Inertia and practice change related to greenhouse gas reduction

Essays on institutional entrepreneurship and translation in Swedish agri-food

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Umeå 2014

ISBN: 978-91-7601-084-6
ISSN: 0346-8291
Studies in Business and Administration Series B No. 86
Elektronisk version tillgänglig på http://umu.diva-portal.org/
Tryck/Printed by: Print & Media
Umeå, Sverige 2014

To Mina

Acknowledgement

First, I would like to express my sincerest gratitude to my two supervisors, Associate Professors Karl Bonnedahl and Jessica Eriksson. Without your patient support and vast knowledge on sustainability, institutional theory and the food industry, this dissertation could not have been written.

In addition, I would like to thank the opponents at my internal seminar: Mattias Jacobsson, Nils Wåhlin and Zeinab Rezvani. Thank you for the excellent comments you provided me with, they helped me finish this one.

I would like to thank the rest of the RiseB-research group, under the competent leadership of Dr. Johan Jansson, for providing an intellectual milieu where matters of sustainability have never been far from the center of debate.

My greatest appreciation goes out to fellow (and former) PhD students, especially Chris Nicol and Vladimir Vanyushyn who helped me with last minute language and format reviews. In fact, all my brilliant colleagues at Umeå School of Business and Economics deserve, and hereby receive, my gratitude.

Most importantly, I could not have made this without the support from Margareta and my daughter Mina. You helped me stay focused, I love you guys!

Lastly, I would like to thank my parents, Anna and 2 x Hans, and my two brothers for inspiring, rather than preventing, me from reading all those books during my childhood. That is how the foundation to this achievement was laid.

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Abstract

To avoid dangerous climate change a massive reduction in greenhouse gas emissions is required in a relative short time span. This cannot be achieved without wide-spread and comprehensive changes in emission-intense activities. However, as development is moving in the wrong direction there appears to be great inertia in changing activities.

Inertia, as well as change, can be analyzed on different levels, where the industrial level is particularly relevant due to patterns of industrial activities resulting in substantial emissions. Here, agri-food is of relative importance, both due to the size of its emissions and its importance for sustaining humanity.

To understand the often value-laden and idea-driven industrial behavior involved in environmentally related change processes, I utilize institutional theory, a non-reductionist organizational theory containing a set of concepts suitable to address this analytical level. Institutional theory is combined with my positioning within the strong sustainability paradigm, which results in a framework indicating the importance of divergent, rather than convergent, change in industrial practice.

Subsequently, the dissertation's overarching purpose is, from an institutional perspective, to advance the understanding of greenhouse gas-related inertia, as well as change, in industrial agri-activities. This purpose is addressed in four individual but related papers and an introductory chapter. The latter presents the theoretical framework, method, an overview of the papers and a concluding discussion of the papers' combined contributions in relation to the literature and the aim of the dissertation as a whole.

This dissertation utilizes a case study methodology to advance knowledge regarding greenhouse gas-related inertia and change. Two change initiatives involving the Swedish Board of Agriculture, the designated expert authority on agricultural matters, were chosen and explored with qualitative methods. Both of these initiatives targeted primary production, which is where the main part of agricultural emissions occurs. The first case consisted of a project to create an Action Plan, a policy suggestion regarding strategies to reduce emissions from agriculture. The second case focused on the Swedish Board of Agriculture's co-owned agricultural extension service, Greppa Näringen. More specifically, the case consisted of the provision of climate advice to farmers. The analyses of the initiatives focused on assessing, discussing and explaining the types of change advanced within them.

The results were reported in the four papers, the first two concentrate on the study of the Action Plan, whereas the latter two concern provision of climate advice. The papers show how and why convergent rather than divergent change was pursued, describing different mechanisms generating this inertia. Convergent change takes the form of a focus upon efficiency or prevailing political goals rather than reducing the prevalence of emission intense activities. Moreover, the discussion of papers' combined results proposes that the change initiatives likely contribute to inertia within industry by affecting the openness and motivation to pursue divergent change among other actors.

The thesis contributes to the sustainable development-field by providing an institutional analysis of inertia and change at the industrial level, showing how the concepts convergent/divergent change can be used to explore issues concerning sustainability. By exemplifying how inertia and change can be analyzed; processes in other industries as well as concerning other such issues can be better understood.

Moreover, this thesis contributes to institutional theory, more specifically to the debates concerning institutional entrepreneurship and institutional logics. The former contribution includes improved understanding of enabling mechanisms as well as institutional entrepreneurship in organizational fields characterized by complexity, whereas the latter concerns the conceptualization of competing institutional logics as well as their influence upon translation activities.

Keywords: inertia, climate change, sustainability, agriculture, institutional entrepreneurship, institutional logics, convergent change, divergent change, practice, translation

Svensk sammanfattning

För att undvika farliga klimatförändringar krävs massiva minskningar av växthusgasutsläpp på relativt kort tid. Detta kan inte uppnås utan omfattande förändringar av utsläppsintensiva aktiviteter. Det förefaller dock finnas en stor tröghet avseende detta, eftersom utvecklingen går i fel riktning. Såväl tröghet som förändring kan analyseras på olika nivåer, och den industriella nivån är speciellt relevant eftersom industriella aktiviteter bidrar med stora utsläpp. I detta sammanhang är primärproduktion av livsmedel av relativ betydelse, både med anledning av utsläppens storlek och produktionens betydelse för mänsklighetens överlevnad.

För att förstå de ofta värdeladdade och idédrivna beteendena involverade i miljörelaterade förändringsprocesser använder jag mig av institutionell teori, en icke-reduktionistisk organisationsteori innehållande ett antal i sammanhanget passande begrepp. Jag kombinerar institutionell teori med en positionering i det ”starka” hållbarhetsparadigmet, vilket ger ett analytiskt ramverk som betonar betydelsen av divergent, snarare än konvergent, förändring av industriell praktik.

Följaktligen är denna avhandlings syfte att, ur ett institutionellt perspektiv, öka förståelsen av tröghet och förändring, relaterat till växthusgasutsläpp och industriella jordbruksaktiviteter. Syftet adresseras i fyra individuella men relaterade papper och en inledande kappa. Kappan presenterar det teoretiska ramverket, metoden, en översikt över artiklarna och en avslutande diskussion av artiklarnas sammanlagda bidrag i relation till litteraturen och avhandlingens syfte.

Avhandlingen använder en fallstudie metodologi för att öka förståelsen av tröghet och förändring relaterat till växthusgasutsläpp. Två förändringsinitiativ relaterade till Statens jordbruksverk, expertmyndigheten på jordbruksområdet, valdes ut och utforskades med kvalitativa metoder. Bägge dessa initiativ riktade sig specifikt emot primärproduktion, där de största utsläppen sker. Det första fallet utgjordes av ett projekt för att skapa en handlingsplan: ett förslag på strategier för att reducera utsläpp från jordbruket. Det andra fallet fokuserade på Jordbruksverkets rådgivningsorganisation, Greppa Näringen, och utgjordes av klimatrådgivning riktat mot lantbrukare. Analysen av fallen sökte bedöma, diskutera och förklara den typ av förändring som eftersträvades.

Resultaten har beskrivits i de fyra artiklarna, där de två första koncentrerade sig på studiet av handlingsplanen och de två senare på klimatrådgivningen.

Artiklarna visar hur och varför som konvergent, snarare än divergent förändring eftersträvades, genom att beskriva olika mekanismer som skapar denna tröghet. Konvergent förändring inbegriper ett fokus på effektivitet eller rådande politiska mål snarare än att minska förekomsten av utsläppsintensiva aktiviteter. I diskussionen av artiklarnas sammanlagda resultat föreslås att förändringsinitiativen bidrar till tröghet inom industrin genom att påverka öppenheten och motivationen gentemot divergent förändring hos andra aktörer.

Avhandlingen bidrar till hållbarhetsfältet genom att ge en institutionell analys av tröghet och förändring på industriell nivå, vilket visar på hur begreppen konvergent/divergent förändring kan användas för att utforska hållbarhetsfrågor. Genom detta exempel kan förändringsprocesser i andra industrier inbegripande andra hållbarhetsfrågor förstås bättre. Utöver detta bidrar avhandlingen till institutionell teori, mer specifikt till diskussionen rörande hållbart entreprenörskap och institutionella logiker. Det förstnämnda bidraget inkluderar förbättrad förståelse av möjliggörande såväl som institutionellt entreprenörskap i fält karakteriserade av institutionell komplexitet, medan det sistnämnda utgörs av konceptualiseringen av konkurrerande institutionella logiker och deras inflytande på översättning.

Nyckelord: tröghet, klimatförändring, hållbarhet, jordbruk, institutionellt entreprenörskap, institutionella logiker, konvergent förändring, divergent förändring, praktik, översättning

Appended papers

Paper 1:

Stål, H. (2011). Examining the Relationship between Emerging and Prevailing Institutional Logics in an Early Stage of Institutional Entrepreneurship, *Journal of Change Management*, *11*(4), 421-443.

Paper 2:

Stål, H., Bonnedahl, K.J., Ericsson, J. (2014). The challenge of introducing low-carbon industrial practices: Institutional entrepreneurship in the agri-food sector, *European Management Journal*, *32*(2), 203-215.

Paper 3:

Stål, H., Bonnedahl, K.J. (2014) Provision of climate advice as a mechanism for environmental governance in Swedish agriculture, *Environmental Policy and Governance, in press*.

Paper 4:

Stål, H., Bonnedahl, K.J., Ericsson, J. (2014) Micro-level translation of GHG reduction – policy meets industry in the Swedish agricultural sector.

1. Introduction

We, humans and our societies, have become the dominant geophysical force on earth (Crutzen, 2002; Steffen et al., 2011). Hence, we now live in the anthropocene (Steffen et al., 2011), and issues at the intersection of ecological systems and human practice have become the most important present-day challenges. One part of earth's life supporting system, heavily affected by our activities, is the climate. Emissions of greenhouse gases (GHGs), e.g., CO_2, CH_4, and N_2O, are contributing to global warming, which introduces tremendous and unmanageable effects on ecosystems and societies alike (Rosenzweig et al., 2008; IPCC, 2013a). Today, a compelling scientific consensus maintains that climate change is occurring, and that it is attributed to anthropogenic emissions of GHGs (IPCC, 2013a; Oreskes, 2004; Rosenzweig et al., 2008). Climate change represents one of the clearest transgressions of ecological boundaries, of leaving what Rockstrom et al. (2009a; b) refer to as humanity's "safe operating space".

To avoid what is commonly referred to as "dangerous climate change", a 2°C increase in global mean temperature (Allen et al., 2009; Meinshausen et al., 2009), and stay within the safe operating space, global GHG emissions have to be drastically reduced (IPCC, 2013a; Rockström et al., 2009a; Rockström et al., 2009b). Of the amount of GHGs possible to emit, with a 50% chance of meeting the globally agreed upon 2°C degree target, 2/3 have already been emitted (IPCC, 2013a). This scenario shows that emissions have to be cut in half by 2050 (cf. Meinshausen et al., 2009). That is a massive reduction in a relative short time span. This cannot be achieved without wide-spread and comprehensive changes in human activities that produce GHG emissions and an increase in those that mitigate them (IPCC, 2007). However, developments are consistently moving in the wrong direction as global emissions are steadily increasing (IPPC, 2013a; World Bank, 2012). This creates a discrepancy, a gap, between the target politically and scientifically agreed upon, and the reductions actually occurring (IPCC, 2013a).

Obviously there is great inertia in changing activities (Wittneben et al., 2012). Despite the seriousness of climate change, and the awareness of what activities need to be altered, not enough is happening. Broadly speaking, inertia represents a disinclination to change anthropogenic activities to

reduce GHG emissions.[1] Inertia prevails despite the different change initiatives**,** i.e., organized attempts at devising strategies aimed at reducing GHG emissions, that are continuously appearing at various levels throughout the world; including global agreements, e.g., the Kyoto protocol, regional e.g., EU-ETS (Buhr, 2012), national e.g., Germany's "Energiewende" (Smith al., 2013) and industrial e.g., climate labeling in agri-food (Bonnedahl & Eriksson, 2011).

The question of what constitutes or explains this inertia can be approached at different levels of analysis. For instance, within the field of environmental psychology the individual level; the relation between individual behavior and the natural environment is in focus. Here research on the awareness-behavioral gap (Kollmuss & Agyeman, 2002), or attitude-behavior gap (Padel & Foster, 2005), try to explain why there is a difference between, for instance, consumer attitudes and environmental behavior. Therefore, intra-individual factors could be evoked for explaining why individuals in different roles; producers, consumers, citizens, engage in activities that result in GHG emissions, even if they know how to refrain from them. Environmental sociology, in turn, focuses on the societal level; the interaction between societies, or elements within them, and the environment. Inertia in relation to GHG reduction could at this level be understood as an outcome of how societies are organized, through markets, politics and civil society. In addition to such analytical levels there are, of course, technical/engineering approaches that analyze technical aspects of environmental problems and prevailing technologies. Here inertia could be explained as lack of effective technological solutions. The organizational level represents social science analysis between the individual and society levels. Such a focus would include the studies of how organizations, e.g., businesses, and their activities affect and are affected by environmental issues (Welford, 1997; Hoffman, 2001). Explanations range from those that focus on barriers and opportunities within firms (Post & Altman, 1994) to those that focus on groups of firms, such as the industrial level (Hoffman, 1999; 2001).

Explanations to inertia that focus on the industrial level are particularly relevant because within industries there are certain reoccurring patterns of activities, e.g., coal firing, trucking, cattle management (Deckers, 2010), that result in substantial GHG emissions. Given the ubiquity of global production, certain industrial activities are a major source of global GHG emissions. If inertia could be explained and overcome at this level, much would be won. Awareness of the links between activities and emissions are

[1] One could consider the alternative where GHG-intense activities are reduced only to be replaced with other similarly bad alternatives, but this is here not considered as part of necessary change.

well mapped out, e.g., through life-cycle analysis (IPCC, 2007; Mattsson et al., 2000; Heiskanen, 2002). Still, this awareness has not resulted in substantial reduction of GHG-intense activities. Moreover, due to recent set-backs in the global, i.e., the UNFCC process, there is little room for believing that global agreements alone will drive the necessary changes. Global political leaders vary in their recognition of the urgency of the problem, and are also in the hands of their national constituencies that seem to favor other issues, e.g., as demonstrated 2009 at the UN Copenhagen climate summit (Carter et al., 2011), or in the 2013 Australian elections regarding a carbon tax (Taylor, 2013). Subsequently, we need to explain inertia and change, and provide plans for action at the industrial level.

Different industries have their particular set of GHG-intense activities (e.g., Engström et al., 2008), where industries such as oil, coal and gas production, air and road transport, agri-food, waste and energy intense processing industry stand out as the worst ones (IPCC, 2007). Given this diversity, this dissertation limits itself to a focus upon one, agri-food, rather than several industries. Agri-food is of a relative importance, representing approximately 11 % of global emissions (UNEP, 2013; IPCC, 2007) and up to 35 % when deforestation is included (Foley et al., 2011). GHG emissions in agri-food are caused by primary production, differentiating it from other industries. This also implies that the industrial activities causing GHG emissions simultaneously are heavily dependent upon eco-system services such as climate regulation. This could make farmers more inclined towards change, which could result in more empirical examples of change initiatives. Moreover, in many industrialized countries, e.g. in EU and the US, agriculture is heavily subsidized, which grants policy a larger role in the structuring of the industry. On the other hand, there may also be similarities in explanations for inertia or change between industries. Similar structural patterns and processes, for instance the existence of industrial logics, policies and debates, may appear in different industries. Hence, the agri-food industry could also be considered as an example.

Moreover, food is a particularly vital product, of importance to sustain humanity; it warrants a special focus. Climate change already affects food production through changing weather patterns which may cause substantive reductions in the global output of food (Lobell et al., 2011). Not to mention the stress that climate change puts on subsistence farmers with low resilience around the world (Brown, 2011). Moreover, as the global population is projected to grow to 9,6 billion in 2050 (United Nations, 2012), this increases the demand for food (Godfray et al., 2010; Foley et al., 2011). Rising global income also induces increased consumption of meat which

further fuels GHG emissions and climate change (Deckers, 2010; Godfray et al., 2010; Steinfield et al., 2006).

Examples of GHG-intense activities within agriculture include livestock and manure management, soil cultivation, use of synthetic fertilizers, transportation, etc. (Deckers, 2010; Steinfield et al., 2006; Foley et al., 2011). Apart from emitting GHGs, agriculture holds great mitigation potential; by increasing the carbon content in productive soils, atmospheric CO_2 can be absorbed (IPCC, 2007). Moreover, production of bioenergy can replace fossil fuels but this increases the pressure on land-use and food production (Foley et al., 2011; FAO, 2008). Based on the need for drastic GHG reductions, there is a strong argument for change in these, and other, industrial agri-activities. Due to increasing population and increasing consumption of meat, it is clear that development trends are not indicating reduced emissions. To the contrary, most predictions show that increased production to meet rising demands will sharply increase emissions. FAO (2003) has for instance predicted that GHG emissions from agriculture may rise with as much as 60% by 2030.

Like many industries, agri-food has seen an increase in change initiatives explicitly addressing climate change and the need to reduce GHG emissions (e.g., Bonnedahl & Eriksson, 2011). However, many development programs aiming at changing industrial activities strive to increase the intensity of production, fertilizer usage etc., particularly in Africa (Gatesfoundation, 2013). On the other hand, in ecologically modernized countries such as Sweden (Mol & Sonnenfeld, 2000) one might expect a somewhat different mix of change ideas, e.g., of organic and small scale production, existing alongside contemporary approaches towards intensification (conventional farming) (Bostrom, 2003; Bostrom & Klintman, 2004; 2006; Milestad et al., 2008). For instance Sweden is within the global top when it comes to organic production (KRAV, 2013). As a part of EU CAP it has come relatively far in making financial support more linked to environmental performance. Therefore, Sweden is an interesting empirical context where a diverse set of ideas regarding activity changes prevail.

To understand potential change processes within the industry, I need a theoretical perspective that can explain industrial behavior. Neoclassical economics are often used for such purposes, despite its static and reductionist approach. Here, Industrial Organization (IO) describes theoretical approaches with a specific focus upon industry structure and practice (Conner, 1991; Carlton & Perloff, 2005). Out of measuring quantifiable data within different industries, certain structural features such as number of firms and barriers to entry are recognized (Conner, 1991). Such

features are assumed to generate particular firm behavior, given the supposition that firms are rational profit-maximizers. The field of strategic management has given more consideration to firms and their choices; however it also adheres to the neo-classical assumption of rational and monolithic profit-maximizing firms. Consequently, GHG reduction becomes generally reduced to a question of the "business case", existing economic incentives, for such behavior. This leaves out the possibility for firms to go beyond the business case or to be affected by other structural features than those identified by economists. Arguably, such theoretical perspectives turn a blind-eye to all those change activities occurring among and around industrial producers that affect ideas and norms as well as regulations related to GHG reduction. Moreover, the aim of the mainstream strategic literature is generally to advice firms how to better position themselves and compete with their peers. This theoretical mission is in turn underpinned by assumptions of the virtue of firm growth, competitiveness and so forth. This is problematic as such a theoretical approach could reproduce some of the assumptions that underpin inertia in the first place (Wittneben et al., 2012). Arguably, strategic management approaches to GHG reduction focuses on means, e.g., firms' strategic choice, rather than the urgency of ecological ends (Kolk & Pinkse, 2005; Kallio et al., 2007).

Subsequently, a limitation with these literatures, in relation to the focus of this dissertation, is that they leave little room for variables other than economic ones. Environmental concerns are value-laden, and concern norms and ideas about proper business conduct (Wade-Benzoni et al., 2002) and ontological assumptions regarding nature (Hopwood et al., 2005). Problems relating to agricultural activities, e.g. GHG emissions, are hotly debated within the farming community. Understandings regarding what should be done and who should do it are constructed in value-laden social processes that go beyond the realm of the individual farm. Although the debate among Swedish agri-food actors indicates agreement regarding the importance of GHG reduction, the opinions of what should be done and who should do it diverge (e.g., Andersson et al., 2009a; 2009b). This reflects to some degree how urgent the problem is understood as well as the desire to protect vested interests. Farmers typically argue that they are under pressure of global competition and that any demands for changed production will lead to price increases and farmer defaults. Consumers, on the other hand, demand better information to be able to make informed choices of what products are "climate-friendly". National regulators are under the pressure for fiscal discipline, and in the hands of the EU-CAP that sets limits on what regulations that can be implemented. As the above-described theoretical perspectives reproduce neo-classical assumptions regarding rational, profit

maximizing firms, they black-box such processes and their usefulness for explaining inertia and change appears rather delimited.

Hence, non-reductionist organizational theories, rather than neo-classical or business ones, are more suited to address the issue of inertia and change. Although research sprung out of the recognition of environmental problems constitute a reasonably established area within organization studies (see Hoffman & Ventresca, 2002; Welford, 1997), little organizational research concerns GHG reduction (Goodall, 2008; Wittneben et al., 2012). This is problematic as organization research should be able to advance knowledge on GHG-related inertia and change on the industrial level, for instance by increasing the understanding of how and why a particular approach to climate change emerges within an industrial context (Jennings & Zandbergen, 1995). Hoffman (1999) used institutional theory to explain how a combination of crisis and legal confrontations, overtime altered beliefs, norms and activities within the US chemical industry. Such research goes beyond the analysis of "the business case" to explore how more factors are involved in environmentally related industrial change (Dyllick & Hockerts, 2002). This challenging and conflicted process can be conceptualized as institutional change – and suggests that detrimental industrial activities over time can be de-institutionalized and replaced with more environmentally friendly alternatives (see also Maguire & Hardy, 2009). Furthermore, such research attenuates that although some environmental problems, e.g. climate change, are global; change initiatives play out in a particular industrial context where rather specific institutions – regulations, professional norms, and understandings – prevail (DiMaggio & Powell, 1983; Hoffman, 1999; Scott, 2001). Outcomes in terms of inertia or change would then be explained by the processes when the issue of GHG reduction meets these structures.

Agricultural GHG emissions result mainly from primary production and its related activities (IPCC, 2007). Thus, the production activities of farmers and their firms, and the type of production system that exist at the level of the farm are of a central concern. Farmers are widely affected by the formal rules within agricultural policy, which contain regulations against certain activities and financial incentives for others. Different types of supports provide a large part of the income for Swedish farmers. Various supports are paid for using certain cultivation techniques, for keeping certain animals or for creating wet lands etcetera. However, institutional theorists do not restrict their analyses to the effects of regulative frameworks but rather focus on collectively maintained institutional logics (Thornton & Ocasio, 2008). Thus the analysis extends beyond the farmers as such, to include processes in which new measures and ideas of change are being disseminated through

trade associations, farm advisors and universities. In addition, powerful food chain actors, e.g. dominant retailers and food processors, affect industrial activities by making demands of various kinds. This further motivates utilizing institutional theory, as it is a theory that goes beyond the individual farm.

Subsequently, institutional theory provides a viable alternative for this thesis. Institutionalists such as Lounsbury and Crumley (2007: 995) define "activity patterns across actors that are infused with broader meaning" as *practice*. Wide-spread and shared industrial activities, some causing substantial GHG emissions, are here conceptualized as practices (ibid). While the term activities denote the observable descriptions of what industrial producers are doing, e.g., driving a tractor, fertilizing or feeding cattle, the practice concept calls attention to the social meaning and the context that these activities are embedded within. Defining these activity patterns as practice means that their collectively prescribed meaning is recognized. For instance, despite being sometimes problematized and discussed, practices are generally understood as legitimate within their industries (Maguire & Hardy, 2009).

Previously, institutional theory was criticized for overtly focusing on stability, e.g., the persistence and homogeneity of practice (Dacin et al., 2002). Subsequently, there was a gap in the literature regarding how institutions such as practices themselves change (Hoffman, 1999). In addressing this gap theorists have attempted to develop a theory of institutional change (Greenwood & Hinings, 1996; Dacin et al., 2002). This includes trying to explain how practices are abandoned (Maguire & Hardy, 2009; Oliver, 1992) but also how emergent logics and practices are institutionalized (Gomez & Bouty, 2011; Maguire et al., 2004; Greenwood et al., 2002). Here, the concept institutional entrepreneurship refers to activities involved in such an enterprise (cf. Hardy & Maguire, 2008). This concept appears to be useful for analyzing inertia and practice change related to GHG reduction at the industry level. However, considerable theoretical debates remain, regarding both the role of institutional entrepreneurship and institutional logics when it comes to change (e.g., Greenwood et al., 2011; Levy & Scully, 2007). The overall theoretical contribution is directed towards these debates.

1.1. Purpose and research objectives

As indicated above, the overarching purpose with this dissertation is, from an institutional perspective, to advance the understanding of GHG-related

inertia, as well as change, in industrial agri-activities. In carrying out this purpose, this dissertation investigates change initiatives in the Swedish agri-food industry. The purpose is fulfilled through four different, self-contained articles, representing individual theoretical contributions.

Paper one introduces the notion of emerging and prevailing institutional logics to analyse a change initiative, the development of an action plan, perpetrated by the Swedish Board of Agriculture (henceforth SBA). The case study scrutinizes the relation between these logics to discuss change and inertia relating to the action plan. Paper two extends the analysis of the above mentioned case study by theorizing on the mechanisms explaining the particular propensity to act displayed by SBA. Paper three contains a case study of provision of climate advice, part of Swedish agricultural extension service. The paper uses discourse analysis to tap into the meanings that are being conveyed through this particular service. Paper four draws on the translation perspective to theorize how GHG reduction as an issue is being disseminated by climate advisors.

2. Theoretical perspective and central concepts

This chapter is structured in the following way; first the research field to which the dissertation belongs is presented, and different implications for inertia and change are discussed. The latter serves to show the consequences of paradigmatic assumptions and position the dissertation. Then the gap in the field's literature, regarding the industrial level, is described to show how the dissertation contributes to the field. As argued in the Introduction, institutional theory provides a way to address this gap. The dissertation's institutional perspective is then presented, focusing on the central constructs. Here, the theoretical gaps, addressed in the individual papers, are introduced. In the last section, these gaps are linked to the four different research questions within the papers and the papers' contributions are presented.

2.1. The research field

The choice of institutional theory to address GHG reduction positions the dissertation within the area of organizational research devoted to environmental issues. In North America, the field goes under the label Organization and the Natural Environment (ONE) (Starik & Marcus, 2000). Here, Hoffman is among the leading scholars e.g., through his work in mapping out the historical developments within US corporate environmentalism (1999; 2001). Furthermore, Maguire & Hardy (2009) have also conducted seminal work by exploring the link between industrial practices and discursive changes caused by the publication of Rachel Carson's "Silent spring". In October 1995 Academy of Management Review published a special issue linking organizational perspectives with the concept sustainability. Included were e.g., papers linking paradigms of sustainable development to management (Gladwin et al., 1995).

Outside the North American context, the field has formed itself around sustainability and sustainable development and covers environmental issues from an interdisciplinary social science perspective (Kallio & Nordberg, 2007). Hence it involves work of organizational scholars (e.g., Orsato & Clegg, 2005; Welford, 1997; Pataki, 2009) as well as other social science disciplines (e.g., Carvalho, 2001; York & Rosa, 2003). Sustainable development became a widely known concept following the Brundtland report *Our common future*, which defined it as development that "seeks to meet the needs and aspirations of the present without compromising the ability to meet those of the future" (WCED, 1987: 51). Those positive to the

concept see it as a break with the post-war paradigm, where technology, science, economic growth and market economy would automatically solve any problems and bring prosperity to the many (Hopwood et al., 2005). However, the concept became vague; consequently it has been used in a plethora of different ways by groups with diverging interests. As a result many different ideas regarding what type of society and what types of societal institutions that are sustainable permeate the field (Hopwood et al., 2005; Dryzek, 2005).

A common demarcation line is that between paradigms of weak (WS) and strong sustainability (SS) (Devkota, 2005; Gladwin et al., 1995; Kallio et al., 2007). Containing different ontological positions as well as normative inclinations, these paradigms imply different versions of inertia and change (Bonnedahl & Eriksson, 2007). WS holds that sustainability can be achieved within the frames of the current system of market economy, capitalism and economic growth. Needed are reforms that de-couple growth from environmental consequences, e.g., more eco-efficiency, more eco-innovations and green consumerism. WS mainly trusts market actors to act on the business case for sustainability but is somewhat compatible with the idea of policy that steers investments towards green growth. In relation to organizational strategy and practice, WS sees change through a win-win frame, ignoring the mass of vested interests, e.g., big coal/oil/gas, that are locked into unsustainable business models (Levy, 1997). Rather than radical changes in practices, e.g., abandoning GHG–intense production, WS would imply incremental changes, working with industry to increase resource-efficiency, reduce waste and develop “green” technology (cf. Orsato & Clegg, 2005).

WS has a lot in common with Ecological Modernization Theory (EMT), which is the main sociological perspective upon “the ecological issue” (Andersen & Massa, 2000; Mol & Spaargaren, 2000; Mol & Sonnenfeld, 2000). This theory mixes normative and descriptive contributions and is built upon analysis of highly modernized western nations that have increased their attention to ecological issues and reduced some of their local environmental problems (Mol & Sonnenfeld, 2000; Mol, 1999). The core claim of EMT is that societies need to become more, not less, modernized to reduce their environmental impacts. This thinking is applied, for instance in the agricultural development model for Africa, where intensification and growth in output is assumed to be the first priority, whereas the environment is supposed to be addressed later on. As societies become more developed, EMT assumes that governance structures will appear that address and remedy environmental problems caused by industrialization and economic growth (York & Rosa, 2003).

Conflicting with these perspectives, SS argues that the current economic system is incompatible with finite ecological boundaries (Orsato & Clegg, 2005; York & Rosa, 2003; Næss & Høyer, 2009). The growth imperative is viewed as inherent to the capitalist system, and through the rebound effect relative improvements are continuously offset (Sanne, 2001). Hence, capital freed through cost reducing eco-efficiency improvements will be invested somewhere else which furthers resource exploitation and produces more waste. Those countries put forth as role models of eco-modernization are also the ones whose populations have the largest ecological footprint because of their level of consumption (WWF, 2012). Thus there is little empirical support for the claims made by EMT (York & Rosa, 2003). SS instead advocates transformative changes, for instance the move to a steady state economy or reducing the scale of the economy (Daly, 2005; Devkota, 2005). At the core lies the rejection of the idea that natural and man-made capital are interchangeable, which separates it from WS (e.g., Costanza & Daly, 1992; Kallio et al., 2007). This is either based upon a deep ecological standpoint, i.e., that nature has an inherent value (Naess, 1973), or the anthropocentric concern that humans cannot do without eco-system services and critical natural capital (Ekins et al., 2003). Hence, SS assumes that natural and man-made capitals are complements; without fish there is no use for fishing boats. Moreover, Daly argues that in today's "full" economy; natural capital has become the limiting factor (2005). From this follows that putting a price on eco-system services and allocating them through markets cannot be the only solution, limiting the scale of the economy is necessary too (Costanza et al., 1997; Daly, 1990). This latter type of reasoning bears resemblance to Rocktröm et al.'s (2009a; b) idea of boundaries and a "safe operating space".

The differences in assumptions between WS and SS affect whether one views climate change as a move towards a catastrophe, calling for radical changes, or as a series of events that can be mitigated with technology, e.g., geo-engineering and adaptive measures. SS here relies on the findings within natural science regarding "tipping points"; indicating that climate change will not follow an incremental trajectory (Rockstrom, 2009b). This means that civilizations will not have time to adapt to these changes before catastrophes occur (e.g., hurricane Katrina).

Furthermore, whilst WS focuses on discussing rational means, e.g., eco-labeling, environmental management systems and green technology, SS instead advocates a focus on ends, i.e., the survival of the ecosystem, and tries to understand what room this leaves for production and consumption (Hudson, 2005; Kallio et al., 2007). The assumption that increasing the eco-

efficiency of prevailing practices is insufficient and that the scale of activities has to be reduced could be interpreted as having the following implication for change in industrial practices (see e.g., Kallio et al., 2007): First, certain practices have to be abandoned to reduce scale, second, it is more effective to abandon practices that are particularly emission intense, third, the necessity to stay within boundaries means that radical changes are necessary as consequences of crossing boundaries could be catastrophic. Hence, industries have to be transformed to fit the limits of the climate system (cf. Hudson, 2005).

The different assumptions also result in diverse interpretations of what inertia exists. When it comes to urgency, a focus on ends typically highlight that development is heading straight in the wrong direction; GHG emissions are steadily increasing (IPCC, 2013), species are being wiped out at a quicker pace than ever (Wake & Vredenburg, 2008; MEA, 2005), and resources are ever more depleted (e.g., Sorrell et al., 2010). However, if interchangeability is assumed, civilization might do fine even without natural resources (or other species), as expressed by Solow (1974: 11); "the world can, in effect, get along without natural resources so exhaustion is just an event, not a catastrophe". Even if most positions within WS would not go so far, it remains that the urgency of the problems is downplayed, as more hope is placed in technology and human ingenuity. Subsequently, inertia might be explained by technical difficulties, or inefficient markets, that fail to create the right conditions for entrepreneurs and innovations to address climate change. According to SS, advocating transformative changes, the search for technological solutions and belief in markets could block other more far-reaching alternatives. For instance, at the industrial level, such projects could deflect attention from the radical changes that are needed and generate inertia.

This dissertation assumes a skeptical position towards many of the claims within WS. Obviously, my claim that radical changes are needed to reduce GHG emissions is underpinned by an understanding informed by SS rather than by WS. In particular, I take a critical stance against eco-efficiency and relative improvements as leading solutions at the industrial level (Frye-Levine, 2012). These changes resemble industry's conventional focus on cost reduction and resource efficiency relabeled as being "climate friendly". Such modifications of practice have been occurring since industrialization began, and in parallel emissions have risen dramatically. It seems less likely that what is needed to reduce GHG emissions are simply new labels for old solutions. At least parts of WS and EMT, as change programs, appear less able to actually address the problem of avoiding dangerous climate change. Hence, contemporary change initiatives need to be analyzed in order to

understand how their content relates to different assumptions, and the meaning that is ascribed to practice change.

2.2. A research gap concerning inertia and change at the industrial level

Although the above-described debate, regarding the sustainability of the economic system, has implications for industrial activities, much of the empirical research within the SD-field has been focused upon either a societal level, or an organizational level (Orsato et al., 2002a). For instance, some authors have focused on the economic system; e.g., Hudson (2005), Foster et al. (2009), Borel-Saladin & Turok, (2013). As described above, the main issue has been whether change within the current systemic frames is sufficient or not (Söderbaum, 2004; as just one example). Others, e.g., Pataki (2009), Bansal (2003), Könnölä & Unruh (2007) have explored change and inertia within organizations. In this stream of research, different conceptualizations of organizational level change, e.g., eco-efficiency, triple-bottom-line, EMS etc. have been examined. Theoretical explanations for organizational level inertia (and change) include structural inertia theory (Hannan & Freeman, 1984), technological-lock in (Könnölä & Unruh, 2007) and various implementation issues (Bansal, 2003).

There is however less research targeting the industrial level, and in particular the issue of inertia and change related to industrial activities (cf. Orsato et al., 2002). Among the work that has focused particular industries, e.g., Adams & Ghaly (2007), some has been mainly descriptive, detailing barriers within a particular industry. There are importance exceptions, for instance Hoffman (e.g., 1999) and Orsato et al. (2002), but these studies concerned other environmental issues than GHG reduction. Consequently, there is, within the SD-field, a research gap concerning inertia and change, related to industrial activities and GHG reduction. Given the gravity of climate change, and the importance of this particular analytical level, as argued in the Introduction, it is a gap important to address. Moreover, as argued above, institutional theory provides a way of addressing this gap.

2.3. An institutional perspective on inertia and change

An institutional perspective on inertia and change would imply the use of concepts that link industrial agri-activities to the existence of potentially

industry-specific rules, beliefs and norms. The concept of *practice* is used to denote such activity patterns that are infused with broader meaning. These meanings are, in turn, derived from the *institutional logics* (Thornton & Ocasio, 1999; 2008; Reay & Hinings, 2008) prevailing within the *organizational field* (DiMaggio & Powell, 1983; Wooten & Hoffman, 2008). The organizational field is here defined as a community of organizations that frequently interact and share an interest in a central issue (Hoffman, 1999; Wooten & Hoffman, 2008). Thus, it encircles the social domain in which relevant GHG-related change initiatives occurs. Institutional logics, in turn, defines "the field's shared understanding of the goals to be pursued and how they are to be pursued" (Battilana et al., 2009: 69). Subsequently, this latter concept links together the meaning, ideas and discourses within a field with its practices. Discourses rationalize goals and provide them with legitimacy among the actors within the organizational field. Legitimacy in turn refers to, "a generalized perception or assumption that the actions of an entity are desirable, proper or appropriate within some socially constructed system of norms, values, beliefs and definitions" (Suchman, 1995: 574).

The theoretical debate concerning practice change has introduced the concept *institutional entrepreneurship* (DiMaggio, 1988; Hardy & Maguire, 2008; Levy & Scully, 2007). Institutional entrepreneurship refers to processes involved in creating new or transforming existing institutions, e.g., institutional logics (DiMaggio, 1988; Garud et al., 2007; Maguire et al., 2004; Buhr, 2012). While "institutional entrepreneurship" singles out actors as potentially important instruments for change, *translation* is used to encircle micro-activities involved in disseminating ideas about GHG-reduction within the agri-field (cf. Powell & Colyvas, 2008). Translation, as a conceptual perspective, describes how entities, e.g., concerns such as GHG reduction, travel between and within contexts (cf. Czarniawska & Joerges, 1996).

Below the five above-mentioned concepts are presented more in detail and the theoretical gaps addressed in the four papers are identified.

2.3.1. Practice

Lounsbury and Crumley (2007) have pointed out that institutional theory operates with an under-theorized account of practice. Since the focus, generally, has been on explaining how a practice becomes diffused, and ultimately institutionalized, less attention has been attributed to practice as a theoretical concept in its own right. Some definitions simply understand practice as an institution, e.g., Phillips et al. (2000: 282): "we define institutions as relatively widely diffused practices, technologies, or rules that

have become entrenched in the sense that it is costly to choose other practices, technologies or rules". Subsequently, institutionalists often view institutions in rather pluralistic terms, generally as patterns of activities or behaviors that are linked to cultural or normative frameworks. A range of different definitions exist, from Scott's (2001) broadness, viewing institutions as consisting of normative, cognitive and regulative pillars, to Czarniawska (2009) who see them as practices underpinned by norms. Hence my adopted definition of practice; "activity patterns across actors that are infused with broader meaning", designate practice as a kind of institution (Lounsbury & Crumley, 2007: 995). However, what represents an institution is always relative to its context (Jepperson, 1991). For example, activities such as fertilizing, cattle feeding, grazing or cultivating fields have meaning within the agricultural context. The more taken-for-granted, or diffused, a particular practice is within its context, the more of an institution that practice has become (Lawrence et al., 2002). Moreover, viewing practice as a kind of institution also means that the link to the norms and beliefs underpinning that practice, that "makes it robust", are theoretically relevant (Smets et al., 2012: 880). For instance, there are discourses that rationalize and infuse practice with value and rationality (Zilber, 2002; 2006; Maguire & Hardy, 2009). Therefore, it is not only that it is standard among industrial producers to perform activities in a particular manner; there are also arguments for that particular practice.

2.3.2. Institutional logics

These arguments for practices are derived from the institutional logics that prevail in the organizational field. Institutional logics are basically defined in two broad ways in the literature that reveal different opinions of analytical level (Thornton & Ocasio, 2008; Greenwood et al., 2011). Friedland and Alford (1991) originally introduced institutional logics to define those macro-structures, e.g., family, religion, the market economy, that in turn underpin field-level institutions. Subsequent scholars have instead suggested that institutional logics are particular to "their" organizational fields (Thornton & Ocasio, 1999; 2008; Greenwood & Suddaby, 2006). They include, for instance, prescriptions regarding the type of actors that can be considered members of a particular profession (Greenwood et al., 2002) or within an industry (Greenwood & Suddaby, 2006). This dissertation agrees with the latter group of authors and thus understands institutional logics as a construct that can be used to conceptualize belief systems within the field. However, institutional logics should be seen as vertically integrated, for instance the market logic manifests itself in various ways within most contemporary organizational fields, although refracted in various ways depending upon the particulars of the field as such (Greenwood et al, 2011).

In the agricultural field the market logic takes different forms, for instance among conventional and organic producers. While the former tend to focus on economies of scale and improved efficiency to cut costs, the latter attempt to communicate added value in terms of different organic labels. In addition there are political logics emanating from political goals communicated through the agri-environmental support system that provide rationale for different practices, for instance cattle grazing is heavily subsidized as a means to improve biodiversity.

This preceding example illustrates that any particular field-level logic will contain several elements that are generic and can be found in many fields. Here, I draw on Battilana et al. (2009: 69) who define institutional logics as the more or less shared beliefs among field actors regarding "the goals to be pursued and how to pursue them". This understanding is also close to that of Rao et al. (2003: 795) who propose that "institutional logics are belief systems that furnish guidelines for practical action". However, this latter definition seems to leave out values and norms, whereas these are included in the notion of shared goals. Battilana et al.'s (2009) definition thus provides one way of relating institutional logics to practices. The choice of practice would respond to "how" to pursue more or less shared goals among the community of organizations within the organizational field. Smets et al. (2011: 880), in a similar fashion, understand practices as "the material enactments of institutional logics". For instance, dairy farmers may choose imported Brazilian soy for their cows, despite its negative climate effects, and rationalize that with the pressure from competitors. Running a profitable firm would be something that is valued in itself within the farming community; a legitimate and taken-for-granted goal. Hence, the existence of goals would be a way to justify and legitimize practices. Furthermore, the concept of institutional logic combines normative and cognitive aspects, which are hard to meaningfully separate. For instance, what is believed to be correct or rational is usually also valued as superior to its alternative. Consequently, I see industrial practices as enforced by institutional logics (Smets et al., 2011).

Furthermore, the construct provides a way of conceptualizing those ideas of appropriate practice and goals common to the field, as *prevailing* logics. Meanwhile, the ideas that evolve within change initiatives aiming to address GHG reduction are conceptualized as an *emergent* logic – an emerging institutional construct potentially consisting of a new goal (GHG reduction) and ideas of practice changes to address that goal (cf. Reay & Hinings, 2009). In addition, this logic could contain discourse describing what causes GHG emissions within the industry, how emission sources can be mitigated, and what roles different actors should play in this. Subsequently, granted

that most emissions occur at the farm, such a logic addresses what (and if) farmers need to change – and why. Thus such an emergent logic would exemplify the industry approach to GHG reduction (cf. Zandbergen & Jennings, 1995). Included could be ideas that challenge the legitimacy of certain practices and strengthen the appropriateness of others, affect the norms, rules and meaning that underpin industrial practices and effect vested interests and positions within the agri-field. However, previous knowledge regarding how institutional logics structure organizational fields is rather limited – as institutionalists have only recently started to pay attention to the interplay between different institutional logics (Reay & Hinings, 2009; Greenwood et al., 2011). In particular, there is a gap concerning the process where new logics emerge – and how these relate to prevailing institutional logics.

What is the relevance of the above discussion regarding the addressed empirical problem? Given my choice to adopt a problem formulation based upon the ontological assumptions within SS, it follows that an emergent logic needs to contain a change orientation, i.e., a content of change that includes ideas of radical practice change or deinstitutionalization of particular GHG-intense practices. If an emergent logic contains ideas of moderate changes or supports practices that already prevail, it raises the concern that change is insufficient. Rather change has to be *divergent*: introduce a new goal (GHG reduction) and practices, or radical changes in current practices in order to achieve that goal (Battilana et al., 2009). But change initiatives could have as their primary outcome a new discourse that justify prevailing practices rather than attempt to replace them. Thus, the suggestions that change initiatives produce, that is the content of change, need to be analyzed in order to determine whether an emerging logic indicates divergent change. Here, discourse analysis could be a relevant tool for assessing the content of change.

Discourse is in this dissertation defined as, "a specific ensemble of ideas, concepts and categorizations that are produced, reproduced and transformed in a particular set of practices and through which meaning is given to physical and social realities" (Hajer & Versteeg, 2006: 175). A discourse represents a shared way of understanding the world, embedded in language. By subscribing to a discourse an actor makes a particular sense of activities, information and events (Dryzek, 2005). While I understand institutional logics as a more encompassing term, including both practice and discourse, I understand discourse as the ideas and concepts, simultaneously supporting and constituting that logic. Discourse provides practices with meaning, aligned with institutional logics, but discourse also contains some degree of diversity, for instance influence from micro-level

contexts. In this dissertation I utilize Dryzek's discourse analysis (2005), as it is particularly aimed at exploring the construction of meaning. For this purpose Dryzek introduces four different elements to describe discourse. This analysis also has the additional advantage of having been developed to understand environmental debates.

2.3.3. Organizational field

The context that embeds farmers and their firms play an important part in this dissertation. The analytical perspective holds that practices are affected by actors and change initiatives occurring outside the individual farm. We need to understand and analyze those initiatives. On the other hand such initiatives are themselves situated within a context. This context is conceptualized by the notion of the *organizational field* (Wooten & Hoffman, 2008). This concept is central to institutional theory and was originally introduced by DiMaggio and Powell (1983), who argued that organizations belong to organizational fields, in which forces work that create similarities in structure and practice. The organizational field-concept has thereafter been defined and utilized in different ways in the literature (Wooten & Hoffman, 2008). Originally, DiMaggio and Powell (1983: 148) defined the field as "those organizations that, in the aggregate, constitute a recognized area of institutional life: key suppliers, resource and product consumers, regulatory agencies, and other organizations that produce similar services or products". This resembled understandings of what constitutes an industry and seemed to leave out actors that do not primarily address markets. Scott (1995: 56) defined the organizational field as "a community of organizations that partakes of a common meaning system and whose participants interact more frequently and fatefully with one another than with actors outside the field". This would indicate less of a focus upon actors serving a particular market. Hoffman (1999) developed this further as he drew upon Scott in arguing that fields are more a channel of common debate and thus also antagonism. Subsequently, fields evolve around "issues" rather than markets – thus the organizational field would include any actors that are concerned with a particular issue and engages with others to address that issue.

The approach to organizational fields in this dissertation is somewhat in-between DiMaggio and Powell (1983) on the one hand, and Wooten and Hoffman (2008) on the other. In line with the latter, GHG reduction could be pictured as an issue giving rise to an organizational field unifying agricultural actors that debate this issue. On the other hand, these discussions are anchored in more stable patterns of suppliers, producers, consumers and agencies that are interlinked through the primary production

of food. The issue of GHG reduction is therefore viewed, not as defining the organizational field, but as interpreted and handled in processes that occur within it. Thus the position taken here sees agricultural practice, rather than GHG reduction, as the central issue unifying the "relevant" community of organizations. Subsequently, given the relative weight put upon primary production and the practice involved therein, the organizational field in focus here consists of those actors that have the potential of influencing agricultural practice. Those actors are in turn those that, to a reasonable extent, may or may not, affect what type of practice changes that are proposed and implemented to reduce GHG emissions. This includes actors such as regulating agencies, farm advisory agencies, trade unions, other non-governmental organizations as well as food processors.

This focal field is below referred to as the agri-field. Thus, the agri-field represents the broad frame used to encircle change initiatives that constitute possible empirical phenomena for study. At the same time, it is important to keep in mind that boundaries between organizational fields are not fixed (Clemens & Cook, 1999; Dorado, 2005). An inherent nature of concerns such as climate change is that they blur boundaries between social domains, linking local, national and global levels of activities (Wittneben et al., 2012). Besides being a concern at the industry level, it is approached in different political processes – as well as within the scientific community. Thus processes in different organizational fields become interlinked and actors move between such processes. Interactions occur across field boundaries, which opens up for extra-field influences among actors.

Institutional theory has hosted a vibrant debate regarding the diversity that exists within fields. The original DiMaggio and Powell (1983) definition depicted organizational fields as rather homogenous. Professions, regulations and market leaders were assumed to provide organizations with an isomorphic pressure – establishing a set of rules of the game that the actors within the field came to follow (DiMaggio & Powell, 1983). Thereby practices, interests and understandings were assumed to be rather similar across field members. This was challenged by observations that fields do contain serious amounts of struggle and conflict (Hoffman, 1999; Levy & Scully, 2007). Others, for instance, Oliver (1991), suggested that organizations often had ways of resisting isomorphic pressures. Thus, both context and organizational responses to context appeared in no way clear-cut. Fields could for instance be understood as containing different sub-communities (Greenwood et al., 2002) or situated institutions (Hoffman, 1999). Or they could contain several institutional logics that could be in competition or conflict (Greenwood et al., 2011; Reay & Hinings, 2009). Furthermore, institutional logics could themselves contain ambiguities (Rao

et al., 2003). Another aspect indicating diversity, mentioned above, is the blurring of boundaries between organizational fields (Dorado, 2005; Greenwood & Suddaby, 2006). Therefore institutions in other fields have influence over such boundaries. Actors belonging to a field could be more or less exposed to the influence of institutions nested in other fields (Greenwood & Suddaby, 2006).

All in all, this means that writings within institutional theory point to a rather diversified set of forces affecting organizations. Hence the way that the organizational field influences organizations there-in certainly cannot be understood as straightforward (Greenwood et al., 2011). Nevertheless, this dissertation still rests upon the assumption that the field, and processes there-in, has an effect upon industrial practice. Subsequently, I agree with the observations that, despite debate and conflicts, organizational fields often contain dominant institutional logics (Battilana et al., 2009; Reay & Hinings, 2009). So despite variations, I would argue that there are broad agreements, particularly within a field as mature as that of agriculture, among actors as to what practices and goals that are legitimate and rational (Battilana et al., 2009). Furthermore, a certain type of diversity, and conflict, may itself be regarded as part of the structure of an organizational field as some conflict lines crystallize into "truces" (Hoffman, 1999) become taken-for-granted and normalized (Reay & Hinings, 2009; Greenwood et al., 2011). At least in mature organizational fields there is a shared understanding of the roles and interests of the actors – thus conflicts and disagreements form part of a dominance hierarchy (Dorado, 2005; Greenwood & Suddaby, 2006). Examples from the agri-field consist of the tensions, debate and pragmatic collaborations amongst proponents of organic versus conventional farming (cf. Andersson et al., 2009a; b; Bostrom & Klintman, 2004; 2006). Conventional farming relies upon industrial methods for producing food, e.g., monocultures, chemical inputs and large scale, while organic farming attempts to mimic nature, e.g., diversified production, renewable inputs and small scale. Conventional farming dominates in terms of share of the market as well as influence in many of the central agricultural organizations.

2.3.4. Institutional entrepreneurship

The diversity within fields implies that relevant change initiatives could occur among a wide scope of actors. Change in industrial practices is thus understood as being dependent upon the activities of actors such as trade associations, regulating agencies, farm consultants and advisers and value chain actors. As mentioned above, such actors are here understood to be taking part in the agri-field. In a certain sense these actors can be

understood as carriers of ideas (Dacin et al., 2002) or potential *institutional entrepreneurs* (DiMaggio, 1988; Holm, 1995; Hardy & Maguire, 2008; Battilana et al., 2009).

The emergent literature concerning institutional entrepreneurship constitutes a response to critique against institutional theory for failing to adequately address the issue of change (Maguire & Hardy, 2008). The original contributions of institutional theory expanded on Simon's notion of bounded rationality (1955) and introduced the notion of social structures, i.e., institutions as a type of limitations on rationality (Meyer & Rowan, 1977; Zucker, 1988; DiMaggio & Powell, 1983). Subsequent research aimed at mapping out the effects of these institutions. This research was typically quantitative, aiming to capture how different practices or organizational forms diffused among groups of organizations (Suddaby, 2010). Such change is here, following Battilana et al., (2009) denoted as convergent, i.e., when organizations follow similar logics. In relation to GHG-reduction, accounts of convergent change would provide explanations for why inertia exists within organizational fields as actors maintain prevailing practices, striving for legitimacy, rather than reflect upon and challenge them. For instance, farmers would ignore GHG reduction because it is not valued by their peers and because additional climate efforts are not incentivized through existing regulations.

In reaction to the described development within institutional theory, DiMaggio (1988: 14) proposed that "new institutions arise when actors with sufficient resources see in them an opportunity to realize interests that they value highly". Such actors were denoted as institutional entrepreneurs. These in turn may be individuals (Lawrence & Phillips, 2004; Maguire et al., 2004), groups of individuals (Maguire & Hardy, 2006; Czarniawska, 2009), organizations (Garud et al., 2002; Leblebici et al., 1991) or groups of organizations (Greenwood & Suddaby, 2006).

Despite these differing descriptions of what may constitute potential institutional entrepreneurs, the concept sharpens the focus of institutional change by paying attention to what actors are doing rather than broad collective, incidental and incremental processes (Lounsbury & Crumley, 2007). This explains some of the criticism that the concept has attracted, as representing an unskillful way of reintroducing the rational actor into institutional theory (Hardy & Maguire, 2008). Meyer (2008), for instance, questions the notion of interests as something external to institutions (cf. Clemens & Cook, 1999). In response, several ideas of mechanisms and features have been put forth that explain why actors could resist institutional constraints and envision alternative courses of action (Oliver, 1991;

Greenwood & Suddaby, 2006; Battilana et al., 2009). These are referred to as enabling conditions, and could be either internal, relate to characteristics of the actor (Beckert, 1999; Mutch, 2007), or external, forces affecting the organizational field (e.g., Fligstein & Sweet, 2002). Included in the latter group are descriptions of shocks (Smets et al., 2012) or triggering events (Hoffman, 1999) that temporally challenge the institutional order and open up windows for change (Buhr, 2012). In the first group we find the idea of particular skills (Fligstein, 1997) but also that of positions within the field that affect the propensity to act as an institutional entrepreneur (Greenwood & Suddaby, 2006; Garud et al., 2007; Battilana et al., 2009). Although the idea of particularly skilled actors may be less fruitful, the link between field position and motivation towards change remains a focal theme (Hardy & Maguire, 2008; Battilana et al., 2009). This latter agrees with the understanding of organizational fields as containing various sub-communities that vary in their degree of normative standing and power (Leblebici et al., 1991; Hoffman, 1999). Garud et al. (2007) suggest that the positions of such different sub-communities might explain why some actors are more motivated and open to ideas that challenge institutional logics, as they have more to gain from a redistribution of power.

Greenwood and Suddaby (2006) draw on Shils (1975) in evoking the notion of central and peripheral field positions that have different effects on the commitment to prevailing logics. The proposed mechanism links position to embeddedness, the degree of institutional constraint an actor experiences (Garud et al., 2007). Position brings different types of exposure to institutional contradictions, for instance conflicts between inconsistent and overlapping institutional logics (Clemens & Cook, 1999), which in turn sets the stage for critical reflection (Seo & Creed, 2002). Here, Greenwood and Suddaby (2006) propose a difference between actors in central and peripheral positions – arguing that the former are more likely to be exposed to influences across the boundaries of their organizational field (cf. Hardy & Maguire, 2008) due to, e.g., that the scope or scale of their operations make them interact with actors belonging to other fields. A regulating agency, for instance, interacts with the branches of government and scientists. Moreover, an argument for exploring the potential institutional entrepreneurship of central actors are is that they may be more likely to actually succeed with their change initiatives than more peripheral actors (Greenwood & Suddaby, 2006; Garud et al., 2007). For instance, regulating agencies can use legal or financial leverage to promote certain practices (Townley, 2002), trade associations control and influence arenas for farm level debate and dominant suppliers and purchasers can make demands that affect large groups of producers. Such actors are privileged in terms of networks, partake in central field processes and possess resources such as

legitimacy and status. Thereby they control resources, e.g., for coercive or normative pressure, that allow them to induce others to comply (cf. DiMaggio, 1988). However, little is known regarding how extra-field influences may enable institutional entrepreneurship among central actors.

In conclusion, given the urgent nature of the problem of GHG reduction, institutional entrepreneurship may represent a suitable path toward change. Subsequently the concept holds relevance for this dissertation. One way of advancing knowledge regarding inertia or change is to pay attention to what type of change initiatives centrally positioned actors, potential institutional entrepreneurs, are pursuing and how they are doing this.

2.3.5. Translation

In addition to the focus upon central actors' change initiatives, I use translation as a concept to explore the activities of several less central actors, who pick up policy issues and send them on (Jiao & Boons, 2013). It should be noted that translation does not *per se* refer to less central actors; however, as a concept it is less actor-focused than institutional entrepreneurship, e.g., less concerned with the issue of agency. While central actors may be important vehicles for change, there is also a need to consider micro-levels within the field. These levels denote concrete social situations and the activities that recursively shape institutions, e.g., practices, through them (Powell & Colyvas, 2008). This is necessary to understand how an emerging logic appears at different field level arenas. The activities of actors with a less central field position are still potentially important in the institutionalization process as they disseminate and interpret a policy issue, possibly affecting practice. More specifically, the term translation usually denotes the transformation issues undergo as they move in time/space (Czarniawska & Joerghes, 1996). Translation has been used within different social science disciplines. Examples include policy studies (Jiao & Boons, 2013), knowledge and technology transfer (Gherardi & Nicolini, 2000), and organization studies (Czarniawska & Joerghes, 1996; Sahlin-Andersson & Wedlin, 2008; Maguire & Hardy, 2009). Here I draw on this latter tradition, which has explored how entities such as ideas and practices are disseminated. The guiding assumption is that it is not the initial strength of an idea or the seriousness of a claim, or the power or prestige of its champion, e.g., IPCC, that explains its spread. Rather translating agents pick up and modify the ideas and problematizations produced by e.g., IPCC or SBA, and interpret their relevance to their activities and pre-understandings. Moreover, in adapting the concept to institutional theory, Zilber (2002; 2006) stressed the shared meanings that underpin practices, i.e., render them legitimate, as one aspect of particular importance. Hence, translation, as a set of activities, is

here understood as linked to the meanings within institutional logics prevailing in an organizational field.

Maguire and Hardy (2009), in their study of deinstitutionalization of DDT show how translations of problematizations (within discourse); e.g., claims regarding the health hazards of DDT may challenge prevailing practices, spurring new meaning (e.g., Zilber, 2002; 2006). Change initiatives can be pictured as different arenas where a "travelling" issue is translated as actors get involved in constructing an emerging logic. To understand how institutionalization occurs within the organizational field, attention needs to be devoted to translating agents and their role in interpreting problematizations as well as meaning of practice (cf. Maguire & Hardy, 2009). In accordance with the paucity concerning the micro-level in institutional theory, the exploration of translation and translating agents addresses a theoretical gap (cf. Powell & Colyvas, 2008). As most institutional research has concerned the sectorial field, or global level, less is known about how agents activities contribute to institutionalization or divergent change (ibid). In particular, there is a lack of research addressing how activities part of translation can be linked to practice change and inertia related to GHG reduction.

2.4. Analytical frame

The review and positioning of the central concepts conducted above result in the following analytical frame, pictured in Fig 2. This frame is used to describe the general principles of the analytical approach applied in the dissertation. In the focus are change initiatives; conceptualized as potential institutional entrepreneurship (central actors) or translation (less central actors), occurring within an organizational field.

Such initiatives potentially challenge prevailing institutional logics and the industrial practices that these logics support; giving rise to emerging logics. Such emerging logics represent field level interpretations of how climate change should be approached, within a particular industry. To analyze the content of change within the approach, e.g., discourse analysis is utilized. The question mark indicates the need to analyze the content of change. This content of change could represent either convergent change: underpinned by WS-concepts such as eco-efficiency, win-win, and ecological modernism, or divergent change: underpinned by SS-concepts such as ecological boundaries, critical natural capital and limits to growth.

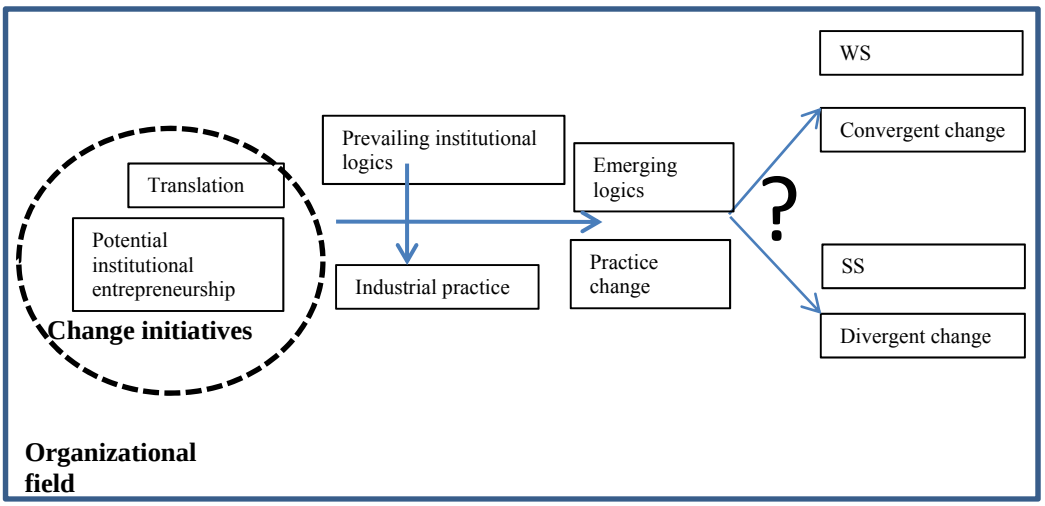

Fig 1: Analytical frame

Hence, WS and SS represent different paradigms, while the elements within them can be found in many fields; these elements manifest themselves in various ways at the field level (Greenwood et al., 2011).

2.5. Research questions

As indicated before, parts of the contribution in this dissertation lie in addressing theoretical gaps within institutional theory. The theoretical review above has identified four such interlinked gaps. The gaps are addressed in the dissertations' four articles and below stated as separate research questions. Addressing these research questions fulfills the dissertation's purpose as they operationalize my institutional perspective:

Paper 1 addresses the theoretical gap regarding the relationship between emerging and prevailing institutional logics, where GHG reduction is framed as an example of an emergent logic. Therefore it contributes to recent work regarding institutional logics, in particular to research aiming to understand situations where there is institutional complexity and competing logics.

RQ 1: What is the relationship between an emergent logic and the prevailing ones?

Paper 2 addresses the theoretical gap regarding the effect of influences across field boundaries upon institutional entrepreneurship. This contributes to research aiming to understand the enabling and constraining mechanisms of institutional entrepreneurship. This paper in particular targets theoretical debate concerning such mechanisms of centrally placed actors.

RQ 2: How do extra-field influences affect an actor's propensity to suggest and promote divergent change?

Paper 3 contributes to Dryzek's discourse analysis (2005) by describing how change orientation within discourse can be interpreted. Moreover, it addresses a predominantly empirical research gap by asking:

RQ 3: What is the feasibility and influence of providing climate advice as a mechanism or instrument for responding to climate change?

Paper 4 addresses a theoretical gap regarding the link between translation, translating agents and practice change. Hence, the work contributes to institutional research devoted to understanding the micro-level processes involved in institutionalization. Moreover, the paper also contributes to research regarding the effectiveness of climate mitigation, by exploring an, in this context, often overlooked socio-cognitive aspect; meaning.

RQ 4: What are the activities of translating agents, between policy and industry, in interpreting GHG reduction and how do these activities relate to the effectiveness of climate mitigation policy?

3. Methodological approach

3.1. Research philosophy

Given that this dissertation addresses both a condition within the natural world and social processes concerning that condition, critical realism (CR) constitutes a valid ontological base. CR is a philosophical position that aims to work both for social and natural science, albeit recognizing the differences between their addressed areas (Fleetwood, 2005; Newton et al., 2011). CR maintains a real ontology and a cautiously optimistic view upon epistemology and the scientific project. I adhere to this philosophy in my belief that there are real environmental conditions, such as climate change, and that science can actually gain knowledge about them. It is of course not the same thing as believing that such conditions will be recognized as problems among politicians, business executives or organizational scholars; this is the outcome of social processes generated by mechanisms different from those found in the natural environment.

Subsequently, I assume there to be a real world entailing objective conditions, regardless of our identification of them (Fleetwood, 2005). CR avoids conflating ontology and epistemology, something which sometimes plagues writings of social constructionists. Hence, CR can address issues such as climate change without hesitating to, "play the ontological trump card" (Burningham & Cooper 1999: 311). A CR position means that although the acceptance of environmental problems (as something that society should address) is a process of social construction, the environmental condition itself, rising CO_2-levels and the unstable weather it brings, is not (cf. Klintmann, 2000). Therefore, CR makes it possible to decide that "climate change denial" is less accurate than the overwhelming consensus within the scientific community (Newton et al., 2011; Oreskes, 2004). For instance, the IPCC process is qualitatively better at arriving at understandings of the conditions within the world than think tanks sponsored by "big oil" (cf. Hoggan & Littlemore, 2009).

CR entails a stratified model of ontology, where three different domains; the empirical, the actual and the real, are thought to exist (Leca, 2006). The empirical is the domain of experience; what can be observed and sensed. The actual contains occurring events, regardless if they are observed or not. The real, in turn, contains entities which have causal effects, these are entities that can make things happen, that "make a difference" (Fleetwood, 2005: 22). Such entities are not only material, e.g., atmospheric concentrations of

CO_2, but also non-material such as ideas, discourses, and social "facts", e.g., practices, social structures (ibid). The causal powers of real entities are transfactual, they exist regardless if they can be observed in a particular context (Leca, 2006). This is because other real entities may intervene to block their effects, or we may fail to observe events generated. Hence, the existence of generative mechanisms cannot be "falsified" through observations. This also rhymes better with how scientific practice actually works; entrenched theories, such as neo-classic economics, are not dismantled despite multiple observations of failed predictions. These arguments are directed towards positivism which is rightly criticized for its overt focus on the empirical and its naïve belief that observations are indisputable and unproblematic "facts". Rather CR sees all identification as mediated, for instance by our senses (Fleetwood, 2005).

Leca (2006) along with others (Delbridge & Edwards, 2013; Mutch, 2007), argue that CR is well equipped to provide an ontological base for institutional theory, especially institutional entrepreneurship, despite institutional theory's social constructionist roots. For instance, CR could provide a way of addressing the problem of embeddedness, how to analytically model the interplay between structure and agency (Delbridge & Edwards, 2013). Writings within institutional theory tend to conflate the two, as actions give rise to structures that in turn have an effect on actions. CR instead holds that society and social structures exist prior to action, this action can in turn reproduce or transform structures, but they should be analytically separated (Leca, 2006).

Following Leca's (2006) example, I model my institutional perspective within the three levels of the critical realist ontology (see figure 1). However, as paper 3 utilizes a discourse analysis rooted in social constructionism, this paper may appear somewhat ambiguous on the matter. Nevertheless, discourse and processes of social construction are no less agreeable with CR; however it insists less on their ontological relevance (Fleetwood, 2005). First, within the domain of the empirical are the observable activities of relevant actors, e.g., their talk and doings. Subsequently, the empirical contains different GHG-intense industrial activities, e.g., fertilization, cattle management, cultivation of organogenic soils. The actual, in turn, contain institutions as actors are not always aware of their existence. That is, they could be taken-for-granted and reproduced by activities without reflection and without proper identification. For this dissertation, agri-practice is a particularly central institution, which is reproduced through various activities, but could also, potentially, be transformed by institutional entrepreneurship. As put forth in the theoretical section, practices are in turn embedded in institutional logics (Thornton & Ocasio, 2008). These are

located within the domain of the real (Leca, 2006). Hence, this research is "based on the analysis of the interplays between actors' actions, institutions and institutional logics" (Leca, 2006: 643).

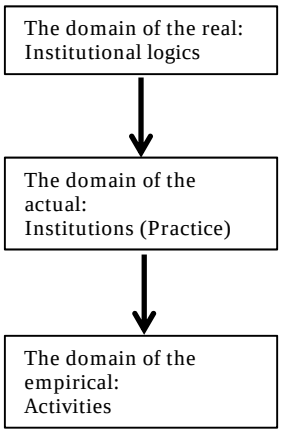

Fig 2: Institutional approach grounded in CR (inspired by Leca, 2006).

It is mainly the generative mechanisms within the domains of the real, which interests CR (Alvesson & Sköldberg, 2009). This has the implication that rather than seeking patterns within large data sets, typical quantitative research, critical realists advocate qualitative case studies in order to understand the generative mechanisms that constitute the real (Alvesson & Sköldberg, 2009). Such generative mechanisms may not always be possible to observe as there may be intervening factors that "block" them (Delanty, 1997). Retroduction is the guiding analytical principle, through which researchers work themselves backwards from the empirical trying to uncover the mechanisms that generate events. This is exemplified in the progression in analyses between paper 1 and 2, were paper 2 explores extra-field influences that could explain the results observed in paper 1.

Positivists typically claim that case studies are suitable only for generating and inspiring, but not testing theory (Yin, 2003). This point of view however, ignores that typical quantitative research does not test theory but rather propositions or models derived from theory, and that the relationship between such models and theory are far from uncontroversial (Alvesson & Sköldberg, 2009). Given that CR seeks to avoid reductionism, qualitative methods are valued for their ability to capture the complexity of theoretical mechanisms. In addition, CR is more inclined to offer an emancipatory critique (Wainwright & Forbes, 2000). In the context of climate change this

could either refer to taking a stand for nature as valued for itself (Naess, 1973), or for future generations (Gardiner, 2001) or for the global poor that have done nothing to cause the problem and yet are hit the hardest (cf. Newton et al., 2011).

The paradigmatic position assumed has the following implications for the type of knowledge that is produced in this dissertation: the knowledge produced uncovers explanations, here conceptualized through institutional theory, to inertia and change. Moreover, as described above, the addressed problematic itself is based upon a realist ontology, i.e., climate change is viewed as an urgent and critical condition. Subsequently, although there are different surface features of the agricultural industry, these findings should not be viewed as exclusive to this particular empirical context, but rather as possible to extend to other industrial sectors as well. This is possible through theoretical, rather than statistical, generalization (Alvesson & Sköldberg, 2009). By providing theoretical contributions, e.g., by developing and applying theoretical concepts and understanding of relationships between concepts, the dissertation develops a conceptual approach that can be used to increase understanding of other, primarily sustainability-related, empirical phenomena. Continuous research will contribute to clarifying the applicability of this conceptual approach, i.e. in which social domains and under which conditions these concepts can advance understanding (cf. Alvesson & Sköldberg, 2009).

3.2. Research approach

In essence, this dissertation is explorative as there is a considerable gap in the organizational literature concerning research that takes climate change seriously (Goodall, 2008). This dissertation utilizes a case study-methodology to advance knowledge regarding GHG-related inertia and practice change. As indicated before, parts of the theoretical contribution in this dissertation lie in developing institutional theory and its concepts. Case studies are useful for this, e.g., as pointed out by Siggelkow (2007:21) who suggests that cases can “help sharpen existing theory by pointing to gaps and beginning to fill them”. Moreover, the case studies within this dissertation are exploratory, but not purely inductive. My research approach does not correspond to developing new theoretical concepts exclusively from the empirics, i.e., the approach within grounded theory (Strauss & Corbin, 1994). Rather guided by the research problem I have looked for institutional theory-concepts that could aid in addressing the purpose of the thesis. Eisenhardt (1989) argues that this is useful in case studies, as theorizing

from cases becomes more focused when it starts with a set of pre-chosen theoretical concepts. The conducted research had found its theoretical home in institutional theory before the case studies were undertaken. This decision was made rather early on, given the characteristics of the addressed empirical problem. However, the role and utilization of particular institutional concepts have certainly changed during the execution of both data collecting and analysis. Hence, my research joins other social scientists active in the broad terrain between the extremes of purely inductive and hypo-deductive research.

3.3. Research setting and case studies

In choosing cases the following considerations were made: change initiatives were considered suitable cases as aspects of inertia and practice change were assumed to be more noticeable within these. These change initiatives were understood as more or less formal projects that aimed to address the question of how GHG reductions could and should be reduced from the agricultural sector. They had to go beyond simply mapping out the problems, that is explaining the emission sources within Swedish agriculture (cf. Swedish Board of Agriculture, 2008), and arrive at some form of suggestions of desirable practice changes.

In order to find suitable cases I identified agri-field actors that could be defined as potential institutional entrepreneurs and searched among the change initiatives that they were pursuing. In following the approach suggested by Neergaard and Ullhoi (2007) I consulted trade journals and followed news letters to construct an understanding of actors within the agri-field, i.e., trade associations such as the Swedish Farmers Association (LRF) (Micheletti, 1990) and the Swedish Ecological Farmers, regulating agencies such as the National Food Agency, the Environmental Protection Agency, the Swedish Board of Agriculture (SBA), NGO: s i.e., Swedish Society for Nature Conservation, universities i.e., Swedish Agricultural University, leading suppliers i.e., Yara (fertilizers) or Lantmännen (fodder and seed corn) and producers i.e., Arla and Norrmejerier (dairy) and Scan (meat) etc. I also conducted a few interviews with representatives of such organizations and asked them to suggest change initiatives that were upcoming or ongoing. This resulted in a few examples of change initiatives from which I selected my two cases (see the last row in Table 1).

Initiatives had to consist of something beyond general discussion and debate, e.g., at seminars or conferences. For instance, networks set up to

explore, gather information and debate, were not considered as sufficient change initiatives. Although such debate and interactions are part of the social processes surrounding the issue, and to some extent is part of the institutionalization process within the industry, it is difficult to assume that they will have effect when it comes to practices. Hence, the assumed strength of the would-be link to practice change was used as a yard stick to measure the suitability of a potential case. Linked to this, initiatives could be understood as positioned at different stages within the institutionalization process, were those initiatives that directly targeted behavior could be denoted as "late". Initiatives aiming to evaluate and formulate suggestions could be denoted as "early". Moreover, for change initiatives to be relevant they had focus on primary production since this is where the bulk of emissions occur. Certainly, a whole range of issues have been discussed and assessed when it comes to their impacts on climate change, but one needs to filter out the big and small issues in some way, i.e., those that address the main agricultural emission sources (Steinfield et al., 2006; IPCC, 2007; Swedish Board of Agriculture, 2008). Furthermore, the suggestions produced within a potentially interesting change initiative had to be coupled with ideas of how these suggestions were to be implemented. This is motivated by the, above described, link to practice change. It also ties in to the theoretical focus upon institutional entrepreneurs, actors that mobilize resources for change. Thus, institutional entrepreneurship involves putting resources on the line for promoting change rather than simply producing a list of desirable changes (Battilana et al., 2009). Exploring a change initiative that has little potential of being implemented appeared less relevant. The risk is that the main cause of inertia is lack of implementation which an exploration of the processes within the initiative itself, would then miss. As a result, theoretical considerations fed into the case selection akin to what Eisenhardt refers to as theoretical sampling (1989).

On the other hand, the outcome of the change initiatives, the suggested practice changes, could be of a less prominent kind. An initiative may start out with high aspirations – but then result in a content of change that appears insufficient, i.e., convergent. A potential institutional entrepreneur could for instance suggest that GHG-intense practices, rather than being deinstitutionalized, are simply modified. Or provide prevailing practices with new meaning, so that they appear as means to reduce GHG emissions (see Fig 2). This is however something that, for obvious reasons, has to be an outcome of the case studies – rather than as criteria for choosing among change initiatives. It is impossible to know beforehand what types of suggestions a change initiative will result in. In reference to my theoretical aims, as pointed out by Scott (2010), most studies of institutional entrepreneurship are post-hoc analysis of successful cases. It is simply

impossible to know beforehand whether a particular change initiative will result in divergent change. However, such an outcome is itself an empirical finding and details of the cases could then explain why inertia exists, and theoretically address constraints concerning institutional entrepreneurship.

Lastly, for a case to be considered suitable for the studies it had to constitute a temporal fit, i.e., the change initiative should not have been terminated before the study began. However, given the few suitable cases that existed, and the observation that the dissertation began two years after climate change had risen on the political agenda, it was deemed reasonable that initiatives had started before the studies.

Organization/ Criteria	LRF	National Food Agency	Swedish Ecological Farmers	Environmental Protection Agency	Swedish Board of Agriculture	Swedish Society for Nature Conservation	Lantmännen	Arla	GN (climate advice)
Type of actor	Trade association	Governmental agency	Farmers (organic) association	Governmental agency	Governmental agency	NGO	Company; input provider and purchaser	Dairy producer	Public-private partnership
Description of initiative	As owner involved in GN; some finished smaller information project	Few reports, less suiting in time	Information gathering; less suiting in time	Overarching responsibility for developing/fulfilling the national GHG reduction strategy	Action Plan-project; suitable in time	Information campaigns; networking	Previous project conducting LCA on products	Devising climate strategy; climate compensation	Development of climate advice – linked to AP
Focus area	Agri-practice	Consumer behavior	Organic practice	Sector policy	Agri-practice	Consumer behavior; policy makers; agri-practice	In-house practice	Dairy farming (and own practice)	Agri-practice
Institutionaliza-tion stage	Early/late: Suggestions and (some) implementation	Early stage: Suggestions	N/A	Early stage: Suggestions of policy	Early: Suggestions of practice change	N/A	Early: Suggestions	N/A	Late: Implementation

Resources for implementation	**Strong**; networks; ownership; information campaigns	Information; policy suggestions	Information; lobbying	Information; policy suggestions	**Strong:** Information (GN); policy suggestions; regulation	**Strong:** Campaigns, lobbying; networking	**Strong:** Monopoly-like position	**Medium:** Reaches part of the population of dairy farmers	**Medium:** Advice reaches a growing number of farmers but it is voluntary
Agri-field position	Central	Boundary* - addresses consumption rather than production	Less central – organizes a (not negligible) minority of Swedish farmers	Boundary* – addresses GHG policy rather than agri-practice	Central (expert authority)	Boundary* – addresses environmental issue rather than agri-practice	Central (owned by LRF)	Central – largest dairy	Consultants belong to different organizations – some central/some not
Expected divergence of suggestions	Low; main task to protect the profitability of farmers	Difficult to assess	Difficult to assess; likely to support prevailing organic practice	Difficult to assess	Difficult to assess	High	Low; expected lock-in	Low; expected lock-in	Difficult to asses
Conclusion	Not selected due to lack of suiting projects and less likely to promote divergent change	Not selected due to lack of projects; indirectly affects practice	Not selected due to lack of formal projects	Not selected due to indirect relation to industrial agri-practice	**Selected due to suitability of AP-project**	Not selected (after interview) due to lack of suitable project	Not selected as less likely to promote divergent change	Not selected due to unsuitability of projects; less likely to promote divergent change	**Selected e.g., due to link to AP-project, institutionalization stage**

* Refers to actors that are moving between different fields (see paper 2).

Table 1: Agri-field actors and case selection

One initiative that appeared suitable, given the time frame from the study, involved the regulating agency responsible for the agricultural sector – the Swedish Board of Agriculture (SBA). SBA is the designated expert authority on agricultural matters; as such it investigates various agri-environmental issues. Such investigations are both carried out on request by the government and at SBA's own discretion. Hence, SBA appeared highly relevant when it came to GHG reduction as it could be expected to respond to existing political pressure and rising interest that accompanied the climate change-issue in the mainstream Swedish debate. Moreover, if politicians were looking to do something about GHG emissions from agriculture – SBA would likely be the agency they would turn to.

Moreover, SBA is particularly relevant for industrial practice as the policy that the agency shapes provides much of the income for farmers. These depend on the plethora of different agricultural supports for their prosperity. These are, of course, part of the EU Common Agricultural Policy (EU-CAP), however SBA provides important inputs to the political process behind EU-CAP, and many details of particular supports are decided domestically. In addition, SBA administers the domestic part of the EU-CAP, the Rural Development Program, once it is decided. These programs run for seven years at a time and contain a plethora of financial supports for farmers who change their practices[2]. Consequently, SBA has coercive power; in terms of controlling that farmers actually are entitled to different support, which hinges upon assessments regarding whether farmers are following prevailing rules. Furthermore, the agency's staff are part of various networks and participate as experts on various arenas e.g., the development of food labeling schemes (Bonnedahl & Eriksson, 2011), and could thus be assumed to take part in the social processes that institutionalize how GHG reduction emerges as an institutional logic within the agri-field. This could be understood as a normative influence, in particular given its role as an expert authority. Hence, there are reasons to believe that how SBA comes to approach GHG reduction is important as to what practice changes that will occur in agriculture. Consequently, the agency is understood as a centrally placed actor within the agri-field. Due to its possibility to mobilize resources for change, and the characteristics of the empirical background, it was considered as a potential institutional entrepreneur with an ability to affect institutionalization of GHG reduction within the field.

[2] The RDP ran between 2007 and 2013, contained funds to a value of 35 billion SEK, where EU and Sweden put up half each.

SBA's change initiative consisted of a project to create at an Action Plan (AP); a policy suggestion regarding strategies to reduce emissions from agriculture. The AP was requested by the Ministry of Agriculture (MA), the governmental branch responsible for agriculture and rural affairs. The strategies were supposed to be implemented from 2011 to 2020, but the action plan was also expected to constitute a tool for a long-term effort to reduce GHG emissions (Swedish Ministry of Agriculture, 2008). This meant that the suggestions would both utilize resources within the current RDP and formulate suggestions for the next program. In comparison to SBA's earlier attempts to deal with GHGs (see Swedish Board of Agriculture, 2008), the project was by far the most comprehensive attempt in terms of number of investigators involved and time invested. The result was to be delivered to the government in the form of a written report. The final report should be regarded as a suggestion; on many issues, it is up to politicians to determine whether the strategies would be implemented. However, suggestions involving agricultural extension, provision of advice to farmers, could be implemented immediately through the operations of SBA's own farm extension service (see below). Hence, there appeared to be a link between the AP project and possible changes in industrial practices. Moreover, the project represented something of a targeted effort and was understood as representing SBA's institutional entrepreneurship.

The AP project was selected as the first case. The results of the case study are presented and analyzed in the first two articles (see Table 2). The second case indirectly involved the SBA, by focusing on its co-owned agricultural extension service "Greppa Näringen" (GN – which translates both to "Capture the Industry" and "Capture the nutrients"). More specifically, the case consisted of the climate advice module within this service. GN is set up as a public-private partnership, shared between SBA and LRF. While the AP project involved stakeholders such as agricultural researchers, agency officials, LRF representatives and NGOs, the second change initiative involved agricultural advisors and farmers. Hence, the link to industrial practice was more direct, as those performing the practice, the farmers, were directly involved. Firstly, the GN case added stakeholders (and processes) within the agri-field, and thereby provided another take on the institutionalization process. In particular, it added the influence of farmers. Given the results from the first case study, pointing to the lack of extra-field influences, the question arose whether an impetus for change could come from the grass root level, e.g., farmers and their advisors. Voluntary policy approaches, such as climate advice, are partly justified by the idea that those subject to regulation will be more motivated and involved when there is no coerciveness (Jordan et al., 2013; Lange & Gouldson, 2010). Hence, climate advice would constitute an opportunity to study the influence from farmers.

Another reason was that while the first case explored an early stage of institutionalization when change ideas were being formulated and suggested rather than actually implemented among farmers, GN would represent a later stage when changes were actually being disseminated within the field. Thirdly, the two cases are related as many of suggestions made in the AP were fed into the module's advice. This was considered an additional reason for selecting this case. This would make it possible to further increase the understanding of inertia and change as it would be possible to explore the process of implementing suggested change ideas. Other AP-suggestions would require more time to be implemented as they had to go into to EU-CAP process (see Table 2).

GN develops and administers advice modules dealing with various agri-environmental issues, and GHG reduction constituted the most recently added one. GN was originally established to reduce superfluous use of fertilizers. Fertilizers leaking into waterways caused eutrophication and toxic algae bloom during the 1980s, around the Swedish shore. In Denmark fertilizer use was regulated with quotas and restrictions, however Swedish policymakers instead chose a mix of voluntary measures, e.g., GN, and financial incentives. After having addressed this issue, GN came to embrace other environmental issues such as pesticide use, soil destruction and reduced tilling. GN is regularly presented as a "success story" and as evidence that its approach is effective, e.g. through data indicating that fertilizing has decreased on participating farms (Statistics Sweden et al., 2012).

The actual advice is provided by independent consultants, during farm visits, and takes about two hours. Consultants participate in annual rounds of public procurement and are educated by GN in the different modules. Farmers sign up for at least three visits, cost free, as consultants are paid by the public. In-between mandatory start and follow-up visits, farmers can choose between existing modules. Climate advice, as a module in this AE system, saw its first round of 34 certified consultants in 2010 with advisory activities commencing shortly afterwards.

Case	Central concepts	Description	Organizat-ional setting	Methods	Type of respondents	Papers	No of respond-ents
#1	Institutional entrepreneur-ship; institutional logics	SBA led project aimed at creating an action plan to reduce GHG emissions	Swedish Board of Agriculture (state agency)	Interviews, document studies	Agency officials, policy makers, agricultural researchers, LRF-represen-tative	1 and 2	18(2)*
#2	Discourse; translation	Climate advice directed toward farmers	GN - Public-private partnership project	Interviews, observa-tions, document studies	GN-staff; climate consultants, farmers	3 and 4	28 (4)*

Table 2: Case studies

3.4. Empirical background – political processes addressing GHG reduction

In this section, the political process preceding the two cases is summarized. This provides the reader with a fuller description of the empirical background, beyond that which is described in the individual papers.

3.4.1. Governmental activities

In 2007, paralleling the Stern-report, the fourth IPCC report, and Al Gore's *An inconvenient truth* (Gore, 2007), climate change peaked on the Swedish political agenda. After Sweden had changed government in 2006, climate change became one of the first issues to be addressed by the new right-wing coalition. The political process aimed at deciding new national reduction targets, as the old targets set for 2008-2012, relating to the Kyoto Protocol and the UNFCCC, needed to be replaced. Swedish political leaders were of course also preparing for the Copenhagen summit (COP-15) which took place in December 2009, and needed new targets to bring to the table. Sweden appeared to have experienced little trouble in fulfilling its Kyoto targets, mainly because these were moderately set and because the country had previously converted its energy systems in the housing sector. This had started as early as during the 70s oil crises. Given that Sweden's energy and

* Number in parenthesis shows number of respondents interviewed twice.

housing systems run on a combination of nuclear, hydrogen and forestry biofuels and is almost fossil independent, it had an advantageous starting position compared to many other countries.

A string of reports followed, exploring the implications of GHG reduction for national policy. The point of departure within these reports was typically the fourth IPCC report and the Stern-report. The Swedish policy reports included one published from a scientific council (Miljövårdsberedningen, 2007), from different state agencies (Swedish Environmental Protection Agency & Swedish Energy Agency, 2008) and from a parliamentary working group (Klimatberedningen, 2008). Here viewpoints from science, political parties and governmental agencies were collected. The political debate concerned what the new target for 2020 should be and whether this target would be reached by domestic reductions or allow for usage of international offsets (e.g., clean development mechanism). The right-wing government favored a less ambitious target with less focus on domestic reductions in comparison to the green-red opposition (Klimatberedningen, 2008). These reports also referred to possible changes distributed between the sectors defined by UNFCCC (e.g., energy, waste disposal, transport, agriculture). In particular, transportation was singled out as the most problematic sector, where emissions were moving in the wrong direction. Agriculture was described as an important sector in terms of its emissions, its potential as a producer of bioenergy and as a carbon sink. However existing knowledge regarding emissions, as well as regarding how to mitigate them, e.g., through practice changes within the sector, were defined as unclear. The political process culminated in the government's bill for a new reduction target of 40% by 2020 – to be achieved through both domestic and international interventions (Swedish Ministry of Environment, 2009). However, this bill did not specify how much different sectors were supposed to contribute; subsequently there was no explicit reduction target set for agriculture.

3.4.2. Governmental agency activities

As described, within politics, global reports, e.g. the recent IPCC-report, were translated into a new national reduction goal as well as some ideas of the role of various sectors in contributing to fulfilling those goals. At the governmental agency level, SBA had the main responsibility for investigating agricultural GHG emissions. SBA staff had worked with climate change since 2002 resulting in two reports (Swedish Board of Agriculture, 2004; 2008). However, these first reports were the achievements of small group of employees, who anticipated that this would be a growing concern for the agency. First the problem (descriptions of the emission sources within the Swedish sector) as well as possible ideas of interventions had been mapped

(Swedish Board of Agriculture, 2004). In 2008, following the above mentioned parliamentary investigation (Klimatberedningen, 2008), the government ordered SBA to map current knowledge and suggest an AP to reduce GHG emissions from the sector (case study 1). In particular, synergies with activities to reduce nutrient leakage were put forth as an important area to investigate.

3.5. Data collection

Qualitative methods were used in both case studies. The use of qualitative methods is based on slightly different rationales in the two studies. Hence, more detailed arguments are found in the different papers. In the first study, I followed an unfolding process (the AP) and therefore qualitative methods, enabling several data collection opportunities, were suitable (Pettigrew, 1997). More importantly, the focus upon changes within institutional logics warranted a qualitative method that would capture the reflections and decisions of the respondents (Alvesson & Sköldberg, 2009). Institutional logics, or discourses for that matter, are abstract entities that are difficult to assess without providing respondents with a space to reflect and discuss particular issues, e.g., problems and potential solutions. Hence, qualitative methods were used because the relevant information was predominantly qualitative (Yin, 2003). This latter also applies to the data collection within case study 2, which concerned discourse (paper 3) and translation (paper 4). Such phenomena play out in language and are difficult to meaningfully assess using quantitative methodology.

Semi-structured interviews were used as the primary tool for collecting data in both studies. While detailed motivations differ somewhat depending on the analytical focus of the different papers, the overarching rationale was based on above-mentioned focus on ideational aspects, e.g., the beliefs, reflections, decisions, rationales, that respondents held of the addressed issue. Thus, I needed to ask open-ended questions and create opportunity for respondents to talk about general understandings – of the agricultural sector, other actors and other concerns. Experiences from the initial interviews convinced me that the respondents were able to reflect upon and describe details over the phone. Hence, most interviews were subsequently carried out over the phone to accommodate hard scheduled respondents and to reduce GHG-emissions from travelling. All but three interviews were audio-taped and fully transcribed (see paper 2 and 3 for a list of respondents in the two cases).

The rationale behind the selection of respondents is described more in detail in the papers, but mainly the ambition was to interview all the involved respondents, i.e., all the active climate advisers and personnel involved in the AP. In addition, for both case studies, archival data, i.e., reports and memos produced within the AP project and GN documents, constituted a valuable source of revealing how potential institutional entrepreneurship was evolving. For instance, in the AP project, minutes from a meeting with stakeholders displayed the ideas that were on the table at an early stage in the project. Moreover, to understand the political background relating to GHG reduction in general, and in particular the political process that had preceded the request for the AP, I explored various political reports (dealing with GHG reduction) produced after the 2006 election. I selected these reports by their referencing to each other, and how they were logically linked together. These reports culminated in the 2009 Energy and climate-bill where the government stated their national GHG reduction strategy for 2020 (Swedish Ministry of Environment, 2009). Furthermore, when it came to agriculture and agri-practice, I needed to conduct a broad document study to identify ideas and themes that existed prior to the change initiative. This included exploring information of the empirical context from various sources; to uncover ongoing and historically contingent themes within agricultural policy and industry.

In case study 2 participant observations were also used. The purpose was both to verify that consultants' descriptions of their activities, and their talk, corresponded to what indeed occurred and to observe the reactions from the participating farmers. I participated in five such farm visits and in one group meeting between farmers and consultants. The farm visits were audiotaped and fully transcribed; whereas field notes were taken during the group meeting (it was technically difficult to record). Moreover, it also enabled me to observe reactions from the participating farmers. This was valuable as it appeared from these observations that farmers varied in their interest of climate change, appearing sometimes even hostile to the issue, and mainly focused on their own economic concerns.

3.6. Data analysis

Four different analyses were conducted – presented in more detail in each article. However, the different analyses were based upon similar principles: First, ideas of relevant codes within the data, e.g., the interview transcripts, were informed by the individual paper's research question, e.g., the focus upon practice change and inertia. Obviously, as this influenced the questions

asked in the interviews, this would also shape the type of responses given. For instance, in the first case study the material was initially coded according to the different change ideas that were discussed in the interviews. Subsequently, interview quotes regarding e.g., organogenic soils, fertilization, cattle etcetera were grouped together. The analysis in both paper 1 and 2 were based upon this coding of data based on change ideas. Second, different theoretical concepts were employed to further categorize and interpret the ordered data. This latter state resembles what Braun and Clarke (2006) describe as a theoretically inspired thematic analysis, e.g., themes do not "emerge" from data but rather data and are fitted to themes derived from the literature. In addition, these themes are also developed in order to facilitate the theoretical contributions. Of course there is a risk that there is data that is missed in this procedure, but given that the data was collected for a purpose and that choice of theory should serve that purpose, chosen themes should also be adequate. For instance, in the second article, the initial codes were then analyzed utilizing the concept divergent change. This meant assessing an idea according to two dimensions; how comprehensive changes at the farm it implied, and estimated reduction of GHG emissions. In paper 2, an additional analysis was carried out, in a third step. This step utilized Greenwood and Suddaby's (2006) operationalization of embeddedness. In paper 1, the third step was less ordered, perhaps more akin to a discussion of the relationship between the emerging and the prevailing logics.

In the second case study, the initial coding followed a different logic. It depended upon how often a theme was mentioned throughout the different interviews. For instance, many of the interviewed consultants referred to the importance of framing advice as being about "win-win". These different codes were then sorted according to theoretically derived categorizations, different for the two papers. For instance, in the third article, the discourse analysis described by Dryzek (2005) was used. Hence, the four elements described in (t)his analysis was used to sort the data. The second step in the paper's analysis was more interpretative. I went beyond the elements, drawing on the results of the first analysis, to interpret the discourse's content of change. Similarly, in the fourth paper, these initial codes were sorted using themes derived from the translation literature.

Subsequently, in principle, the analyses in the papers consisted of three somewhat similar steps; an initial coding "close" to the empirics, a theoretically derived analysis followed by another, more interpretative, analysis or a conceptually informed discussion of the findings (see Table 3).

Paper	Central concepts	Data	Analytical concepts	Analytical steps
#1	Institutional entrepreneurship; institutional logics	Interview transcripts; documents (SBA reports)	Templates-in-use; diffusion/translation; Emerging/prevailing institutional logics	1) coding for templates discussed 2) categorized according to translation/diffusion (Zilber, 2006) 3) analysis/discussion of the relationship between logics
#2	Institutional entrepreneurship; divergent change; propensity to act	Interview transcripts; documents (SBA reports)	Change ideas; divergent change; awareness/openness/motivation	1) coding for change ideas 2) analyzed using two dimensions of divergence 3) assessment of propensity
#3	Governance; discourse	Interview transcripts; field notes; documents (GN & consultant reports)	Four elements of discourse; change orientation	1) coding for repeatedly mentioned ideas 2) categorizations according to elements 3) interpretation in terms of change orientation
#4	Translation; translating agents	Interview transcripts; field notes; documents (GN & consultant reports)	Problematizations/responsibilities; meaning of practice & change	1) coding for repeatedly mentioned ideas 2) categorizations according to analytical concepts 3) interpretations for construction of meaning

Table 3: Overview of analyses

4. Summary of research papers

Below the papers of the dissertation are summarized, followed by an overview in Table 4. The last row of the table shows the synthesis, discussed more extensively in the last chapter.

4.1. Examining the relationship between emerging and prevailing institutional logics

This study examined how potential institutional entrepreneurs in the Swedish policy process devised GHG reduction strategies, which I conceptualized as an emerging institutional logic within the Swedish agri-field. The purpose of the study was to explore the relationship between this emerging logic and the prevailing logics. The latter refers to already existing, and competing, goals, as well as linked practices, in the agri-field. Examples are conventional and organic farming, as well as different policy goals linked to implementation policies. Hence, GHG reduction potentially refers to a new goal coupled to ideas of practice change, which is being introduced into an institutional context where other ideational structures already prevail. The relationship explored, in turn, has implications for inertia, and change. On the one hand, the content of change may or may not represent a divergent break in relation to current practice. If not, inertia in the field may depend on lack of propensity to act by potential institutional entrepreneurs. On the other hand, inertia may also be explained by the constraints that prevailing logics pose. By exploring the early stages of institutional entrepreneurship, when the emergent logic is being developed, it becomes possible to investigate these outcomes.

A case study was used to investigate a project led by the Swedish Board of Agriculture, and qualitative methods were applied to reveal how policy-makers reflected upon and discussed prevailing goals and templates. Given the SBA's purpose to devise strategies, and suggest ways to later implement them; this case study could be considered an early stage of institutional entrepreneurship. Templates refer to ideas of practice (Randall & Munro, 2010), here the way that farmers are perceived to be or should be producing. An emergent logic thus aligns templates in relation to GHG reduction as a policy goal. There are however prevailing logics that compete with this emergent logic. Competing goals include, but are not limited to, other environmental issues, such as increased biodiversity or reduced

eutrophication. Further, goals of a more general kind, such as employment, national competitiveness or increased efficiency, also provide arguments that are used to rationalize templates. Moreover, there is competition between conventional and organic farming practices, two different standards underpinned by different logics. Subsequently, there are prevailing institutional logics that offer alternative rationales for different templates. These understandings may end up in conflict with each other indicating the goal conflicts that exist. One template could be framed as appropriate according to one set of goals but detrimental according to another.

To analyze the relationship, I focused on the emerging templates and how they related to different prevailing goals. The results of the analysis demonstrated that templates were processed in four ways: diffusion (or failure) and translation (or failure). Failures occurred when translation or diffusion (of a template) was discussed but subsequently dropped, due to, for example, resistance. Resistance occurred as different stakeholders, part of the process, voiced conflicts with prevailing logics, i.e., called attention to competing goals. Constraints are also built in to the process as part of the rules and procedures that SBA has to follow, e.g., how the government originally had delineated its request. This means that some templates are not even on the table, including ideas of deinstitutionalization of GHG-intense meat production. Moreover, at least one idea (to restrict cultivation of organic soils) that appeared divergent, both in terms of suggested practice change and reduction of GHG emissions, was dropped altogether. Nonetheless, prevailing logics also constituted a resource; a collection of pre-existing ideas that could be used for GHG reduction as well.

The conclusion is that the emerging logic was less of a divergent break with the prevailing logics and more of a co-mingling containing changed, reused and new templates rationalized by pre-existing as well as new political goals. Hence, it may questionable whether it really represents a new logic or rather an extension of the prevailing ones.

The study suggests that inertia in GHG-reduction results from lack of entrepreneurial efforts in combination with constraining forces within prevailing logics. In a situation where there are constraining forces, generating uncertainty in terms of goal conflicts, this causes inertia. By stepping into the policy activities within an early stage of potential institutional entrepreneurship, the details of this constraint are evinced, e.g., stakeholders' role in calling attention to different goals.

Keywords: Institutional logics, institutional entrepreneurship, templates in use, climate change, agriculture

4.2. The challenge of introducing low-carbon industrial practices: Institutional entrepreneurship in the agri-food sector

This paper builds upon and extends the case study presented in the first paper, by exploring enabling mechanisms that could increase a potential institutional entrepreneur's propensity to act. It argues that in relation to industrial practices and prevailing logics, the promotion of GHG reduction could be interpreted as potential divergent change. Inspired by Battilana et al., 2009, divergent change is in the paper understood as introduction of GHG reduction as a new (field level) goal, coupled to new, or radically changed, practices to address that goal. Of course, it is an empirical question whether the AP actually is an example of divergent change. Nevertheless, in the paper we adopt a proposition from the institutional literature (Dorado, 2005; Greenwood & Suddaby, 2006; Seo & Creed, 2002) that influences originating outside the organizational field could constitute such above-mentioned enabling mechanisms.

Greenwood and Suddaby (2006) suggest that although central actors are usually depicted in the literature as adversaries to change, they are sometimes more open to influences from other organizational fields. For instance, the focal actor, SBA, due to its mission regularly interacts with branches of the government and scientists. Such influences can be understood as extra-field influences, and denote how institutions nested in other fields affect actors in these positions. We could for instance imagine the case where strong political pressure for GHG reduction would push regulating agencies to challenge prevailing practice. The scientific community could also provide important influence by for instance enhancing problem awareness (GHG-intensity of certain practices) or by introducing ideas of agri-practices that entail less emissions. Thus, such influences blur the boundary between the agri-field and wider processes, e.g., within the scientific community and domestic policy making.

To analyze the effect of these extra-field influences, the paper explored them along three dimensions of propensity to act; awareness, openness and motivation to suggest and promote divergent change (cf. Greenwood & Suddaby, 2006). However, few comprehensive changes to prevailing practices were suggested, instead it was concluded that GHG emissions was a

more or less unavoidable part of agricultural production. The AP report appeared to testify to the difficulty of reducing GHG emissions, as biological and natural processes were blamed. Rather, the main suggestion was to mitigate climate change by compensating emissions in other sectors by agricultural biofuel production. In addition a number of modifications of existing practices were suggested, for instance switching between types of fertilizers, increasing energy efficiency, improving animal health.

In contrast to the propositions within extant theory, the results show that the agency's propensity to act was not necessarily enhanced by extra-field influences as such influences constrain the scope for suggesting change that challenges existing industrial practices. Scientists pointed to complexities and voiced resistance against certain suggestions; politicians refrained from setting clear reduction targets and appeared mainly interested in the cost-efficiency of suggestions. Thus, influences exacerbated uncertainties and contributed to making SBA staff less willing to try controversial and challenging path-ways. The forces suggested to override e.g. constraints from prevailing logics were absent or restraining. However when influences could be aligned there were openings to suggest more divergent changes. This was the case with suggestions to increase bioenergy production which appeared to be favored by both scientists and politicians (but less so by farmers).

Keywords: Institutional entrepreneurship, divergent change, institutional logics, organizational field, extra-field influences, climate change, low carbon practice, agriculture

4.3. Provision of climate advice as a mechanism for environmental governance in Swedish agriculture

The third paper investigated provision of climate advice, which correspond to information and advice regarding GHG reduction. This advice is provided to Swedish farmers by private consultants, based upon information put together within GN, a public-private partnership. Given that it is voluntary to receive and adhere to the advice, climate advice represents a new environmental policy instrument, part of the governance context. The latter denotes a type of regulation that entails a greater degree of participation (of non-state stakeholders), voluntarism and other softer forms of regulation (Jordan et al., 2013). Provision of advice may be an effective instrument as it could raise the capacity of farmers to comply with regulation, i.e., by instructing them how to reduce their emissions. On the other hand advice could become both positively and negatively influenced by those receiving it;

the farmers. Hence, climate advice constituted an opportunity to study the potential to promote change ideas to producers, as well as whether the influence from farmers would reduce inertia and spur a different form of change orientation, i.e., content of change, than observed in the first case study.

The paper investigated the feasibility of climate advice as a policy instrument to achieve change in industrial practices. Feasibility partly refers to whether the content of change would entail ideas of radical change. Discourse analysis was used as an analytical device motivated by the type of (discursive) activities involved in provision of advice. Here, Dryzek's (2005) discourse analysis was used, as it concentrates on the construction of meaning. This aligns with my utilization of institutional theory; e.g., how institutional logics provide practices with meaning. Thus, by analyzing consultants' discourse, it could be concluded what kind of change that consultants were promoting to farmers.

The case study demonstrated that, rather than promoting radical change in industrial practices, the climate issue was discursively constructed as "being about efficiency". Since efficiency already is a major concern for producers, as well as advisors in general, consultants' discourse seemed to support this prevailing focus, including prevalent efficiency-increasing practice changes. Arguable, such practice changes represent convergent changes, part of reducing the costs involved in producing and increasing output. Interestingly, the discourse also involved providing prevailing practices with changed descriptions. By relating the GHG emissions per unit of produce to international competition, some advisors argued that Swedish production was already climate friendly, and that there was no need for farmers to feel accused.

Subsequently, climate advice appeared less feasible as an instrument for radical change. The content of change within consultants' discourse can in turn be explained by how it is embedded within consultancy as a practice. Consultants are economically dependent upon farmers' demand for their advice and are less prone to upset or challenge them. Such an approach is likely to bring on less "business", e.g., recommendations to new clients. Particularly in a situation where there is a lack of clear political reduction goals, and weak political pressure, it is no surprise that GHG reduction is adapted to the interests and understandings of the individual farmer. Nevertheless, the consultants' approach bears a discursive resemblance to WS, in particular statements that relate to finding win-win situations and focusing on eco-efficiency. Hence, from a WS perspective provision of advice might appear as a feasible instrument, although the emphasis was on

efficiency rather than eco. Climate advice might then work best as an instrument for reducing farmer stress, thereby facilitating continuous improvements of efficiency. From an SS-perspective, efficiency improvements are part of the solution but needs to be coupled with other policies, for instance reducing the overall throughput.

Keywords: climate change, provision of advice, agricultural extension, discourse, environmental governance

4.4. Micro-level translating of GHG reduction – policy meets industry in the Swedish agricultural sector

This paper extended the results of the second case study by exploring provision of climate advice from a translation perspective. This particular perspective outlines how entities, here the issue of GHG reduction, travel within and between contexts, here from policy to industry. The purpose with the paper was to explore the activities of translating agents, between policy and industry, in interpreting the issue of GHG reduction, in order to discuss the effectiveness of climate mitigation policy. Since mitigation policy is introduced from outside industry, ideas regarding problems and measures need to be related to prevailing practices and made meaningful to industrial producers. Subsequently, translating agents fulfill an important role e.g., in simplifying and transforming GHG reduction. This purpose was, in turn, based on the supposition that micro-level activities provide an important perspective upon institutionalization, subsequently to understand inertia and change in the field, these activities are critical (cf. Powell & Colyvas, 2008).

Inspired by Zilber (2002; 2006), the paper argues that translations could spur change if the meaning of industrial practice is challenged. One aspect of particular importance in this context are the problematizations that accompany the issue of GHG reduction. These denote claims, examples or stories, that substantiate the ineffectiveness and inappropriateness of industrial practices (Colomy, 1998). Empirical examples include discussions of the GHG-intensity of meat production, synthetic fertilizers or organogenic soils. Another analytically relevant aspect was the interpretation of responsibilities connected to GHG reduction. Subsequently, the analysis within the paper focused on these two particular aspects. The results show that although practices were problematized as GHG-intense, their necessity and effectiveness were also stressed by the advice (cf. Maguire & Hardy, 2009). Moreover, rather than portraying farmers as potential change agents,

they are described as suffering from economic pressure, e.g., subjects of an economic determinism that makes any additional responsibilities beyond firm profitability impossible. Subsequently, the urgency of climate change is not reduced, but the responsibility for addressing it is placed elsewhere.

Out of this analysis emerged two new themes, a new meaning for agricultural practice and a new meaning for climate friendly change. The first refers to the claim that efficient practice is equivalent to climate friendly practice, hence the more industrialized a producer is, the better in terms of relative emissions. The second refers to the claim that farmers who, for whatever reason, are improving their efficiency are becoming more climate friendly. Consequently, rather than promoting divergent change, convergent change is provided with a new meaning and aligned with the goal of reducing GHG emissions.

5. Synthesis and concluding discussion

In this section the results from the four papers are first linked together. This is followed by a discussion of the synthesized results in relation to the dissertation's purpose (see Table 4). Lastly, I reflect on the contributions of the thesis, its limitations, as well as recommendations for future research.

5.1. Synthesis

The purpose with this dissertation has been, from an institutional perspective, to advance the understanding of GHG-related inertia, as well as change, in industrial agri-activities. This was achieved by exploring two associated cases, exemplifying change initiatives, in the Swedish agri-food industry. I viewed these change initiatives as empirical examples of an institutionalization process, where GHG reduction constituted an emerging logic within this particular organizational field (cf. Jennings & Zandbergen, 1995). An emerging logic was understood as a new goal coupled to change in practices to achieve that goal. For this emerging logic to be divergent, it had to introduce GHG reduction as a new goal along with new, or radically changed, practices (an example of how this could be operationalized was provided in paper 2). The relevance of divergent change in industrial practices corresponds to the assumptions within strong sustainability. Reducing the scale of economic activities should start with abandoning GHG-intense practices. Given the ubiquity of industrial practice, this could also constitute large reductions, in Sweden and globally. Moreover, the assumption that eco-systems are not interchangeable implies absolute boundaries that should not be crossed.

The first initiative engaged a centrally placed actor – the SBA. It was derived from the literature regarding institutional entrepreneurship, as well as the understanding of the research setting, that SBA could be decisive for change in industrial agri-activities. The policies towards GHG reduction, developed by the SBA, were described and analyzed in the first paper. The first two papers are linked in the following way; the result from the first paper generated interest in mechanisms that could have increased SBA's propensity to act, i.e., reduced the constraints from prevailing logics. This constraint is referred to as embeddedness in the institutional literature (Garud et al., 2007; Holm, 1995). Institutionalists suggest different mechanisms that may reduce the embeddedness of actors and open up the possibility for institutional entrepreneurship (Battilana et al., 2009). These mechanisms depend on the position of the focal actor (Garud et al., 2007). In

focusing on those few descriptions of mechanisms that refer to central actors, I explored extra-field influences (Greenwood & Suddaby, 2006). Moreover, such influences were perceived as particularly relevant for GHG reduction as a problem, given its tendency to involve actors and processes at various societal levels (Buhr, 2012; Wittneben et al., 2012). Even though the industry is a relevant analytical level it is not insulated from influences occurring at other societal arenas. As described in the empirical background, climate change climbed the political agenda in 2007 and there were processes occurring within the political sphere that potentially could influence institutional entrepreneurship within agriculture.

However, the analysis of the change suggestions put forth within the AP revealed that it could not be interpreted as an example of divergent change. Few comprehensive changes to prevailing practices were suggested, instead it was concluded that agricultural production, both organic and conventional, necessarily entails GHG emissions. The main idea was to modify these categories of practices, increase their efficiency, and to compensate for these emissions by introducing different forms of bioenergy production.

Hence, as an example of (early stage) institutional entrepreneurship, the case appeared more as a failure than a success (cf. Scott, 2010). GHG reduction seemed not particularly prioritized, i.e., there was a failure to prioritize GHG reduction as an urgent goal that outweighed other goals and interests. Altogether, the AP could be interpreted as an expression of convergent, rather than divergent change. Existing practices were taken as a given point of departure, and modifications were aligned with prevailing logics. In addition, many ideas were recycled from previous policy or focused on improving efficiency. The former means optimizing within existing means-ends frameworks rather than redefining the frameworks as such. The latter shows how prevailing logics functioned as a resource for agency staff fulfilling their customary tasks, i.e., to deliver the report that is expected of them (Lawrence et al., 2010; 2013). Ideas that are well-known and have been evaluated in connection with various policy goals should be easier to promote as their arguments are well-rehearsed. This becomes all the more important if uncertainty is increased concerning alternatives. This does not come across as institutional entrepreneurship but may unfortunately characterize much of the change initiatives being undertaken to address climate change. In addition, convergent change is also supported by the reasoning within the WS-paradigm, were efficiency improvements and industrial reform is put forth as sufficient to address drastic GHG reduction. Subsequently there are well-spread discursive elements that legitimize this approach to change.

These results from the first case study motivated the second case study. The initial rationale for choosing the case was that it represented a later stage in the institutionalization of GHG reduction, i.e., an attempt to implement some of the suggestions for practice change. Thereby, this case explored what happened with some, but not all, change ideas, put forth and discussed in the AP. By raising the capacity among farmers to reduce GHG-intense activities, climate advice could be a policy instrument that facilitates change. In addition, given the somewhat disappointing empirical results of the first case study, the question arose if an impetus for change could come from micro-levels within the field. Perhaps farmers, given that they would themselves be affected by climate change, could become open for change when politicians and scientists were not. The focus for the second case study, provision of climate advice, appeared suitable for exploring this as it is an example of a voluntary and participatory policy approach. As such it involves discussion and exchange of knowledge, between advisor and farmer. Provision of advice is partly justified by the idea that those subject to regulation will be more motivated and involved by a participatory approach. Subsequently, the case study of climate advice constituted an opportunity to study activities affecting the openness of farmers.

By analyzing the discourse of the advisors, the content of change expressed within provision of climate advice was explored. Advisors' discourse regarding GHG reduction framed change as a win-win solution. This aligns with a content of change centered upon advancing efficiency and increased output as primary means of addressing GHG reduction. Increased efficiency also promises to alleviate farmers from the economic pressure they are currently experiencing. At the same time improved efficiency, through optimization and lean production, reduces relative emissions. However it does little to push down aggregate Swedish agricultural emissions, at least in the drastic sense needed to avoid dangerous climate change. The discursive focus upon efficiency is actually stronger in the provision of climate advice than that expressed in the AP report. In some sense, efficiency appears infused with positive value, perhaps as a symbol for a particular approach to farming. Within the particular agri-field context of historical tensions between organic and conventional farmers; efficiency could be associated with conventional farming, as part of a belief in the virtue of industrialization and specialization.

The fourth paper extended the results from the second case study by choosing an alternative perspective; relating translation activities to practice change. The paper complemented the analysis of paper 3 by stressing the importance of meaning, and how this was affected by the predominantly discursive activities of climate advisors. Ideas regarding problems and

measures need to be related to prevailing practice and made meaningful to industrial producers for GHG reduction to result. Here problematizations; claims, stories and examples, that substantiate the ineffectiveness or inappropriateness of practices (Colomy, 1998), could be particularly important. By introducing the notion of translating agents, the role of consultants in interpreting the issue of GHG reduction becomes more salient. Hence, the fourth paper adds another explanation for inertia and change in the field; translations by actors at later stages in the institutionalization process.

5.2. Inertia and change in industrial agri-activities

These results advance the understanding of GHG-related inertia and change in industrial agri-activities as SBA has a normative influence in the organizational field as an expert authority, and a possibility to affect practice through various policy instruments. Subsequently, when SBA introduces an emerging logic that is convergent, it is likely to reduce the motivation and openness among industrial producers to radically change their practices. For industrial producers to implement practices that break with prevailing institutional logics, they must not only be aware of such alternative practices but also view them as legitimate and rational; be open toward them (Greenwood & Suddaby, 2006). Moreover, they must be motivated to enact change. However, the dissemination of convergent ideas and suggestions reduces the anticipation that, at least in the short term, emerging policy will forcefully address the issue. Hoffman (1999), in his account of institutional change in the U.S chemical industry, points to the importance of regulatory action as an initial step to affect logics within an organizational field. Hence, SBA's change initiative thus contributes to inertia in the agri-food industry by signaling that no significant policy changes are on the way. This is likely to affect motivation among producers, and other issues could be prioritized instead.

Table 4: Overview and synthesis of papers

Paper	Research questions	Addressed research gap	Findings	Implications for inertia and change	Contributions
#1	What is the relationship between an emerging and the prevailing ones?	Early stage of institutional entrepreneurship; competing logics	An emergent logic describing ideas to address GHG reduction appears as a comingling rather than a break with prevailing logics.	Institutional logics prevailing within a social domain constitute a constraint for the development of a divergent emerging logic. However, they may also function as resources for development of convergent change suggestions.	Suggestions for how to analyze relationships between emerging and prevailing logics; findings concerning contingencies relating to institutional entrepreneurship.
#2	How do extra-field influences affect an actor's propensity to suggest and promote divergent change?	Mechanisms enabling central actors' institutional entrepreneurship	Extra-field influences have different effects on the three dimensions of propensity to act, but the overshadowing effect is that of a constraint.	Inertia is explained by the constraints emanating from extra-field influences, which explains why this central actor refrained to act as an institutional entrepreneur.	Elaborates on extra-field influences as mechanisms enabling or constraining institutional entrepreneurship.
#3	What is the feasibility and influence of providing climate advice as a mechanism or instrument for responding to climate change?	Possibilities of GHG reduction through climate advice	The climate issue is used in support for prevalent efficiency increasing efforts and also to relabel existing practices.	Influences from producers constrain discourse. Moreover, discourse is underpinned by WS-ideas of win-win and eco-efficiency.	Contributes empirically by exploring the feasibility of climate advice.
#4	What are the activities of translating agents, between policy and industry, in interpreting GHG reduction and how do these activities relate to the effectiveness of climate mitigation policy?	Role of meaning in policy driven practice change; translation of outsider-driven issues	By analyzing translation activities, two new themes emerge; a new meaning for practice and a new meaning for practice change. Rather than promoting divergent change, convergent change is relabeled.	Translation creates constraints and may fuel resistance against divergent change, but could on the other hand facilitate convergent change.	Contributes to research on the effectiveness of climate mitigation policy by exploring meaning. Contributes to the organizational branch of the translation literature by exploring dissemination of outside-driven issues.
Synthesis	From an institutional perspective, to advance the understanding of GHG-related inertia, as well as change, in industrial agri-activities.	Inertia and practice change related to GHG reduction at the industrial level.	Institutionalization of GHG reduction generates inertia by reducing the openness and motivation towards divergent change. Lack of enabling conditions reduces the potential for overcoming constraints from prevailing logics.	Inertia is generated in relation to divergent change whilst convergent change is facilitated. This equates both the lack of a central actors' (SBA) propensity to act as well as translations within later stages of the institutionalization process.	Contributes to the SD-field by providing an institutional analysis of inertia and change at the industrial level, showing how the concepts convergent/divergent can be used to explore sustainability issues.

Moreover, by disseminating certain beliefs concerning GHG reduction the content of the emerging logic likely reduces the openness and motivation to divergent change, among other actors within the field, in three additional aspects. First, by describing emissions as necessary because of biological and natural reasons, concealing the alternative perspective that they depend on industrial activities chosen by firms; producer responsibility and thereby motivation is diminished. In addition, this responsibility is further reduced by describing consumption as the primary determinant of production. If producers do not perceive that their current performance is adverse, they are less likely to critically reflect upon the misalignment of current institutional arrangements (Seo & Creed, 2002). Such misalignment, causing critical reflection, is one suggested mechanism that could increase the motivation to enact change (Greenwood & Suddaby, 2006). Maguire and Hardy (2009) discuss the importance of problematizations for altering the legitimacy concerning practices, motivating change among field actors. The AP case shows how implicit problematizations are translated in such a way that the challenge to legitimacy is downplayed, which is not uncommon when problematizations travel across field boundaries (ibid).

Second, as some change ideas were removed from the project, such as the idea of reducing the cultivation of organogenic soils or promotion of organic farming, SBA might have reduced the future openness towards them within the agri-field. Here, SBA could be considered as a translating agent that could disseminate or change ideas but perhaps temporarily stop them (Czarniawska, 2009). These ideas are less likely to be perceived as rational and legitimate ways of addressing GHG reduction. Given that these ideas directly address certain GHG-intense aspects of agricultural production, and are developed, they could have provided a quicker way of advancing change in the industry.

Third, by disseminating the idea that bioenergy production could compensate for GHG-intense food production, it may become redundant with radical change in the latter. This could reduce the openness towards implementing practice changes in the primary production of food, and also the motivation for this. However, to meet the need for drastic cuts and avoid dangerous climate change, all sectors have to contribute. As mentioned in the introduction, food production with low GHG emissions is particularly important as we move toward a more populated future

with escalating climate change pressuring food production systems (IPCC, 2013b).

To sum up, a change initiative could create inertia, in relation to divergent change, both by the type of translations it advances and by strengthening a particular meaning concerning the issue as such; i.e., the meaning justifying those translations. On the other hand implementation of convergent change among producers could be facilitated as some measures to increase efficiency are legitimized as a means to GHG reduction.

Given the particular role and position of SBA, as the expert authority within the agri-field, the change initiative represents a potentially important contribution to the institutionalization process. It could be interpreted, by the collective of industrial producers, as the main signal from the policy system. However, to overcome inertia there is a need for signals from the policy system that can incentivize not only convergent but also divergent change among these producers (Hoffman, 1999).

The analysis of the second case advances the understanding of GHG-related inertia and change as follows: Unlike the meaning conveyed within the Action Plan, climate advice reaches many industrial producers directly. The latter may consider the consultants as an authoritative source of knowledge regarding GHG reduction. Hence it is perhaps an even more decisive translation mechanism for disseminating GHG-related discourse, ideas and measures, at least directly to producers within the agri-field.

First, the case study shows how inertia is generated as GHG reduction is primarily framed and simplified into an issue of efficiency. Simplification could, in turn, be considered a common feature of translation (e.g., Jensen et al., 2009). Given that efficiency is tied to prevailing practices, this general principle may block out ideas of implementing more comprehensive, and possibly divergent, changes, for instance going organic. Efficiency deals with optimizing within current means-ends frameworks, rather than transforming these (cf. Battilana et al., 2009). Second, this provides efficient conventional producers with new, or at least maintained, legitimacy. The latter is likely to decrease their motivation to implement more radical changes. If reducing GHG emissions is translated as equivalent to being an efficient producer, it

could strengthen the legitimacy of conventional practices that on average have higher yields and are more specialized than organic ones. To increase the likelihood of change, the legitimacy of practices rather needs to be problematized as an adverse performance that needs to be remedied (Greenwood & Suddaby, 2006; Maguire & Hardy, 2009).

Third, provision of advice could also potentially decrease the possibility for the political system to enforce more radical changes further on, if more substantial reduction targets are chosen, because discourse have been disseminated among industrial producers that justify resistance. It seems problematic if producers are first told that increasing efficiency is a sufficient response to GHG reduction, and then later expected to implement more radical changes.

As an instrument for advancing convergent change, climate advice could work perhaps not mainly by raising technical capacity, as ideas of measures appeared rather well known, but rather by improving morale. This morale might have been damaged by farmers' perception of media's implicit accusations of being "climate villains". Because farmers know their individual production systems best they are likely to be most suited to find room for improvements, if they are motivated.

Concluding the results from both studies, it would seem that inertia is generated mainly in relation to suggestions of divergent change. GHG reduction, at least on the explored arenas within the agri-field, is institutionalized in such a way that openness and motivation towards divergent alternatives is reduced (cf. Greenwood & Suddaby, 2006). Exceptions are the different ideas of bioenergy production, but such ideas will not address the dual challenge of producing food while reducing emissions. If efficiency is put forth as the criteria for deciding who is "climate friendly", then there are fewer arguments for reductions within, at least parts of, the Swedish agri-food industry. Rather this suggests an alternative principle for how the responsibility for climate change should be distributed within the global community that seems to propose that Swedish farmers have environmental reasons for resisting any attempts to further reduce their GHG emissions. Since public pressure is needed to push politicians to implement stricter goals, such resistance could affect future Swedish political processes.

What could explain this outcome? It is the basic tenet of institutional theory that prevailing institutions constrain attempts for divergent change (Dacin et al., 2002). This basic tenet is however complicated by the recent observation that fields contain several institutional logics, more or less conflicting (Greenwood et al., 2011; Reay & Hinings, 2009). The case studies exemplify field level processes in which these prevailing logics are enacted (Greenwood et al., 2011). Although the second case study seems to indicate a certain support for conventional farming, or at least some of its discursive elements, neither conventional nor organic farming is exactly reproduced as the equivalent of GHG reduction. According to the literature, to understand the influence of prevailing logics upon organizational practice we need to understand how this refraction works (ibid). The two case studies suggest two main principles for this: first, prevailing logics make convergent change ideas easier to promote, for instance for agency personnel that are attempting to solve everyday tasks, e.g., writing up an appropriate report to the government. Ideas and arguments can be recycled and familiarity reduces the uncertainty that is attached to addressing a new policy issue. In the absence of the particular enabling mechanisms needed to reduce embeddedness; create openness and motivation to divergent alternatives, inertia is likely to prevail (Battilana et al., 2009). Second, uncertainty itself, generated by various actors promoting competing goals, creates inertia. This is most evident in first case study where the complexity of policy goals facilitates a wide range of counterarguments making resistance easier and the alternatives appear uncertain. Because diverse field level rules, existing goals and rationales have to be followed, this generates a sort of “base-line”-inertia that can be utilized by translating agents seeking to defend prevailing institutions. In a field signified by competing goals and logics, there is likely a need for strong alliances and collective institutional entrepreneurship if divergent change is to succeed (Hardy & Maguire, 2008). Although central actors could potentially be institutional entrepreneurs, there is a degree of collective efforts needed. However, especially the second case seems to suggest that several other actors are currently pursuing convergent change, impeding the forming of such alliances.

Perhaps producers within the industry could be motivated to promote GHG reduction if it can be adapted to their particular institutional affiliation – for instance organic or conventional farming. On the other hand adaption creates complexity as different translations contradict

each other (cf., Jensen et al., 2009). This might undermine alliances needed to enforce field-wide change but on the other hand shows how GHG reduction is interpreted through the frames of prevailing logics (cf. Greenwood et al., 2011). However utilizing existing affiliations, facilitating alliances, may be advantageous or perhaps unavoidable to succeed with institutional change (cf. Battilana et al., 2009). For the pursuit of divergent change, building upon organic farming might then be a good alternative, as this set of practices avoids certain GHG-intense activities and is already embedded in discourse and an organizational structure. Increasing the share of organic farming is currently a Swedish agri-policy goal. This goal could also be furthered at the local, municipality level, where public procurement could facilitate such policy.

Third, convergent change is supported by discursive elements from the WS-paradigm that provide a more or less coherent explanation for how environmental problems should be addressed. Because the WS-paradigm advocates both eco-efficiency and eco-innovations (Bocken et al., 2014), where only the latter could indicate divergent change, it provides generic arguments that can be used to defend and strengthen prevailing GHG-intense practices. In the studies, these generic ideas are imported and adapted to the different industry specific ideas, for instance, as eco-efficiency is translated into a support for continued quest for higher yields.

Fourth, while organic farming could represent a divergent alternative that restricts some GHG-intense activities, this interpretation appears crowded out by the suggestions in the two studies. Organic farming represents an institutional logic less dominant within the field. In a situation where there are conflicting logics within a field, there is a need for actors to act as champions for interpretations (Lawrence et al., 2010). Interpretations are linked to legitimacy, which is a potentially valuable resource. Without legitimacy, industrial producers may lose funding., e.g., agricultural supports, or risk regulation (Hoffman, 1999; cf. Maguire & Hardy, 2009). Hence, the field can be understood as a site for discursive battles; when GHG reduction is translated, legitimacy is at stake (Levy & Scully, 2007). This is displayed in the first case study, e.g., in the account of how Swedish Society for Nature Conservation tried to advance organic farming, but were ignored by the SBA.

Institutional theory suggests two main paths to break out of this lock-in; either through external shocks, e.g., strong political pressure and clear reduction goals (Smets et al., 2012) or change driven by mechanisms within the organizational field (Greenwood & Suddaby, 2006). Both could precipitate institutional entrepreneurship by introducing institutional contradictions. As such a mechanism within the field, Smets at al. (2012) suggest that small innovations within everyday practices could accumulate to field level institutional change and the creation of new practices (see also Lounsbury & Crumley, 2007). However, in their examples these changes have been precipitated by the practical challenges field actors face. It does not appear from the case studies that climate change presents farmers with that type of practical challenge that motivate them to innovate in this respect. Moreover, it seems that the practical challenges that SBA staff faced rather strengthened prevailing logics. On the other hand, farmers' adaptation to the effects of climate change is increasingly becoming necessary. The latter includes coping with new pests, floods and droughts. Particularly floods have recently caused Swedish farmers great trouble, this call for improved drainage of fields. But climate change also brings possibilities, such as being able to cultivate new crops, e.g., corn. Adaptation may bring changed conditions that eventually may change the practices for a majority of Swedish farmers; however whether new practices will also be less GHG-intense is far from certain.

However less GHG-intense farming could perhaps come through organic producers and their allies, which already exist as a challenging, albeit supplementary, logic within the industry. Likely such paths need to be combined in alliances that can reduce inertia and fight off resistance at many different arenas, both within industry and politics. Hence, this path towards institutional change appears possible but perhaps not probable at the moment.

Hence external shocks, for instance the implementation of strong political reduction goals, or the effects of climate change, could make discrepancies more evident. This would reveal the industry's adverse performance potentially creating both a stronger openness and motivation towards divergent change (Seo & Creed, 2002). Moreover, this would translate GHG reduction from an environmental concern into a political one and create incentives for certain stakeholders within the regulatory system to take action.

5.3. Contribution

The study contributes to the sustainable development-field by providing an institutional analysis of inertia and change at the industrial level. As such it complements analyses of organizations (e.g., Pataki, 2009) and society (York & Rosa, 2003). The analysis shows how the industry-specific; the practices and institutional logics take at the industry level, is combined with wide-spread discursive elements within the two different paradigms of sustainability, affecting how GHG reduction is translated (Jiao & Boons, 2013). Hence, institutional theory is introduced as a perspective shedding light upon inertia and change in industry. Whilst the dissertation shows how convergent/divergent change can be used to explore sustainability at the industrial level, the individual papers show how divergent change can be operationalized and assessed in change initiatives. In addition, convergent change can be used to understand how WS-ideas are combined and adopted with prevailing logics. These combinations show interconnectedness of mechanisms, at different levels, causing inertia. Thus, the dissertation develops an analytical approach to describe, explore and explain industry level processes concerning sustainability issues. By exemplifying how change can be analyzed; processes in other industries, as well as concerning other sustainability issues, can be better understood.

Moreover, this dissertation contributes to institutional theory, more specifically to the debates concerning institutional entrepreneurship and institutional logics. Regarding the former, the dissertation elaborates upon the concept divergent change, as put forth by Battilana et al. (2009), and shows how the concept can be used to analyze the content of change within potential institutional entrepreneurship. By assessing how a change suggestion relates to the means and ends of a particular practice, its degree of divergence can be assessed. This is useful for trying to understand institutional entrepreneurship in fields where there are institutional complexity and change initiatives conflict or align with a plethora of goals (cf. Greenwood et al., 2011). Hence, there is a need to better describe the relation between a particular change initiative and prevailing institutional structures to better reflect upon this, as our understanding of fields become more elaborated. In addition, the study contributes to the debate regarding embedded agency, by exploring enabling mechanisms described in the literature (Garud et al., 2007; Greenwood & Suddaby, 2006). The results show that although

mechanisms put forth as enabling may reduce the constraint of influences from the field, they may function as a constraint in other ways and limit the openness and motivation to pursue divergent change. Different professional groups, enjoying different legitimacy, affect how influences are expressed at the field level (Scott, 2008). Here, generating uncertainty could be one way of reducing the motivation to pursue divergent change. For institutional theory to adequately explain change it needs to better understand such micro-level mechanisms and how they interact (Powell & Colyvas, 2008). The case studies have contributed in this matter by addressing and developing Greenwood and Suddaby's (2006) conceptualization of embeddedness, showing how it can be used to analyze embeddedness at various field arenas. This in turn may be useful for attempting to uncover the "big" theoretical question of what facilitates institutional change. The dissertation as such testifies to the importance of unravelling this enigma.

The study contributes to debate regarding institutional logics in the following way: first by introducing the concepts emerging and prevailing logics the first paper shows how change in the composition of institutional logics within a field can be analyzed (c.f., Reay & Hinings, 2009). As argued above, this is particularly useful when new issues are institutionalized in organizational fields characterized by institutional complexity. Given the prevalence of such complexity, for institutional theory to arrive at an accurate explanation of change, such conceptualizations are needed. This is exemplified by the analysis in paper 1; when logics are related to each other through the analysis of templates. Second, the link between institutional logics and practice is elaborated in the two last papers, where meaning and discourse is deployed as mediating concepts to explore analytically the link between practice and the underlying logic. By exploring translation activities concerning different aspects of GHG reduction, the influence of prevailing logics is traced at the micro-level. Hence, the papers contribute to the debate by describing the role of change agents and their activities in maintaining practice and legitimizing prevailing logics. Such contributions are in turn necessary to enhance current understandings of how outsider-driven issues may affect institutions within fields (Maguire & Hardy, 2009). The literature has just started to address these issues, but given looming environmental crisis, this will become all the more important.

5.4. Limitations

There are different aspects of the study's limitations addressed in the individual papers. For instance, the AP case study relied on interviews partly carried out in retrospect. Hence, there are some methodological difficulties in reconstructing the processes involved. For instance, preceding processes, e.g., at political arenas, may have had important implications for framing the observed activities. They may also have been parallel processes among stakeholders that may have had an influence, or at least sought to have an influence. Remedies included attempting to build a strong case given the data at hand, relying on different written material and cross-checking between respondents' accounts. The second case study could have benefitted from a sample of respondents from different time periods, so that the background of climate advice could have been traced, unfortunately the interviews started after these activities had occurred. Another interesting addition could have been to include farmers, to trace how they interpreted translations. For various reasons this was difficult to arrange. Overall, there are limitations to the conclusions that can be drawn from case studies, but there are also many arguments for choosing this methodology, as it provides a richer, more nuanced, account of policy (Taylor et al., , 2012).

An additional limitation concerns the choice of cases; it could be argued that projects involving SBA are less likely to display examples of divergent change, as the actor is embedded in the prevailing institutional logics. On the other hand, this is the theoretical challenge addressed by the institutional entrepreneurship literature. Moreover, to explore inertia one has to study the kind of change initiatives that do take place; these types of projects are representative of how society is currently addressing GHG reduction. Given SBA's function as a regulatory authority a governance approach could have been chosen instead. To some extent this is included in paper 3, but by utilizing institutional theory this aspect has been less stressed.

Transferability of the results is relevant/desirable, either to other domestic, GHG-intense, industries, e.g., transport, or to the agri-food industry abroad. The agri-food industry in some modernized countries may resemble that of Sweden, although production is for instance, more intense on the European mainland. Many modernized agricultural production systems have coexisting organic and conventional producers,

and perhaps more diversity tied to different food brands or regions. In Sweden, given the relative small size of the agri-food industry, this latter diversity is restricted. There are differences in regulations and norms between countries concerning the environment although EU-CAP may slowly even out some of these. Due to the differences between GHG-intense industries perhaps results cannot be undeniably transferred. Agri-food involves primary production, emissions are caused by biological processes, technological solutions are generally difficult to find (IPCC, 2007), and the industry has a lower profitability than other Swedish industries. On the other hand, the institutional mechanisms discussed in this dissertation are found in many industries despite their technical or empirical features. Prevailing logics are likely to generate similar patterns within change initiatives and arguments may in many cases appear similar. Moreover, many organizational fields are characterized by rivalry or prolonged competition between dominant and challenger logics (Reay & Hinings, 2009). Hence, findings should be relevant for other mature industries.

Rather than transferring the results to other empirical fields, the conceptual approach utilized in the study should be reused to analyze other sustainability issues. As discussed above, the link between convergent/divergent change and sustainability paradigms could be utilized to conceptualize other change processes; possibly challenging the prevailing institutional order. This could occur in industries, but also at other societal arenas. There is a need for such a conceptual frame that can handle both the complexity that prevail in mature fields, how this affects the translations of an emerging issue, what convergent/divergent change would mean within that particular field, and what mechanisms that could enable such change. Hence, rather than a specific model, this type of conceptual framework may be more suitable.

5.5. Future studies

To further develop the conceptual approach, more studies are required both in other industries but perhaps also within the agri-food industry, in Sweden and abroad. The latter is motivated by the importance of GHG reduction in these practices. The focus of future studies should not only be to explain inertia, but also to increase the understanding of how it can be overcome. One particular aspect is that of overcoming uncertainty

regarding effectiveness of measures, ensuring a propensity to act despite this. In addition, more studies are needed to explore enabling mechanisms at various analytical levels. Arriving at a more elaborated understanding of various field level positions and how they are linked to perception of alternatives and motivation for change could be one fruitful path (Battilana, 2006; Battilana et al., 2009). Better methods for mapping out industries could then be used as a diagnostic tool to discover potential institutional entrepreneurship. Contrasting with this dissertations focus upon GHG reduction, escalating climate change will stress the importance of adaptation within various industries. The latter could be understood as a mechanism or influence that will have an effect on mitigation and needs to be included in the analysis.

5.6. Concluding remarks

This dissertation has investigated change initiatives in the Swedish agri-food industry, these are relevant to explore because they represent examples of how we are currently dealing with GHG reduction in various industries. But agri-food practices are also important in their own right, as climate change progresses global food productivity may drop, creating the dual challenge of reducing emissions and sustaining production (Foley et al., 2011). Hence, there is a need for divergent change, shifting away from GHG-intense practices towards alternatives. Such change activities, in turn, must be motivated by a strong commitment to the goal of reducing GHG emissions, to avoid dangerous climate change. However, the results in this dissertation have shown that currently this goal is being introduced alongside other competing goals; in processes were different actors, guarding different interests, participate. This creates uncertainty and reduces motivation, which is detrimental if alliances are to be mobilized.

Without strong pressure from institutional entrepreneurship it is difficult to see how such change processes can overcome industrial inertia in such a way necessary to avoid dangerous climate change. On the other hand, industry is part of a society which unfortunately also is characterized by inertia regarding GHG reduction. And for institutional entrepreneurship to take place within an industry, there is a need for extra-field influences, e.g., from politics and science that push change. Given my conclusions regarding these stakeholders' influence one should perhaps look to other

stakeholders, e.g., NGOs, voters, EU or global agreements. Evidently, change is not up to any particular group of actors, or societal sphere, but has to be driven simultaneously, at many levels and by the many.

The push for industrial change could for instance come through new and sharper reduction targets that clearly show what reductions are needed from different industries. As discussed above, the risk is that relabeling prevailing practice as "climate-friendly" might provide industrial laggards with both arguments and motivation to interfere with political processes were such goals could be set. For the same reason it seems unlikely that industry could drive change on its own, industrial associations such as LRF, are broad coalitions were both laggards and progressive producers participate. For this reason they are likely to advocate uncontroversial principles, as a general increase in efficiency, rather than elimination of GHG-intense practices. On the other hand, there are examples when the industry has acted to replace certain practices, by helping those producers that need to change radically. Subsequently, given new stronger reduction targets, the industry might be incentivized and motivated to help producers replace certain GHG-intense practices.

6. References

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