community."*

It was true that very few of these visions provided great detail on the practical side of the agricultural system but neither was this the task's aim or desire. Negotiations of these visions, their validity and logical steps to the design were introduced in the next stages of the workshop by producing a second rich picture and a combined vision of the future. This would be presented at the end of the workshop.

The rich pictures themselves covered a diverse set of occurrences and considerations for the creation of the CSA; from the acquisition of members, the need to locate land, a willing farmer, create a structured core group and consider finances. The participants were definitely making progress towards logical plans which could form the backbone of the project.

More detailed aspects that were also explored included how to move from primary products to tertiary products, such as from grains to breads and/or beverages. The ideas here reflected those in the consumer survey with people mostly focusing on producing in a community environment, but also having the opportunity to produce these products at home; where appropriate and depending upon the capability of those involved.

The choices for processing steps outlined in the survey did not limit the participants' ability to engineer other equally valid solutions to this aspect of their design and a cooperation with a local mill was ruled possible and desirable. A relationship was envisioned in which CSA members could provide labour in exchange for the products of processing, in essence amalgamating the two categories that stipulated either Community processing or Professional processing.

Similarities between the survey results were also seen in how much people would like to engage in agricultural activities, where approximately half of the people said they would like to be involved as much as they wished (Graph 5). This was reflected in the views of two groups who had envisioned and designed a system where people could contribute in areas which reflected their interests and provide as much labour as they wished.



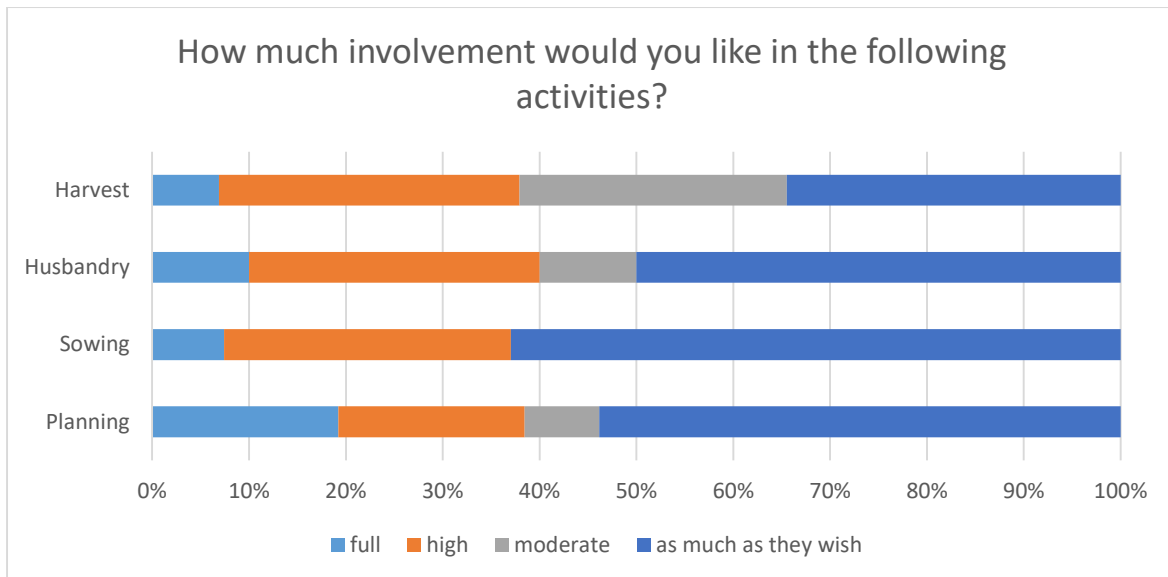


Figure 11. Desired level of involvement from consumer survey. NB: Within the workshops the views of participants differed from those in the consumer survey, the workshop attendees agreed strongly that the “participation in the planning of a community-based scheme was important”

The results for the desired level of engagement in the survey and the supporting evidence from the workshop reflect the current involvement and practical knowledge that people have within the grain system, people are very removed from the production aspects but have more desire, knowledge and ability to be involved in community aspects after the primary production. An innovation stemming from this thought was that people envisioned the agricultural activities as more of an exhibition or experimental activity, where workshops could be held throughout the year to engage those who were interested in agricultural activities. Experiments were a means to test new production practices or new crops which could eventually form part of the CSA.

One participant adequately summed up the desire for a level of freedom in the operation of the CSA in the following dialogue with another participant:

*“When we talk about community, you [Another participant] said there is a sense of belonging which is really important for a community and for me, in order to develop a sense of belonging I need to be able to contribute with something, so then it’s in a way, finding how, how each person fits into that puzzle of building the community and giving that person the opportunity to contribute with that what they have, be it being the person baking bread when we do get together or, or whatever, even the one putting the time to weed or volunteering at the mill to do some hours in order to do the milling.”*

These discussions had proved a demanding task and on occasion conflicts and difficulties were notable. These conflicts were valuable as they challenged the preconceptions and intuitions that people may have had; leading to a more grounded, considered and practical plan for the future. When conflicts were apparent this promoted those people to take different perspectives on the discussion. One such discussion surrounded the decisions that would be made around crop husbandry. On two occasions challenges to the methods of crop husbandry were made; one regarding ploughing vs. reduced tillage and the other on fertilisation technicalities - the final debate was eventually diffused by the facilitator after it seemed that an accommodation and understanding had been reached between the two views.



This group was not the only group who had experienced challenges during this exercise. This extract from the facilitators field notes and reflections also denotes a similar story, albeit a different pattern of interactions between the participants was occurring.

*“A participant hesitated to draw at first, then started suggesting things which I would draw, and finally started drawing. Another participant did not treat the rich picture so much as a collective drawing, but had a large section which was mainly that person's drawings and ideas. This was all a bit tricky to facilitate and I feel like it could have been better.”*

Following the rich pictures, the participants engaged in timelining their ideas. This process turned what were imprecise ideas into more practical and considered plans, which had to consider how each part of the process would be executed and in what chronological order. This moved participants closer to creating comprehensible and convincing strategies that could be followed within the coming year.

Despite these difficulties, the participants on the whole felt that these exercises were a valuable part of the workshop process.

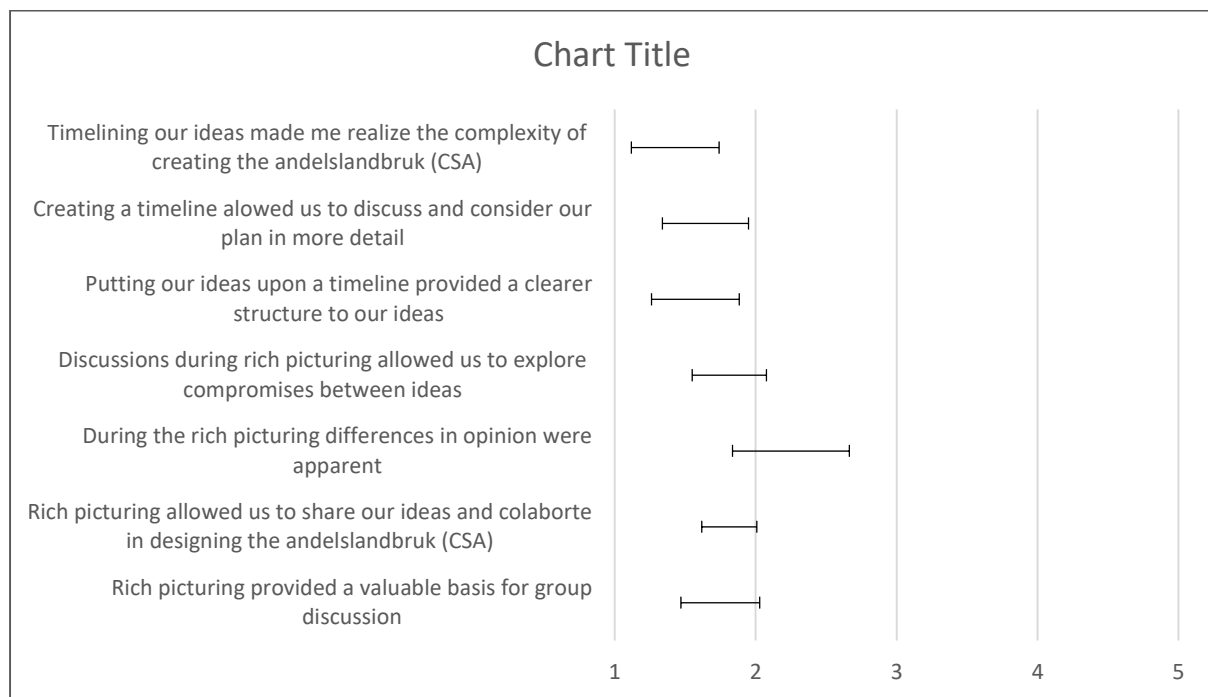


Figure 12. Responses to the use of diagramming in the second workshop  
- Likert Scale - 1 (strongly agree) to 5 (strongly disagree) +/- S.D

With the completion of this exercise the designing phase was over and people would now begin to present their diagrams to the other groups. Presentations involved people sharing their ideas upon the rich picture and then relating these to the timeline. Groups took turns making these presentations and discussion was encouraged after each. The ideas presented showed that people had not only considered what was desirable but also what was feasible in the current context and with the existing resources. Participants had determined planning procedures and the need to create a core group of managers to be in charge of the operation of the CSA, including aspects such as finances and communication. There was a range of ideas of how the community could participate in the project and how the project could acquire more followers. All groups produced a relevant model from which it would be possible to make comparisons and the distinctive plan needed to move things forward.

The process of presenting the ideas was not without its difficulties, some of the initial problems that raised their heads in the production of the collaborative rich picture were also mirrored in these presentations. The conflicts that arose here, were not based on aspects of design; the issue here related to more fundamental beliefs based upon people’s worldviews.

The occurrence is clearly illustrated in the rich pictures of those involved, on the one hand we have pictures which place the community at the centre of the CSA and on the other we have a more economically oriented view of the operation (Appendix: Rich pictures). In the community oriented model, the people are placed at the centre of the picture, where as in the economically oriented model a farm shop is placed at the centre. This was also reflected in the presentations of the respective models where people clearly expressed their different worldviews on how the CSA should be operated.

Presentation 2. Community oriented model	Presentation 3. Economically oriented model
Placed community at the centre of the diagram	Placed a farm shop at the centre of the diagram
Presentation referred to actions and the participants in first person	Presentation referred to actions and participants in the second person
Presentation began: “Our ideas start with the people; our main goal was to involve as many people as possible.”	Presentation began: “First of all, nobody has mentioned the funding, money to start with this, investments. That’s crucial.”
Model desired community functioning and member sustenance before income.	Model sought Income which would enable community activities. “We were thinking one way to get an income for the community was to sell out from the farm shop”
Ideas were less bound to preconceptions or an existing model but were formulated through group discussions: “It might be easier to involve some farmers who are already present.”	Ideas were more bound to the existing CSA model and to preconceptions deeming economics of high importance: “How are you going to rent an area of land without money”
Model recognised that a community already existed	Model proposed the need for marketing and outreach before starting.
Marketing was a product of community activities. “If everything goes well, set up a big party for the community... and start establishing connections.” Inclusion and outreach was fundamental to success, a common plan was desired before outreach to farmers.	Presentation stated the importance of marketing and branding for outreach and the need for money in achieving this. “How are you going to reach out to people? You need marketing and you need to pay for this, you need a good logo a brand; you need to build up that.”

Table 3. Summary of the differences between two worldviews

After the presentation of the economically oriented model, individuals became more vocal in the discussion whereas previous groups had received little reflections or input from the audience. In

their responses participants pointed out solutions to the challenge of economics and also that the economy of the existing CSA was initially based on membership contributions.

*“Maybe the members are prepared to put in and then maybe get it back in the second year or something, maybe there is a longer term plan.”*

And immediately following this:

*“I’m just thinking, the existing CSA is just based on membership, I mean the annual fees payed by members. Which gave, in the first year, it gave us start-up capital for investing.”*

These reactions suggested some objection to the obstacles that were proposed by this particular presentation. But also that this was something that the participants were willing to tackle, innovating ideas and seeing this as an issue with many solutions. The challenge presented was valuable for the participants to think about their ideas from other perspectives. The evaluation responses of the participants to the presentations also depicts that some tension surrounded the designing of a common plan, but overall these tensions were a valuable part of the process.

The approach taken in the presentation tested the views of the community oriented groups and implied them to be flawed. The community oriented participants may have felt that they had already described feasible approaches to start the project and that these ideas were not entirely dependent, or neither desired a focus on the economic aspects of the project. It was also evident in the participant responses to the presentation that even if investments were required there were numerous possibilities to how the economics of their models could function.

In later communication with some of the participants, these thoughts were confirmed. These participants had suggested that the approach taken in the presentation was heavy-handed and created a dominion over their work. Although these participants were not explicit with economics they had given them consideration, not a priority. The participants had instead put more value on the community aspects of CSA and despite the statement that “First of all, nobody has mentioned the funding” it had in fact been mentioned in the previous presentation; a note that was captured by one of the facilitators and it is also confirmed in the recording made of the presentation.

Nevertheless, each model provides a feasible route to develop the CSA, each has its merits and shortcomings and ideally the desirable and viable path lies somewhere between the two. A sustainable path for community resource management in CSA relies on a diversity of ideas, social and economic capital.

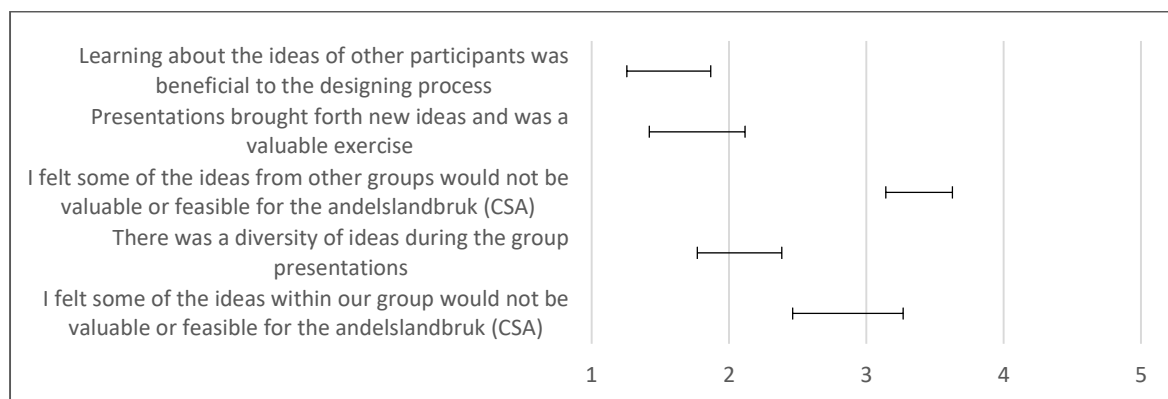


Figure 13. Responses relating to conceptual ideas for operating the grain CSA  
- Likert Scale - 1 (strongly agree) to 5 (strongly disagree) +/- S.D

## Experiences during model comparisons

Model comparison was initially scheduled to be held in a structured public meeting that was comparable to Checklands & Poulter's (2006 p.51) model comparison technique. People were invited to review the work of the previous two workshops, and from these come up with a plan which would incorporate different aspects from the range of ideas that were explored by the participants. The meeting was scheduled for the 07/06/2016 and again included an energiser related to grain. From the RSVP list and expression of interest from key members it was expected that a maximum of 10 people to attend this meeting, and upon starting this was a good estimation. This expectation however, was quickly surpassed with latecomers and the number soon reached double of the estimate, many of these had not attended either of the two previous workshops and had little insight into how or what plans had been conceived thus far.

This was not ideal for the planned structure of the meeting and the plans were abandoned. This is not to say that this meeting did not provide valuable new insights but it did so in an unstructured manner and one which was open to influence from more vocal members of the group.

A rescheduled meeting was conceived by a key participant who suggested that the next meeting should contain a lesser number of select participants; those with a keen interest in the project. From this it was decided that the next meeting would not contain an energiser or be an open event, instead participants who had attended both workshops were invited to attend a new meeting on June 17<sup>th</sup>. Where a more focused and structured meeting would be held.

Four participants and myself were present for this meeting, the meeting provided a platform for people to voice their opinions in a structured manner which was open and democratic. In the meeting there was reflection upon the previous unstructured meeting which described the ideas that were presented here in an uncertain tone.

*"There was definitely a lot of talk and I wasn't sure about the idea of contacting other farms and using their grain."*

This promoted a cascading discussion about actions that were perceived desirable and feasible in the context of what was learned in the workshop and the meeting. This included insights taken from the survey, for instance the question of organic or conventional production. From this discussion a document (Appendix: Development plan) was produced which described the desired plan to move forward.

In concluding the workshop, I quizzed one of the participants, a key player in the resulting action, what was thought of the whole process. In this communication it was expressed that at the beginning of the process the aims of the project were not initially understood by himself, as things progressed however, it was beginning to become clearer; the project was aiming for a high level of participation in designing changes for the community. What was perhaps emerging in the mind of this participant was the thought that self-mobilisation was not just a desirable outcome but an absolute necessity for action to proceed.

## Description of the resulting action

Following the second workshop 12 people (75%) had said they would like to discuss the project further and contribute to its development, a promising outcome. Those who were not interested were uncertain of their plans for the coming year and were perhaps moving from Ås and Norway.

The proposed plan was comprehensive and demanding. The plan itself was posted on the social media outlet and webpage metrics suggested that 28 people had viewed the post. This prompted

responses (on the social media platform) from three people who responded with enthusiasm and offers of assistance. Further assistance was also offered outside this medium in meetings with other participants who were now initiating new separate initiatives related to alternative food networks, and home brewing.

Despite the expressed interest, efforts were not institutionalised into the formal groups that were described in the plan and neither was there somebody who took the role of organising this. This had consequences for the remaining tasks on the plan, one result was seen in the pace that the action proceeded in. Because of the lack of an individual responsible for organising events and social activities these occurrences became spontaneous, sporadic and disjointed and reflected individual's own specific interests, abilities and schedules. This was not an ideal structure and did not promote community development, often times it was uncertain if any action would happen at all. With one of the key aims soon approaching somebody needed to take the initiative to make this aim achievable.

Fortunately, one participant who was involved in all three prior meetings stepped up and organised a meeting with me. This participant was concerned that the proposed plan would not be executed. The participant had discussed with me how the plans for this particular activity could be implemented and began to organise the necessary steps to make this happen, providing evidence that self-mobilisation had occurred.

This included posting a message upon social media where the aim was to get others involved in the preparations for an identified event:

*"We have a great opportunity at the upcoming Green Festival in Ås. It takes place on the 2nd-4th of September. It will give us a chance to involve residences of Ås, local farmers, and promote any events we want to hold. To continue we need a core group who are willing to take on some responsibilities for the rest of the year."*

These efforts received little response, but the participant was adamant that this aspect of the plan should be fulfilled, and the initiative and effort to do so was taken largely by this individual.

The plan for the festival would incorporate a number of the specified aims in the season plan, including community outreach, organising and promotion of further events, probing the desire for membership into a grain CSA, encouraging people to get involved with grains and showcasing the diversity of products that could be made from them. This plan was executed with vitality by the participant, the attendance at the festival was a success and interest and requests for membership to forthcoming events was gathered, reaching a total of 42 people. In addition to this, outreach to local farmers was achieved, with one particular collaborative farming group expressing a keen interest and proposed further discussion about the project.

The success here rested firmly on the shoulders of one key individual. Who despite the odds and challenges took an initiative to make a change. This particular individual was involved and engaged in all stages of the process and also had the necessary skill-set to make this happen. These specific abilities and the participants astute interest in these activities formed the foundations for this participant's involvement.

When asked "What made you take the initiative to do this?" The participant replied:

*"People are always looking for leadership, rather than taking action into their own hands. It's just the way we are taught to act in society."*

This remark made me reflect upon the comment made previously by this participant at the model comparison stage. The understanding that self-mobilisation was not just a desire but a necessity was realised. This suggested that the participant had taken some empowerment throughout the process of the intervention resulting in positive action towards a desirable goal.

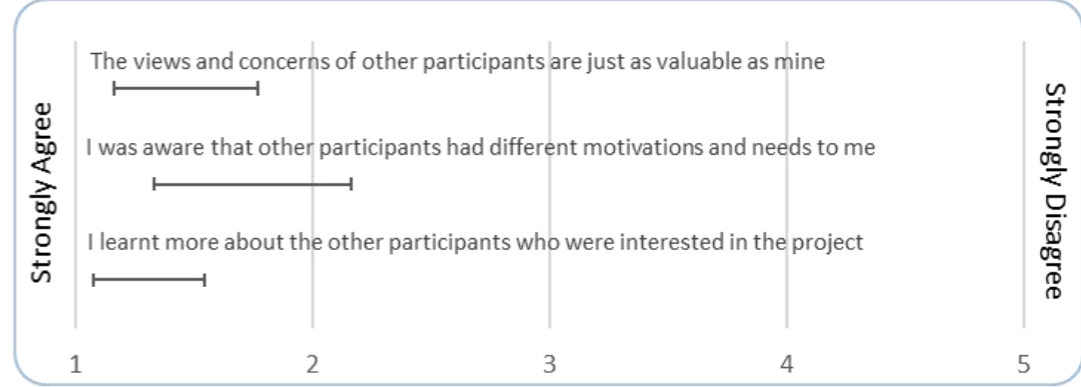




"People are always looking for leadership, rather than taking action into their own hands. It's just the way we are taught to act in society."

Concrete experience- Have the ability to involve themselves fully, openly and without biases in new experiences

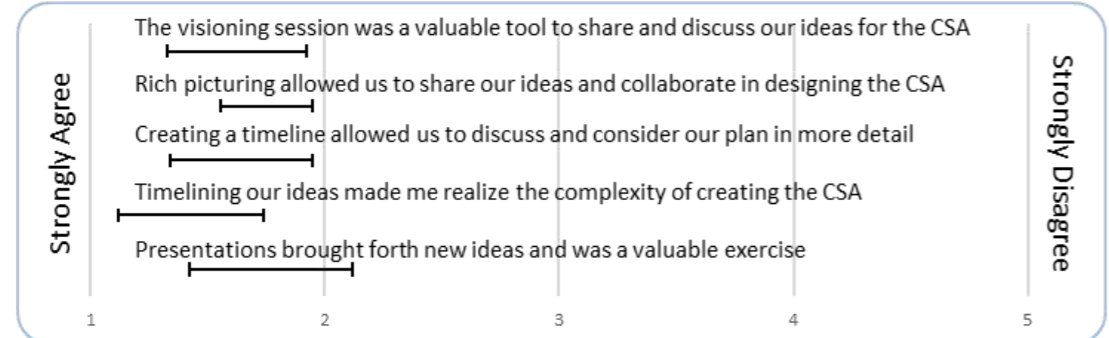
"I think it is not only about being against, we are not working against anything, its not an aim to be against something, my aim is to be coming up with additional alternatives to the food system which we have because you can combine them, and not always thinking I'm against them, so I see this as an additional alternative to producing and consuming food."



"I'm just a scientist in a Lab, very removed from actual farming. So being part of a CSA would expose me to questions that the active farming would bring."

Active experimentation - Have the ability to use these theories to make decisions and solve problems

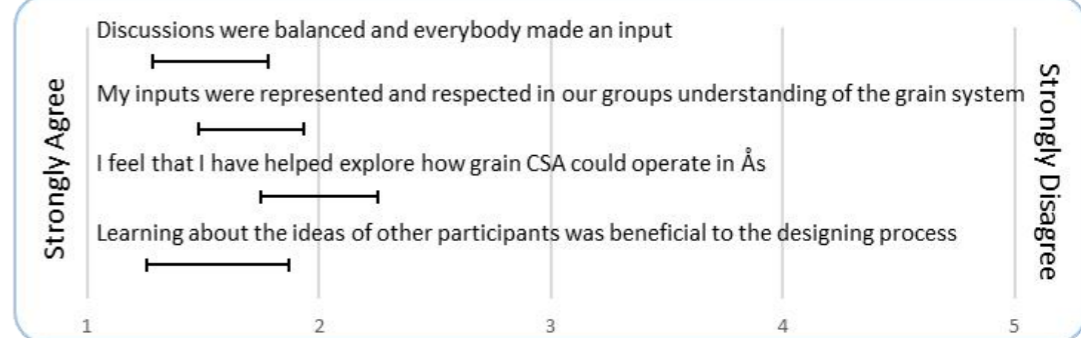
"We have a great opportunity at the upcoming Green Festival in Ås. It takes place on the 2nd-4th of September. It will give us a chance to involve residences of Ås, local farmers, and promote any events we want to hold. To continue we need a core group who are willing to take on some responsibilities for the rest of the year."



"Our Ideas start with the people, our main goal was to try and involve as many people as possible. Ås has a really changeable community, so we have to involve the part of the community that is more stable here... We like the idea of letting people enter the process at any step they have most interest in, so there might be people who are interested in the farming part, some people may just be interested in buying the final product because they dont have time to participate."

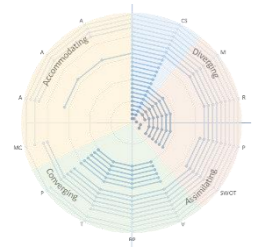
Abstract conceptualisation – Have the ability to create concepts that integrate their observations into logically sound theory

"I didn't realise that [the microbrewery] was so disconnected... at the same time we are trying to gain support from the locals but we are just so disconnected... The yeast is from America... The malt from England... even the bottles are brought from abroad, we use the local water and we sell at the local market. So in fact when you analyse the big picture and how it is connected with the local community, it looks like it is completely disconnected."



"first of all, nobody has mentioned the funding, money to start with this, investments. That's crucial. How are you going to rent an area of land without money? Are you going to pay for yourself, how are you going to reach out to these people, you need marketing, and you need to pay for this, you need a good logo, a good brand and you need to build up that, so for me first of all you need funding."

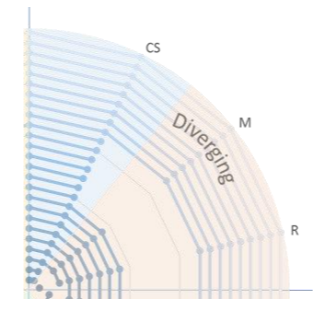
Figure 14. Mixed methods summarising graph



The central piece of the graph depicts participant attendance at each stage of the intervention. Participants are represented by the blue concentric lines. A complete 360° line shows that participants were involved in all aspects of the investigation whereas individual lines show only involvement for that segment.

Shaded areas of the central circle represent the different stages of the workshop:

Consumer Survey	Workshop One	Workshop Two	Model Comparison/Action



Each Quadrant represents a stage of Kolb's learning cycle the Abbreviated labels on the circumference represent tasks of the workshops clockwise from top these are: **CS** – Consumer Survey; **M** - Expression of Motivations; **R** – Richpicture Workshop One; **P** – Group Presentation; **SWOT** – SWOT Analysis; **V** – Visioning Session; **RP** – Richpicture Workshop Two; **T** – Timelining; **MC** – Model Comparison; **A** – Action.

Each Quadrant contains quotations that relate to the modes of learning, these are supported by qualitative results from the evaluation surveys.

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### Personal reflections and parallel observations.

Formal communication of the project began in the latter part of January 2016, which included a rally of emails between myself the general manager, the head gardener and a family member of the landowner, who along with his partner were fundamental in getting the pre-existing CSA up and running. The tone of the emails was positive, with my proposal for the project communicating the desire to have high levels of participation. This was met with excitement and some valuable ideas from one of the recipients. From these emails it was clear that there was interest from the board of the pre-existing CSA.

Resulting from these emails, I was granted permission to formally introduce the project to the members of that CSA at the annual meeting. The response to the presentation was encouraging, and a number of people had questions and commented with some ideas which they thought may be possible to incorporate into the grain CSA. These ranged from contacting farmers already operating organic and alternative grain production systems, involving people from the local asylum centre, to how grains could be used to incorporate laying hens into the existing CSA. These ideas were a little overwhelming, but from my knowledge of community resource management problems, it was not unexpected. Everybody would have and is entitled to their own ideas and views of how a grain CSA could operate and become a reality, and these ideas are to be respected.

Following the meeting a conversation between myself and a board member provided valuable insights and consolidated my thoughts around the general meeting. It was expressed by the board member that the meeting lacked a concrete structure and that these meetings had tended to be inefficient. It was felt that at times the debate descended into topics that were not of primary importance and that this deflected attention away from more pressing topics. It was felt by the board member, that one debate had taken more than its fair share of the meeting's time and that more pressing questions were still at large.

Reflecting upon this, I felt that the feelings of this member mirrored mine when people voiced their spontaneous ideas for the grain CSA. This provided me with yet further justification for having a defined methodology in place, one that could both provide structure to meetings and efficaciously deal with the multiple perspectives within a community resource management problem.

Through this experience it was also beginning to occur to me; that although I had felt I had made my aims and role clear at this point, the other potential stakeholders were not as clear as I had thought. During the discussion at the annual meeting and within follow up emails with the general manager the reoccurring questions that were asked always put me in the decision making role, my default answer to these questions was always along the lines of "I want the community to decide." But I felt that many people saw this as a sign of indecision and uncertainty, a sympathy also held by (Paucar-Caceres et al. 2015). This was not the level of participation I had set out to achieve, I was determined to have people work together in the decision making process, to learn about their own situations and feel empowered to make changes themselves; that is of course, if people wanted change at all.

This phenomenon was a dominant theme throughout the investigation, in conversations with contemporaries it was often regarded or referred to as "your project", It was difficult to separate people from this presumption. I felt that people were looking for leadership rather than understanding that actions must be taken into their own hands – this was evident even when the participants were the ones responsible for designing the project.

My thoughts and one possible explanation for this is that despite the prior interest and an agronomic justification for incorporating grains into the rotation, the support from the existing CSA

was not as strong as I had hoped. The absence of the key individuals was discouraging but was a result in itself. As a consequence of this absence, I could not convey to the workshop participants that the project was initially set up to solve a real problem, and so the project indeed became “your project” to solve a “problem at large” not something that was desirable or necessary to improve agronomic practices in the CSA.

Following the workshops, an equally revealing insight provided to me by the landowner over lunch at the farm, was simply that the interest of the wider community was not there. It was suggested that although there was student interest it would be more difficult to attract other members of the community who did not see value in such a scheme. This is a sound reason and I was very aware that many people were simply curious about the project and weren’t necessarily ready or capable of engaging and taking control in a demanding new project.

The leadership issue was also noticeable during the workshops. Within one particular group they seemed to be generating more questions and obstacles than they were producing novel solutions to these obstacles. For instance: “We are not farmers, how do we grow grains in this climate?” and numerous other questions were asked by one assemblage. In comparison, other groups were able to create innovative ideas to work around similar problems they faced, for example using existing farmers to grow the grains. This showed a level of initiative and self-organisation, showing they were not reliant on leadership and were truly embracing a participatory approach.

When it comes to my own interpretation and feelings around the presentations of differing worldviews, I feel that the approach to the economically oriented presentation was slightly condescending, one statement was made that exemplifies this: “It’s all very well to have these idealistic visions, but for me, I’m working with food production, you need money.” Despite my reservations with the delivery of the presentation there was no doubt value in what this group had to offer and grounding the ideas of people from a conceptual world into reality was necessary, but unfortunately its conveyance was tactless.

Strong views at this sensitive stage were neither necessary nor desirable, pushing this view here was a little premature. I felt the presentation had taken the wind from the sails and deflated the hard work that was put in to give people empowerment. I feel that it limited many potential ideas for change and presented finances as a large obstacle to overcome. This obstacle was perceived to be unavoidable and people would not be able to devise plans that were not so dependent on large sums of financial capital.

My personal view and experience with many community organisations, even small joint ventures, is that people participate for the sense of community and improvements upon their wellbeing. Student organisations at the university are a primary example of this. Many people become members of organisations because they see value in the project and its principles, and in this way the economics (in this case seen as the science of making choices) are controlled more by social than monetary incentives. I feel that this sentiment was shared by the participants who wanted a “sense of belonging” from the CSA, and is also reflected in the consumer survey where the majority of people were willing to pay more for the grains if they were received through a CSA (Appendix: Pricing preferences).

For me, this shows that people were thinking beyond the economic bottom line and were considering other aspects in their economic decisions, such as social and natural capital (see: Pretty 2013). Again, this is also indicated in the consumer survey where most people were willing to pay more for value laden foods (see appendix: Pricing preference).

From these responses and my experiences, it is conceivable that schemes with strong social capital can overcome any financial constraints that a community based resource management scheme may face. Therefore, these schemes are not as constrained by financial capital as was suggested. Social capital is the glue that holds people in CBRM together, if it is strong enough and there is solidarity to the principles then this management strategy becomes a resilient option for resource management. If we neglect these social aspects and do not respect, consider and encourage participants' views and perspectives in the design of their scheme, people may become disillusioned or lose connection with the project. It is conceivable in these instances that people may defect (Pretty 2003), turn to an alternative or revert to a conventional system as they do not feel they receive the payoff to remain members of the organisation; an occurrence that may already be occurring when you consider membership turnover in Norway is as high as 50% (Grande 2009).

Social capital and social learning provide the resilient path for CBRM. Social learning and deliberation have the ability to bring people together, interact and share their values. Without a functional community CSA is less resilient over long time periods.

## Discussion

The results described above show that developing a strategy and creating action in AFN's is achievable through the use of soft systems methodology. Further to this, a process of experiential learning was responsible for instigating this action. By facilitating participants' learning in a cyclical manner expressed by Kolb (1984) pragmatic changes were observed. These changes reflected what was feasible given the participants involved in the intervention and the context that surrounded it.

The platform that was provided through soft systems methodology encouraged constructive dialogue about the resource management problems. This platform and the active participation of actors were prerequisites for learning about existing resources and how participants are integrated into this system. The learning also included recognition and utilisation of multiple perspectives for creating change and allowed a constructive dialogue surrounding the many ideas of the stakeholders; this helped integrate ideas together to produce collaborative resource management plans. On the whole, participants were able to negotiate these preferences with those of others, this process however, was not without its challenges.

Armed with the plans created in the workshops, the process of synthesising the preferences of the participants in relation to what was feasible given the available resources, allowed the construction of a concurrent plan upon which relevant action could be based.

The approach taken in this thesis does not allow us to generalise about its utility in all resource management settings. It has brought to light some important reflections and provides a heightened understanding of problems that must be considered when creating participatory resource management platforms. The results that support these findings are provided by both qualitative and quantitative data and have undergone an analysis process which helps reiterate the interpretation of the observed phenomenon.

From the turbulent progress of the intervention, some key points are revealed that must be considered when attempting to use participatory approaches to community based resource management. This discussion will describe these in relation to the findings of the intervention, in comparison to the work of others and illuminate their implications for the development of community based resource management and CSA. These considerations are that:

1. Learning promotes the development of sound resource management

2. Structured dialogue invites a democratic approach but does not guarantee it
3. The level of participation and involvement will strongly influence project outcomes
4. A continuity in learning may avert conflict
5. The freedom of expression and choice can stimulate pragmatic action

### Learning promotes sound community resource management

The results presented portray that learning through community deliberation was a catalyst for action. Without the intervention directed, relevant and feasible action towards change could not have been guaranteed and may have never been initiated.

The qualitative and quantitative results describing the experiences of the participants suggest that the stages of the learning cycle were achieved at the respective workshops and at the model comparison stage. Qualitative results highlight some prominent examples of these instances, whilst the quantitative results project these occurrences on to the remaining participants.

A limitation of this projection is that it neglects the extent to which learning occurred in each individual, but given the limited resources and the ambitious nature of the study (normally undertaken in teams: Pretty 1995) the embedded design was appropriate. It allowed what limited resources were available to produce results that can provide some indication to the outcomes of the whole study population.

The participants demonstrated an ability to think critically on their actions; for instance, the brewer and the question of 'local'. They were keen to contribute to helping others learn; as shown by the explanation of what monocultures are, and they relished the opportunity to be able to contribute their own knowledge and ideas in a collaborative setting; as evidenced by workshop one statements, my observations during the visioning session and workshop evaluations. These all suggest that positive attributes for the management of CBRM were achieved during the workshop sessions.

With referral to the pragmatic methods suggested for managing CSA (Soil Association 2011), a noteworthy illustration of how collaborative learning could influence the outcomes in CBRM is provided when you consider; what extent learning was promoted by the completion of the consumer survey alone. The limitations of surveys are too well known. In community resource management situations, they are particularly inept because they provide no opportunity for negotiating personal preferences against the resources or the social context in question, and they will tend to solidify personal preferences and thus limit the capacity for adaptation. Responses to surveys are also limited by the categorisation of answers, which provide little room for innovative ideas. And finally, the analysis of the results excludes the community which subjects the data to biases and preconceived ideals of those in possession of this information.

Any learning promoted on this level is severely handicapped and would not produce the understanding, collaboration and adaptability needed for sound CBRM. A poignant question resulting from these factors is to what extent can we expect people to act upon plans that are not truly conceived by themselves? And have survey respondents learnt to adapt or think critically of their own actions and values, therefore can this level of involvement be sustained?

In answering these questions, a community scheme based heavily on survey results severely limits the extent of participation and would fall under the typology of participation by consultation. This is a relegated level of participation; the participants will have little stake in maintaining structures or practices if the incentives to do so are inadequate (Pretty 1995). Community projects which are developed with a strong emphasis on quantitative results from surveys are less resilient because of

this. Looking explicitly within CSA, community members are under no obligation to maintain their involvement if they feel that incentives are inadequate. Those individuals may choose to defect from the scheme with obvious ramifications for the remaining members and potentially the project as a whole.

Conversely, results from the participatory phase of this investigation showed that people were gathering new insights from their fellow participants, they learnt more about the context of the management problem and were able to innovate ideas and plans based upon this understanding. Ultimately this meant that participants were able to design feasible systems that reflected their own interests and abilities, and that the participants had learnt their way to defining strategies that they could operate. The result from this was that participants were able to embark on action that incorporated these abilities whilst also showing that they have achieved a level of adaptability towards this resource problem.

Individuals and groups who are given the opportunity to learn about problems, design innovative solutions and implement these as collaborative plans are more likely to arrive at positive outcomes for those involved (Pretty 1995). The positive relationship between learning, education and sustained positive collaborative action is supported in numerous variations of the behavioural experiment; the prisoner's dilemma. In these cases, people who are given the opportunity to have dialogue with others in a cooperation dilemma collaboratively learn and create innovations which are beneficial to all parties (Dawes, McTavish & Shakelee 1977). This finding is also mirrored in the level of education of participants, Individuals with higher level of education are more perceptive, and likely to arrive at mutually beneficial arrangements (Jones 2008). Further to this, cooperation can be prolonged when people see that others are investing in the same strategy (Nowak & Sigmund 1993; Pretty 2003).

Innovations, new knowledge and perceptive insights that fit the context of the problem being investigated were observed on numerous occasions in the results from the workshops and successively in the resulting action. This provides evidence that collaborative learning and deliberation can be effective for dealing with CBRM problems. The findings here are also supported by similar studies of real life phenomenon where a focus on learning produced positive and directed action for communally managed resources (Armitage et al. 2011; Daniels & Walker 1996; Schusler, Decker & Pfeffer 2010). This supports the notion that strategies with a focus on learning are able to avoid "Tragedy of the Commons" type scenarios (Senge 2014 p.140-144).

The historical thought on CBRM proposed it was the members of the community that had to learn to adapt to the guidelines proposed by researchers and/or management, whereas modern understanding and this study suggest that movement towards sustainable management of resources; that is inclusive and democratic is also achievable with the extensive participation of those involved (Pretty 1995). Longer term sustainable strategies need to be based on this thought, but the level and reasoning for participation must also be given due consideration. Participation should not be seen as a method to coerce people towards set plans and achieve goals, rather it should be viewed as a fundamental right that moves us closer to sustainable community resource management (Pretty 1995).

#### [Structured communication, invites democracy but does not guarantee it](#)

Participant learning was promoted by the structure of the intervention. Participants confirmed this through both their remarks in the workshops and through the quantitative results obtained in the evaluation surveys.

The structure of the workshop provided a platform for individual expression of motivations and design preferences, as well as group based activities including co-learning and the negotiation of individual preferences. Despite the presence of these platforms and the learning that surrounded them, it was evident that although democracy was invited, it was not guaranteed.

The value of structure was particularly evident through the mishaps of the project (for instance, the initial attempt at model comparison) and my experiences surrounding the communication of the project at the pre-existing CSA meetings. In these instances, the lack of structure led to unclear, undefined and inefficient outcomes that were open to dominance from vocal individuals. It is therefore desirable for a clear methodology to be outlined in participatory approaches to resource management. One consideration I must advocate in using the methodology is to be “optimally underprepared” (Chambers 2002), meaning there can be little control of how action may proceed. A level of flexibility is desirable, taking this approach was beneficial during the initial attempt at model comparison and when workshop tasks were too demanding for weary participants.

The adaption of the methodology that occurred in this investigation was as a response to what I see as shortcomings of the SSM approach; first and foremost, as alluded to, time was not a luxury. Although being patient in processes of deliberation are likely to improve outcomes (Jones 2008), my experiences in this workshop and others is that short constructive activities are desirable to maintain interest and concentration. To suit this ideal, the workshops in this investigation were approximately four hours long and had varied tasks, but even within this time period people became lethargic towards the end of each workshop. My approach to SSM omitted many of the activities described in “A fleshed-out account of SSM” (Checkland & Poulter 2006 p.23). The approach taken was more in line with “The iconic representation of SSM” (Checkland & Poulter 2006 p.13).

Apart from time constraints, I feel that the “fleshy” account of SSM is too demanding for a sole and relatively inexperienced user. In addition to this, Checkland & Poulter (2006 p. 46) make a referral to Miller’s (1956) celebrated paper which suggests that we can cope with around seven concepts simultaneously. If the “fleshy” methodology is used, then there would be too many new concepts for new users to deal with in my workshop schedules. Participants not only have to comprehend the tasks involved in SSM, but also juggle with new knowledge that is generated during the process of deliberation. I feel the structure provided by the “Iconic” version of SSM was adequate for this particular investigation.

Facilitators of the workshops were fundamental in maintaining the structure of the workshops and mediating any differences between individuals. In certain circumstances however, difficulty in facilitating was apparent because the methodology has a limited capacity to deal with contrasting views, and relies heavily on convivial participation, and the learning of participants to bring about desired changes and democratic outcomes. Similarly, when the strong views of the economically oriented group were put forth, there was no predetermined mechanism to deal with the strong delivery in a constructive manner. The condescending tone left people feeling like they were “being talked to as if you've done something wrong” (personal communication with participant). This Perhaps limited the extent of empowerment resulting from the intervention as people felt their ideas and plans were inadequate.

In other studies, the use of soft systems methodology has been complimented by the use of conflict resolution strategies (Daniels & Walker 1996). In hindsight, this may have been a desirable approach. Such a clash was not anticipated and mediation by facilitators was deemed adequate for dealing with such issues. In backing the utility of SSM it is stated that the methodology can be adapted to

suit the needs of the study in question (Checkland & Poulter 2006). Perhaps my naïveté towards the potential for such an occurrence opened up the intervention to these problems.

Another key technical aspect of this study was that the analysis of the problem and the planned route for change was conducted by the participants. Allowing this to occur was fundamental for bringing about action, as the results truly reflected what was desirable and feasible for the participants. In contrasting this approach to other studies, it is seen that when analysis is left to individuals outside of the problem itself or management, people may manipulate the direction of the study, whether consciously or not (see discussion: Macadam et al. 1995). This shortcoming is a major criticism of some approaches to SSM as it does not account for biases that SSM users may have.

A procedure that provides some redemption for the lack of a conflict resolution strategy, is that during the production of this report I have provided the opportunity for the participants to evaluate the interpretations of their actions. Hopefully this provides some opportunity for reflection and will perhaps be taken into account if similar situations arise. In taking this approach I am advocating Pretty's (1995) approach of writing reports with working hypothesis and propose that the learning resulting from this is a non-confrontational mechanism to manage different worldviews.

The need for a conscious analysis strategy (such as hermeneutic phenomenology) is eluded to by both Checkland & Poulter (2006) and Pretty (1995), however neither were explicit in describing a specific means to achieve this. Through the use of hermeneutics in this study, I encouraged the continued communication and revision of the conceptions that the participants and I held. This undoubtedly improves the trustworthiness of the findings and prolonged the engagement in this study. The use of hermeneutics helped identify biases in my interpretation and has led to higher quality of knowledge in the participants, for the academic community and for myself.

### Continuity in learning may avert conflict

This aspect is inherently linked to the preceding discussion points but elaboration in reference to the learning cycle is provided here. The results suggest that a continuity in learning may provide a mechanism to alleviate the conflicts that became apparent during the workshop process. Differences in opinions may have been accentuated by the absence of participants at previous stages and had not gained the desired range of experiences from the preceding workshops.

The sampling methods used returned individuals with high levels of affinity to the aims of the project, this in turn produced rich data from the healthy interactions and dialogue. However, because Participation was upon a voluntary basis – and although the best efforts were taken to accommodate the schedules of all individuals– it was an arduous task to schedule workshops to suit all needs, and some people were simply not able to attend. In reflection, what this produced was an asymmetry in the learning of individuals, and this may have precipitated some of the shortcomings that were observed.

The exploration in the first workshop was successful in identifying the desires of the community, their preferences for change and their motivations to create this change. The visual presentation on Prezzi.com (Appendix: Prezi presentation) and the plenary used in the second workshop aimed to bring new members up to date with the progress of the first workshop, but it could never deliver the same effect of having these experiences first-hand. The details, depth and the complexity of issues addressed were too great to be condensed into a five-minute plenary, and my evaluation could not do this justice.

In this respect, those members who had not attended the first workshop had not experienced a stage which focused and encouraged them to involve themselves fully, openly and without biases in new experiences, or reflect and observe their experiences from many perspectives (Kolb 1984). Additional evidence of this is provided when you consider the difficulties that were experienced in facilitating this group.

These are important attributes for those engaging in community based resource management especially when the desire is to produce common goals to move forward. In effect those individuals without the experience of the first workshop may have become, what Kolb (1984) describes as specialised around one dominant mode of learning. This does not mean that other stages of learning were not comprehended and that those participants had no indication of others' views, it simply means that their views were skewed towards one side of the dialectic.

During this study the differing worldviews were pronounced during the second workshop and half the members of the economically oriented group had not been present during the first workshop. The second workshop required participants to engage in a phase where abstract conceptualisation was the dominant dialectic, dominance towards this dialectic results in a sense of play (Kolb 1984). The perceived playful nature of this workshop (although part of a bigger process) may have incited the opposing reaction of the economically oriented participant. Having not experienced the prior workshop, this participant's reaction showed a reduced capability to be open to new experiences or observe experiences from multiple perspectives; which had previously stated a desire to focus on socio-ecological factors rather than economics.

This kind of asymmetry should not be allowed to occur if learning is to be a major contributor to community based resource management. This dominance in dialectics is observed much in the same way when you consider a survey can reinforce personal preferences and therefore limits the ability for conceptual assimilation in groups and similarly, an unstructured public meeting can limit reflection and ability to accommodate the perspectives of others - if vocal individuals dominate. Learning in these instances is restrained by the dominance in one side of the dialectic, it is difficult to reflect whilst acting or be concrete and theorise. This reinforces the view of Kolb (1984 p. 31) that quality learning (and therefore sound community resource management) needs a movement through all stages of the cycle:

*“At the highest stage of development, the adaptive commitment to learning and creativity produces a strong need for integration of the four adaptive modes. Development in one mode precipitates development in others... Thus, complexity and the integration of dialectic conflicts among the adaptive modes are the hallmarks of true creativity and growth.”*

From these experiences CBRM can benefit by ensuring a continuity in the learning within individuals. Maarleveld & Dabgbégnon (1999) Present similar thoughts in their evaluation of platforms for common pooled resources, these authors focus on the accessibility, attendance and the membership to the process of deliberation, noting that absence results in failing management approaches. More closely related to this study, Daniels & Walker (1996) showed that people who attended the whole-day's proceedings of their ecosystem management workshops, were more likely to respond positively to statements about the utility of the approach, than those who attended only part of the workshops. This justifies that continuity in the learning and deliberation process can increase commitment to collectively decided goals. These changes are the key to transforming people's experiences towards more sustainable practices.



### The Level of Participation and extent of engagement will influence project outcomes.

Building on the previously mentioned points, the extent to which participation and engagement is achieved will inevitably influence project outcomes. Although the sample for the workshops was one which provided a rich description and experiences necessary for this thesis, these results are limited to the participants that were involved – who had expressed a keen interest and had an affinity with the project. Even within this sample the participation, engagement and interest of those involved varied from a mild curiosity to the recognition that this represented an opportunity to create meaningful change in the community.

Within the research the sample consisted primarily of students and the remainder was made from ex-students. Although there was an interest from those outside of these groups their involvement was limited to the consumer survey and in providing some vague suggestions at public meetings. Further to this the involvement from the existing CSA members and the management board was also limited. This highlights the struggle that is part of bringing about a collective process of social improvement needed to create democratic food systems.

To this extent, is it necessary and desirable to develop institutions for resource management in this participatory and democratic manner? Another valid option for development is to rely on innovations from individuals or authoritarian control to guide the development of alternative food networks and community resource management. This approach will inevitably provide more controllable situations for managers, but in the words of George Orwell “Revolutions only effect a radical improvement when the masses are alert.” This statement provides justification for building alternative food networks and community resource management strategies which actively engage people, and help develop a deeper understanding of actions and the consequences thereof. If we neglect this, we may simply be seeing what Orwell describes as a change of masters - to which progress will be tethered.

If we are to create a genuine change and see longevity in this change then we must look astutely at the level of participation that is occurring within these movements. Generally, participation in CSA falls into two categories, participation for material incentives and functional participation (Pretty 1995):

- Participation for material incentives involves the contribution of resources (for example economic capital) in return for material incentives (produce from the production system), participants are not involved in either experimentation or the process of learning. Yet when the material incentives end people have no stake in maintaining practices when these incentives or the payoff for doing so ends.
- Functional participation is seen as a means to achieve project goals; this differs from the above in that people may have the opportunity to contribute to decision making but may only be able to have a narrow influence on the direction of the project, with predetermined goals paving the path of the development.

In CSA, these levels of participation reflect instrumental and functional levels of involvement (Pole & Grey 2013). My aim in this work was to transcend these levels of participation into ones that gave people a stake in maintaining the structures and practices that they create, falling under the typology of interactive participation (Pretty 1995), and a collaborative model in the CSA literature (Pole & Grey 2013). This was the continuous battle of the investigation. Although my initial involvement was from the desire to help introduce a rotation to improve agronomic practices in the existing CSA, my ability to express this openly to participants was waived through a lack of

involvement from the existing CSA. In hindsight perhaps I had overestimated its need. This relegated my approach to functional participation because the project goals had already been stated and a predetermined model of production was presented.

Without an invested interest from the existing CSA, people associated this project as a goal of mine, the external agent, but this was never my intention. Having said this, in any participatory process, there is always a tension between participation as an instrumental means of accomplishing something and participation as an end in itself (Greenwood & Levin 2006 p. 190). Given this tension and the level of participation achieved the likelihood that the project will continue after my involvement is questionable.

Despite this, I still feel that the resulting action reflects the people of the project. The initial goal of the grain CSA was not reached and instead the experiment produced outcomes that represented the participant's ideas, their capabilities, and has also helped promote action in other unrelated projects; these are the success stories of this project.

### Freedom of choice can stimulate action and increase performance.

Despite the project's difficulties and the relegated level of participation, outcomes and action can be seen as innovations of the people involved and rather than progressing in leaps and bounds, they can be seen as progressive changes. People became motivated to act upon these plans because they had ownership over the ideas and therefore a stake in executing them. This ownership was created in a process which encouraged participants to have freedom to express their own views and make informed choices based upon their own abilities and knowledge.

From the results of the survey and the dialogue in the workshops, many participants felt that a level of freedom was a beneficial aspect of the design. It was felt necessary that for people to feel a sense of belonging they should have the freedom to contribute where their interests may lie, and many felt they would like to contribute only as much as they wish to specific and required tasks. It seems counterintuitive that a CSA could operate in this manner whilst also maintaining functionality, but there is convincing evidence suggesting that this approach can be achieved and can be desirable from managerial perspectives.

In this study, it was observed that very few people had technical or practical knowledge of grains. One prominent example of this is reflected in the comment of one participant who asked "How many times a year do you harvest grains?" This response highlights the lack of involvement people currently have with grain production, which inevitably results in major challenges to operate the grain CSA under the same model as the existing CSA. This finding coincides with that of Hvitsand (2016) who concludes that relevant agronomical competence is a major barrier for developing CSA.

Despite this problem, participants moved around it and were able to design the model upon their own desires and capabilities; for instance, one example is provided by the suggestion to incorporate existing farms and farmers to ensure production, and having a smaller plot for those looking to experiment with new ideas. The most prominent example of how this freedom was beneficial is seen in the resulting action, the participants who had sound knowledge and capabilities of tertiary processes such as baking and brewing were able to mould the design around these abilities, which then eventuated in concrete action.

The participation of the key individual mentioned in this story resulted from the freedom to contribute in an area where this person had particular competencies, and possessed the necessary resources to create action. This participant was involved closely with the project at all stages and

had contributed ideas throughout, there was a continuity in learning. The result was that not only was the project shaped by this person but also the motivation to act upon this design was also more likely, through a heightened sense of ownership (Pretty 1995).

We can also relate these experiences and actions to sociotechnical change: “It is impossible for a worker to operate a lathe unless the worker has the skills to understand how to set the piece in the chuck” (Greenwood & Levin 2006 p.20). Much in the same way it is impossible (and undesirable) to operate a CSA without sound knowledge, availability and willingness of the human resources in question. Sociotechnical change advocates making changes in technological aspects in tune with changes in social/organisational areas, seeing them as inseparable elements in a web of interactions (Greenwood & Levin 2006 p.20).

Our existing and dominant sociotechnical regimes are a major constraint on developing alternative food networks (Wiskerke 2003, Gliessman 2016). Wiskerke, (2003) demonstrates that transition to alternative grain production systems are, amongst others characteristics, hindered by the zeitgeist. By focusing too heavily on technical rather than societal aspects of change the alternative grain movement investigated by this author fell short of its potential. It was concluded that the alternative model was a good example of successfully building a new food supply chain, but a poor example of establishing a viable one that could continuously meet changing societal and consumer demands.

Neglecting communication of values, experiences and societal aspects of CSA and CBRM, we limit the potential of new sociotechnical arrangements and therefore reduce the leverage for making larger and important changes to existing regimes, organisations and politics in our food systems (Hvitsand 2016; de Molina 2015; Wiskerke 2003).

Having said this, building new managerial approaches are not without their limitations, participatory development strategies are more financially demanding, require greater human resources than their authoritarian counterpart (Irvin & Stansbury 2004, pretty 1995) and in the modern political economy they are a relatively young strategy, suggested to be more unstable and short-lived (Ferguson 1981). Given these facts, it is not surprising that managers have shown unease in handing control over to others. These managers may feel they have the knowledge necessary to guide progression and know what is best for those under their jurisdiction. Often times this is not quite the case, and the fear of losing credibility and certainty in their managerial abilities is accompanied by the dismissal of abstract and uncontrolled direction (Paucar-Caceres et al. 2015), the paradox here is that managers both require participation and fear it (Pretty 1995).

Examples of people-centric and liberal approaches to management have yielded results that have surpassed the typical hierarchical structure in management of today – not only economically but also through increasing the social wellbeing of participants (Semler 1989), these examples range from large multinational businesses (Ibid) to regional community Bakeries (Ferguson 1981). By focusing on the participants of the resource problem, community oriented approaches have a legitimate capability to provide economic, social and human types of capital above and beyond economically focused institutions (Pretty 2003).

The challenge for our society then becomes to change the psyche of the people; from those with authority, those with honoured knowledge, and those who make up the body of society. People need to become aware that letting go of the reins and privileging somebody else with the opportunity to take more control will not inevitably end in disaster, that people are capable of steering their own lives and have equally valuable ideas and knowledge to contribute. This change of

psyche can allow a collective process of social improvement; *democracy*, that can potentially lead to more sustainable journeys for all involved.

## Conclusion

The outcomes discussed here have shown that there were many challenges to the bottom-up development of community supported agriculture. Learning was a prerequisite for the action produced but its impact upon the participants was not as prevalent as was hoped, reasoning behind this suggests that both the overall level of interest from the community and the typology of participation achieved are primary factors influencing this outcome. Further to this, the desired plans were not formally institutionalised which reduced organisation of the group.

Soft systems methodology was shown to be a viable tool to catalyse inclusive management of resources, yet its application as an initiating mechanism was limited by some of the phenomena described in this investigation. Further to this, community schemes often require direction and nurturing from one passionate individual or group of persons. If a more consolidated and definitive project were undertaken with the support of key individuals, in an institutionalised setting, then I have no doubts that the methodology taken would be more fruitful.

Despite the setbacks, the use of a defined methodology in management of existing CSA & CBRM institutions is promising, from the results obtained it can be seen that there is great value in action oriented inquiry into community resource problems, including a heightened understanding of participants to; the resource in question, of qualities in their community and of other participants. Connections and friendships were also forged in this process showing that social capital was also generated during the intervention. All of these factors are positive attributes to develop sound community based resource management, further research using SSM in developing alternative food networks is likely to provide dividends.

The fundamental resource in all sustainable food systems are the people (Feenstra 2002). By focusing on the development of a community in CSA the positive attributes above are obtainable, with further cycles of learning, participants would become more astute to these factors eventuating in a process of deliberation that is more likely to produce sustained outcomes. In contrast to this, approaches which fall under the typologies of instrumental or functional models of CSA, with low levels of participation, limit the potential to make positive societal changes that are needed to accompany and compliment this emerging agroecosystem management strategy.

Without these changes the longevity of such models is limited and will perhaps diverge into forms which do not reflect the core values promoted by CSA's today. CSA and alternative food networks in Norway and Europe are seeing an explosive increase in numbers, enthusiasm is high but if parallel changes are not seen in the values of the actors can we expect this development to be sustained? Within Norway warning has been given regarding these observed increase in numbers, suggesting that this will be accompanied by a dilution in the core values and agroecological practices currently employed (Hvitsand 2016). This is where the role of participation, deliberation and social capital can aid these movements. Learning and recognising these values is a key component to bring about the sustained changes that these movements seek, participatory action research and experiential learning is a promising way to involve people in this process.

Finally, engaging in community based resource management and CSA will require a fundamental change in people's lives. These changes must be learnt, new values must be created and old one's forgotten. These new values will also have to be reinforced and acted upon with integrity. A thriving

community is a key target in the management of CSA, this can promote and maintain these values, lead to financial stability and the ability to attract higher political interests; grasping a stronger influence on supportive policies. Functional or instrumental models with low levels of participation will perhaps look well in the financial books, but unless they achieve community cohesion, sustain changes in participant values and generate social capital their true potential is lost.

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## Appendix

### Flyer:

**Bli med å skape framtidens for lokalsamfunnets mat produksjon!**

<https://www.facebook.com/groups/Aaskornsamfunnet/>  
[Aaskornsamfunnet@groups.facebook.com](mailto:Aaskornsamfunnet@groups.facebook.com)

**Community Influence**

From seed to harvest and through to consumption the community can shape their grain system around themselves.

Examples of community involvement range from *Passive*: Having farmers plant and harvest grains with conventional equipment to *Active*: where community members can take control of the production system employing hand rather than diesel power...

**Involving The Community**

Modern grain production is highly mechanised, input intensive and has very little community involvement. This has had negative effects upon our environment, our appreciation of food and our health.

Community grain movements have begun to turn this around by promoting the social, economic, cultural and health benefits of high quality organic and/or locally produced grains.

The beauty of the approach of andelslandbruk is that the community can decide how they desire their production to be run - Hopefully in ways that benefit the entire community.

**Creating The Change**

The process of creating the community grain system should serve as an experience where knowledge is created in combination with action.

This involves people becoming more aware of their current supply system and surroundings. Then, using this this knowledge we will vision changes that lead to positive action.

There are numerous possibilities for your local grain supply system, the only limitation is your imagination.

I hope you would like to join our journey to create a local grain community!

**The Finished product**

Modern Agriculture and the industrialised production of foods has disconnected people with their food.

Food now takes longer and travels further to reach our plates than ever before. The convenience of picking up a loaf of bread in the supermarket has lead consumers down a road where they have little understanding of the product, its ingredients or how it is made.

We can link this issue to numerous problems that we are facing within our food and farming systems.

Grains and bread have been a staple part of our existence and a central part of our food culture. We must take action as a community so we can protect this part of our culture for future generations.

Contact: Rhodri Hardy  
Email: rhodri.hardy@gmail.com

### Consumer Survey:

<https://no.surveymonkey.com/r/QYWYMR> (Norwegian)

<https://www.surveymonkey.com/r/VPP6Z5R> (English)

### Workshop 1 evaluation:

<https://www.surveymonkey.com/r/X2SDWGN>

### Workshop 2 evaluation:

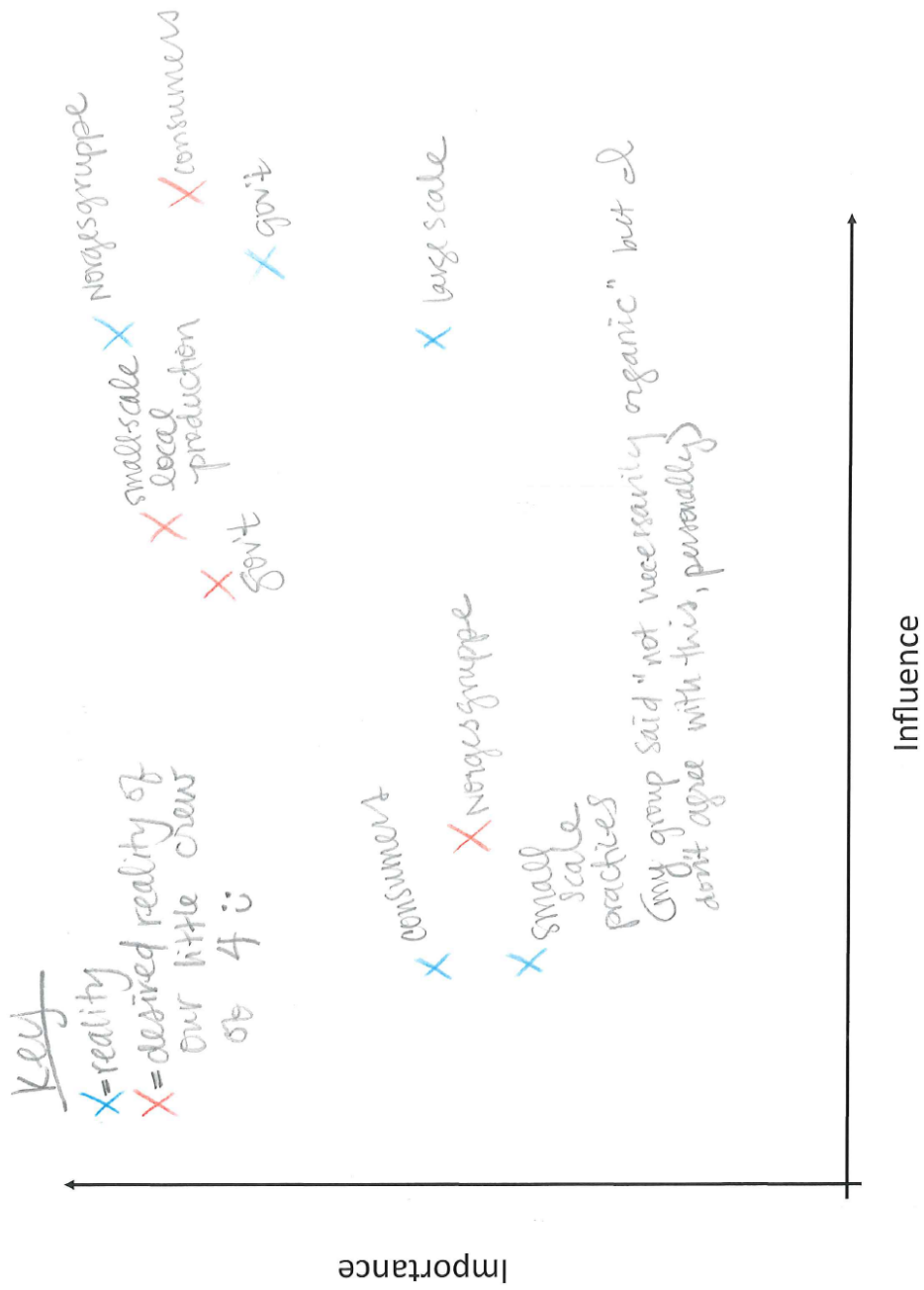
<https://www.surveymonkey.com/r/CQYPL8T>

### Prezi presentation:

[http://prezi.com/v2vdz3nzgrj0/?utm\\_campaign=share&utm\\_medium=copy&rc=ex0share](http://prezi.com/v2vdz3nzgrj0/?utm_campaign=share&utm_medium=copy&rc=ex0share)

All web material available on request.

Importance/influence graph:



Notes from facilitator:

- Awareness so more ppl buy these products.
- I know I should use BUA but buy everything at supermarket b/c easier
- Is farmer bound to contracts w/ Fellesk!t or can they grow what they want?  
Are they being paid fairly? We don't know.
- 
- Farmers imp. but low influence. Could they organize? Would Fellesk!t help?  
Does system look different to organic farmers?
- Farmers could organize if they were sure they had alt. buyers
- Consumers have a lot of influence, or could, but may not want to... but need alts to be created eg by govt
- Local communities easier for ppl to organize  
If only one thing to change, single cases - easier.
- Big supermarkets very influential but they could be less important, ∵ there is competition.
- Small markets/stores should be more important, they connect farmers & consumers

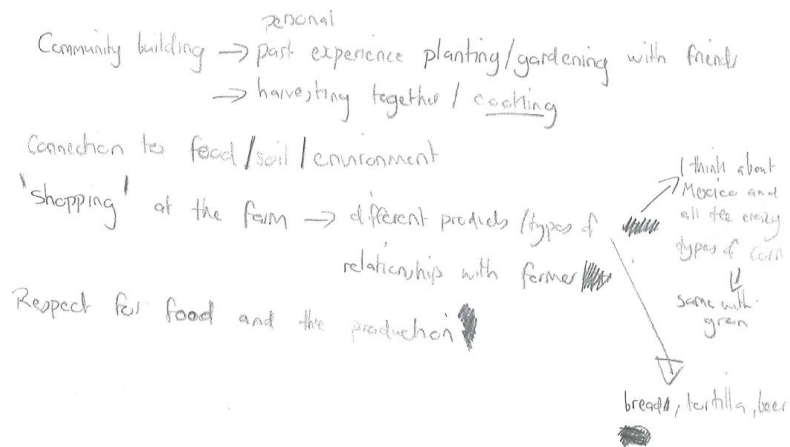


SWOT matrix:

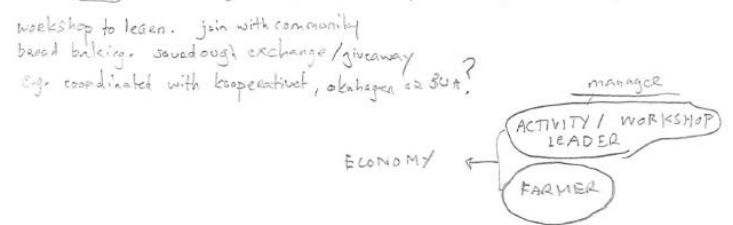
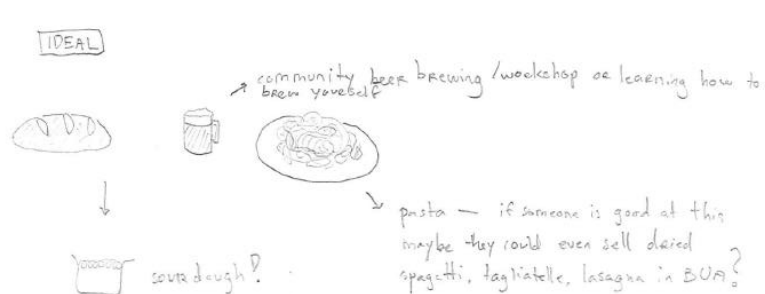
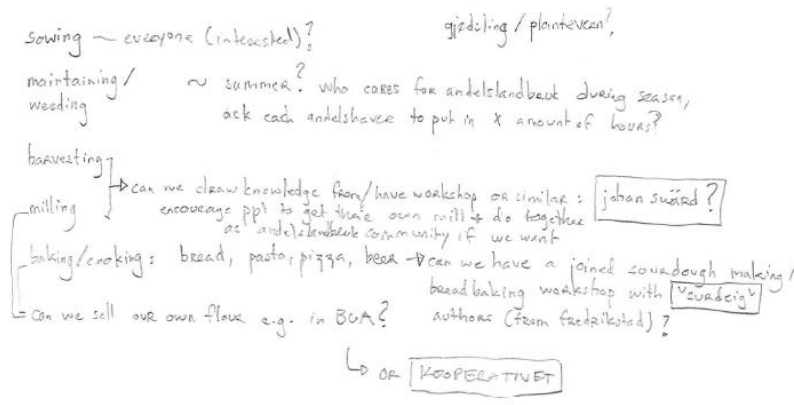
<p><b>STRENGTHS</b></p> <p>1. <i>ying</i></p> <p>2.</p> <p>3.</p> <p>4.</p>	<p><b>WEAKNESSES</b></p> <p>1.</p> <p>2.</p> <p>3.</p> <p>4.</p>
<p><b>OPPORTUNITIES</b></p> <p>1.</p> <p>2.</p> <p>3.</p> <p>4.</p> <p><i>ying</i></p>	<p><b>Opportunity-Strength (OS) Strategies</b></p> <p>Use the strengths to take advantage of opportunities</p> <p>1. Growing population → Research Op</p> <p>2. Preexisting community in AS interested in Alt Food Networks → growing pop/sustainable long term base for the scheme</p>
<p><b>THREATS</b></p> <p>1.</p> <p>2.</p> <p>3.</p> <p>4.</p>	<p><b>Threat-Strength (TS) Strategies</b></p> <p>Use strengths to avoid threats</p> <p>1. Strong interested, already</p> <p>2. organized community (spine, budget)</p> <p>can overcome larger financial &amp; external interests</p>
<p><b>Opportunity-Weakness (OW) Strategies</b></p> <p>Overcome weaknesses by taking advantage of opportunities</p> <p>1. Gr</p> <p>2. Growing pop of non-students can overcome the interested but time/money scarce students who can provide info/marketing</p> <p><i>ying</i></p>	<p><b>Threat-Weakness (TW) Strategies</b></p> <p>Minimize weaknesses and avoid threats</p> <p>1. thinking the realities of the</p> <p>2. scheme to the students academic life, making scheme accessible will</p> <p>increase visibility of scheme, increase market share of the CSA, prevent conversion of land, influence other farmers</p>

Participant visions:

Bullet points:



Diagramming:



## Narrative:

Some of the harvest is done by hand - that particular grain is <sup>seeded/harvested</sup> used in the community events. The rest which we take home to bake with is from a tractor for now so we can have plenty for us, and also to sell into the community, making it a destination for grain (in fact some other local farms are selling local grain into the community too.) Some local people remember using these other varieties in bread long ago and they have a loaf or two for sale at community events, alongside waffles & soft - The whole grain recipe for waffles has been perfected by Jonathan and while it's not for every occasion, people humor it for special events in it that celebrate local grain. The best thing is the flour is super fresh. Most of it gets used up because it's in such high demand, so little is wasted. The local grocery stores aren't upset though, because everyone is baking at home more anyway. We even convinced Babylon Pizza... or maybe Bruggen... to do a one night dough event featuring the andelstlandbank's grain. Also at Sanddinet one night - a keg of beer from the farm replaces Hansa in a "tap takeover."

The grains are grown using the latest biological techniques - having explored things like intercropping, green manuring - the farm has chosen the best methods and is using less and less inputs (whether conventional or organic inputs.)



Rich pictures:



Figure 1 Economically oriented model

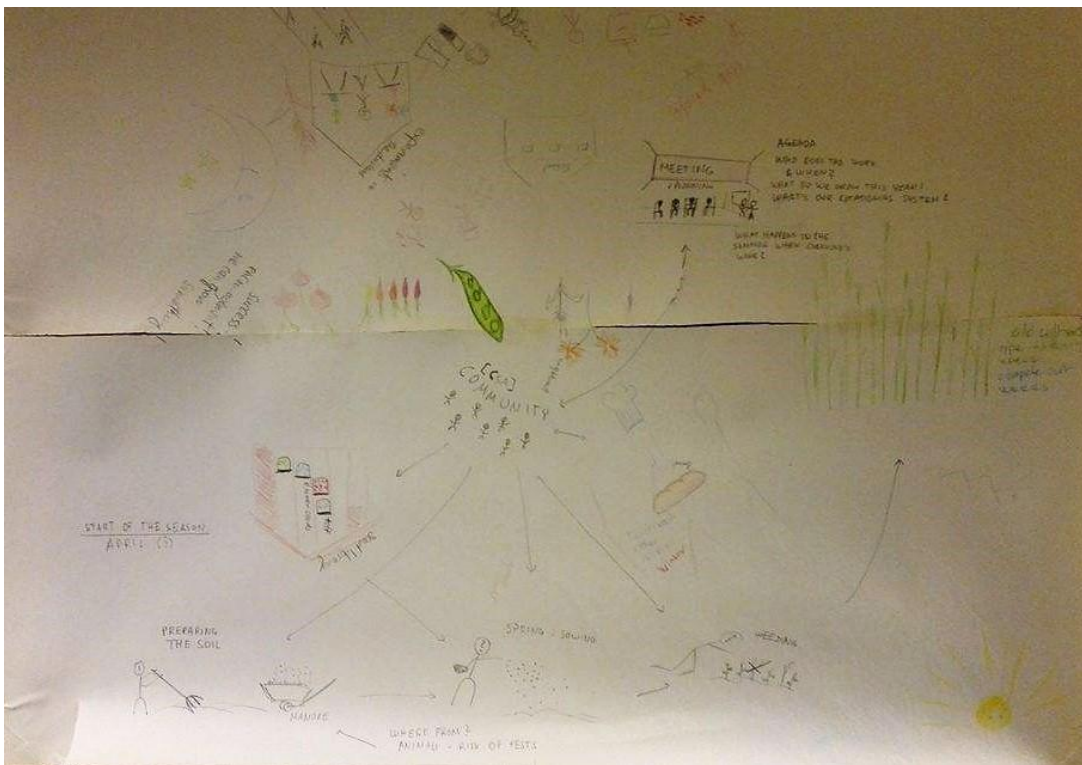


Figure 2 Community oriented model

*Development plan:*



## Ås Andelslandbruk for Korn Season Plan.

### *About us:*

Andelslandbruk for Korn is a young organisation currently made up of NMBU students. We formed after a series of workshops as part of his master thesis which focused upon methods to create and manage alternative food regimes.

We believe that Community Supported Agriculture (CSA) provides an opportunity to educate, strengthen and reconnect the community with the production of grains. For the rest of the year we plan on promoting the organisation at festivals and other public events. We are currently arranging several events focused on the processes involved in producing grain, such as harvesting and thrashing, through to using the grains in baking or brewing beer. We hope to work alongside the existing Andelslandbruk Dystergård, local farmers and the residents of Ås to make this possible. Our plans for next year are to build up a membership base and find a plot of land to grow grains.

### *Specific Aims:*

- Stay under or cooperate with the existing CSA, dysterjordet andelslandbruk.
- Expanding the scope of the project to actors outside of the University.
- Involve people in the process of growing grains and making food from it.
- Create several events in the fall to gather interest - plant a winter crop if possible
- Find best strategy to continue the project beyond this year (how will it change?)
- Look for finances, grants, memberships, donations (through events)

### *Arranged Tasks:*

1. Contact individuals from workshops interested in having a formal role in the G-CSA.
2. Create working groups with defined roles to plan different aspects of the CSA
3. Make contact with key stakeholders
4. Participate in Ås green festival (Sep. 3)
5. Make clear the events for the Fall and Winter season.
6. Prepare and plan for 2017 season

### *Task details:*

1. Contact individuals (preferably) from workshops interested in having a formal role in the G-CSA.

Using the season plan, we should maintain contact with existing stakeholders who have participated in our workshops and meetings to determine whether they would like to engage further with the project. This would entail contributing (as much as one would like) to one of the arranged tasks listed above.

Development plan cont.



## 2. Create working groups with defined roles to plan different aspects of the CSA

The creation of groups is to be undertaken to formalise roles and responsible individuals for specific tasks. Provisional groups include:

- **Outreach group:** creates bridges and relationships to other organizations in Ås, farmers and the general public through publicity material and direct communication.
- **Events and Social Group:** Plan events and field operations, including brewing or bread workshops. With the aim of expanding the scope of the project and gathering interest (see aims)
- **Membership and Treasury:** Decide upon a strategy for fundraising. Work with existing CSA to determine who can be responsible as treasurer for proceeds of the fund raising whilst pursuing or enquiring about additional funding options. Begin to compile and manage a list of potential members.

Each group will have responsibility for the following identified tasks, but the decisions of how these are achieved are open to the group members:

## 3. Connect with key stakeholders (Outreach group)

- Contacting local farmers (preferably organic) to:
  - Arrange/organize events for this year
  - Inquire to whether they are interested in hosting an event on their farm.
  - Purchase (or look for donations of) grains if available (otherwise from BUA)
  - Determine any future interest in being involved with the grain CSA project
- Contact BUA
  - Enquire about the possibility of buying grain and cooperating at the green festival. Share our goals with them, ask for ideas
  - Would they like us to mention BUA when outreaching to farmers (as being two different routes to sell grains).
- Reach out to students
  - Maintain contact with student base (our existing demographic)
- Reach out to Agroecology department
  - Enquire as to whether the project can be incorporated into the the study programme for students to gain experience in using SSM or if students have own interest in aspects of the project.
- Reach out to local schools
  - Involve schools in events, decide how this can be achieved
- Reach out to Vitenparken
  - Possibility of using the venue to hold workshops



#### 4. **Participate in Ås green festival (Sep. 3) (Events and Social Group)**

Organise the participation within the green festival to include the following tasks:

- Contact the responsible persons for the festival with details of event(s) that could take place during the festival.
- Promote additional forthcoming events

#### **(Membership and Treasury group)**

- Gather interest in the CSA and begin to generate a list of potential members
- Offer some grain related products (To be decided)
- Look for donations that could be used to make the CSA financially viable.

#### 5. **Fall and Winter Events: (Events and Social Group)**

Create, organise and promote new events in addition to these pre determined events:

- Harvest event - with existing csa grains or through farmers identified by outreach group
- Winter sowing event - Within existing CSA or with new farmers
- Beer/brewing event
- Grain Wreaths making event

Donations welcome at all events. **(Membership and Treasury group)**

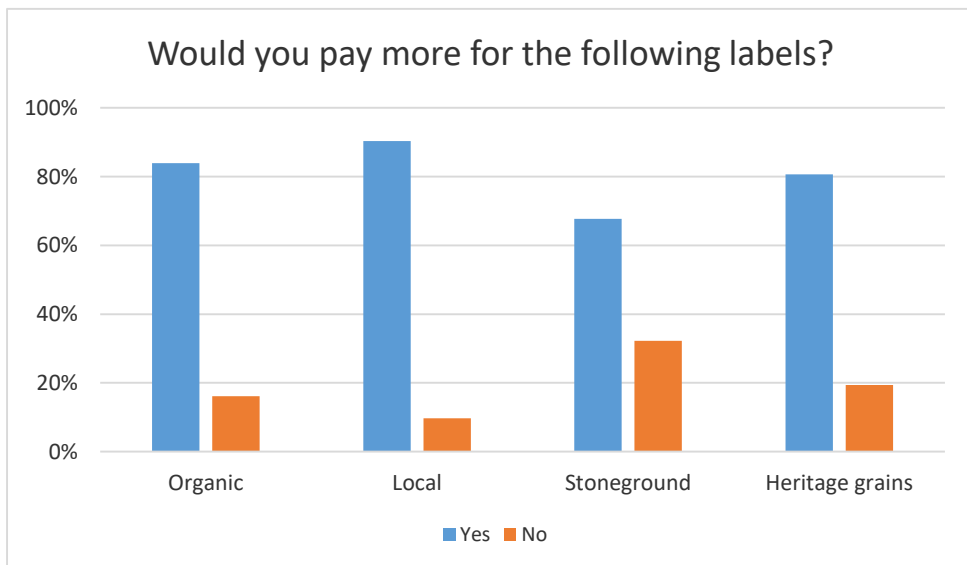
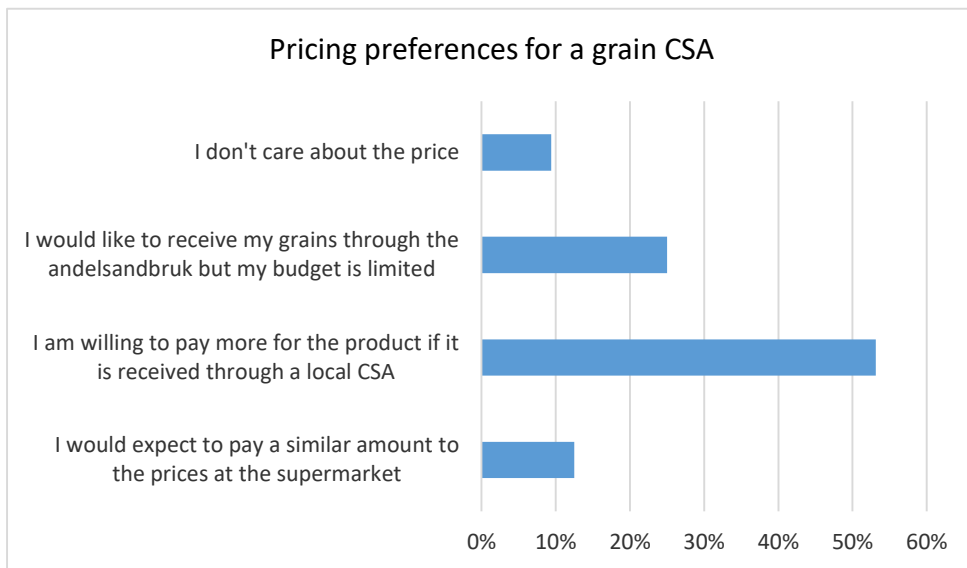
#### 6. **Preparations for 2017 season (all groups)**

- Membership Rally
- Decide on strategy before 2017 harvest
  - Purchase equipment accordingly
  - Further meetings required

To consolidate these ideas it is proposed to hold more regular meetings which will contain at least one member from the respective groups.

Thanks for reviewing the document comments are welcome, through the facebook page.

Pricing preferences:





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