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Motivating change agents: influences of visioning on human agency for food system transformation

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Abstract

Swift transformation of the food system towards sustainability is important to avoid further transgression of the planetary boundaries. Food system transformation requires altering the fundamental determinants of the system. Human agency plays a vital role in this process. Previous research alludes to the potential of Future Oriented Methodologies (FOM's) to influence human agency. This case study explores the influence of the FOM visioning on human agency to gain a better understanding of the relation between FOM's and human agency. To this end is, based on Banduras' agentic perspective on Social Cognitive Theory and Ryan and Deci's Self-Determination Theory, the concept human agency unravelled into the property's forethought, self-reflectiveness, and self-reactiveness. In relation to forethought the findings of this research indicate that visioning is a means to exercise forethought and inspire individual and collective visions and action plans. Furthermore, through the visioning methodology, participants contributed from their personal perspectives in creating a diverse collection of ideas. The subsequent dialogues about the ideas can invite to self-reflection. Regarding self-reactiveness the research has found that visioning can influence both the magnitude as well as the kind of motivation of participants to act and result in action. Consequently, the overall conclusion is that the used visioning methodology has potential to foster human agency for food system transformation. This was however an explorative research. More comprehensive research is required to draw definite conclusions regarding human agency and enable refinement the methodology visioning for the purpose of fostering human agency.

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Chapter 1 Introduction

Swift transformation of the food system towards sustainability is required to meet the United Nations Sustainable Development Goals (UN SDG's) (Independent Group of Scientists appointed by the Secretary-General, 2019; Rockström et al., 2020). The UN SDG's is the actionable plan to change the earth's trajectory to avoid a radically different climate and maintain the capacity to produce enough food for the global population (Independent Group of Scientists appointed by the Secretary-General, 2019; Rockström et al., 2020). The food system is the primary driver – and a first victim – of the earth trajectory towards a radically different climate that threatens life as we know it and can make certain places on earth inhabitable (Rockström et al., 2020; United Nations, 2019). Food system transformation encompasses altering the system from the fundament up, it is characterized by complexity and uncertainty and requires coherent multilevel and multiphase action involving a wide variety of actors (Independent Group of Scientists appointed by the Secretary-General, 2019; Méndez et al., 2016a; Rockström et al., 2020; Westley et al., 2011). It is a daunting challenge for which we need approaches that foster human agency of actors across the food system.

Human agency can be described as the perceived capability to exert influence over one's functioning and take responsible action to realize a vision (Bandura, 2001; Nash, 2005). Top-down transformation approaches can result in resistance, apathy and even hostility among the effected people (Caluwé & Vermaak, 2010). These approaches do not foster human agency. Over the past few years the news has shown that farmers have been showing this kind of resistance towards sustainability measures requested by governments. Bottom-up participatory approaches on the other hand such as Agroecology adheres can facilitate human agency for the transformation process among food system actors (Oteros-Rozas et al., 2019). These approaches integrate and mobilize different types of knowledge, a rich diversity of ideas and worldviews and bridge action and knowledge creation in proximity (Oteros-Rozas et al., 2019; Westley et al., 2011). Future Oriented Methodologies (FOMs) can be considered part of the bottom-up approaches. Research involving FOMs have shown to increase motivation to act, facilitate reflection, mobilize different kinds of knowledge, and engage stakeholders in the transformation process (Falardeau et al., 2019; Lieblein et al., 2001; Parker, 1991; UNESCO, 2018; Wallin et al., 2016). A central role in FOMs is the creation of visions for the future. Visions have inspired transformation of individual and societal functioning for centuries (Van Der Helm, 2009). A vision provides a key reference point for the development and execution of sustainability transformation strategies to move from the current to the desired future situation (Wiek & Iwaniec, 2014). According to Costanza (2000 p. 3) "The challenge for the current generation of humans is to develop a shared vision that is both desirable to the vast majority of humanity and ecologically sustainable". FOMs show the capacity to influence human agency and facilitate action by creating a motivating vision that is shared, relevant and in line with the stakeholder's worldviews and capacities.

The FOM visioning from Parker and Pool (2017) is not widely used in relation to systems change such as food system transformation. The available results from methodology indicate its potential to foster human agency for system transformation. With this research I intent to contribute a better understanding of the relation between visioning and human agency by exploring the influence of visioning on participants' human agency in the context of food system transformation. This can provide valuable insight as to how to use visioning as a tool to foster human agency for food system transformation. Therefore, I have unravelled the concept human agency using renowned theory on human behaviour and motivation. Furthermore, two workshops in which visioning is used to create a vision and action plan for the local food system are facilitated as cases for the research. Observation during the workshops, subsequent interviews with the participants and a questionnaire are executed to collect data about the participants experiences.

In the next chapter I first explain in section 2.1 the motive and context of the research namely the challenge of food system transformation. This is followed by a description of relevant findings from previous studies that have used FOM's in section 2.2. In the third section of chapter one, section 2.3, I unravel the concept of human agency and explain how I have used the theory to conduct the research. The last part of the chapter, section 2.4, is dedicated to the research questions. In chapter three I describe the methodology of the research including the methodology used in the workshops, the cases, and the limitations of the research. Chapter four presents the findings based on the participants experiences. In the discussion in chapter five I interpret the findings from a human agency perspective to indicate the found relations. Lastly, in chapter six I conclude with explaining the found influence of visioning on human agency. Figure 1 now empty will be filled along the chapters as a guide throughout the report.

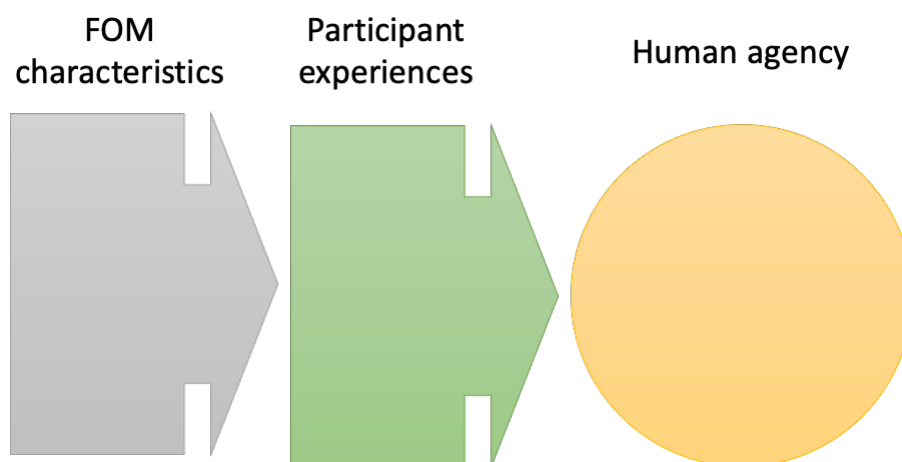


Figure 1 Diagram of the research that attempts to gain a deeper understanding of namely the influence of the FOM visioning on human agency from participants.

Chapter 2 Background

2.1 The challenge of food system transformation

In this first section of the background the context and motive of this research is explained. The context of this research can be broadly described as food system transformation. Since this research took place in Norway some background information is provided on the Norwegian challenges of the food system as well. The motive for this research is the tremendous challenge food system transformation. To sketch the mess that food system transformation is I have first explained what transformation is. This is followed by a description of the food system and its contemporary challenges on global and Norwegian level. Subsequently, the challenge of food system transformation and the approach agroecology takes on that is explained. This provides an understanding of why food system transformation is a tremendous challenge and the need for an approach that deals with the complexity and importance of human agency.

2.1.1 What is transformation?

Transformation is different than change and it can be described in various ways. IPCC describes transformation focused on the external system as: “the altering of fundamental attributes of a system (including value systems; regulatory, legislative, or bureaucratic regimes; financial institutions; and technological or biological systems)” (IPCC, 2012 p. 564). In this understanding the human is altering the system. It is human behaviour however that determines the functioning of humanly constructed systems such as the food system. Thus, to alter the fundamental attributes of a system human behaviour needs to be considered as well. Accordingly, O’Brien and Sygna (2013 p. 1) describe transformation from an internal perspective as “unleashing of human potential to commit, care and effect change for a better life, or an internal shift that results in long-lasting changes in the way that one experiences and relates to oneself, others, and the world”. In addition, the capacity to bring transformation about or transformability is defined by Westley et al. (2011 p. 763) as “the capacity to create untried beginnings from which to evolve a fundamentally new way of living when existing ecological, economic, and social conditions make the current system untenable”. The later perspectives focus on human behaviour and that what drives it, such as worldviews, to bring about transformation.

A worldview “is a coherent collection of concepts” (Vidal, 2008p. 3) consisting of “internalized taken-as-given assumptions which cause us to interpret the world in a particular way” (Checkland & Poulter, 2006). Worldviews help us to understand the world and our experiences (Vidal, 2008). Beliefs about what is true and false, what is bad and evil, where ‘it’ all comes from, where we are going and how we should act, are part of our worldview (Vidal, 2008). For enduring and transformative change, it needs to come from the inside (O’Brien, 2013b as cited by Pisters et al., 2019). This demands an emotionally engaged, meaningful experience that helps people to make sense of the situation, the change and the possibilities (Maiteny, 2002).

To bring true transformation about internal and external transformation need to be facilitated in concert. Transformation encompasses altering the system from the fundamental level of values, worldviews and institutions that govern behaviour, up to alter the fundamental attributes of the system.

2.1.2 The food system: a complex entangled element of our lives

The food system is an entangled part of our lives and includes each and every one of us (Gliessman, 2018). It is the source of nutrition for all of us, an income for many, plays a role in our cultures and is part of our environment.

A food system can in alignment with European Commission (2018 p. 6) be described as: all elements and activities that relate to the production, processing, distribution, preparation, and consumption of food, as well as its disposal. This includes the environment, people, processes, infrastructure, institutions, and the effects of their activities on our society, economy, landscape and climate.

The food system consists of three elements (Gill et al., 2018):

1. Food environment: 'The physical, economic, political and sociocultural context in which consumers engage with the food system to make their decisions about acquiring, preparing, and consuming food (HLPE, 2017).
2. Consumer behaviour: All choices made on individual and household level, referring to the influence of personal preferences as well as to the influence of the wider food environment
3. Food supply chains: All steps of the chain including production, storage and distribution, processing and packaging and retail and market.

The food system is a system of interrelated parts (Gliessmann, 2014; Wezel et al., 2009), as visualised in Figure 2 showing the elements in the middle, the drivers that dictate its functioning and the relations between the elements and drivers. The place specific combination of these elements and forces together form the numerous unique regional food systems all over the world and determine whether it is sustainable or not. The global food system emerges from the interaction between its constituents, which encompass the numerous local and regional food systems (Independent Group of Scientists appointed by the Secretary-General, 2019). Sustainability is an emergent property of the food system when all elements and forces are calibrated and functioning in harmony (Gliessman, 2016; Muller et al., 2017; Rockström et al., 2020). The food system is a complex system of human and non-human factors that together determine its functioning. For true transformation consumer behaviour and actors in the food environment and food supply chain need to engage in coherent action.

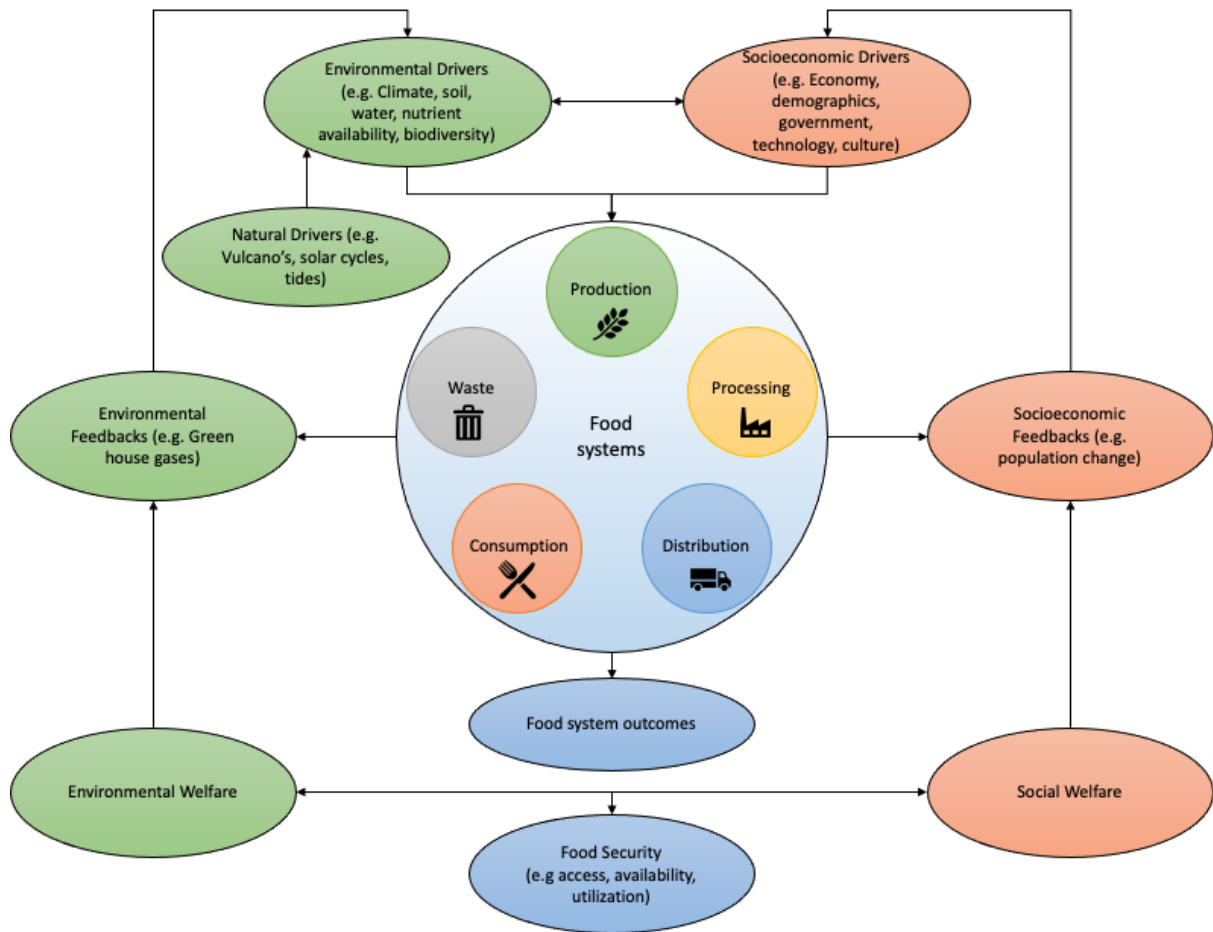


Figure 2 Illustration of the determinants of the functioning of food systems (adapted from Ericksen, 2008 as cited by Oxford Martin Programme on the Future of Food, s.a).

2.1.3 Unsustainability of contemporary food systems

Contemporary food systems are considered unsustainable. The current global food system is responsible for 21-37% of total anthropogenic greenhouse gas emissions (GHG) causing global warming (Rivera-Ferre, 2020) and an important driver in biodiversity loss which disturbs ecosystem functioning (McGlade, 2020). Furthermore, the distribution of food over the world leaves over 820 million people around the world remain hungry while obesity is on the rise with over 2 billion people are overweight (Independent Group of Scientists appointed by the Secretary-General, 2019). Producing less food to reduce the impact is not necessarily a sustainable solution considering that the global population is growing, and welfare is rising which increases food demand (Godfray et al., 2010). At the same time the food system is also one of the first victims of effect of climatic changes such as drought, rising temperature, and pests, jeopardizing our ability to produce sufficient nutritious food (European Commission, 2020). The issues the food system faces are contradictory and due to the structure of the food system also interrelated exacerbating the challenge of creating a sustainable food system.

The planetary boundary framework aims to help us to better understand the safe humanly operating space to avoid transgression of tipping points and creating cascading effects on the stability of ecosystem process that regulate the climate (Steffen et al., 2015). Recent

research shows that the global food system transgresses five planetary boundaries bringing us in operating zones of uncertainty (Rockström et al., 2020). This means that the consequences of transgression are still relatively unknown, adding a layer of uncertainty to the challenge of food system transformation. Swift transformation of the food system towards sustainability is necessary to avoid a radically different climate and maintain the capacity to produce enough food for the global population (Independent Group of Scientists appointed by the Secretary-General, 2019; Rockström et al., 2020). In 2015 the UN SDGs were adopted by all United Nation member states to address global challenges societies are facing. Despite all good efforts we are not on track to achieving most of the 169 targets that comprise the goals (Independent Group of Scientists appointed by the Secretary-General, 2019). The global food system is undermining this endeavour (Klerkx & Begemann, 2020). Therefore, we need to find approaches that can foster coherent action among stakeholders across the global food system.

2.1.3.1 The Norwegian food system

Norway plays an active role in the global discussion about food system transformation. In 2019 Norway was awarded the European Green Capital (European Commission, s.a.), Norway supports the UN SDGS (ForUM, 2016), signed the Paris agreement (United Nations, 2016) and contributed to the Eat Lancet report "Food in the Anthropocene" (Willett et al., 2019). Nevertheless, according to The Food and Land Use Coalition (2019), the Nordic diets are considered unsustainable since they produce 2.5 times more GHG emission and use twice the amount of cropland, as would be sustainable. A specific issue in Norway that includes every citizen is waste. Norway creates approximately 390.000 tonnes of food waste at a value of NOK 22 billion or 1.3 million CO₂ equivalents per year (Government.no, 2020). Hence, in alignment with the UN SDG 12, the Norwegian government aims to reduce food waste by 50% in 2030 compared to 2015 and therefore signed an industry agreement (ForUM, 2016; Government.no, 2020). In 2016 the Norwegian organisation ForUM proposed that to reach the UN SDGs by 2030 an inclusive and transformative approach is required (ForUM, 2016). Norway plays an active role in the global discussion about sustainability and food system transformation but there are challenges still present that involve the vast majority of the population to create improvement.

2.1.4 Food system transformation is a mess

Transforming the food system is thus a tremendous and daunting challenge that requires systemic change to drivers that govern the functioning of the food system. In order to create sustainable food systems, food system transformation and transformative action is called for consisting of multilevel and multiphase action including a wide variety of actors (Anderson et al., 2019; Independent Group of Scientists appointed by the Secretary-General, 2019). To indicate the type of challenge, food system transformation has been qualified as a Mess or Wicked issue. (Struik & Kuyper, 2017). Messes do not have a definite formulation (Rittel &

Webber, 1973) but are characterized by their scale, level of uncertainty, instability & evolution, ambiguity and unboundedness & interrelatedness as also shown in Figure 3 (Armson, 2011). Often, they are also emotionally charged, create conflict, take time and draw in a wide variety of people (Armson, 2011). Messes need an approach that embraces their intricacy to address them effectively, a problem-solving approach is considered insufficient (Armson, 2011; Rittel & Webber, 1973). Messes require, a thorough understanding of the problematic situation and the role of the person in question in it (Armson, 2011).

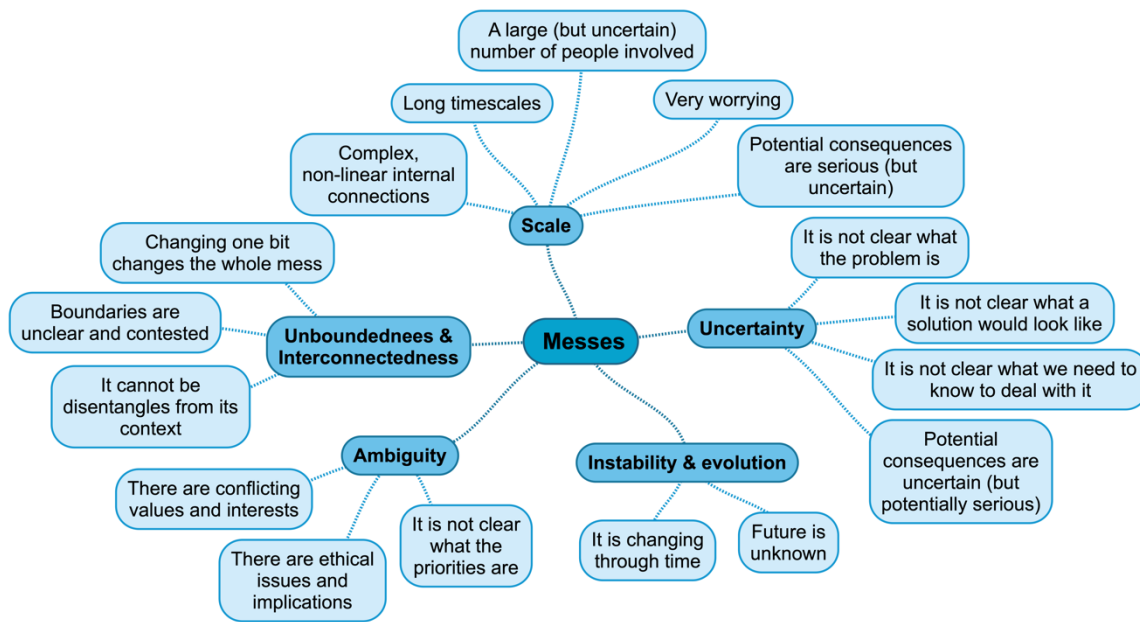


Figure 3 Mindmap of the characteristics of messes as a kind of problem or challenge (Armson, 2011 p. 22)

2.1.5 Agroecology: A food system transformation approach

Agroecology has been recognized as a valuable approach to food system transformation due to its inclusive character and potential create environmentally sustainable food systems (Ishii-Eiteman, 2020; Oteros-Rozas et al., 2019). Within agroecology the complexity of food system transformation is not only acknowledged but treasured with systemic, place-based, transdisciplinary, participatory and action-oriented approaches to transformation (Méndez et al., 2013). Agroecology is “the integration of research, education, action and change that brings sustainability to all parts of the food system: ecological, economic, and social” (Gliessman, 2018). An agroecological approach is based on principles similar to the principles of Participatory Action Research (PAR) see Table 1. Transdisciplinary dialogues for the co-production of knowledge are a focal point of agroecology to reconcile divergent values and interests, create ownership over the transformation process, facilitate participation of a diverse group of stakeholders and ground the transformation in real-life place- and practise-based experiences (Méndez et al., 2016b). Enabling participation and contribution expands the resources and ensures strategies that are tailor made to the needs of the population which is essential to guide sustainability-oriented transformation (Independent Group of Scientists

appointed by the Secretary-General, 2019). An agroecological approach aims to facilitate 'responsible action' across food systems through the training of the competencies to observe, participate, reflect, dialogue, and think visionary (Lieblein et al., 2001; Lieblein et al., 2012).

Table 1 Participatory Action Research Principles in comparison to Agroecological principles (Méndez et al., 2016a p. 6)

Participatory Action Research Principles	Agroecology principles
PAR prioritizes empowerment as community-based partners contribute to define the research agenda	Agroecologists work with farmers, consumers, communities, agricultural ministries, food advocates, and others to support empowering people
PAR processes are context dependent as they bring together trans/interdisciplinary teams responding to stakeholders' aspirations	Agroecology establishes farming and food systems that adjust to local environments
PAR processes inform action at multiple scales for positive social change	Agroecology offers principles and analysis toward the creation of more sustainable agriculture and food systems
PAR processes deepen as long-term relationships are formed and multiple iterations of the cycle occur	Agroecology seeks to develop strategies to maximize long-term benefits
PAR processes listen to a diversity of voices and knowledge systems to democratize the research and social change processes	Agroecology incorporates farmers' voices and knowledge into the research process and seeks to diversify biota, landscapes, markets and institutions

2.2 Visions as a means for transformation

Meadows et al. (2004 p. 7) the writer of the book the Limits to Growth said "Vision without action is useless. But action without vision is directionless and feeble. Vision is absolutely necessary to guide and motivate. More than that, vision, when widely shared and firmly kept in sight, does bring into being new systems". Visions have inspired transformation of individual and societal functioning for centuries (Van Der Helm, 2009). More recently, visions are being used to foster participation and democratize transformation processes (Nielsen, 2005). In this section will be explained what visions and envisioning is. Furthermore, results from previous research that have used FOMs is visited to indicate what we already know about the role of FOMs in change processes.

2.2.1 Visions: a desired future situation

A vision provides a key reference point for the development and execution of transformation strategies to move from the current to a desired future situation (Wiek & Iwaniec, 2014). There is however no universal definition of vision. Understanding what a vision is, is important to understand what the aim of envisioning and to differentiate between FOMs. A regularly used typology of future situations is probable, possible, and preferable futures. Wiek and Iwaniec (2014) determined quality criteria for visions and visioning and addressed the differences

between those types of futures. Probable futures or likely futures are predictions created with predictive methods such as forecasting or trend extrapolations (Carlsson-Kanyama et al., 2008; Wiek & Iwaniec, 2014). They try to answer the question ‘What will happen?’. Scenarios are possible futures in an attempt to answer the question ‘What can happen?’ (Wiek & Iwaniec, 2014). Preferable or desired future are created with methodologies that attempt to answer the question ‘What do we want to happen?’. This is what is considered a vision. Accordingly, a vision is defined as a representation of a desired future situation created by an individual or group of people (Costanza, 2000; Wiek & Iwaniec, 2014). Scenario building can, provided it is designed that way, result in visions see for example the research project from Falardeau et al. (2019). The desirability is important to arrive at a compelling vision that invites to act. As Wiek and Iwaniec (2014) describe a good vision is desirable – which they refer to as nuanced – , visionary, sustainable, systemic, coherent, plausible, tangible, relevant to the people who created it, motivational, and shared Figure 4. This resonates with the de aim of the visioning methodology from Parker and Pool (2017).

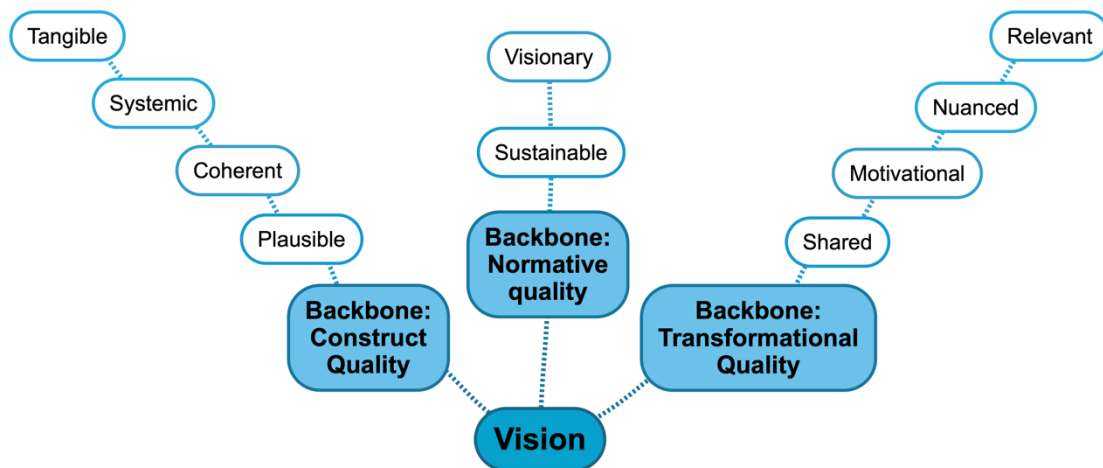


Figure 4 The backbones and characteristics that indicate the transformative quality of visions according to (Wiek & Iwaniec, 2014 p. 501)

In addition, Kim and Oki (2011) differentiate a vision from an objective and a goal. An objective is defined as “a specific and product-oriented statement of intended accomplishment that is attainable, observable, and measurable by specifying no more than what, where, when and how” and a goal as “a general statement of intent that remains until it is achieved or no longer needed as the direction changes” (Kim & Oki, 2011 p. 250). A vision can and should contain objectives and goals that result in ‘wins’ to remain compelling and motivating (Parker & Pool, 2017). Moreover, a vision can represent a long-term goal in a specific moment in time. An important difference though is that a vision constantly develops according to changes in the stakeholders’ desires and other external or internal influences that effect for example the plausibility of the vision. Furthermore, to facilitate transformation a vision needs to be systemic

(Wiek & Iwaniec, 2014). The stakeholders of a system might change over time. Consequently, a vision needs maintenance and needs recalibration of the stakeholders' desires repeatedly.

2.2.2 Envisioning: finding what we want to create from a personal perspective

Visionary thinking or envisioning is "the process whereby we activate our insight and imagination, connect with our values and sense of purpose, and create mental images of a desired future state relevant to the challenge that is in focus." (Parker & Pool, 2017 p. 8). Envisioning is a process generate ideas to creating a vision featuring an action plan. Envisioning should include both the heart and the mind as Shipley and Michela (2006) describe because these both influence the attitude towards the created vision. Similarly, Parker and Pool (2017 p. 8) refer to it as a "whole-brain" approach involving both the often dominant rational thinking left side of the brain and the more intuitive, feelings oriented right side of the brain. In envisioning the central question is 'what do we want to create?'. The answer to this question comes from an internal drive and is an expression of our values, and emotions which is intrinsically inspiring, can result in a feeling of excitement, passion, and commitment (Parker & Pool, 2017). Envisioning is a way to create visions as reference point for transformation since it aims to incorporate both the functioning of the external system elements as well as the drivers of human behaviour. Visions are created from a personal perspective. Interaction between personal perspectives can result in a shared vision.

2.2.3 Process level functions of participatory FOM

Although visions have played a role in transformation for a long time, they have become more popular since the 1980s (Van Der Helm, 2009). Visions can be made individually or collectively. Popular books such as 'The Fifth Discipline' from Peter Senge and 'The Seven Habits of Highly Effective People' from Stephen Covey writer of the mantra "start with the end in mind" contributed to the rise in popularity of visions for personal success (Covey, 2011; Francis et al., 2016; Senge, 1990; Shipley & Michela, 2006). These publications have also inspired the development of participatory processes – what I refer to as FOMs – for the creation of visions (Parker & Pool, 2017; Shipley & Michela, 2006; Wiek & Iwaniec, 2014). A range of FOM's have become available including:

- Future Literacy Laboratories (FLL) (UNESCO, 2018),
- Visioneering (Kim & Oki, 2011),
- Scenario building (IPBES, 2016),
- Critical Utopian Action Research (Nielsen & Nielsen, 2016),
- Future Workshops (Drewes et al., 2004),
- Visioning (Parker & Pool, 2017),
- Backcasting (Carlsson-Kanyama et al., 2008),
- Vision Conference (Vidal, 2004).

FOM's fulfil valuable process-level functions such as reflection, mobilizing different kinds of knowledge, empowerment, motivation, and collective action (Wiek & Iwaniec, 2014). All these functions are interesting in the context of food system transformation.

2.2.3.1 Transdisciplinary dialogue room as learning environment

FLL is framed by R. Miller as learning process and places emphasis of the facilitation of reflection to create self-awareness as a first step to alter behaviour in line with the created vision (Paas, 2020; UNESCO, 2018). Other application of FOM's also show that they can result in learning about both the person themselves as well as about others and the challenge in focus (Bennett et al., 2016; Francis et al., 2016; Lieblein et al., 2001). FOM's can thus invite to self-reflection to learn about oneself and the relation of oneself to the challenge in focus.

Various empirical studies have concluded that FOMs are a valuable methodology to mobilize different kinds of knowledge from various disciplines which results in an exchange of perspectives as source of inspiration and increased alignment (e.g. Carlsson-Kanyama et al., 2008; Falardeau et al., 2019; Nielsen, 2005; Parker & Pool, 2017; Wallin et al., 2016). Perspectives can also be brought in from the outside. Bennett et al. (2016) for example brought in scientific perspectives but suggest that this might have undermined the local perspective and therefore that careful deliberation of doing this is paramount. Falardeau et al. (2019) brought in what they refer to as the 'Seeds of good Anthropocene's' as a source of inspiration and reflect positively on this decision to diversify the visions that are made. FOMs can thus in addition to learning from self-reflection also facilitate learning about the situation in focus. A diversity of people that represent each a different perspective or input from the outside in combination with dialogues are in that regard important characteristics of a FOMs

2.2.3.2 Motivating transformative action through collective action planning

In terms of the transformational capacity of FOMs the focus goes to the motivating action. Research findings in this regard are not only scarce but also diverse. As Shipley and Michela (2006) conclude it is difficult to determine whether visions 'work' – whether they motivate action. The majority of the studies that have used FOMs are conducted within a short period of time, this inhibits the possibility to determine whether action has resulted. Lieblein et al. (2001) however asked the participants after three years whether they have taken any action in response to the visioning workshop. Although the vision has stayed with the participants and was still desired, limited action had taken place, a sense over incapability and powerlessness dominated among the participants (Lieblein et al., 2001).

Results from Falardeau et al. (2019) show that the participants were motivated, even eager to take action and draw-in others to take action. During their research project the participants identified actions they can do themselves but also actions that require collaboration (Falardeau et al., 2019). Results from Carlsson-Kanyama et al. (2008) who used a participatory

backcasting methodology show that the methodology offered new perspectives, and personal contacts but they are not conclusive about whether people will engage in more environmentally friendly behaviour than before. Nieto-Romero et al. (2016) used a single scenario building workshop. They concluded that although people identified actions and were motivated by the workshop it is very unlikely that action will result due to the short process and limited consensus about the action plan (Nieto-Romero et al., 2016).

FOM's can thus be a source of motivation for stakeholders to come into action to achieve the shared vision. The possibility that a vision resembles, provided plausibility is kept in mind, is one of the sources of motivation. Another source of motivation is the perceived possibility for collective action due to the build consensus about the vision and actions. Nevertheless, previous research is not conclusive about whether FOM's lead to transformative action. One explanation is the previous research designs such as in the case of Nieto-Romero et al. (2016). Additionally, a sense of powerlessness, perceived powerful barriers for action, perceived incapacity to act individually or collectively and sense of incapability due to the level of knowledge and skills in combination with insufficient motivation to change are all possible factors that influence the amount of action in response to a FOM (Caluwé & Vermaak, 2010; Lieblein et al., 2001; Nieto-Romero et al., 2016). A FOM should thus take these aspects into consideration by design.

2.2.4 Visioning from Parker and Pool

For this research I have chosen to use the methodology visioning from Parker and Pool. In their book 'Creating Futures That Matter Today' Parker and Pool (2017) describe the Future Oriented Methodology I will refer to as visioning. It is a methodology to facilitate change through dialogue and visionary thinking developed in the 1980s. The methodology is inspired by the work of Juanita Brown, Peter Senge, participation in the International Woman's Dialogue group, MIT's Organizational Learning Center and the International Center for Studies in Creativity in Buffalo. By Parker and Pool the methodology is predominantly applied for organizational transformation. But the methodology is also adopted within the field of agroecology as a tool to facilitate learning and for transdisciplinary, participatory, and action-oriented research (e.g. Francis et al., 2016; Lieblein et al., 2001). Their approach aims to be inclusive, trigger intrinsic motivation and facilitate collective action by means of a shared vision. It has a strong focus on personal characteristics such as values, worldviews, background, and capabilities (Parker & Pool, 2017). For example, they have brought together an entire organisation to engage everybody by creating ideas from their personal perspective, dialogue about the ideas and create action plans in the transformation of the organisation (Parker, 1991).

A shared vision they describe as an expression of what a group of people have in common (Parker & Pool, 2017 p. 7). They conclude that the process of creating a shared vision can provide alignment and focus for a diverse group of stakeholders, interests, and activities.

Furthermore, they describe how the process of creating a shared vision can increase engagement by nurturing a sense of purpose and sense of meaningfulness. Lastly, they explain that the process can empower people and that when it is a vision that the stakeholders believe in people are more committed because they are intrinsically motivated and therefore take responsibility for the transformation process. The process of empowerment means providing the opportunity for people to influence their lives (Alkire, 2005; Parker & Pool, 2017). A sense of empowerment is thus an enhanced feeling of control over your own live due to being offered the opportunity to change the environment. Although similar to human agency as will become clear from the next section of this chapter it is not synonymous (Alkire, 2005).

2.2.5 The characteristics and participants experiences regarding FOMs

FOMs including visioning hold characteristics that can play a role in facilitating transformation. The characteristics and the participants experiences in focus for this research are summarized and filled out in the Figure 5. The experiences relate to the characteristics of human agency as will become clear in the next section.

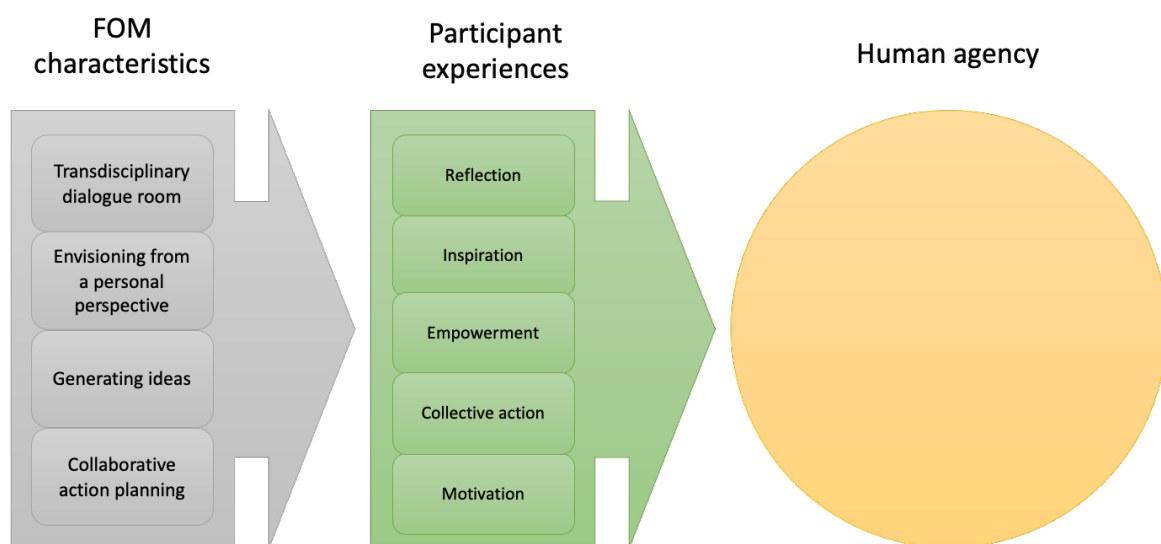


Figure 5 FOM characteristics and participants experiences in focus of this research

2.3 What is human agency?

Human agency is a conceptualization of the processes that govern human behaviour. Visiting some of the important definitions from different perspectives provides a thick understanding of the concept. Subsequently, human agency is unravelled by means of Banduras (1989) Social Cognitive Theory (SCT) and Ryan and Deci (2000) their Self-Determination theory (SDT). Human agency is a concept that touches on the philosophical discussion about the degree of autonomy and free-will that people have. Therefore, before defining human agency for this research, first a note on these topics.

2.3.1 A note on autonomy and free will

Human agency theory is essentially a conceptualization of the interaction between people and their environment (Bandura, 2000). More specifically, it is an attempt to understand the causal relation between changes in people and their environment. Archer (2002 p. 11) nicely phrased the difficulty of deterministically conceptualising human agency “The central problem of theorising agency is how to conceptualise the human agent as someone who is both partly formed by their society, but also has the capacity partly to transform their society.” The central issue is thus the direction of the causal relation, which boils down to the understanding of autonomy and free-will (Dörnyei et al., 2014). The complexity and sensitivity of these topics are profound, worthy of only an comprehensive discussion (as done by for example Dörnyei et al., 2014). This, however, transcends the purpose of this master thesis research. SCT and SDT have a conception of autonomy and free will, which will be adhered to in this research.

Chirkov et al. (2003 p. 98) summarized Deci and Ryan their understanding of autonomy: a person is autonomous when his or her behaviour is experienced as willingly enacted and when he or she fully endorses the actions in which he or she is engaged and/or the values expressed by them. People are therefore most autonomous when they act in accord with their authentic interests or integrated values and desires.

Bandura is less explicit about his conception of autonomy. The following quote is however illustrative of his conception of autonomy “Agency causation involves the ability to behave differently from what environmental forces dictate rather than inevitably yield to them” (Bandura, 1997 p. 7 as cited by Dörnyei et al., 2014). Freedom is by Bandura and Ryan and Deci similarly conceived as positive freedom meaning free to exercise self-influence (Bandura, 1989; Ryan & Deci, 2000). The opposite is negative freedom meaning absence of coercion or constraints (Bandura, 1989; Ryan & Deci, 2000). In line with Bandura and Ryan and Deci people are perceived to have a level of autonomy and free-will in their life, depending on their circumstances. Circumstances that can for example inhibit perceived autonomy and opportunity to express free will can be institutions such as social norms and values in the place that you live.

2.3.2 Defining human agency: a concept of many definitions

Visiting some of the important definitions from different perspectives provides a thick understanding of the concept of human agency. Having a thick understanding of the concept will be useful to interpret the data of this research in a nuanced matter.

2.3.2.1 *The definition from a philosophical perspective*

The famous economist and philosopher A. Sen refers to ‘agency freedom’ defined as “what a person is free to do and achieve in pursuit of whatever goals or values he or she regards as important” (Sen, 1985 p. 203). This perspective clearly includes people’s own perspectives regardless of whether that is regarded ‘right’ or ‘good’ by society. This perspective suggests

that people should be able to do anything they regard important which as Costanza (2000) points out can result in outcomes undesired by a many others such as war. Hence, he advocates for a “shared vision that is both desirable to the vast majority of humanity and ecologically sustainable.” (Costanza, 2000 p. 3). Similarly, Sen (1985 p. 204) also emphasizes the importance of discipline “This open conditionality does not imply that the person's view of his agency has no need for discipline, and that anything that appeals to him must, for that reason, come into the accounting of his agency freedom.”. Central in this understanding is the moral decision-making process regarding behaviour as human in social and ecological systems.

2.3.2.2 The definition from a neuroscience perspective

Within neuroscience, scholars commonly use the term ‘Sense of Agency’. The sense of agency is “the registration that I am the initiator of my actions” (Synofzik et al., 2008 p. 221). Moore (2016 p. 1) explains it as “(The) feeling of being in the driving seat when it comes to our actions”. The sense of agency is thus the attribution of an action and the corresponding effect to oneself. The sense of agency naturally coincides with a sense of ownership over thoughts and body parts for example (Braun et al., 2018). But a sense of ownership can also be experienced over other objects and achievements (Pierce et al., 2001). From this perspective the sense of ownership and control over one’s own actions is the focal point of human agency.

2.3.2.3 The definition from a psychology perspective

The psychologist A. Bandura developed a renowned theory about human agency (Alkire, 2005; Bandura, 2006a). He defined human agency as “the human capability to exert influence over one’s functioning and the course of events by one’s actions” (Bandura 2009 as cited by Weibell, 2011). “To be an agent is to influence intentionally one’s functioning and life circumstances” (Bandura, 2008 p. 16). Although, Bandura acknowledges the two-way interaction between human behaviour and their environment (Bandura, 2006b), the focal point of this definition is the capacity to shape your own functioning. In line with the described view on autonomy and freedom, everybody has human agency, and can consequently be inhibited or enabled. Peoples’ own perception of it can however vary and be developed (Bandura, 2006a). Human agency is domain specific (Alkire, 2005), meaning that somebody’s perceived human agency regarding teaching can be high while the perceived agency regarding food system sustainability is low. Bandura’s theory is mostly developed within the domain of personal development and adaptability but leaves what Sen refers to as discipline open. In an article on ecological sustainability, he however notes in line with Sen and Costanza, that in light of sustainability moral engagement is important as guide (Bandura, 2007).

2.3.2.4 The definition from an environmental sustainability perspective

Brown and Westaway (2011) looked at the human adaptive capacity in light of environmental and subscribed to the following definition from McLaughlin and Dietz (2008 p. 105) “the

capacity of individuals and corporate actors, with the diverse cultural meanings that they espouse, to play an independent causal role in history". Another regularly used definition comes from Pattberg and Stripple (2008 p. 373-374) from their paper on environmental governance "the capacity of individual and collective actors to change the course of events or the outcome of a process." In comparison to the previous definitions these two definitions add the collective element. What maybe does become less clear from the definition presented this far is that they also encompass natural ecosystems and processes as well as human constructed processes and systems. Accordingly, Nash (2005 p. 67) refers to human agency as "The ability of people to act intentionally to shape their world." Where the focal point of the definitions from neuroscience, philosophy and psychology is on the capacity to shape your own functioning, the definitions presented in this paragraph place the focal point on the effect of human behaviour on the outside world.

2.3.2.5 The definition for this research aligning behaviour with a desired future

Based on the presented definitions the working definition of human agency for this thesis is **the perceived capability to exert influence over one's functioning and take responsible action to realize a vision**. I subscribe to the definition of Bandura that the capability to influence one's functioning is a central topic in human agency. This requires awareness and a sense of ownership over one's functioning, including one's action and the effects of one's action. This capability enables recalibration of the food system elements for sustainability. The other central topic is the realization of a desired vision via responsible action. This means to include intrinsic motivation, moral engagement, and social deliberation to realize a desired vision that is shared and ecological sustainable. It is explicitly not the aim of this research to impose change, the aim is to foster perceived human agency in whatever direction is regarded important.

2.3.3 Bandura's human agentic perspective on Social Cognitive Theory

The renowned agentic perspective of Social Cognitive Theory from A. Bandura forms the bases for the understanding of human agency. This theory provides a clear conception of the relation between people and their environment, describes different kinds of human agency and the underlying processes (Bandura, 2018). There is however a point of critique on Bandura's theory, namely that it is not explicit about the nature of motivation for action (Alkire, 2005). Therefore, Ryan and Deci (2000) their Self-Determination theory – a theory about human motivation – is here used to complement SCT. Both theories originate in behavioural psychology and aim to explain human behaviour in the context of wellbeing, or more specifically personal-development and human environmental adaptation. Both theories are developed and advanced with significant empirical support (Alkire, 2005) in various disciplines (see for example Bandura (1989); Bandura (2006a); Deci and Ryan (2000)). Attention to the concept is rising in the field of environmental development to better understand, conceptualise and influence anthropogenic pressure on our environment (see for example

Otto et al. (2020); Preston et al. (2015)). In this section I unravel the concept human agency by touching upon the development of the theory and the various definitions available in literature.

2.3.3.1 Self-efficacy beliefs the most effective levers for behavioural change

The development of SCT started in 1977 with the concept of self-efficacy beliefs, which is still considered the central and most pervasive process of SCT (Bandura, 1977; Bandura, 2001). Moreover, empirical evidence attests that self-efficacy beliefs are one of the most effective levers for behavioural change (Gallagher, 2012). Self-efficacy belief is one's perception of their capabilities to produce designated levels of performance that exercise some measure of control over their own functioning and over their environment (Bandura, 1994; Bandura, 2000; Bandura, 2001). Unless people feel capable to influence their own behaviour or their environment they have little motivation to act (Bandura, 2001). Self-efficacy beliefs can thus be perceived as the internal focus of perceived control. According to the conception of autonomy and free-will just presented, people have a degree of influence over their own life. Nevertheless, circumstances can impose (perceived) limitations to that for example, awareness of alternatives, levels of knowledge and skills but also rules and regulations. Self-efficacy beliefs also effect relations we have with our environment and other people. Empirical research has shown that a high perceived self-efficacy promotes altruism in the form of cooperativeness, helpfulness, sharing and vested interest in each other's welfare (Bandura, 2001). To gain insight in self-efficacy beliefs Bandura proposes self-efficacy scales a subjective quantitative method in which people evaluate their self-efficacy beliefs in regard to a specific topic (Alkire, 2005; Bandura, 2006c).

Looking at self-efficacy beliefs would give insight in how capable people feel to change their behaviour in light of food system transformation, a quantitative understanding thus. For this research I however aim to get a rich qualitative understanding of the underlying processes between that govern action and their relation to a FOM. Therefore, I have focused on the concept of human agency which is built on the concept of self-efficacy beliefs.

2.3.3.2 The triadic reciprocal causal process: how human agency operates

In 1989, SCT was expanded with an agentic perspective, describing the underlying processes of exercising human agency (Bandura, 1989). Bandura conceptualized human functioning as a triadic reciprocal causal process encompassing interaction between personal, behavioural, and environmental determinants Figure 6. Personal determinants are for example values, beliefs, and worldviews (Bandura, 1999; Bandura, 2001). Behavioural determinants refer for example to actions and decisions (Bandura, 1999; Bandura, 2001). Environmental determinants encompass, among others, institutions, climate and social structures (Bandura, 1999; Bandura, 2001). O'Brien and Sygna (2013) attest in their conceptualization of the three spheres of transformation to the interplay between these determinants regarding climate

change. This means that understanding the interplay between these determinants is interesting for personal development which human agency theory focuses on and for societal transformation towards sustainability such as food system transformation. These determinants are the drivers of human behaviour, the properties of human agency provide more insight about the internal process that influence behaviour.

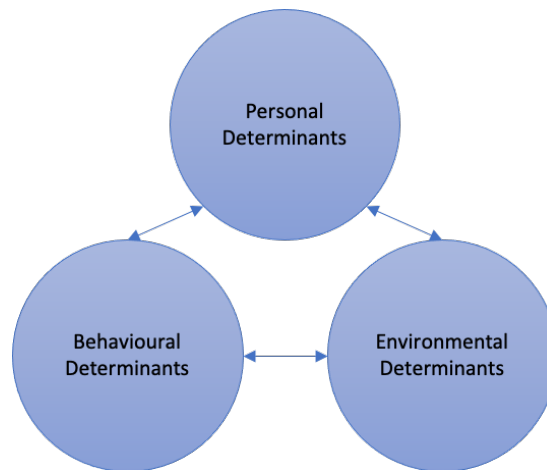


Figure 6 Triadic reciprocal causal process; the conceptualisation of the interplay in which human agency is exercised adapted from Bandura (2018 p. 131)

2.3.3.3 The properties of human agency

Initially Bandura's agentic perspective on SCT consisted of four core properties of human agency (Bandura, 1989). Later however the property intentionality was merged with the remaining three properties namely Forethought, Self-reactiveness and Self-reflectiveness (Bandura, 2018). These properties differentiate human agency from mere action. In comparison to just action human agency is characterized to be forethoughtful includes a level of awareness over one's functioning and motivation to align one's functioning with the vision. For example, a person can hold the idea that farmers are part of the local food system and therefore decide to buy products locally at farm shops to support these farmers and maintain their role in the local food system. The properties of human agency are interrelated and as such influence each other.

2.3.3.3.1 Forethought: creating the governing visions and action plans

Forethought is the temporal extension of exercising human agency (Bandura, 2006b). It is the capacity to create desired future situations that govern the creation of actions plans by means of outcome expectations to guide and motivate behaviour (Bandura, 2006b; Bandura, 2018). It involves the prediction of and anticipation on outcomes of our actions and their interaction with the environment in light of a certain desired future situation. Outcome expectations are constructed based on observed or taught relations between actions and their effects on the persons environment or self-evaluation (Bandura, 2001). Forethought provides coherence and meaning to actions and one's life (Bandura, 2001; Bandura, 2018). The awareness of alternative

future situations is an inspiration and motivates to alter behaviour accordingly (Bandura, 2006a). For food system transformation it is however important to not only facilitate coherent individual action but also coherent collective action. Exercising collective agency requires a shared vision and action plan in which diverse self-interests are melded together (Bandura, 2001). Collective agency is thus the capacity to meld visions and actions plan into shared action plant. The foci of forethought are thus visions and action plans and the capacity to create these in a transdisciplinary and participatory setting.

2.3.3.3.2 Self-reflectiveness: examining out own functioning

Self-reflectiveness refers to the capacity for self-examination of our own functioning in relation to a desired vision (Bandura, 2001). At this metacognitive level people choose between courses of actions, in light of their capabilities, values and beliefs (Bandura, 2001; Bandura, 2018). By means of reflection awareness is created over ones functioning and worldview as a bases for evaluation and possible change to achieve the desired vision. Self-efficacy beliefs play a pivotal role in the perception of one's capacity achieve the created vision (Bandura, 2001). Self-efficacy beliefs are a result of reflection and strong self-efficacy beliefs help to imagine positive outcomes more easily (Alkire, 2005). This in turn influences the level of ambition represented in the vision and action plan and the motivation to act upon them. Self-awareness of one's functioning and worldview in light of the created vision are the central tropics in regard to self-reflectiveness. Self-efficacy could be another central topic in regard to self-reflectiveness, due to the overlap with a feeling of competence this is captured there.

2.3.3.3.3 Self-reactiveness: motivating action

Beyond making appropriate action plans, human agency also includes the execution of these action plans, thus human agency links thought to action (Bandura, 2006b). Self-reactiveness is a self-regulatory process encompassing the ability to motivate and regulate action plans (Bandura, 2006b; Bandura, 2018). Not all goals facilitate action, this is dependent on the specificity, level of challenge, engagement, and temporal proximity (Bandura, 2001).

According to Bandura, motivational and self-regulatory mechanisms govern the manner and level of engagement in activities (Bandura, 2001). People act in order to feel satisfied or proud and avoid behaviour that leads to dissatisfaction and devaluation (Bandura, 2001). In new situations people will try to figure out what is expected from them, create hypotheses, and evaluate their capabilities (Bandura, 2001). Subsequently, they set a goal that will satisfy others or themselves (Bandura, 2001). If there is an intrinsic motivation for the activity, typically people will be persistent in achieving the goal (Bandura, 2001). Imposing external motivation risks to result apathy or hostility due to a feeling of coercion or disrespect (Bandura, 2001). Motivation is thus the focus the central topic regarding self-reactiveness in which the aim should be to engage intrinsic motivation. The concepts external motivation and intrinsic motivation will be explained in the next section.

2.3.4 Self-determination theory: a theory about human motivation

Self-determination theory (SDT) is a theory about human motivation. Motivation is an important aspect of human agency mainly linked to the self-regulatory process that Bandura describes as self-reactiveness. SDT holds that human are active, growth oriented and are naturally inclined to act according to their needs (Deci & Ryan, 2000). Ryan and Deci suggest that we should focus on the kind of human motivation in addition to the magnitude. Accordingly, they have divided motivation in categories on a continuum Figure 7 ranging from amotivation or extrinsically motivated to intrinsically motivated. Intrinsic motivation is characterised by the combination of autonomy, competence and relatedness which they describe as the three needs of human motivation (Ryan & Deci, 2000). Integration of external motivations thus hinges on the facilitation of these needs.

2.3.4.1 *Autonomy: ability for self-guidance*

Autonomy refers to the ability and opportunity to make choices, acknowledgement of feelings and opportunity to self-guidance (Ryan & Deci, 2000). Empirical research has shown that the level of autonomy is linked to the level of engagement in a certain activity and the value of successfully finish the activity (Deci & Ryan, 2000). Hence, in order to motivate action people should be offered the opportunity to decide for themselves in what way they can contribute to food system transformation. A shared vision and action plan can ensure coherent action and effectively use different kinds of knowledge and skills.

2.3.4.2 *Relatedness: feeling supported*

Relatedness is the need to feel connected to others and a sense of belonging (Ryan & Deci, 2000). It encompasses caring for and being cared for, a sense of being supported by for example a teacher and is related to a sense of security (Deci & Ryan, 2000; Ryan & Deci, 2000). The primary reason for externally motivated action is to satisfy others whose interests matter to the person in question. Creating this sense of relatedness therefore contributes to the internalization of motivation (Ryan & Deci, 2000). The process of creating a shared vision has the potential to facilitate connection between people a sense of relatedness depending on the group dynamics.

2.3.4.3 *Competence: the feeling of being competent*

This need is the feeling of being able to execute a certain activity or pursue a certain achievement of goal (Ryan & Deci, 2000). It is similar to what Bandura describes as self-efficacy beliefs. Feeling competent does not result in internalization of motivation if not accompanied by a sense of autonomy (Ryan & Deci, 2000). This means that one need to feel competent to contribute to food system transformation. This requires a level of knowledge about the topic in order to create a vision and plan and subsequently reflect on your function in light of vision and motivate and regulate your action.

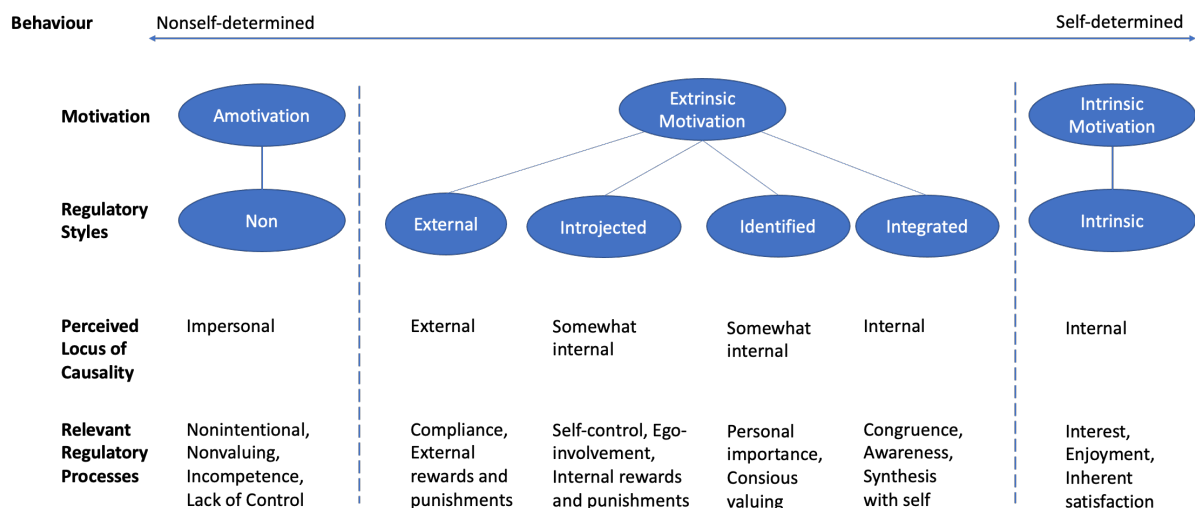


Figure 7 The self-Determination Continuum showing the types of motivation with their regulatory style, loci of causality and corresponding processes (Ryan & Deci, 2000 p. 72)

2.3.4.4 Steer towards integrated motivation

Amotivation or externally regulated motivation is guided by a sense of obligation without having integrated the reasoning, desire to avoid punishment or get a reward. If acted upon at all it is without intent “they just go through the motions”, because either they do not act autonomously and thus do not value the results of activity or have a low self-efficacy belief regarding the activity (Ryan & Deci, 2000). When facing adversity amotivated people typically have a difficult time to persevere.

Intrinsically motivated people on the other hand act with determination because they value the activity and act highly autonomous which not means individualistically (Ryan & Deci, 2000). Furthermore, their performance is likely to be better, they are more engaged which also results in a better perceived well-being (Ryan & Deci, 2000).

A level of adversity is rather likely in any change process. It is therefore important to attempt to foster and enable people to act upon their intrinsic or highly integrated motivations to facilitate determination perseverance. This is certainly the desirable when dealing with a mess such as food system transformation that is characterized by its inherent uncertainty, ambiguity, scale, time span, number of actors and unboundedness.

2.3.5 Human agency as a competence with competencies

Human agency and the properties as described by Bandura can also be regarded as a competence and competencies. The words competence and competencies are among others synonymously used with the word’s ability and capability. Mulder (2001 p. 152) reviewed conceptions of competence and formulated a definition: “the capability of a person or an

organisation to reach specific achievements” Later in 2014 he reviewed the conceptions of professional competencies in light of practice-based learning. According to Mulder a professional competence is “the generic, integrated and internalized capability to deliver sustainable effective (worthy) performance (including problem solving, realizing innovation, and creating transformation) in a certain professional domain, job, role, organisational context, and task situation.” (Mulder, 2014 p. 111). Apart from the focus on a professional role this later definition is more specific and suits the purpose of this research better. Therefore, **within this research a competence is understood as the generic, integrated, and internalized capability to deliver sustainable effective (worthy) performance (including problem solving, realizing innovation, and creating transformation) to reach a specific achievement.**

A competence in turn consists of various competencies (Mulder, 2014).

Accordingly, Mulder (2001 p. 152) describes competencies to be: integrated performance-oriented capabilities, which consist of clusters of knowledge structures and also cognitive, interactive, affective and where necessary psychomotor capabilities, and attitudes and values, which are conditional for carrying out tasks, solving problems and more generally, effectively functioning in a certain profession, organisation, position or role.

Applying this understanding, human agency can be understood as the competence to exert influence over one’s functioning and take responsible action to realize a desired vision of the worlds functioning. Consisting of the competencies forethought, self-reactiveness, and self-reflectiveness as described before. Competence cannot be taught but are developed via action-oriented learning processes which, as pointed out by Dewey, start with the awareness of incapability (Lieblein et al., 2012; Mulder, 2001; UNESCO, 2018).

The competencies pertaining to human agency can be linked to several descriptions of competencies that are considered to support a more sustainable lifestyle. This to say that beyond human agency these competences in itself are considered important to facilitate responsible action and create a more sustainable world. UNESCO published a list of eight competencies for education for the UNSDGs namely: 1. systems thinking; 2. anticipatory; 3. normative; 4. strategic; 5. collaboration; 6. critical thinking; 7. self-awareness and 8. integrated problem-solving competency (UNESCO, 2017 p. 10). Lieblein et al. (2019) develop agroecological education which holds the competences: observation, participation, dialogue, systems thinking, reflection and visionary thinking (Lieblein et al., 2012; Lieblein et al., 2019).

Self-reflectiveness in this links to the competency reflection from Lieblein et al (2021), and to normative, critical thinking and self-awareness from UNESCO (2017) which contains the reflection on norms, values, actions, goals, one’s own role and worldview. Self-reactiveness links to the goal of developing the competencies as a means to foster and motivate responsible action. Forethought is similar to what UNESCO refers to as anticipatory

competency, Lieblein et al. (2019) call visionary thinking, what Riel Miller calls Future Literacy (UNESCO, 2018), what Meadows calls envisioning (Meadows, 1996). Riel Miller wrote “A futures literate person has acquired the skills needed to decide why and how to use their imagination to introduce the non-existent future into the present.” (UNESCO, 2018 p. 15). Forethought is a competence part of the agroecological change agent’s skill set (Lieblein et al., 2019) and important within transition management. In line with what Meadows argued in 1996 – this competence is underdeveloped and in order to create a sustainable world we need to develop this competence – Lieblein et al and Riel Miller are today pursuing widespread development of this competence (Costanza, 2003; Lieblein et al., 2019; Meadows, 1996; UNESCO, 2018).

2.4 This research: exploring the influence of visioning on human agency

Food system transformation is a tremendous challenge that involves the vast majority of societies with all their different worldviews, practices and environmental determinants (Independent Group of Scientists appointed by the Secretary-General, 2019; Méndez et al., 2013; O’Brien & Sygna, 2013; Rockström et al., 2020). True transformation asks for a system approach (Gill et al., 2018). Top-down approaches can be perceived as confinement of the opportunity to nurture motivational needs for action, which can result in apathy or hostility (Caluwé & Vermaak, 2010; Ryan & Deci, 2000). Since this is the opposite of what is needed for sustainable food system transformation, approaches that nurture, and foster the motivational needs are more promising. Furthermore, a thorough understanding of the vision and the action plan and the competence to develop them can invite to forethoughtful behaviour (Bandura, 2001). This thorough understanding can be developed via participatory approaches such as FOMs. These can also invite to self-reflect and motivate individual or collective action. This means that human agency is at the basis of true system transformation. Considering the tremendous challenge of food system transformation it is interesting to how human agency for food system transformation can be influenced. Research that has used FOM’s indicate the potential of these methodologies to play a role in fostering human agency for food system transformation Figure 8.

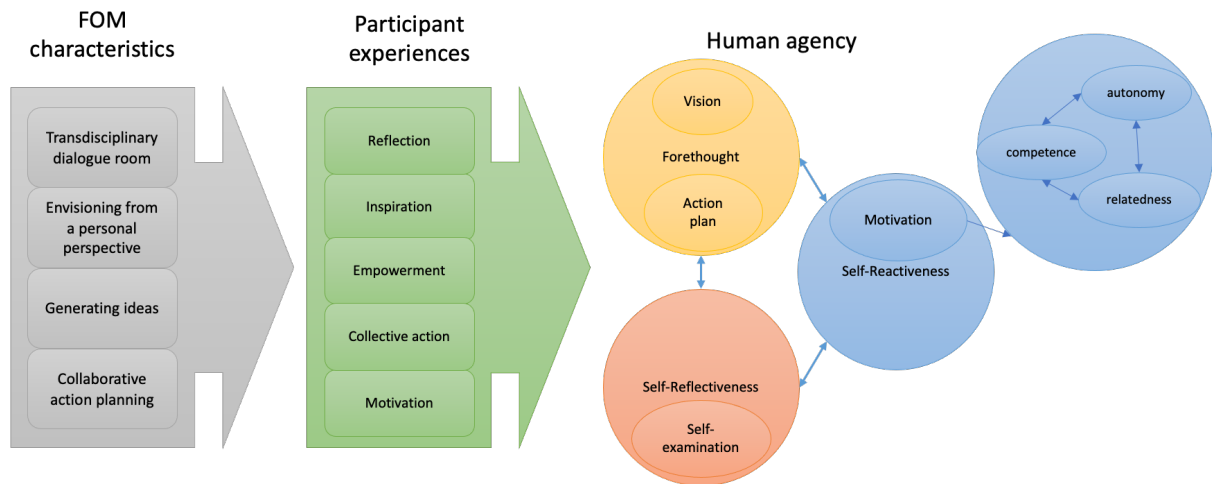


Figure 8 Diagram with the FOM characteristics, the participants experiences complemented with the properties of human agency and needs of motivation which guides the data analyses of this research

This research explored in what ways visioning can influence participants' human agency regarding food system transformation. The aim of the research is to inform future application of the FOM visioning and invite people who are concerned with food system transformation to critically think about their approach.

Correspondingly, the research is conducted with the following research questions:

- In what ways does visioning influence participants' property of forethought in light of food system transformation?
- In what ways does visioning influence participants' property of self-reflectiveness in light of food system transformation?
- In what ways does visioning influence participants' property of self-reactiveness in light of food system transformation?

Chapter 3 Methodology

The research approach is guided by Agroecology principles as presented in Table 1. The purpose of this approach is to include those marginalized or regularly excluded from research and decision-making processes (Méndez et al., 2016b). In other words, it is an approach that attempts to foster bottom-up action by enabling these groups of society effected but often excluded from knowledge creating and decision-making processes. In combination with FOM this has potential to foster human agency for food system transformation.

3.1 Research design – a qualitative case study

In order to gain a rich understanding qualitative and quantitative research methods are combined. The research design can best be described as an One-Shot Case Study (Bernard, 2006). Case studies are described by Bryman (2012) as an intensive study by qualitative methods of an object of interest, such as an organization or community. One-Shot Case studies are characterized by the absence of a control group, and the research inquiry taking place after an event or intervention (Bernard, 2006), in this case visioning workshops. Two visioning workshops are facilitated focused on the local food system with two unrelated groups of people. Qualitative research methods such as interviews and observation aim to get a rich understanding of a certain phenomenon (Bryman, 2012; Hancock & Algozzine, 2006). Accordingly, observation during the workshops and subsequent semi-structured interviews with the participants were used. Additionally, a questionnaire as quantitative method was used to get a more generic perspective and investigate if any action has followed.

To enable the research to take place within given limitations, collaboration was sought with two existing projects using my own contacts. The final research design was created in collaboration with the overarching project goals, to facilitate a democratic process, and to avoid research fatigue. Furthermore, envisioning process and vision should be relevant to the participants (Wiek & Iwaniec, 2014). Therefore, instead of setting up an independent research might not only risk research fatigue but also lack relevance. The objective with this approach is to promote voluntary participation of community members, which results in a more meaningful workshop (Ryan & Deci, 2000).

3.2 Participatory Action Research process

The research process is presented in Figure 9. The process started with the search for suitable project based on the following criteria:

- Location: South East Norway.
- Project duration: The project must be already initiated and continue for at least one more year.
- Project size: over 10 people.
- Project nature: inter- or transdisciplinary.
- Project topic: related to food system sustainability in local context.

- Voluntary participation in visioning workshop of both the project coordinators and project participants.
- Availability of a determined project coordinator to participate in the design of the workshop.
- Project coordinator agrees to work with visioning as methodology.
- Project coordinator presumes sufficient volunteers for interviews.
- Project offers the opportunity to follow-up on workshop outcomes.
- Possibility to have a visioning workshop between November 2020 and January 2021.
- Sufficient proficiency in the English language of the project coordinator and the workshop participants.

The search resulted in two suitable cases. Subsequently, together with the project coordinators the rest of the research process was designed. The coordinators were involved throughout the process, in the practical organization, invitations and determining the content for the workshop. Due to the COVID-19 pandemic, the workshop was adapted to meet evolving regulations, and to ensure the participant's safety. For the same reason, the workshops were facilitated digitally using Zoom.us, which was the main platform used by NMBU at the time and has the added value of a break-out room functionality.

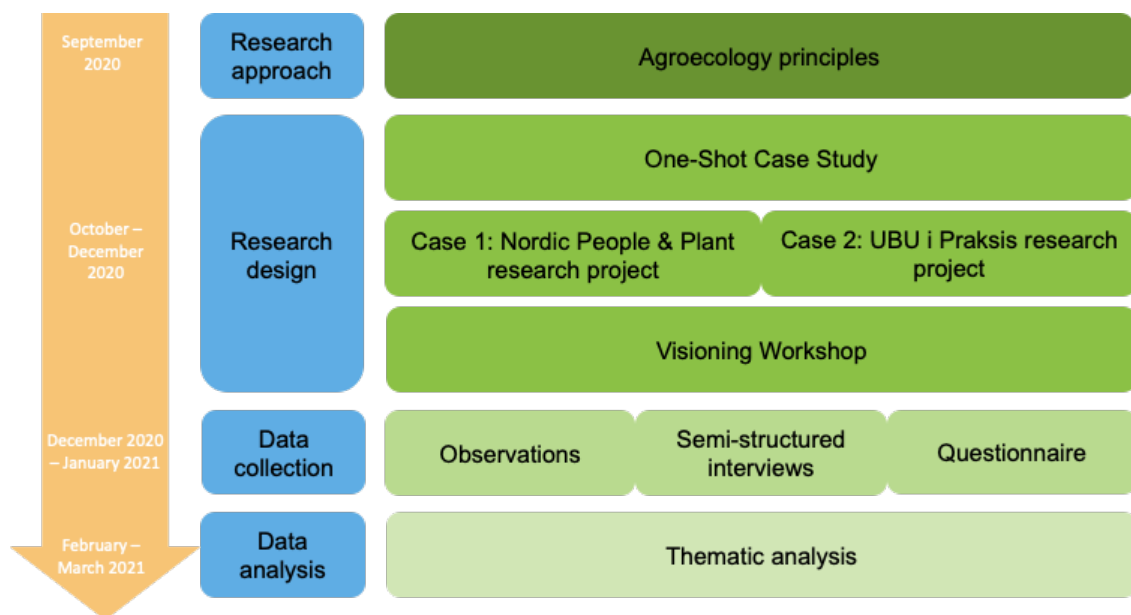


Figure 9 Research process diagram

3.3 Case 1: Nordic People & Plant research project

The first case was the Nordic People & Plant (NPP) research project. This project is a collaboration between the Natural History museum in Oslo and the University of Oslo, started in November 2018, until April 2023. The project focuses on rediscovering and safeguarding ethnobotanical heritage in the Nordic countries. Special attention goes to the Viking age in their endeavour to trace the cultural evolution. The research objective is to broaden the spectrum of contemporary plant uses, by inspiring a wide range of people with historical plant

use practises. A source of inspiration was the unprecedented decline in plant diversity on earth, which the project can contribute to mitigate. Furthermore, the project aims to contribute to Sustainable Development Goal 3: Good health and well-being and 2: Zero hunger. To address this, they use historical sources and contemporary knowledge (e.g., cookbooks) to create a database of knowledge about plant use practises, and to a lesser degree, plant species. Edible and medicinal plant use make up an important part of their research. Beyond knowledge creation, they are dedicated to disseminating the knowledge widely, and to a participatory transdisciplinary approach.

At the time of the visioning workshop, the project was a collaboration of a diverse group of approximately 25 people. The project is led by six funded researchers - a botanist, an ethnobotanist, philologist, linguist, and ecologist. Furthermore, approximately 20 people are otherwise affiliated ranging from a biology bachelor student to a chef, professional foragers, story tellers, organisation as Kvann and Norges Sopp- og nyttevekstforbund and much more.

The team is constantly changing due to new opportunities or needs that arise, resulting in a constant need for community building. Community building was the communicated aim for the visioning workshops. Additionally, improving the efficacy of the research by creating more unity in the research activities, utilizing synergies, and facilitating collective action was an underlying aim.

Together with the project coordinator, the group of invitees was determined consisting of the project coordinators and affiliated organizations and individual researchers. Subsequently, an invitation was composed explaining the aim, the program, the voluntary nature, the intended outcomes, the date, and time, and that the workshop is part of a master thesis research. The participants were individually invited by a personalized email sent by the project coordinator resulting in a diverse group of thirteen participants. The different levels of seniority were considered not problematic due to existing relationships. Diversity was also represented in the prepared breakout rooms. The participants were invited to envision their contribution to the development of a more sustainable local food system in 2025. This four-hour workshop took place on the 11th of December 2020.

3.4 Case 2: The university school project – Ås Videregående Skole

The university school project at NMBU is a collaborative project between the NMBU Department of Educational Science at Realfag og Teknologi (REALTEK) faculty, four high schools in the Viken county and Viken county themselves. The research group 'Utdanning for bærekraftig utvikling i praksis' ('UBU i praksis') at Department of Educational Science is responsible for the research that is carried out in this project. The project started in 2017 and lasts until 2022. The main objective of the university school project is to support the development of practices in education for sustainable development, both in the schools and

in the teacher's education at NMBU. More specifically, the project approaches education for sustainable development through a 'whole school approach', where sustainability is dealt with on different levels of the educational system (e.g. leadership, teachers colleagues, the pedagogical approaches and the curriculum) (UNESCO, 2017). It is a transdisciplinary project, including academics from various levels and disciplines, such as the government and high school representatives, ranging from pupils to board members. In total, over 30 people are involved in the project. There is a strong emphasis on interactive participation of all project stakeholders, meaning the project agenda is composed and executed in collaboration, and that participation in activities is mainly voluntarily.

The workshop was shaped and organised in collaboration with both the university school project coordinator from NMBU and Ås Videregående Skole (Ås VGS). Ås VGS is one of the four schools in the university school project. Over the past few decades, the school has grown significantly. Today they employ approximately 250 people, who contribute to nine educational programs varying in level, from vocational to university preparation, for about 1400 pupils (Ås Videregående Skole, 2020). In response to the national Sustainable Development policy named the green-shift (grønt skifte) agenda (Regjeringen.no, 2020), Ås VGS committed in 2016 to integrate sustainable development into the school strategy.

In September 2020, the new high school curriculum designed by the national government, was effectuated. A portion of the new curriculum contains three interdisciplinary topics: Sustainable development, Health & Life skills and Democracy & Citizenship (Utdanningsdirektoratet, 2020). Ås VGS aims for an integral approach towards the implementation of the new curriculum elements. Rather than adding them to the total workload of both teachers and pupils, they aim to create synergies between the three interdisciplinary topics and the specific subject goals. This requires interdisciplinary collaboration across the school.

Additionally, an UBU i Praksis PhD researcher with research interest related to this research and familiar with visioning, contributed to the workshop organisation. This set-up ensured the relevance of the workshop for Ås VGS and UBU i Praksis in addition to this research.

The participants of the workshop were invited to envision the utilization of the community's and school's food system, to collaborate and facilitate learning in the three interdisciplinary topics in the year 2025. The main motivation for the workshop, was the integration of the interdisciplinary topics in the curriculum. Due to the COVID-19 restrictions, group gatherings were limited. It was decided to focus on teachers and department leaders instead. Therefore, the workshop had the main objective to facilitate interdisciplinary collaboration among teachers and department leaders, for the practical integration of the three interdisciplinary topics. The community's and school's food system were chosen as a relevant focus for the workshop for multiple reasons. This was acceptable, as the purpose of this workshop was not to create a shared vision that represents the whole school, but to enthuse participants to

engage in the implementation of the interdisciplinary topics, introduce volunteers to visioning, and spark the planning of more comprehensive workshops.

Like with the NPP case, invitations were composed with the aim, the program, the voluntary nature, the intended outcomes, the date, and time, and that the workshop is part of a master thesis research. The invitation was delivered via selected Teams groups, as that was the main form of communication at Ås VGS. Those who were interested in participating in the research, submitted their acceptance to the project coordinator from Ås VGS. The approach resulted in a diverse group of eleven participants. The diversity was maintained in the prepared breakout rooms. This two-hour digital workshop took place on the 14th of December 2020.

3.5 Visioning workshops

Designing the workshop was an iterative participatory process with shared and divided responsibilities, to facilitate a sense of ownership over the workshop among the project coordinators. Both workshops were methodological designed based on the guidelines described in the book "Creating Futures That Matter Today" from M. Parker and A. Pool (Parker & Pool, 2017).

3.5.1 Guidance

Multiple facilitators who were involved in the organization of the workshops, were present in the breakout rooms to provide participants with guidance. In the NPP case, two facilitators, including myself, managed three breakout rooms. In the Ås VGS case, an equal number of facilitators were present as there were breakout rooms. In addition to an oral explanation of each phase, a template was provided. The template contained a description of all the phases, the questions, the process for answering them, and space to write answers. The options to use digital tools to collaborate in one place or document was considered; however, this did not occur, as unfamiliarity with these tools created a barrier for participants. The possibility of technical or human errors was also considered as a potential barrier, therefore it was decided not to use digital tools.

3.5.2 Workshop process

The workshop comprised of four phases. The detailed programs and scripts are included in appendix 1 and 2. Envisioning the desired future consequently became the first phase of the workshops, followed by the identification of the supporting and hindering forces, action planning and lastly, plenary sharing the breakout room groups results. Each phase started with an individual element, followed by a dialogue, finished with a collaborative element.

3.5.3 Phase 1: Envisioning the desired future script

The visioning script began with fast forwarding to the year 2025, followed by the visioning questions. The fast forwarding was a story in which the people walk towards respectively the

natural history museum or the Ås VGS. Realistic scenes from the local situation constitute the story, which the participants were invited to detect with various senses. The rationale behind this decision was that this area would be used in their vision of the desired future. Moreover, engaging various senses was a way to invite people to become mentally and physically present.

Immediately after the script, the participants were asked to write down their answers to the questions posed in the script. It was repeatedly emphasized that there was no right or wrong answer, or a specific way of answering. To avoid socially desirable and overthought answers, a time limit was given. Thereupon, the participants were divided over breakout rooms. Here they were invited to share their vision one by one followed by creating a shared vision.

3.5.4 Phase 2: Force Field Analysis

A situation is held in balance by opposing forces. On the one side are forces that maintain the status quo, and on the other, those that promote and drive change (Parker & Pool, 2017). In order for change to occur, a disbalance needs to be created, in which driving forces exceed restraining forces (Parker & Pool, 2017). Hence, the participants were invited to identify supporting and hindering forces. Supporting forces were explained as elements, characteristics, values, or processes currently present, that support the transition towards the desired future situation, and therefore could be utilized or even amplified. Hindering forces were explained as elements, characteristics, values or processes currently present, that hinder the transition towards the desired future situation, and therefore should be avoided or diminished. Kotter and Cohen (2002) argue that the single biggest hindering force can be people higher in hierarchy, and that a main goal is to get as many people as possible to participate in the change. Therefore, in addition to the previous questions, the participants were also invited to identify people whose support would be beneficial for the transition.

3.5.5 Phase 3: Action planning

“A vision without action is useless” (Meadows et al., 2004). This third phase therefore focusses on actions. The aim is to identify actions that can be taken by the participants first and foremost, to achieve the vision. The hindering and supporting forces serve as inspiration for actions (Parker & Pool, 2017). To guide the participants, some questions were prepared on the template addressing the individual actions, as well as collective actions.

3.5.6 Phase 4: Plenary sharing

In this last phase, all breakout room groups were invited to share the results of previous phases. The main goal was to inspire each other. Additional goals were to show differences and commonalities between the groups, to indicate the complementarity.

Time was too short to make a shared vision and action plan for the entire case group. The participants asked whether they could receive a summary of the ideas that were brought up during the workshop. Therefore, a summary was made in which the ideas from the different groups are merged to one vision, set of supporting and hindering forces and action plan. The anonymised versions of these summaries are included in appendix 3. These also reflect observations described above. The questionnaire data shows that the content of the summary corresponds to most of the participants perspectives.

3.6 A mixed method data collection

Methodological complementarity is a way to enrich research results (Hancock & Algozzine, 2006). Therefore, three different data gathering techniques were used, namely observation, interviews, and a questionnaire.

3.6.1 Observation

During the workshop, observation was used to take note of any markable events. Attention was paid to any markable responses of the participants to the activities, questions, and the interaction between the participants. Throughout the workshop, quick notes were made. Additional notes were taken after the workshop, and then compiled and reviewed (Bryman, 2012; Hancock & Algozzine, 2006). Furthermore, a collective reflection session with the other facilitators was conducted to validate and complement the observations.

3.6.2 Interviews

Due to restrictions in place for the COVID-19 pandemic, all interviews took place via the online platform Microsoft Teams (Teams). Teams was chosen because the majority of the informants were familiar with the platform. Interviewees were informed of the research by the information letter attached to the consent form. Each interview lasted between 30 – 60 minutes. After each interview, it was transcribed to ensure rich data collection and anonymized for ethical reasons (Kvalle, 1996).

Participation in the workshop was voluntary. This was stated in the workshop's invitation, and at the end of the workshop. After the workshop, participants received a personal email invitation for the interview. After a week, a second personal email invitation was sent out to those who had not responded yet. This resulted in fourteen participants in total, with seven participants of each group representing the diversity of the groups.

To avoid stretching people's memories (Bryman, 2012), the interview was aimed to take place within two weeks after the workshop, so the participants still had a vivid and rich memory of the workshop and their experiences. Eleven interviews were conducted within two weeks after

the workshop. The remaining three were conducted within 34 days after the workshop due to the Christmas and New Year holidays.

Semi structured interviews were chosen to enable rich answers from the diverse group of participants, by adjusting the questions and vocabulary to the interviewee (Bryman, 2012; Lune & Berg, 2017). Semi structured interviews are a method to balance flexibility with rigour (Bryman, 2012; Kvalle, 1996). I used a layered interview technique, meaning that the depth of the interview is dependent on the interviewees' answers, and the overall atmosphere of the interview (Lune & Berg, 2017). The guide is included in appendix 4.

The interviews were conducted based on the theory from Kvalle (1996) and Bryman (2012). Accordingly, the interview started with open and descriptive questions so the interviewee could voice immediate thoughts and experiences of the workshop. This also enabled the identification of reoccurring themes, and to get a first impression of the interviewee and their experience. Towards the end of the interviews more personal opinions and experiences were asked for. Probes were used to explore the reasons behind the opinions and experiences.

3.6.3 Questionnaire

2-months after the workshops a questionnaire was sent to all participants. It was a short questionnaire of seven questions to get a better sense of whether the interview answers represented the general experiences of the participants. It was designed short and easy to optimize response rate. The first question was the consent question. The three following questions were seven-point Likert-scale. This is relatively easy and quick to answer but maintains the participants ability to give a nuanced answer (Bryman, 2012). Fifth and sixth question were yes or no questions. For ethical reasons an option to answer 'I do not know' was also included. The last question was an open question as an option for comments as suggested by Bryman (2012). The questionnaire was open for approximately one month and after two weeks a reminder was sent to the participants who had not responded yet. The questionnaire Nine participants of each group filled out the questionnaire this means a 100% response rate from Ås VGS case and 69% response rate of the NPP case.

3.7 Data analysis

Thematic Analyses as described by Nowell et al. (2017), guided the data analysis to ensure trustworthiness of the research. This means that immediately following the interview, all interviews were transcribed, anonymized, and complemented with reflections and initial themes and codes. After this first iteration, human agency theory and information on FOMs were consulted for the second analysis iteration. The second iteration took place between three to six weeks after the interviews. A data analysis log was kept in which notes were made about themes, codes, decisions, and changes. After this second analyses iteration, all interview transcripts were analysed one more time to apply new insights gained throughout

the second iteration. During the third iteration, notes were made on defining the final names for the themes. These themes were subsequently used for reporting the results. After the interview data analyses the questionnaire was made to triangulate some interesting findings from the interviews. Since the questionnaire data was limited due to the amount of workshop participants the data was analysed with excel. Moreover, statistical tests were not performed due to the small sample size (Bryman, 2012).

3.8 Ethical considerations

To ensure an ethically sound research process, various measures were taken with the aim of avoiding harm caused by the research project (Lune & Berg, 2017; Nygaard, 2017). Nygaard (2017) presents a clear description of the ethical considerations, which guided the research design as explained hereafter.

The ethical guidelines from NMBU were followed, and approval for the research was obtained from the Norsk Senter for Forskningdata (NSD) granted with reference number 866899 before the workshops and data collection took place.

In all phases, participation in this research was voluntary. Together with the project coordinators, qualified participants were determined to remain within the limits of the research. All qualified participants had opportunity to participate and respond to the invitation with questions or requests. To accommodate the participants from Ås VGS, the workshop was held during their normal planning hours, as suggested by the project coordinator. Furthermore, participants could withdraw from the research at any time, as stated in the consent form. A consent form was composed according the NSD guidelines and signed by all participants. Confidentiality and anonymity were adhered to throughout the research.

3.9 Trustworthiness

In this section, research validity, reliability and generalizability are discussed (Bryman, 2012). Since this is a qualitative research study, the trustworthiness criteria – credibility, transferability, confirmability and dependability – as developed by Guba and Lincoln (1989), and as cited by (Nowell et al., 2017), are used instead for two reasons. Firstly, these criteria are developed from the idea that there is not an absolute truth (Bryman, 2012), which is in line with my interpretivist perspective. Secondly, these criteria are considered a pragmatic way to demonstrate the acceptability and usefulness of the research for a variety of stakeholders (Nowell et al., 2017).

3.9.1 Credibility

Credibility parallel's internal validity (Bryman, 2012). Triangulation is a technique to ensure credibility (Nowell et al., 2017). To this end, I have used a mixed method for data collection in

which the post-workshop questionnaires were used triangulate some of the interview findings. Furthermore, the observations were discussed between the facilitators and interview answers were verified during the interviews. It was however not feasible to obtain feedback from the participants on the written report, which would have strengthened the credibility. Furthermore, the iterative process of thematic analysis assisted in congruency between concepts and observations (Bryman, 2012)

3.9.2 Transferability

Transferability parallel's external validity (Bryman, 2012). This research is designed as a case study, limiting the transferability since these are specific to the context of this research (Nowell et al., 2017). The elaborate methodology presented should enable the judgement of transferability (Bryman, 2012). It should however be kept in mind that interpretations of the observation, interviews and the reflections are unique to the person. Furthermore, the results are discussed in relation to previous research, which indicate where results comply or diverge from the existing knowledge.

3.9.3 Dependability

Dependability parallel's reliability (Bryman, 2012). This can be ensured by auditable content, along with comprehensive description of the methodology and background information (Nowell et al., 2017). Therefore, the data analysis log, the consent forms, auditable content, and an elaborate methodology and background is included.

3.9.4 Confirmability

Confirmability parallel's objectivity (Bryman, 2012). Adhering an interpretivist stance, it is assumed that people, depending on their preknowledge, background and environment, interpret information differently (Nygaard, 2017). Therefore, personal perspectives are assumed to be reflected in conducting and writing up this research. Transparency, reflexivity, methodological complementarity, and theoretic methodologies are means to demonstrate ethical process and trustworthiness of the research. (Nowell et al., 2017; Nygaard, 2017; Reason & Bradbury, 2006). Transparency is created through the preceding comprehensive methodology and background, and the availability of the research data. Reflection throughout the research enabled this level of transparency and awareness over biases. Furthermore, confirmability has also been a consideration in choosing the methods visioning and thematic analysis.

3.9.5 Reflection

Reflection is used throughout the research process, by means of a journal, to investigate ontological and epistemological perspectives, and possible biases for trustworthiness (Nowell

et al., 2017). Therefore, after the workshop, individual and collective reflection were used to increase credibility and expand the observational data (Hancock & Algozzine, 2006).

3.10 Limitations

No research is perfect (Nygaard, 2017). In this section, the various aspects that need to be considered while interpreting the research are described. This research was conducted during the highly dynamic COVID-19 pandemic. Therefore, the workshops were conducted digitally which has not been done before and also the interviews could therefore not take place physically. Furthermore, the voluntary participation of the people needs to be considered while interpreting the research findings as well as the fact that the researcher and participants had different cultural backgrounds and could not use their mother tongue in their communication.

3.10.1 Digital visioning workshops

The workshops were limited in size in anticipation of the maximum amount of people that would be allowed to gather physically inside. Approximately a week prior to the workshops, regulations regarding the COVID-19 pandemic became more stringent, and physical meetings with the participants enrolled were prohibited. Therefore, the workshops were conducted digitally.

Limitations of this research include experience in independently facilitating visioning workshops and, absence of literature on digital visioning meetings, which restricted the possibility to use previous knowledge. Visioning workshop can be conducted in various lengths of time depending on the situation (Parker, 1991; Parker & Pool, 2017). For ethical reasons, it was decided to shorten the workshops in comparison to the physical set-up to not impose long screen time. The digital set-up also limited the researcher's possibility to make observations, the inclusion of the observations from the other facilitators and the reflection afterwards. It is not uncommon to use multiple facilitators. It is however, important to consider that different people interpret, respond and effect a situation differently (Bryman, 2012; Nygaard, 2017). This might result in slightly different results from the breakout rooms. All facilitators were, however, involved in the organisation of the workshop and briefed to ensure alignment.

3.10.2 Voluntary participation

As mentioned previously, participation in the workshops and interviews was voluntary. Therefore, a possible bias towards the methodology needs to be considered. None of the participants were, however, familiar with the methodology used in the workshops.

3.10.3 Interview

Interviewing is a craft that is developed by practise (Kvalle, 1996); therefore, limited experience might thus limit the quality of the interviews. Additionally, reflection has been an important element of my research to uncover and address biases. There was an anticipated bias towards the relation between visioning and human agency. Therefore, attention was paid to the structure, the nature and the phrasing of the texts and questions, based on Bryman (2012) and Kvalle (1996) guidelines. Furthermore, the interviews were conducted by the researcher who also facilitated the workshops, potentially resulting in socially desirable answers and acquiescence (Bryman, 2012). To address this concern, leading questions were avoided, and predominantly open questions were asked to mitigate the interviewer effect.

Face-to-face interviews are preferred above telephone interviews for various reasons (Bryman, 2012). Physical interviews enable observations, can typically last longer and are preferred when possible sensitive topics are addressed (Bryman, 2012). Longer in-depth interviews would have been preferred for this research, but this was not achievable due to COVID-19 pandemic. As an alternative, interviews were conducted online. This might pose similar limitations as telephone interviews; however, due to the COVID-19 pandemic, many people are now more familiar with the use of online tools such as Teams. Moreover, in order to include observations, all interviews were conducted with video recording.

3.10.4 Language and culture

At the time the research was conducted I had spent over a year in Norway and was familiarised with the local culture to the extent that can be expected within a one-year period. The workshops were facilitated in English due to limited experience in the Norwegian language. The workshop script was however, composed in collaboration with native Norwegians, and accordingly adjusted to fit the participants terminology and language level (Bryman, 2012). This was important particularly for the visioning script to ensure that participants could easily follow (Parker & Pool, 2017). Although all interviews were conducted in English, the semi-structured interview methodology offered room for clarifications. Nevertheless, the language barrier might result in nuances getting lost in translation.

Chapter 4 Findings

This chapter presents the findings of the research. The findings comprise of experiences from participants that regard the influence of visioning and human agency. Although it is not an objective of this research to compare and contrast the two research cases, some interesting differences emerged from the data that contribute to the overall objective of this research and are therefore included. First, an overall reflection regarding the food system as a topic and the participation of the attendees is described as context for the findings. This is followed by the findings from the interviews and the questionnaires.

The interviews revealed that creating visions and action plans for the local food system even from a personal perspective was challenging for the participants. Envisioning and dialoguing about personal perspectives was a cause of tension for some but the workshop process and composition was successful overcoming this. Envisioning from a personal perspective helped the participants to think about what they want – to (re)connect to more integrated motivation. Furthermore, due to the diversity of backgrounds envisioning from the personal perspective resulted in a diversity of ideas. The dialogues about the ideas were a source of inspiration that aided the process of creating more comprehensive visions and action plans. For some participants this was also a trigger to reflect upon their own views and activities. The interviews also show that the opportunity to participate in a workshop to think about the future was a source of motivation to act. Participants found or confirmed a role for themselves in achieving the vision and identified ways to join forces. The open and positive approach of visioning was also a source of motivation for the participants.

The questionnaire confirmed the findings from the interviews and observations in that most participants thought the workshop was meaningful and motivating. It also showed that the summary made of the workshop ideas correspond with the personal views of most participants. Furthermore, the questionnaire showed that two months after the workshop several participants have acted in response to the workshop and most of them have the intention to act. The findings are processed into the Figure 10.

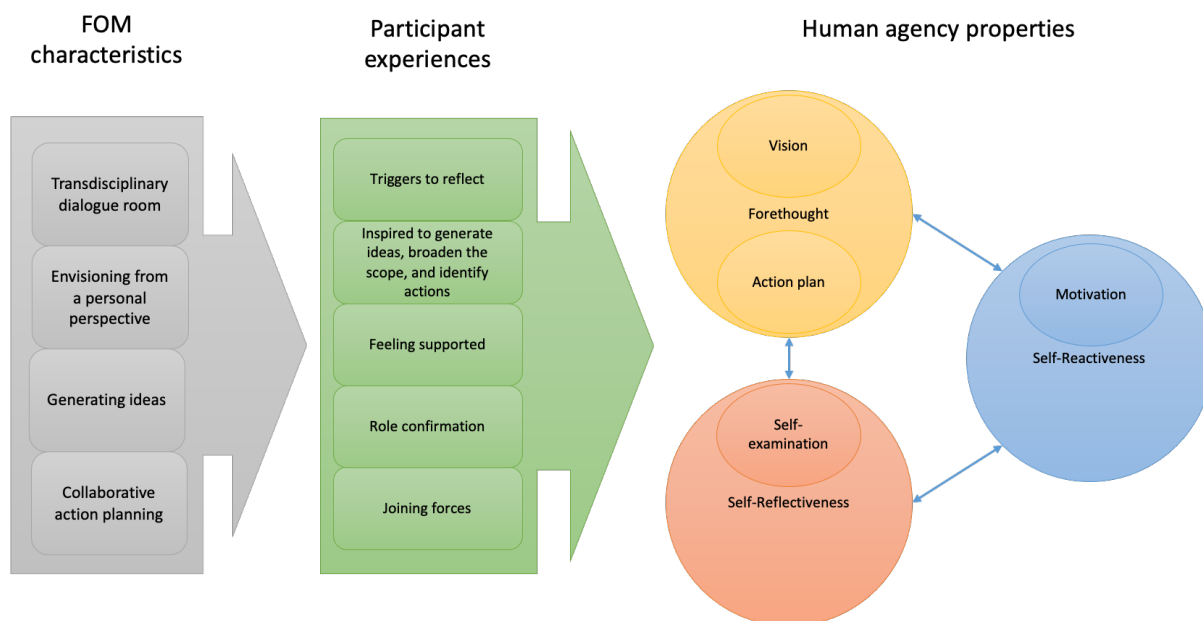


Figure 10 The characteristics of FOM, adjusted participants experiences based on the data of this research and the properties of human agency. The needs for motivation are excluded for readability.

4.1 The challenge of envisioning the local food system

The topic of both workshops was the future situation of local food system. For the participants of the NPP case this appeared to be an appealing topic, close to the participants lives. Food and the local food system turned out not only to be an embedded element of the NPP project but, for many participants, also of their individual work and lives for example via small scale food production at home, foraging, beer brewing, writing, seed saving, etc. During the workshop it was observed that the participants brought in ideas linked to their background and directly related to the topic. Furthermore, the participants stayed on topic and were eager to share.

For the Ås VGS however, the topic appeared more challenging. It is not a topic that all participants work with or think about regularly. The interviews reveal it was challenging for some participants to bring up food system related ideas from either a personal perspective or professional perspective. For some other participants it was less challenging. These were predominantly but not only participants with a background in natural sciences. They have also incorporated the food system with topics such as equality, food production, ecosystem functioning and nutrition in their work and their personal live. The facilitators remarked that they every now and then had to assist the participants in staying on topic or probe for ideas. The rooting of the visions and the action plans in the local food system was thinner than in the NPP case but nevertheless contains some interesting food related ideas, or ideas that potentially can incorporate the local food system. This shows that although the food system is part of everybody's lives in one or multiple ways it is not evident that everybody understands their relation and capacity to engage in food system transformation.

4.2 Satisfactory participation

Overall, the facilitators were satisfied with the participation of the attendees. Most of the participants contributed with input. It was observed that the participants contributed to each other's ideas and that the overall atmosphere was energetic. The set up with small breakout rooms, in which most of the work took place, was raised as an enabling factor for active participation. It encouraged participation and provided a certain level of comfort. A couple of interviewees in both groups explicitly voiced a feeling of anxiety prior to the workshop because of uncertainty about what to expect and their contribution. The set up in small breakout rooms and the open and positive character contributed to transform the initial reluctance to participation. Moreover, as the following quote shows that diversity in the groups also fostered participation:

NPP

"Maybe because it wasn't just botanists and so and as a student, I don't feel I know anything yet. You know? I think it [participation] was easier because of the range of people because then everyone has like a different background."

4.3 Exercising the competence forethought

The visioning workshop invited the participants to envision for the creation of visions and action plans. For some participants it was challenging to come-up with ideas in general due to the topic. For others it required a different way of thinking than they normally do, more intuitive. Especially at the beginning of the workshop the input from the participants was more leaning towards objectives and goals. Furthermore, some participants had the tendency to discuss what decision makers – either the school management or the government – should do to change the current situation. Nevertheless, envisioning was considered by interviewees fun, creative, and imaginary as well as new and for some a challenging exercise. Visioning is a process that needs time explains the participant from Ås VGS. The participatory approach aided the processes in terms of idea generation, complementing the individual visions and action plans and made it made the vision more compelling according to the participant from the NPP case.

Ås VGS

"I experienced that we all tried our best to help each other to make this work and the ideas we had [...] When you counted down you would have to leave the breakout group and return to the bigger group, I was like 'o no we are in the middle of a very interesting conversation'. Which is also a process I think, once the ideas flow it's easier for everybody. So I think the result was good and the outcome the thing we had envisioned in and also the process of pitching our ideas and getting the others to understand what you're talking about getting your message across because, if an idea is vague to you, I guess it's even vaguer to the person listening to you, obviously."

NPP

"The pictures I made in my mind stayed with me, I noticed that I was thinking a lot more about some of the questions asked. And that it was, indeed, I think it was a combination of hearing people's ideas and like them and using the pictures as well as like my own process of I'd only done it myself, and maybe I wouldn't remember it as much because it could just be something I had done in my head, because we wrote it down and talked about it and I hear other people's perspectives it stayed with me."

4.4 Visioning as a source of inspiration, motivation, and empowerment

The interviews show that the ideas created during the workshops were a source of inspiration for the participants. The facilitators observed that the generated ideas were diverse, corresponding to the diversity of backgrounds and worldviews. The ideas were a source of inspiration regarding the understanding of local food system, for individual roles and actions, and ways to join forces.

4.4.1 Generating ideas from a personal perspective for motivation

Generating ideas is a first and crucial step of the visioning process. Envisioning from this personal perspective contributed to the generation of ideas. An interviewee described the workshop as 'structured brainstorming'. During the envisioning phase the question 'What do you want the future to be like?' was put in focus. Participants were encouraged to let go of today's reality and think about what the future could look like oppose to what problems need solving. This freed-up their mind to diverge their thinking and helped to generate ideas as the following interviewees say:

NPP

"I thought it was a good way to start the mind travel, thought as this process, was to let people know that they are not tied down to factors that can make it difficult."

Ås VGS

"I think it was interesting. Because normally, you're so limited about thinking about what we can do and when to and the time. Now had the opportunity to just think outside the box and just throwing ideas out. And I think maybe it can come something out of it, which I wouldn't have expected that we could do without this."

The interviews show that the workshop was successful in incorporating personal perspectives and generating authentic ideas for the vision and action plan. Comparing the interviews with the workshop summaries reveals that participants included their personal worldviews, level, and field of knowledge about the local food system, interdisciplinary teaching, plants, etc. in answering the questions. This was also confirmed in the questionnaire (question 3 Figure 11). Furthermore, the generated ideas were also perceived 'interesting' and 'different'. An interviewee from the NPP case explained how she answered the questions posed in the visioning script differently due to thinking from a personal perspective.

NPP

"I was attaching myself to the assignment in a different way. And then the correct creativity was not to try to answer the assignment but what was 'the my' perspective, [...] I think in my first homework answers, I came to very textbook workwise answers, which I would if it was my workplace, and very distant from my own perspective, or more mainstream maybe. And very problem solution problem solution thinking."

Thinking about personal desires to create a vision was a source of inspiration and motivation for the participants themselves. A NPP interviewee remarked that creating a vision is meaningful and inspiring *"It's always when you manage to formulate your goals and your visions it's inspiring"*. An interviewee from the NPP case was talking enthusiastically about her passion for plants, seeds and her preference to be outside. These are all fundamental elements of the NPP project. She expressed that she was motivated by the workshop and that (re)connected her interests to the NPP project contributed to that. A participant from Ås VGS expressed a similar experience.

NPP

"So I can see from my response that what I found happened was that I was reminded of why I joined in on this project and why it was a good thing to, to get a sense of why I was there as well."

Ås VGS

"How is it going to look like then? Yeah, that's when you have to really picture it. And that is giving me the exact idea of what I want to achieve."

Envisioning from the personal perspective supported answering the questions posed in the visioning script differently. Instead of 'the' correct answer, 'their' correct answer from a personal perspective was given. This was not only a source of motivation for individual or collective work but also contributed to include a different kind of motivation namely more internally regulated motivations.

4.4.2 Inspiration for broadening the scope

It was observed that the ideas were diverse, corresponding to the diversity of background. The diversity was also positively remarked on by the interviewees. The interviews show that appreciated dialogues took place in which perspectives, knowledge and experiences were exchanged. Not being able to finish valuable conversations and unclarity about the intended focus of conversation can also be a cause of frustration as one participant shared. The majority of the participants however considered the dialogues one of the most valuable characteristics as these quotes nicely show:

Ås VGS

"It is interesting to work with people with other subjects and other kinds of experiences. So you get different perspectives of what practices you already have."

NPP

"I think it's not about the vision in itself. I don't think it's important, not at all. It is the discussion that is important. And why, what makes you think. Yeah, so I can't remember the vision. I can relate to the process of finding it."

Through the dialogue's participants exchanged perspectives. The exchange of perspectives provided input for participants with limited ideas for the vision and relevance to their work to spark ideas. For others the various perspectives fostered a more comprehensive understanding of the system and the possible points of intervention in line with the participants set of capabilities and desires.

NPP

"I mean when I really got to see this is a cool approach. Because there's that angle here that I wouldn't think a chef would make about biology, which I haven't thought about, because I'm used to thinking in biology in very defined terms. So, then I get to hear his perspective in and that shapes me a bit." [...] I guess what inspired me was to see that it's relevant, it is relevant to society as a whole, not just to science, which you shouldn't be the goal. And also, that it can be interesting, even though it is like school or university work."

Ås VGS

"It was also a bit eye opening when it comes to food as an interdisciplinary subject. And how that applies also to the subjects that I'm responsible for, which I hadn't really thought much about. At least not in such a broad sense."

4.4.3 Finding a role in achieving the vision

Through the dialogues participants found or confirmed a role for themselves in the action plan to achieve the vision. Some participants had a pre-existing idea about their role either professionally or privately in the local food system and through the dialogues and created shared vision and action plan confirmed their role. The following interviewee for example talked about why she values and enjoys interdisciplinary work and how she realised that a bigger part of her role should be to bring different people together:

NPP

"I realised that an important part of my role is to bring these people together. [...] To bring together two 'worlds' [outreach and research] is I think my role which became extra clear during the workshop"

This department leader from the Ås VGS had a similar experience:

Ås VGS

"I know who's doing what and who's interested in what and then I can make sure that these who are motivated and interested are sort of lifted and to set them in connection with others who need that motivation and managing and sort of, a bit pulling the strings will have to be my job."

As mentioned, the local food system was not for all participants in the Ås VGS case an equally easy topic to generate ideas about. The participants, from their personal perspective shed different light on the local food system, elucidating different aspects. Exchanging these perspectives broadened the horizons of the participants. The dialogues were a source of inspiration for these participants as to how to include of the food system in teaching as for example the following participants described:

Ås VGS

"But some teachers are [changed attitudes] even in the course of the webinar that we had. They said that started with saying that: 'I don't know if it's, if that's relevant for my subject'. But after a while, they started to think about, 'oh, maybe I can do it like that'. And they weren't that sceptic. So, I think for some that joined the webinar they turned out after the webinar, they were thinking differently, I think."

4.4.4 Joining forces to motivate and enable action

Interviews show that the dialogues were also a source of inspiration for collective action plans. The sharing of ideas and dialogues elucidated was to join forces to achieve the vision. Joining forces refers to collaboration in an activity but also sharing knowledge and experience or develop action plans consisting of (individual) actions that build on each other.

NPP

"I think it was an eye-opener that the group of people who attended we are doing things that complement each other"

The same interviewee proceeds saying: "It made clear to me that it is very important to do this kind of things where we all come together often. I realised that when you bring these people together, they will also do things together in which I do not necessarily play a role. These things happen because everybody is together."

The participants contributed with ideas from their personal perspective creating a diversity of ideas. The diversity of ideas and activities was considered valuable. Maintaining the diversity in the group was by various interviewees brought up as an objective in itself in order to address the different aspects of the vision while respecting preferred autonomy.

NPP

"I think we are much too eager to agree in, in working everyday activities, it's much more fruitful to be able to see that we go different directions, but our different roads, at least in the same direction."

Ås VGS

"I like working that way, thinking about a specific topic, and that everybody's working together around the topic and the different subjects that they work with this same team or just the topic, but they work with it differently. Students recognize that we work with the same as a team."

Furthermore, joining forces was also perceived as way to enable action in general. According to several interviewees, joining forces is important in order to be enabled with time, funding or other recourses to act upon the created vision. Time was especially in the Ås VGS case an important perceived constrain. Several interviewees revealed that they would like time to develop interdisciplinary collaborations between teachers in order to get consent from management to take action. The visioning was considered an approach to develop these interdisciplinary action plans. In terms of the NPP research project a participant revealed that in order to get funding for a research project an extraordinary research proposal is required. The visioning workshop offered the opportunity to get inspiration for such proposals and initiate collective action.

NPP

"There are wild ideas coming from the workshop. We need these wild ideas in order to get research funds. The wilder the ideas the bigger the chance that you are seen. I think that these wild ideas you sometimes get on your own but most often these ideas result from open dialogues with other people."

The opportunity to join forces appeared motivating to collaborate or execute individual actions to achieve the desired future.

NPP

"I am, after the workshop definitely more optimistic towards broader collaboration in the Nordic countries and Norway. When it comes to both value food services, and learning more about plants, I think. So, definitely more enthusiastic and more positive after the workshop, and I found it very useful to be a part of it."

Ås VGS

"I think the workshop made me more motivated. Or if I could be more motivated to work this way. So, and then maybe also see that we can work together and more together with NMBU."

Nevertheless, the interviews also reveal that not all breakout groups had sufficient time to finish the action planning to satisfaction. The level of concreteness is important in order to join forces or see how the individual activities can contribute to achieving the desired future situation.

NPP

"I think the potential about becoming more concrete is that then we might have found ways where we could support each other in the ways where we are concrete, each of us. I am sure, you know, each of us have ways of stepping towards these goals. But both the act of telling each other about it might be beneficial, just in the sense of giving each other feedback from our own individual background and understanding, but also in the sense of being able to further support each other."

Ås VGS

"I can say that we teachers often say is that we would like concrete examples of things we can do in the classroom."

4.5 Finding support as motivation for action

The interviews show that participants found support for their ideas with other participants which was beneficial for the workshop and was a source of encouragement and motivation. Mixing levels of seniority played a role in this. Furthermore, beyond finding support for ideas, participants experienced the workshop as a means to build community.

Explicating personal ideas was for some participants a source of anxiety at the start of the workshop. Hearing ideas from others that provided a sense of comfort and confidence as the quote below explains. This was beneficial for the participatory process of creating a vision and action.

Ås VGS

"So I experienced that we all tried our best to help each other to make this work and the ideas we had, [other participant] and I we're not that different in a way. Which might be a good thing that you know you'll get support from your team members that the way you're thinking is not totally off in a way."

The workshops consisted of a diversity of disciplines as well as different levels of seniority. I have found that mixing the levels of seniority had a positive effect on the motivation of the participants. The decision-makers appreciated the participation of the others to get a grasp on what drives them in order to enable them to act upon the created vision. Envisioning from the personal perspective did contribute to this since this provided authentic ideas for the vision and the actions. Simultaneously, the participation of decision-makers (e.g., the project leaders and department leaders) was important for the credibility of the workshop. This became clear from a comment made by an Ås VGS participant in the questionnaire who said

that higher management should have at least initiated the workshop for the perceived value of the workshop. Some other participant credited the participation of department heads as the following quote also indicates.

Ås VGS

"What inspired me was that the heads of the departments looked like they were interested in this. That surprised me a bit. Because normally they have problems enough. So that they were willing to do something extra here. I was a bit optimistic about that. Firstly, is that three of the heads of the departments joined this. I wouldn't expect more than one tops. And all them participated in a constructive way. They didn't look for problems"

Moreover, finding support from decision makers enhanced confidence and motivation to engage in the endeavour of achieving the vision as this participant explicated:

NPP

"they (decision-makers) really liked the project that I'm working on. And they found it very interesting and wanted to hear more about it. [...] Interviewer: Did you feel motivated after the workshop? Interviewee: Yeah, absolutely. As I said, it gave me a lot of like, inputs on what to write about or think about and ask about. It got me like, rolled to start with everything"

The applied visioning methodology enabled a diversity of participants to participate and share ideas. Furthermore, participants found support for their ideas with other participants which served as a source of motivation. The interviews reveal that beyond finding support for ideas the workshop also contributed to the perceived sense of community. The following quotes illustrate this nicely:

NPP

"It's, you know, when you meet all these people, and, you know, you realize that you're not alone, and you know, it's this sort of communal feel, it's quite energizing and very positive. very positive thing!"

Ås VGS

"I think that the energy from one group tended you know get across to the other groups.

That we sort of pulled everything together that we were in this togetherness thing. I think that was positive and that we shared what we had and come up with our ideas and we listen to each other and we maybe got something to do think about."

This sense of community gained through creating a shared vision contributed also to a perceived sense of attainability of achieving the vision.

NPP

"I felt that you know, that it might be more possible, because of this sort of sense of sort of a shared goal."

4.6 Exchanging perspectives to trigger reflection

The participants were invited to generate ideas in regard to the future local food system from their personal perspective. This was followed by sharing the ideas and dialoguing about them in order to create a shared vision and action plan. During these dialogues the participants exchanged perspectives which encouraged some of the participants to reflect upon their own perspectives, ideas and activities. An interviewee phrased it as follows:

NPP

"It's [visioning] helpful because it forces you to take a step out of the everyday activities and to think [about] your work in a wider context. It is always a good thing with these kinds of workshops where you actually are allowed to discuss yourself with other people."

Self-reflection requires level of critical thinking about what we do know but also what we do not know. A participant from the NPP case spoke about how the workshop was a way to exchange perspectives to elicit assumptions and biases. This can also be considered a way of self-examination in order to increase self-awareness.

NPP

"I feel that it's important to be open to not knowing what questions to ask and to, like, use different perspectives of relationships between people and plants that I myself don't even think about, or is not really part of what I'm aware of. But including these different perspectives of people, you know, it's possible to really go exploring and sort of shed light on these different perspectives. [...] there are a lot of ways that one can see the world, because assumptions based on that background, but with a broader network, you know, one that becomes less biased or less limited by that."

The exchange of perspectives and ideas also offered the opportunity to review or benchmark ideas. A participant from the Ås VGS case used the workshop to reflect upon ideas in comparison to others in order to determine the best course of action. Provided that this happens not by means of discussion but with an open-minded reflection as this participant did this can also be considered self-reflection.

Ås VGS

"I enjoy, I guess, people differ. But to me, it's also very important to have someone to share my ideas with and I also get lots of new ideas when I talk to people. And then afterwards, I think that, okay, perhaps mine was better, or sometimes, that was a better idea than I had. So I think it's always very useful to sort of play with ideas together with other people."

The exchange of perspectives thus played a role in triggering reflection on perspectives, activities, and ideas to challenge current thinking patterns and action plans.

4.7 Motivate to act

Overall, the interviews show that the participants were motivated by the workshop. They were motivated by the opportunity to participate, be together, create ideas together, identify actions, the vision itself and the opportunity to join forces. The focus on possibilities oppose to problems played an important role in this regard as also the following interviewee from the Ås VGS case tells:

“Yeah, I think it could be as long as the focus, is on the positives. What can we actually achieve? What can we do? Yeah, I think it could be a bit dangerous if the focus gets on all the things that are in the way. That's not possible or principle will never allow it. And we don't have time and everything in one has so much to do already. And if that sort of takes over, it's going to be a bit more destructive. But as long as it's more of a brainstorming really positive idea I think it's a very good exercise.”

That most participant felt this way is confirmed by the questionnaire.

4.8 A meaningful and motivating workshop

The workshops were appreciated by the participants. Interviewees explicitly appreciated the opportunity to be creative, use their imagination, let go of today's reality, the start from a personal perspective and do something together. Furthermore, the workshops were considered both meaningful and motivating by most of the participants of both groups see Figure 11 question 2 and 4. Two participants, one of each workshop, however responded to have left the workshop dissatisfied. One responded it was neither meaningful nor motivating and one responded to consider the workshop meaningful but was not motivated see Figure 11. They explained that their dissatisfaction came from the ambiguity of the assignments and lack of predetermined concrete follow-up and engagement of the management of the school.

Ås VGS

“Without follow-up the workshop gives us ideas that we become sad about not implementing”

NPP

“The main problem for me was to understand what we were asked to create visions about.”

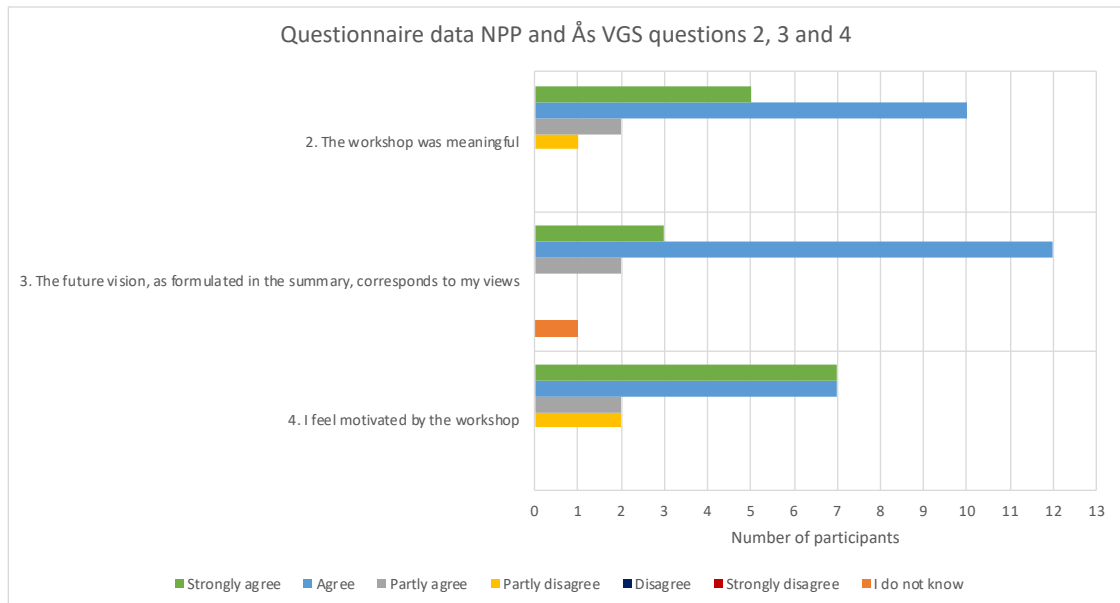


Figure 11 Diagram showing the accumulated processed questionnaire data for question 2, 3 and 4 of the questionnaires with both Ås VGS and NPP.

4.9 Intention to act resulted

Figure 12 and Figure 13 show the questionnaire data results per case in regard to action and the intention to act. The questionnaire shows that fourteen of the in total 22 participants have the intention to act upon ideas and activities that were brought up during the workshop. An additional two people do not know whether they have the intention to act. One person from the Ås VGS responded not to have the intention to act in response to the workshop. This is the same person who did consider the workshop not very meaningful or motivating.

In line with the expectations, the majority of the participants have not acted in response to the workshop. Although the actual reason cannot be determined, the COVID-19 pandemic and relative short amount of time between the workshop and the questionnaire are plausible explanations for the limited amount of action. Nevertheless, six participants, respond to have taken action in response to the workshop and an additional two responded to not know whether they have acted in response to the workshop. This can mean that they did not understand the question or that they are uncertain as to whether their action was in response to the workshop or not.

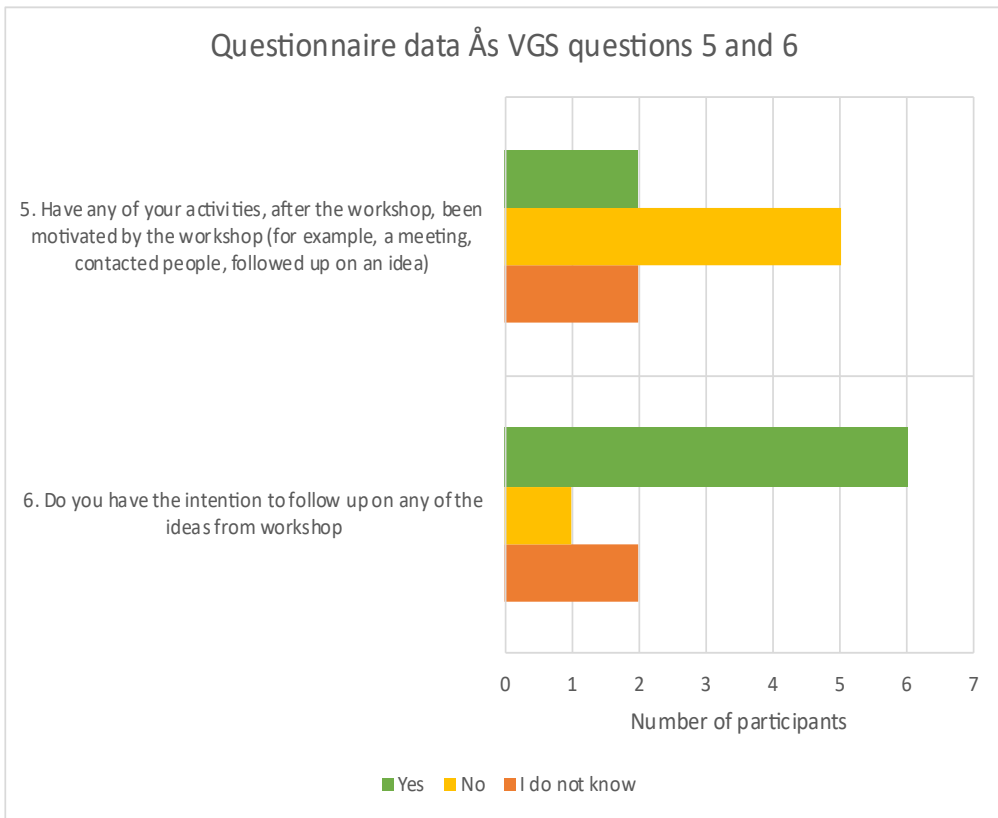


Figure 12 diagram showing the processed questionnaire data for question 5 and 6 of the questionnaire with Ås VGS

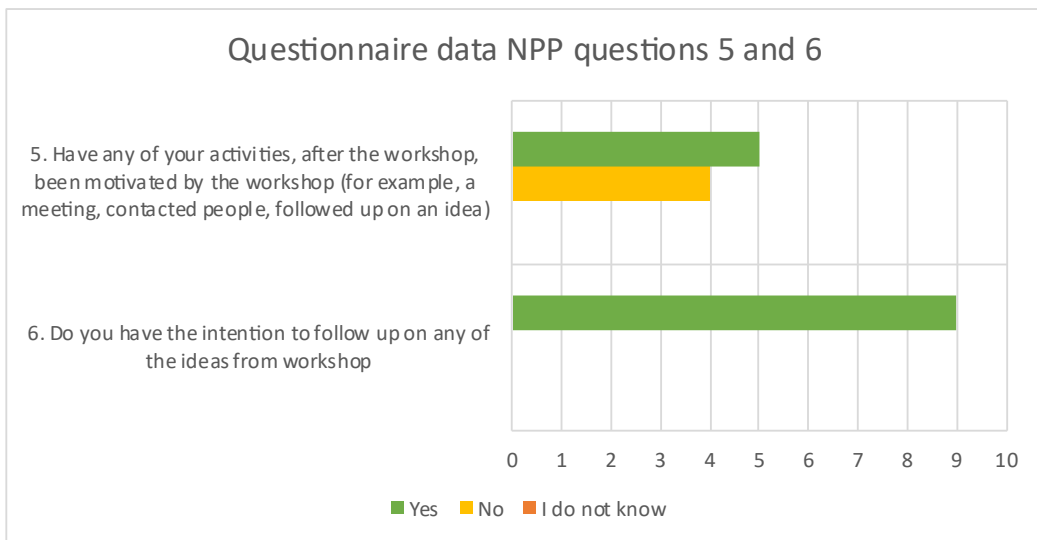


Figure 13 diagram showing the processed questionnaire data for question 5 and 6 of the questionnaire with NPP

Chapter 5 Discussion

The visioning methodology mobilized a diversity of people through the participatory, open and positive approach to create a vision for the local food system. This research focussed on the process-level functions regarding human agency that visioning can fulfil. To recapitulate, human agency is the perceived capability to exert influence over one's functioning and take responsible action to realize a vision. The participatory approach contributed to several human agency related experiences among the participants, such as empowerment, sense of relatedness and motivation to act. The findings show that the participatory approach contributed to perceived collective agency, while maintaining the opportunity to act autonomously. Most of the findings are consistent with previous research findings. What this research however contributes is the link to the properties of human agency by means of the following discussion of the findings.

5.1 Forethought

With regard to forethought, the results show that visioning was a way to exercise forethought and facilitate the exchange of perspectives which provided inspiration for both individual and shared visions and action plans. Forethought is the capacity to visualise desired future situations that govern the creation of action plans by means of outcome expectations to guide and motivate behaviour (Bandura, 2006b; Bandura, 2018).

5.1.1 Exercising Forethought

According to Stephan Covey the writer of the book *7 habits of highly effective people*, the second 'habit' in the order is to 'begin with the end in mind', the end being the vision in this case (Covey, 2011). The argument he makes is the same as Meadows's et al. their argument: "action without a vision is feeble" (Meadows et al., 2004 p. 7). Desired outcomes or visions guide the formulation of action plans and subsequent human behaviour (Bandura, 2006b).

During the workshop the participants have exercised forethought in a participatory setting. The research findings indicate that the participants considered envisioning challenging but also enjoyable. It was observed that participants besides ideas for visions also provided ideas that are leaning towards goals and objectives, which often result from a more problem-solving way of thinking (Parker & Pool, 2017). Creating visions featuring action plans is a sustainability competence (Lieblein et al., 2012; UNESCO, 2017). The finding suggests that although some years have passed since Meadows argued that the competence is underdeveloped, envisioning is still not part of everybody's skills set. Therefore, the findings of this research support the work from Francis et al. (2016) and R. Miller (UNESCO, 2018) and UNESCO (2017) to incorporate envisioning in learning processes to establish widespread development of the competence and foster forethoughtful behaviour. To ensure visionary ideas it might be valuable to explain and contrast a vision to scenarios, prediction, goals, objective and vision statements (Kim & Oki, 2011; Wiek & Iwaniec, 2014). Creating a (shared) vision and action plan

is an aim of visioning, visioning might be a way to develop the competence forethought. Considering that the person envisioning should be invited to see a role for him or herself in the vision and action plan, visioning can foster forethoughtful behaviour which is a characteristic of human agency. According to Bandura (2001 p. 7) "The ability to bring anticipated outcomes to bear on current activities promotes foresightful behaviour. It enables people to transcend the dictates of their immediate environment and to shape and regulate the present to fit a desired future."

5.1.2 Group diversity to enable forethoughtful behaviour

In the preceding section forethought was reflected on as a competence. This section focusses on the output – visions and action plans – of the use of forethought by the group of participants. The visioning methodology mobilized a diversity of people through the participatory, open and positive approach to create a vision for the local food system. That FOM's can mobilize knowledge from a diversity of people is also a conclusion many other research projects with FOM's have drawn (e.g. Carlsson-Kanyama et al., 2008; Falardeau et al., 2019; Nielsen, 2005; Parker & Pool, 2017; Wallin et al., 2016). What is different from some previous research for example the research from Falardeau et al. (2019) is that the visioning methodology created a diverse collection of ideas for visions. Whereas Falardeau et al. (2019) concludes that the scenarios created in their approach showed unsatisfactory diversity.

The diversity of ideas created during the visioning workshop were a source of inspiration for individual and collective visions and action plans. Interviews with the participants from Ås VGS revealed it was challenging for some participants to make a vision or action plan due to limited knowledge. In order to create visions and action plans in regard to a given topic one need to have at least some knowledge of the topic or awareness of the alternatives (Bandura, 2006a). The participants with knowledge and experiences regarding the local food system provided the participants with limited knowledge and experiences with inspiration. The exchange of perspectives and ideas helped to create and enrich individuals' visions and action plans. These findings are similar to previous findings about FOM's. Parker and Pool (2017 p. 1) describe visioning as a methodology "to enable collective intelligence". Others have also concluded that it is beneficial for the process and outcome that FOM's bring together stakeholders with different perspectives and different types of knowledge (Falardeau et al., 2019; IPBES, 2016; Lieblein et al., 2001; Wallin et al., 2016). The participatory visioning process can elucidate ideas of alternative futures as the findings of this research indicate. Awareness of alternative future situations helps to alter behaviour according to the chosen alternative future vision (Bandura, 2006a). Based on the finding that participants exchanged perspectives and expanded their knowledge visioning can be considered a way to coproduce knowledge which is consistent with Tschakert et al. (2016) who frame participatory envisioning of future situations as a means for transformative learning. This can foster behavioural change in an autonomic way since it enhances the possible alternatives a person can choose from.

Composing a group for visioning is not straight forward (Bennett et al., 2016). Diversity in the group is concerning food system transformation important but it can also obstruct the visioning process. Negative effects from power dynamics can for example obstruct the process or extensive amounts of time needed to facilitate reciprocity, trust and mutual understanding for a truly shared vision and action plan (Falardeau et al., 2019; Wallin et al., 2016). Various interviewees of this research also commented that they would have liked more time for the visioning process to have important dialogues about worldviews and approaches to work towards the vision. On the other hand, it was observed and commented on by interviewees from NPP that the group of participants was relatively aligned about what the future should look like. This was beneficial for the sense of relatedness, but it might be more beneficial in terms of food system transformation to create a shared vision for individuals with very different interests and visions. Stakeholder analysis can help to identify the right group of stakeholders in terms of representation of interests and avoid undesired pre-existing alignment (Wallin et al., 2016). The dialogue process of individual, sharing and merging as used during the visioning workshop also helps to ensure constructive conversations between (Lieblein et al., 2019).

5.2 Self-reflectiveness

Participants valued the workshop as a space to 'discuss yourself', elicit biases and think critically about the ideas. Self-reflectiveness is the capacity for self-examination of our own functioning in relation to a certain goal (Bandura, 2001). The workshop thus facilitated individual reflection through dialogue.

5.2.1 Reflection on the role in the vision

This gave participants inspiration as to how they, themselves, can adjust their functioning to contribute to realizing the envisioned future in light of food systems. Several interviewees said their role in achieving the vision or what Parker and Pool refer to as sense of purpose and meaning has improved (Parker & Pool, 2017). This is consistent with R. Miller UNESCO (2018) who argues that an important function of FLL is to facilitate reflection and initiate anticipation on the vision created. Parker and Pool (2017) in line with Dewey (UNESCO, 2018 p. 100) write "Unless people understand how they are contributing to creating their current reality, they do not see how they can work towards changing that reality". This understanding can be facilitated by dialogues about hindering and supporting forces in combination with self-reflectiveness (Bandura, 2001; Paas, 2020; Parker & Pool, 2017). Knowing you have a role in realizing the vision is important for the transformational power of the process (Wiek & Iwaniec, 2014).

Contributing to this form of self-reflectiveness were the questions directly addressing the individual like, "What are YOU going to do?". Even more focus on this level could have been

beneficial since it was observed that some participants spend considerable time on what others could or should do. Sharpe et al. (2016) developed a methodology called Three Horizons which assists in identifying agency among the stakeholders and enables self-reflectiveness in light of a desired future vision. Falardeau et al. (2019) incorporated an adapted version of the methodology and positively reflected on this for the identification of agency. They remark however that instead of the two hours they did spend, four or five would be better to create actionable paths, which makes it a time-consuming exercise. Nevertheless, inspiration could be gained from the Three Horizon methodology to enhance visioning as a methodology to foster human agency.

5.2.2 Whole-brain approach for true transformation

Envisioning from a personal perspective encouraged the participants to include their own worldviews and preferences in the process. Some participants observed that their ideas were different from ideas produced with other mindsets. Visioning is a 'whole-brain' approach, incorporating both the left and right side of the brain, conscious and unconscious levels of the mind (Parker & Pool, 2017). Interviewees attributed the difference in ideas to the use of their imagination, creativity, their unconscious mind and including their worldviews and preference in envisioning the desired future. One of the participants contrasted the envisioning to a problem-solving mindset, like Parker and Pool (2017) do. Besides different, the ideas were also considered interesting and better to deal with topic at hand. In short visioning invited some participants to use various ways of knowing and to incorporate emotions in envisioning a desired future and action plan, consistent with the aim that Parker and Pool (2017) describe.

The workshop was limited in time and maybe too short considering that none of the participants were familiar with visioning and envisioning to get in the right state of mind as also some participant suggested. The duration of a visioning workshop is a balancing act. Factors like perceived time efficiency and the time people need to get in the 'right' mindset play a role in finding the right duration (Parker & Pool, 2017). It is however valuable to offer enough time to facilitate the whole-brain approach for the creation of commitment, collaborative learning and to incorporate worldviews in the creation of visions and action plans for transformational change (O'Brien & Sygna, 2013; Parker & Pool, 2017; Tschakert et al., 2016; Wiek & Iwaniec, 2014).

5.3 Self-reactiveness

Self-reactiveness is described as the self-regulatory process encompassing the ability to motivate and regulate action plans (Bandura, 2006b; Bandura, 2018). The findings show that the several of the participants have acted in response to the workshop. Moreover, visioning can influence both the magnitude of motivation as well as the kind of motivation of the participants to act upon the vision created according to the research findings.

5.3.1 Motivation to act

The questionnaire shows that most of the participants were motivated by the workshop. This is consistent with previous research findings from for example Falardeau et al. (2019), Nieto-Romero et al. (2016) and Parker & Pool (2017).

The findings show that engagement of decision-makers, something often warned for, was very much appreciated. Beyond appreciated it was even considered important for the credibility of the workshop, the visions and action plans. This is consistent with Wallin et al. (2016) who found that some participants missed the representation governmental organisations. Furthermore, this research found that the participation and expressions of support from the decision-makers gave participants confidence in their ideas and participation. The decision-makers appreciated the participation of the others to get insight in what drives them. The theory suggests that in order to be motivated to act people need to feel competent to contribute to achieving the desired outcome (Bandura, 2001; Ryan & Deci, 2000). Positive feedback can contribute to this sense of competence as the activity is intrinsically motivated (Deci & Ryan, 2000). As mentioned before, composing a group for successful future oriented methodologies can be considered a craftsmanship. Previous research shows that the engagement from decision makers contributes to the level of engagement and motivation from participants (Nieto-Romero et al., 2016; Wallin et al., 2016). But powerful voices can also silence other participants (Falardeau et al., 2019; Wallin et al., 2016). Therefore, several researchers who have used the methodology homogenised or suggest homogenising groups especially concerning levels of seniority (Falardeau et al., 2019; IPBES, 2016; Wallin et al., 2016). The findings of this research underscore that composing the right group of people is a craftsmanship and that homogenising the group is not necessarily the way to go.

Visions need to be perceived plausible, feasible and shared in order to cultivate the tension between current reality and future vision and motivate action (Parker & Pool, 2017; Wiek & Iwaniec, 2014). This research found that the opportunity to join forces to achieving the shared vision made the vision feel more attainable. Previous research does not explicitly talk about this relation. It is however consistent with Bandura (2001) who suggest that perceived collective agency can influence perceived personal agency. Moreover, Ryan and Deci (2000) assert that relatedness as a sense of connection between people contributes to human motivation to act. The plausibility and feasibility of the visions are not explicitly evaluated in this research due to time constrains. Evaluating these characteristics could improve the methodology in terms of fostering motivation. The opposite can however also be true. Participants remarked that the processes should be focused on the possibilities and opportunities to foster motivation and engagement. Seeing possibilities is motivating and helps to overcome obstacles (Bandura, 2006a). If due to the evaluation the vision appears not feasible the participants motivation might be compromised rather than enhanced.

Furthermore, the research findings show that the process can contribute to perceived relatedness. Previous research has shown that FOM's can encourage transdisciplinary collaboration to achieve the desired future, which is particularly important for food system transformation (Falardeau et al., 2019; IPBES, 2016; Wallin et al., 2016). In addition to these conclusions, the findings of this research show that participants found support for their views and ideas and they got a sense of community, through the workshop. This contributed to the motivation to act and a positive attitude towards collaboration. This corresponds with the findings from Ryan and Deci (2000) who argue that a sense of relatedness contributes to human motivation.

In respect to autonomy. Previous research has shown that visioning can engage participants to identify a role in the change processes (Parker & Pool, 2017). The research findings also show that a certain level of autonomy was maintained in the process, vision, and action plan. The workshop process created a diversity of ideas that fit together considering the vision. This diversity was valued and maintained during the exercises to create shared visions and action plans. Furthermore, participants from this research were inspired to find a role or 'place themselves into the picture' as Sharpe et al. (2016 p. 10) call it. The maintained opportunity to act individually according to personal capacity but in all in the direction of the vision indicates that autonomy can be preserved with this methodology. Moreover, as explained before participants exchanged perspectives which was a source of inspiration. This can increase the possibility of the participants to make decisions about their behaviour due to increased knowledge about alternatives (Ryan & Deci, 2000).

In the visioning workshop participants were invited to think about their personal desired future to spark thinking about what they want and value in a future situation. Paying attention to preferences and worldviews contributed to the inclusiveness of the workshop and the personal motivation to act. Moreover envisioning from the personal perspective contributed to (re)connect to more internally regulated forms of motivation, which are generally more robust and trustworthy in terms of follow-up action (Ryan & Deci, 2000). Parker and Pool (2017) describe the importance of 'supervision' for realizing the vision from within for a strong sense of commitment. This is similar to the argument from Ryan and Deci to strive for integrated regulated forms of motivation to act (Ryan & Deci, 2000). Consistent with Parker and Pool (2017) this research has found that visioning can facilitate 'supervision' from achieving the vision from within through (re)connection to intrinsic or highly integrated forms of motivations.

5.3.2 Taking action

The post-workshop questionnaire responses show that most of the participants have the intention to act upon in response to the visioning workshop and some of them already have. Previous research indicates that singular FOM workshops do not necessarily lead to action

(Lieblein et al., 2001; Nieto-Romero et al., 2016). The results of this research are in alignment with these findings since only some participants have acted. There was however a relatively little amount of time – 2 months – between the workshop and the questionnaire. Lieblein et al. (2001) interviewed the participants after three years and concluded that limited action was taken. Parker (1991) used a more comprehensive (in terms of time and resources) approach for organisational change and conclude the approach was effective in bringing about transformative action. This research shows in line with previous findings that visioning might lead to action but is insufficient to say it does lead to action.

The interviews also revealed a prerequisite to instigate action, namely the concreteness of the vision and the actions. Participants that took part as representative from an organisation and participants with decision-making power explicated during the interviews that the workshop was a means for them to enhance their network and a source of inspiration for action. Whilst some individual participants and participants with limited decision-making power voiced that they would have liked a higher level of concreteness in the actions and more clarity about their potential role in collective actions. Previous research concluded that action plans need to be tangible, actionable, concrete, relevant and contain quick wins to initiate and foster action (Bandura, 2001; Falardeau et al., 2019; Lieblein et al., 2001; Parker & Pool, 2017; Wiek & Iwaniec, 2014). The findings of this research show that the action plans created in the workshops met these requirements for some but not for all participants. Interviews showed that more time would have been appreciated for the action planning. This is consistent with Falardeau et al. (2019) who suggested that to plan ample time for the action planning to create actionable plans. For visioning to play a role in transformation it is important that the participants share the vision and feel part of the action plan, to echo D. Meadows once more “a vision without action is feeble”. Evaluating the quality criteria repeatedly in an iterative FOM process might advance the action plans which in turns might affect the self-reactiveness of participants.

To get a better understanding of the relation between visioning and action, a longitudinal research that focuses not only on action but on change of a person’s functioning would be valuable. As the definition from human agency suggests, the aim of influencing human agency is to create awareness and subsequently create change in the functioning of the person in light of a desired future situation (Bandura, 2006a). The change in functioning can mean executing consciously chosen activities but it can also mean consciously withholding to execute certain activities. This to say that determining whether action has resulted from influencing human agency needs to pay attention the whole of change in functioning consisting of both action and non-action. The scope of this research did not allow for in depth research into the resulting action.

Chapter 6 Conclusion

Previous research alludes to the potential of FOM's to foster human agency. This research builds on that and has explored the influence of visioning on human agency for food system transformation. Therefore, I have investigated the influence of visioning on the participants' property forethought, self-reflectiveness, and self-reactiveness of which human agency can emerge. Regarding forethought, during the visioning workshop participants were invited to use their capacity to create a desired vision of the future from a personal perspective featuring an action plan to achieve that vision. The interviews show that this was a challenging assignment. Dialoguing about perspectives and ideas is a source of inspiration that enriches individual visions and action plans and enables the creation of a shared vision and action plans for collective agency. Therefore, visioning can be considered a sense-making processes and means to exercise the competence forethought to guide human behaviour potentially beneficial for food system transformation. In this process, it is paramount to facilitate inclusive dialogues and avoid debates between participants. Homogenising the groups in terms of background and level of seniority is often presented as a way to ensure participation. I, however, conclude that the diversity in terms of background and level of seniority are appreciated as sources of inspiration and empowerment. In this case study, including different levels of seniority in the workshops contributed to the credibility of the workshop and to a sense of empowerment of other participants. Homogenising groups is thus not necessarily the best option to facilitate participation in the workshop when fostering human agency is an objective. This sense of empowerment is one of the found sources of motivation. In regard to self-reactiveness the focus was placed on motivation to act. Visioning has the potential to not only influence the magnitude of motivation, but also the kind of motivation. The research findings indicate that visioning can accommodate the needs of integrated forms of human motivation with perceived relatedness, competence, and autonomy. Participants envisioned a desired future vision from their personal perspective and were encouraged to think about what they want rather than what might be a solution to the problem in focus. This accommodates a sense of autonomy and competence. Moreover, through the visioning process participants found support for their ideas and activities from other participants. Especially the support from participants with higher levels of seniority was perceived as motivating. Furthermore, the visioning process contributed to a sense of community as a motivation for collaboration and collective agency. This accommodates a sense of competence and relatedness without compromising the ability to work autonomously. I conclude that visioning has the potential to foster integrated or even intrinsic motivation for action. Moreover, the questionnaire showed that most participants had the intention to act in response to the workshops and some of them had even followed up on it already. This means that visioning has the potential to instigate action which is necessary for food system transformation. Lastly, in terms of self-reflectiveness, I have found that some participants were triggered to self-reflect and discuss their perspectives. Visioning can thus invite to self-reflect to increase awareness about one's own functioning in light of a vision.

This was an explorative research looking into the influence of visioning on human agency for food system transformation. Based on this case study I conclude that visioning has the potential to foster human agency for food system transformation. To gain a more representative and even deeper understanding of the influence of visioning on human agency I have the following recommendations for further research in addition to the remarks already made in discussion. More comprehensive research in terms of duration and participants is necessary to draw definite conclusions. A longitudinal research could tell us more about the relation of visioning to true transformative action. A higher number of and diversity within the participants not necessarily in the workshops, but in the research, would increase the transferability of the research data. The findings of this research indicate some sources of motivation to contribute to achieving the created vision. But as Bandura (2006a p. 55) wrote "Unless people believe they can produce the desired effects by their actions, they have little incentive to act or to persevere when facing difficulties". To gain more insight into the effect of visioning on the perceived capability, a more quantitative research with self-efficacy scales can be valuable that evaluate individual as well as collective perceived efficacy.

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Appendix 1 Detailed workshop programs

Case 1 Nordic People & Plant visioning workshop program details

9.45 – 10.00 “Doors” open for everybody to come and mingle with some coffee to get to know each other.

10.00 – 10.15 Welcome, introduction round & project.

10.15 – 10.25 Explanation of the program

10.25 – 11.15 Phase 1: Envisioning a new food system

10.25 – 10.30 visioning story

We will guide you in envisioning your desired future. The aim is to let go of any kind of constraints of today’s reality; imagine you have unlimited resources in time, money, people, and also policies and laws are of no influence.

10.30 – 10.40 Individually write

Individually write down, on the template that you received, the answers to the following questions:

- An artist made a painting as tribute to the project. The painting depicts the impact the project had on society's relation to food. What do you see in the painting?
- You have been asked to present the NPP project approach from your perspective. You walk on stage with a ready-made presentation. Proudly you start showing steps and decisions that were important for the project achievements. What are you showing?
- After the presentation people can ask questions. Somebody asks you what motivated you to do this project – what are you saying?
- What is the project outcome you are most proud of? What do you answer?

10.40 – 10.55 Group dialogue

Share your ideas in the Break-out group, mind the dialogue guidelines.

10.55 – 11.15 Create a shared vision.

When you have heard all the ideas, use these ideas to make a shared vision. It is up to you how you make this vision. There is no right or wrong way of doing this. The goal is that it inspires and that everybody identifies with the vision and that you can share it in the plenary session later today.

11.15 – 11.25 Short break

11.25 – 11.55 Phase 2: Supporting and hindering forces

In the Break-out groups we are going to reflect on the NPP project in the current situation. In the same groups, identify hindering and supporting forces. Hindering forces are barriers that need to be overcome to work towards the desired future situation for example missing

knowledge or skills, technologies, relations, etc. Supporting forces are opportunities that are present in the current situation that support the movement towards the desired future, for example educational programs, contact with the local government or private actors.

11.25 – 11.30 Individually write

Individually write down, on the template the answers to the following questions:

- What elements of the current situation (values, knowledge, initiatives) need to grow to move towards the desired future?
- What elements of the current situation (values, knowledge, initiatives) need to reduce to move towards the desired future?
- Whose support do I need to move towards the desired future?

11.30 – 11.45 Group dialogue

Share your ideas in the Break-out group, mind the dialogue guidelines.

11.45 – 11.55 Merge all the ideas to one list.

11.55 – 12.40 Lunch in the main room.

Be prepared to share ethnobotanical narratives about your own lunch.

12.40 – 13.25 Phase 3: Action planning

A vision is there to guide our actions. In the Break-out groups we are going to explore the actions that are needed to move toward the desired future.

12.40 – 12.45 Individually write

Individually write down, the answers to the following questions:

- What is the first step I want to take to help initiate action towards the desired future?
- How can we use today's results to strengthen the project?
- What are following actions we can take to help moving towards the desired future?
Do we need knowledge or skills and how can we get that?

12.45 – 13.00 Group dialogue

Share your ideas in the Break-out group, mind the dialogue guidelines.

13.00 – 13.25 Create one shared action plan.

When you have heard all the ideas, use the ideas to compose one shared action plan. It is up to you how you do this. The aim is that everybody is included in the action plan and that it can be shared in the plenary session next.

13.25 – 13.55 Phase 4: Plenary sharing session

We have been working in the Break-out rooms most of today, now we are going to share all the good work you have done with the whole group. The groups will present in turns and after every presentation there is time for questions from the rest of the group. The presentation is to get an idea of what the other groups have been thinking about, get inspired.

13.55 – 14.00 Thank you

As part of the master thesis research N. Paas would like to interview after the workshop.

Case 2 UBU i Praksis – Ås VGS visioning workshop program details

13.45 – 13.55 Introduction and questions from participants

13.55 – 14.00 visioning story

We will guide you in envisioning your desired future. The aim is to let go of any kind of constraints of today's reality; imagine you have unlimited resources in time, money, people, and also policies and laws are of no influence.

14.00 – 14.40 Phase 1: Envisioning your desired future

14.00 – 14.05 Individually write

Individually write down, on the template that you received, the answers to the following questions:

- How does the school facilitate learning in the three interdisciplinary topics Health and life skills, Democracy and citizenship and Sustainable development using food and the food system? What do you see?
- A teacher from another school asks you what outcome you are most proud of? What do you answer...?

14.05 – 14.15 Group dialogue

Share your ideas in the Break-out group, mind the dialogue guidelines.

14.15 – 14.40 Create a shared vision.

When you have heard all the ideas, use these ideas to make a shared vision. It is up to you how you make this vision. There is no right or wrong way of doing this. The goal is that it inspires and that everybody identifies with the vision and that you can share it in the plenary session later today.

14.40 – 14.45 Break

14.45 – 14.50 Introduction of the next part

14.50 – 15.10 Phase 2: Identifying supporting and hindering forces

In the same groups, identify hindering and supporting. Hindering forces are barriers that need to be overcome to realize the desired future, for example cooking facilities, missing knowledge or skills, etc. Supporting forces are opportunities that are present in the current situation that support the movement towards the desired future, for example contacts with farmers, the local government, the UEAT project, the new curriculum, etc.

14.50 – 14.55 Individually write

Individually write down, on the template that you received, the answers to the following questions:

- What elements of the current situation (values, knowledge, initiatives) need to grow to move towards the desired future?
- What elements of the current situation (values, knowledge, initiatives) need to reduce to move towards the desired future?
- Whose support do I need to move towards the desired future?

14.55 – 15.10 Group dialogue

Share your ideas in the Break-out group, mind the dialogue guidelines.

15.10 – 15.15 Explanation of action planning

15.15 – 15.50 Phase 3: Action planning

We will think about actions that help us to move from the present to the desired future. The goal is to make an action plan that includes the most important people among which yourself.

15.15 – 15.20 Individually write

Individually write down, on the template that you received, the answers to the following questions:

- What is the first step I want to take to help initiate action towards the desired future?
- What are following actions we can take to help moving towards the desired future? Do we need knowledge or skills and how can we get that?

15.20 – 15.30 Group dialogue

Share your ideas in the Break-out group, mind the dialogue guidelines.

15.30 – 15.50 Create one shared action plan.

Make a shared action plan to move towards the desired future.

15.45 – 15.55 Plenary presentation of the work

We have been working in the Break-out rooms most of today, now we are going to share all the good work you have done with the whole group. The groups will present in turns and after every presentation there is time for questions from the rest of the group. The presentation is to get an idea of what the other groups have been thinking about, get inspired.

15.55 – 16.00 Thank you and questions

As part of the master thesis research N. Paas would like to interview after the workshop.

Appendix 2 Visioning scripts

Case 1 Nordic People & Plant visioning script

The aim of visioning is to let go of any kind of constraints of today's reality; imagine you have unlimited resources, support and time. It is about creating a future that you desire; about things you want to see or do. As N. explained, today we will make a story that we all believe in. I have taken the liberty to start the story, which I will tell you.

Let's start by getting comfortable. Sit comfortably in your chair leaning to the back. Place your feet next to each other on the ground and place your hands in your lap. Now, gently close your eyes and take a deep breath in and breathe out. I am now going to guide you to envision a desired future situation. Therefore, we will imagine traveling through time.

Take another breath, breath in, breath out. Imagine yourself walking to the National History Museum in Oslo. When you leave your house it is winter, it is nice and cold outside. The trees have lost their leaves and the world is covered with a thin layer of snow. You arrive at the entry of the botanical garden and enjoy the walk through it.

You look up...

You see that the trees are getting leaves, you also hear birds singing and you smell fresh cut grass. You realize it has become spring... Breathe in the nice fresh spring air.

You walk further and approach an open field. You notice the sun high in the sky, shining on your back. You close your eyes to enhance the feeling of the sunshine warming your body and realize it has become summer.

When you open your eyes again you see people cleaning leaves and preparing the plant beds for winter.

Suddenly, you feel a chilly breeze and it starts to rain. You cover your head with the hood of your coat and look down to cover your face. You speed up to reach the museum building as fast as possible. When you arrive, you take off your coat and look at your watch. To your surprise you see it is now 10 o'clock on December 11th, 2025.

Today is the opening of a new exposition about the transition of the Norwegian food system from the Viking age till now. You walk through the hallway to one of the main exposition areas, you hear the sound of chatting and laughing people.

You enter the room and see Nordic People & Plant project stakeholders and representatives from organisations from all over the world.

The NPP project was a great success, resulting in increased understanding and recognition for ethnobotanical heritage. This also contributed considerably to food system sustainability. An artist made a painting as tribute to the project. You walk towards the painting to look at it.

The painting depicts the impact the project had on society's relation to food. What do you see in the painting?

You hear a voice, asking everybody to come towards the stage. You have been asked to present the NPP project approach from your perspective. You walk on stage with a ready-made presentation.

Proudly you start showing the steps and decisions that were important for the project achievements. What are you showing?

After the presentation people can ask questions. Somebody asks you what motivated you to do this project – what are you saying?

Somebody else asks: What is the outcome you are most proud of? What do you answer?

The meeting comes to an end, after a word of thanks, everybody goes their own way again. You sit down on one of the nice chairs in the museum and breath out after this beautiful experience.

Slowly come back to the today, the 11th of December 2020 and open your eyes. Please write down on the Template document on your computer the answers to the questions I posed in the story.

Case 2 UBU i Praksis – Ås VGS visioning script

The aim of visioning is to let go of any kind of constraints of today's reality; imagine you have unlimited resources, support and time. It is about being creative and imagining an inspiring and innovative future. The ideas do not need to be realistic from the start, the point is to be inspired by them.

Let's start by getting comfortable. Sit comfortably in your chair and lean back. Place your feet next to each other on the ground and place your hands in your lap. Now, gently close your eyes and take a deep breath in and breath out.

I am now going to guide you to envision a desired future situation. Therefore, we are going to travel in time.

Imagine yourself walking to school. When you leave your house it is winter, it is nice and cold outside. The trees have lost their leaves and the fields are covered with a layer of snow.

You enjoy the walk and decide that you have some time to take a longer route through a forest. You enter the forest, and you hear birds singing and you see the trees are getting leaves.

You realize it has become spring, breath in the nice fresh spring air.

You walk further...

You notice the sun high in the sky, shining on you. You close your eyes and feel how the sunshine is warming your face.

You realize it has become summer.

When you open your eyes, you notice the leaves have changed colour and you sense the smell of mushrooms. You realize it has become fall.

You come out of the forest and suddenly feel a chilly breeze and it starts to rain. You cover your head with the hood of your coat and look down to cover your face.

You speed up to reach the school as fast as possible. When you arrive at the school you take off your coat and look at your watch. To your surprise you see that it is now 2 o'clock on December 14th, 2025.

Today is the collective reflection meeting of the University-School collaboration at your school. When you walk through the school towards the Canteena you hear the sound of chatting and laughing people. You enter the Canteena and see people from all participating schools, the university and local governments.

Your school is chosen as host for this meeting because of the innovative ways to facilitate learning in the three interdisciplinary topics using the food system. The school participates in local food production, uses food in teaching and the Canteena as a learning arena.

The meeting starts with a guided tour in the school and the local community to show how the school facilitate learning through the food system in the three interdisciplinary topics Health and life skills, Democracy and citizenship and Sustainable development.

What do you see?

A teacher from another school asks you what outcome you are most proud of? What do you answer...?

The tour ends back at the school where everybody, after a word of thanks, leaves. You find a nice bench to sit down on and take a nice breath to reflect on this beautiful experience.

Slowly come back to 14 December 2020 and open your eyes. Please write down in the Template document on your computer the answers to the questions I posed in the story.

Appendix 3 Workshop summaries

Case 1 Nordic People & Plant workshop summary

THE VISION

Due to the outstanding affords of the Nordic People & Plant project to not only create but also disseminate knowledge about plants and plant usage, society is one step closer to a sustainable, nature friendly food system. Systematically violating nature's dynamics for human benefit is increasingly condemned by society resulting in an increasing number of people living in harmony with nature, appreciating, respecting and not the least enjoying what nature offers.

The enthusiasm and devotedness of the research team and her network resulted in a research approach that is inclusive of different kinds of knowing, from renowned academics in humanities to pupils and students from all levels, from politicians to everyday citizens, from children to "very experienced" (read elderly) people, and from restaurant chefs to farmers. The gained knowledge is besides the regular academic publications also disseminated via various kinds of books, book presentations, events, workshops, podcasts, magazine articles, etc. The natural history museum is THE headquarters of a growing community around ethnobotany and foraging. Their knowledge and experience are rooted in historical traditions and they have a good understanding of contemporary ecological principles.

The famous sentence "Ut på tur, aldri sur" is reinvigorated! Professional foragers supply restaurants with beautiful, fresh and healthy leaves, roots, flowers and seeds. Regularly, schools invite professional foragers to take the pupils outside to the streets of the city and the forest to share stories about plants and mushrooms. Ethnobotanical knowledge is an integrated part of education from barnehage till university level. In the weekend's families are predominantly outside, and children proudly share their knowledge with everybody who wants to hear it.

Even urban areas are undergoing a transformation. The research team is regularly consulting the government. Consequently, weeding of public areas is no longer a practise, the money is reallocated to foster foraging in the cities and reconnect people with their food. When you now walk through the streets you see gardens with nut trees, edible plants and herbs, climbing plants decorating the houses and neighbours sharing food and medicinal recipes and their ingredients. Fresh herbs and foraged food are becoming part of people's everyday meal. Due to the increased demand of these products farmers are increasingly engaged. Some farmers provided land for seed conservation, wild plants to grow and be harvested and utilize beneficial properties of various species such as walnut trees in their farming practises.

SUPPORTING AND HINDERING FORCES

Hindering forces are that what needs to be overcome to realise the vision. The political environment and economic mind set are the most mentioned. Furthermore, the decreasing quantity and quality of sources the further back in history you go, the limited time available to

spent outside, lack of ethnobotanical knowledge, destruction of landscapes and topsoil, people's routine of easy access to food sources and science scepticism.

Supporting forces are factors that are already present in society and can be utilized to realise the vision. Many of the supporting forces link to the identified hindering forces. First and foremost, the motivation, overlapping goals and belief in the vision and capability to succeed of the people in the project group. Furthermore, the current climate, biodiversity and COVID-19 crises are perceived as opportunities to facilitate a sense of urgency for lifestyle changes. Due to the COVID-19 pandemic, more people spent time in nature and reinvigorates the importance of community building. This facilitates the growing interest in foraging and plant knowledge which can contribute to a change in lifestyle beneficial for the fight against climate change and biodiversity loss. Other important supporting forces are the "Allemanssretten", shortening workhours, "Norsk Friluftsliv" culture, increasing attention from society and the government for green growth, the new school curriculum containing sustainable development and health & life skills which provides support for outside classes. Lastly, there are still elderly people left with valuable knowledge and skills, history and language can be used as bridge to society.

ACTION PLAN

- Get hands dirty, doing what we research!
- Share the list of both invasive and native species, found in Norway including their uses.
- Innovation Norge: Connect with barnehage and schools to facilitate courses on ethnobotany and foraging.
- Get more chefs on board to use the project's data for creating dishes. Encourage them to utilize social media to generate interest and more customers.
- Get in contact with Mathias Grant, edible garden designer.
- Dig into the Schübelers network - voluntary work from the priests that test different plant species - established in 1860s, across Norway.
- Create or collaborate with events, workshops, etc., that people are willing to pay for.
- Create common arenas for open discussion of topics (podcasts, etc.)
- Make narratives: on plant uses focusing on their cultural history including use and people's relations to the plants. Let the plants themselves tell stories. Make these stories widely available for different groups of people from children to academics.
- Disseminate project outcomes in action oriented Prestegård meetings. Nice cultural historical context for gathering people around food, plants and gardening.
- Communicate with politicians when opportunities arise.

The visioning workshop made it possible for all participants to learn about each other's vision, how their participation can benefit the project and stimulate individual as well as collective action.

Case 2 UBU i Praksis – Ås VGS workshop summary

THE shared future VISION

In 2025 Ås VGS is a role model in the field of interdisciplinary education. The new curriculum initiated an innovative, experienced based approach to education that serves the needs of the contemporary pupils. The school promotes a student-centred education where teachers work as facilitators and perceive themselves as life-long learners. The school board, department leaders, teachers and pupils together shaped **a holistic vision that offers cohesion for the school**. The school designed and implemented **a participatory process** securing time and resources for continuous development of the vision, the teaching plans and projects. This process generates **a feeling of collective ownership and engagement** to work towards the vision among all stakeholder groups.

The interdisciplinary topics form the thread connecting subjects, meaning that the topics are not an addition to, but a part of the subjects. The school is an active part of the community. The school has numerous long-term **community-based activities and clubs**, like writing a local paper or magazine, assist in organisation of municipality owned events, theatre plays about local topics, local food production. Pupils can engage starting in their first year and continue all the way to their last year. Also, through the connection with NMBU, the school developed **international projects** such as installing solar panels for subsistence farmers in Africa. This provides both a theoretical and practical perspective on international challenges such as climate change. The pupil's competencies are assessed on their **whole school performance**, not just their exams, this allows for activities to run also after school.

Together with the local farmer and NMBU the pupils learn about **growing food, using traditional and innovative methods** such as aquaponics as part of subjects like biology, chemistry and electronics. Furthermore, the pupils are encouraged to develop **entrepreneurship skills** by developing products, services or organising events for the school and local community as part of their education. This is connected to interest groups in the community that aim to distribute locally grown food and involves subjects such as marketing, accounting, mathematics and languages. The pupils and teachers **work extensively together across years, and disciplines**, for example the pupils from the vocational programs are taught to **install solar panels** and together with other pupils calculate the capacity, the costs and the benefits of the panels. Furthermore, topics like fair trade and social equality are introduced in subjects such as geography and languages provided with **guest speakers** from for example the Red Cross or students from NMBU are the teachers.

The canteen also plays an important role in the school. Vocational pupils together with the canteen personnel use the food grown by the school, teach about healthy and sustainable food choices and reduce waste by providing fresh meals. **Recycling and composting** are an integrated part of the school's practice. Everybody knows how to recycle, why it is important and does it, this awareness comes from strengthening dialogue between different departments in the school so they can learn from each other. The compost is used in subjects such as chemistry, accounting and biology and utilised by the school to grow food. Also

broken products such as clothes, coffee machines and cars are used in education and repurposed within the local community.

THE HINDERING AND SUPPORTING FORCES

In order to move from the present to the envisioned future situation some hindering forces need mitigation and supporting forces need exploitation. The most important identified hindering forces are **available and allocated time and resources** for the development of a vision, projects and collaborations with internal and external people. Furthermore, the municipality, the school board, department leaders and teachers need to acknowledge the vision and ideally all participate in envisioning the future of the school for the success of any endeavour of systemic changes. The competence and desire for continues interdisciplinary development needs to be embedded in every fibre of the school. On a practical note, limitations in present knowledge and skills for growing and maintaining plant beds, a licence to sell for produced products due the safety criteria that need to be met are mentioned.

The identified supporting forces aid several of the identified hindering forces. The most important supporting force is **the enthusiasm and commitment of various employees** to work interdisciplinary and develop their teaching with the ample ideas they already have for projects they have to utilize the new curriculum. These employees can form the driving force for development of the school. They feel supported by each other and by the positive responses from pupils. Furthermore, the existing relations with NMBU, Vitenparken and nearby located farmers offer opportunities for community collaborations and support knowledge and skills building, for example in growing food.

THE ACTIONS

A vision should drive to action. The identified actions include but are not limited to:

- Department leaders: plan meeting together
- **Identify like-minded people** at the school that are motivated
- Reflect together with the new head teacher on opportunities for systemic changes.
- Plan meetings with and between department leaders, school board, teachers and pupils (pupil council to start with) to create a shared vision for the future situation. **Work on mini visions which are merged into one comprehensive vision.** Facilitate a sense of shared ownership, responsibility and commitment for the vision by building it in a participatory manner.
- Highlight that the changes are not a big jump from what we already do. What we do is very concrete, but we can **connect the thinking behind initiatives better** (e.g., recycling). Focus on what systems we have and finetune them and raise awareness.
- Teachers: ask for **more planning time** and time to work with what we collectively plan.
- Start planning early to get the ideas into the schedule of the school year and identify 'open periods' in the school year where there could be room for collaboration
- Teachers and department leaders: reflect together on existing projects and 1STC class that works with sustainability.
- Ask headteacher and Viken to fund **more time for collaboration between the UBU i Praksis and the school.**

- **Apply for funds** for solar panels and windmills.
- Contact local farmers, NMBU, other VGSs and Matvalget for collaboration.

Appendix 4 Interview guide

- Can you please tell me what you thought of the workshop?
 - Can you elaborate on ...
- Can you tell me about the vision you made?
- What feeling or thoughts do come up if you think back about the vision?
- Do you feel you can contribute to realizing the vision?
 - Can you elaborate on that and tell me why?
- Do you think you could provide a valuable contribution to the workshop?
 - What enabled you to do so?
 - Why makes you think that?
- What were aspects you particularly appreciated from the workshop?
 - Why?
- Were there things that happened that you did not expect?
 - Why did you not expect that to happen?
- What did you appreciate less, or would you have liked to see differently?
 - Why?
- Have you given any follow-up yet on the workshop?
- All in all, do you think the workshop was meaningful?
 - Why?
- What do you think of the fact that it was digitally?
- Do you feel it contributed to the group feeling?



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