

## **The approach of Swedish municipalities to the preservation of agricultural land in a planning context**

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**Abstract:** Agricultural land is one of the primary natural resources for human life. Climate change, peak oil, peak soil and a growing world population are factors that are likely to increase the importance of land in relation to both food production and the cultivation of energy crops. The current legal protection for agricultural land in Sweden is considered weak. The aim of this paper is to present the 'state of art' in respect of how Swedish municipalities approach the issue of preserving agricultural land. The topic is analysed in the context of municipal spatial planning, through which policies, strategies and motives pertaining to the preservation of agricultural land are asserted. Results from three empirical studies show that a relatively high degree of the responding municipalities stated an interest in the preservation of agricultural land. However, their actual planning practice did not confirm such an approach.

**Keywords:** agricultural land; spatial planning; resilience; planning paradigm; environmental paradigm.

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## 1 Starting points – challenges and trends

One of the key challenges of our time is to sustain the management of agricultural land to feed a growing world population (Almås and Campbell, 2012; European Commission, 2006; Food and Agriculture Organization of the United Nations, 2009; OECD–FAO, 2012). The report 'How to feed the world 2050' (OECD–FAO, 2012) estimates that food production must increase by 70% by 2050 in order to feed a population which is expected, by then, to rise to more than nine billion people. About another 100–250 million hectares of arable land are thus required to meet the food security needs of a growing population. At the same time it is also envisaged that agricultural production will be increasingly impaired due to climate change and the ongoing degradation of natural resources (Food and Agriculture Organization of the United Nations, 2009). On a global level major differences exist both in respect of the threats facing agricultural land and the actions taken to preserve and protect it. Widespread problems here include soil erosion, mainly due to intensive farming, pollution and the general degradation and exhaustion of land (Imeson et al., 2006; Platt, 2004). The global conflict over land is

already a fact through large-scale land investments ('land grabbing'). Land speculation is widely practised by many different kinds of actors such as states, businesses and financial institutions, many of which, for instance, have significant interests in large land areas across Africa, Latin America and Asia, as well as in Eastern Europe and Russia. This phenomenon is complex and conflict-oriented and often has significant negative consequences for local land users, violating their rights and increasing their vulnerability.

Agricultural policy has in years been confronted to a greater degree than ever before by challenges related to climate change, peak oil (Alekklett, 2008), peak soil (Hermele, 2012), peak phosphorus (Cordell et al., 2008) and the looming food crisis. At the same time, competition over cultivated land is increasing, as it is now used not only for food production but also for the cultivation of fibre and bioenergy while also being exploited for buildings and roads. A trend within all of Europe is that the amount of artificial surface (such as buildings, roads, parking spaces, etc.) increases relatively seen per resident (European Environment Agency, 2010; Nuissl et al., 2009). European statistics on land use at a regional level shows that Sweden belongs to the countries with the highest amount artificial surface per resident (ESPON, 2006). The exploitation of agricultural land for urban development normally takes place on the fringes of larger cities which often are located in rural regions. Thus, we can surmise that a majority of this soil sealing takes place on productive agricultural soils. The conditions for producing food are generally excellent in Europe, as farming land is available across the continent and is often located in close proximity to big agglomerations. Around 50% of the land in Europe is used for agriculture, regardless of population density. The historical explanation for this is probably that the most fertile parts of the continent are traditionally those with the highest population density (Bengs and Schmidt-Thomé, 2004). The EU Commission staff working document on 'Guidelines on best practice to limit, mitigate or compensate soil sealing' (European Commission, 2012) stresses the need for protecting agricultural land. Current land take in Europe is approximately 252 hectares per day, mainly due to urban sprawl. Thus, the EU has identified an urgent need to document and promote best practice regarding the limiting, mitigation and compensation of soil sealing across the member states.

## **2 Agricultural land in a Swedish context**

Sweden is a country with a relatively sparse population with land readily available. The land area covered by agricultural land is about 8%. During the period 2006–2010, the agricultural land converted to other uses is estimated to be approximately 3000 hectares, with 1995 hectares used for new building projects and 652 hectares for road construction. The counties of Halland and Skåne in the south of Sweden have seen the highest rates of agricultural land exploitation, and this is also where the most productive agricultural lands in Sweden are to be found (Swedish Board of Agriculture [SBA], 2013). The preservation of agricultural land has, from time to time, been highlighted in the course of political discussion but no strong statutory protection has been introduced. Swedish scholars now routinely express the need for agricultural land to be preserved (Granvik, 2013; Granvik, 2012; Larsson and Germundsson, 2012; Linnér and Messing, 2011).

### *2.1 Agricultural land and the Swedish planning system*

The Swedish spatial planning system is regulated in the *Planning and Building Act* (PBL, 1987). At the local level the municipalities enjoy a planning monopoly which gives them primary responsibility for spatial planning. The national and regional authorities have very little power in ‘day-to-day’ terms, though they do draw up the legislation and ensure that it is followed. This ‘bottom-up’ system is quite different from the planning systems in many other European countries (Busck et al., 2008). The municipalities are requested to develop comprehensive plans and to update them on a regular basis. The aim of comprehensive planning is to specify the broad directions in respect of long-term planning in relation to the physical environment of the whole municipality, both in urban and rural areas. The plan should provide guidance in relation to decisions on how land and water areas should be used, developed and preserved. It should also declare which environmental and other risk factors should be taken into consideration. However, the status of the plan is that it is not legally binding.

The municipality has the specific responsibility to present specific areas of national interest (“Riksintresse”) in the comprehensive plan. Agricultural land is not accounted for such an interest but is said to be of general national importance (“nationell betydelse”) according to the Environmental Code Chap. 3:4. The safeguarding of agricultural land is, however, beset with numerous difficulties. The Environmental Code Chap. 3:4 states the following: ‘[...] agricultural land shall be used for buildings or facilities *only* if necessary to accommodate important public interests, and *if* the need couldn’t be met by other land to be utilized’. But in practice agricultural land is poorly protected. It is up to each of the 290 municipalities in Sweden to interpret what is meant by *important public interest*, while no central authority is charged with monitoring the protection of agricultural land from urban development. The question of elevating the most productive agricultural land to specific areas of national interest status was considered in 2009 by the Swedish Environmental Regulation Committee, which, however, opted against taking the matter any further (Statens offentliga utredningar SOU 2009:10). The topic is, however, on the political agenda once again, in that the SBA was assigned by the government in February 2013 to investigate how well Swedish municipalities applied the Environmental Code Chap. 3:4. The stated reason for this is that in Sweden today only a limited knowledge on this issue exists in general (Landsbyggsdepartementet, 2013).

This paper highlights agricultural land use in a Swedish planning context. The aim is to present ‘the state of art’ regarding Swedish municipalities’ approach to the preservation of agricultural land in relation to spatial planning. The presented findings in this paper are based on a selection of the most comprehensive studies that have been conducted for the research area in the latest years in Sweden. The assumption for this ‘state-of-art’ study was that agricultural land is not given priority in general in Swedish local planning, neither agriculture as an economic sector. The research question highlighted was the following: *what approaches do Swedish municipalities adopt regarding the preservation of agricultural land in a planning context, and through which policies, strategies and motives is this asserted?* This will be discussed in the light of the results from three independent empirical studies conducted in Sweden between 2011 and 2013.

### 3 Theoretical framework

There is a clash between the planning and environmental paradigm in the present Swedish governance system (Lerman and Emmelin, 2006). The starting point of the environmental paradigm is a scientific approach to decision that concerns the environment. The idea is to determine what is healthy and what nature can tolerate on a scientific basis. The basis of the planning paradigm is that control and change of land and the environment must be based on considerations between different legitimate, but not necessarily compatible interests. The origin of planning is the transformation of the built environment and the need to balance individual interests against public interests. The politics of the perceived need to ban development on agricultural land is an interesting juxtaposition to the politics of the planning paradigm.

Our theoretical framework is inspired by *planning theory* (Forester, 1989; Forester, 1993; Friedmann, 1987; Healey, 1997), *implementation theory* (Rhodes, 1997; Rothstein, 1998; Winter, 2006) and *resilience theory* (Gunderson and Holling, 2002). This combination generates an approach which is both useful and relevant when it comes to planning, regulation and policy regarding of agricultural land. Planning theory concerns both planning as an activity and the role of the planner. Implementation theory focuses on how goal-setting is supposed to drive changes in organisations as well as the complex relations and interactions between several actors with different agendas and motives. In practice, this means that regulations and policies are influenced by many stakeholders, which is crucial of any planning process. The notion of *resilience* has become a central element of the policy discourse in relation to sustainable development (Davoudi et al., 2012; Evans, 2011). Resilience as a concept, moreover, is used in many different contexts related to planning, e.g. urban resilience (Davoudi et al., 2012), resilient city lands (Berg et al., 2013), and resilient rural systems (Granvik and Hedfors, forthcoming), and in relation to the resilience of food systems (Almås and Campbell, 2012). Resilience in the latter sense can be understood as a socio-ecological-political system that possesses a given adaptive capacity to alleviate perturbations, which can be mitigated by actors learning and understanding the interactions within the system (Almås and Campbell, 2012). *Localisation* is a related concept which can be viewed as a process of adaptation, where the aim is to increase the capacity of the municipalities and other local actors to build resilience. Localisation represents an attempt to increase the geographic proximity of production and processing *vis-à-vis* the end consumer. The production and consumption of goods and services are brought relatively closer geographically, from global markets to macroregions and to municipalities and their surroundings (Berg and Granvik, 2010; Berg and Rydén, 2012; Granvik, 2012; Kahiluoto et al., 2006; Roseland and Soots, 2007; Seitzinger et al., 2012). Local agro-food initiatives are seen by several scholars as representative of an alternative food system where social-ecological relations are embedded in food to a far greater extent than is the case with the mainstream food system and the prevailing global industrial agriculture model (Allen et al., 2003; DeLind, 2002; DuPuis and Goodman, 2005; Renting and Van der Ploeg, 2001). This in turn creates a potential for adaptive capacity among local actors to build resilience into the food system. Adaptive capacity is then the ability of actors to cope with change (Gunderson and Holling, 2002). Resilience can be built or eroded, partly depending on the adaptive capacity of the actors in the system: actors such as planners, farmers, processors, retailers and consumers. A food system with a low adaptive capacity is more vulnerable to shocks, disturbances, and sudden changes (Adger, 2006).

Emergency preparedness and self-sufficiency are topics that have undoubtedly risen up on the political agenda in recent years. There is a trend moving towards *survivability* rather than sustainability. Our interpretation of the concept survivability differs from the concept sustainability in the following: survivability is grounded in the assumption that there are physical limits to growth and limits in the capacity of to which extent the globe can be resilient. Thus, the human society of today needs to focus on plans and measures for survival. Survivability as a concept is more action oriented than the concept sustainability, in the way the latter is defined by the Brundtland report. Financial shocks and food crises coupled with ongoing climate change influence planning. As a planner you are tasked with planning for the future where land use issues are fundamental. This is, however, challenging as there is a need to take into account many differing perspectives and aspects while balancing different goals and needs (Healey, 1997). The increasing level of pressure we are now seeing placed on attractive urban and peri-urban areas to handle a diverse number of different functions has led to a change in the use and meaning of landscapes. This has profound social, ecologic and economic consequences, and challenges the way different actors understand and value, e.g. agricultural land. How planners interpret and comprehend sustainable development and the future role of agricultural land, moreover, affect decisions and actions today, and thus has important and immediate practical consequences.

#### **4 Method**

The findings presented in this paper are limited to three studies in Sweden. These are the most comprehensive studies that have been conducted in Sweden within the research area recently (2010–2015). The methods being used in the three studies are both quantitative and qualitative: national surveys, interviews and text analysis.

##### *4.1 Study 1*

A national survey was conducted in 2011 on behalf of the PLAN group of the Swedish Rural Network (SBA). The aim was to chart Swedish municipalities' work with spatial planning with a focus on rural issues and urban–rural interactions. The survey was carried out by mailing a questionnaire to the spatial planner responsible for issues in respect of comprehensive planning in each municipality, in total 290. Out from the national survey a selection of seven municipalities were made in order to analyse their respective comprehensive plan. The motive was to select the municipalities that considered preservation of agricultural land to be very important in their municipality. The purpose of analysing these comprehensive plans was to see if and how the municipality described agriculture land, whether they outlined potential strategies or made specific suggestions to protect and preserve agricultural land.

##### *4.2 Study 2*

The second study includes a national survey, text analysis (Bergström and Boréus, 2005) of planning documents and semi-structured interviews (Trost, 1993; Kvale, 1997) with planners. The survey was conducted by The Swedish National Board of Housing, Building and Planning (Boverket) and RUS – the joint organisation of Sweden's county

administrative boards for cooperation concerning environmental objectives. Together these organisations annually conduct a national Environmental Objectives Survey. In 2011, a question concerning the preservation of agricultural land was added to the survey up on request of two of the authors of this paper. Out from the national survey a selection of 20 municipalities located in the most intensive farming regions was made in order to analyse their respective comprehensive plan. This work focused on identifying information on municipal policy for the preservation of agricultural land and on the methods used to deal with conflicts over land use. Following the review of comprehensive plans, three municipalities were selected because they had forwarded advanced arguments concerning preservation of agricultural land. Semi-structured interviews were conducted with five persons at planning departments in three municipalities.

### 4.3 Study 3

The third study was a national survey conducted in 2013 by the SBA on behalf of the Government Commission: *Regeringsbeslut 3, L2013/480* (Landsbygdsdepartementet, 2013). The study concerned how Swedish municipalities apply and interpret the law governing when agricultural land may be used for development or other facilities (Env. Code, Chap. 3 and 4). Granvik was part of the reference group for the study, representing the Swedish University of Agricultural Sciences (SLU). In total, 150 municipalities (out of 290) were selected as respondents. They were chosen with the motive that they all had a relatively high degree of agricultural land. The survey was conducted by sending a questionnaire to the responsible spatial planner in each municipality.

## 5 Empirical findings

The results from the three empirical studies, conducted during the period 2011–2013, are presented in this section.

### 5.1 Study 1 – main findings

In total, 161 municipalities (out of 290) responded to the survey (54%). According to the municipality classification developed by former Glesbygdsverket (The Swedish Rural Development Agency) – *rural municipalities*, *urban municipalities* and *rural municipalities close to urban areas* – the responding municipalities are relatively well represented in Sweden as a whole: *rural municipalities* in the study, 12 (54%) of a total of 22 in Sweden, *urban municipalities* in the study, 65 (58%) of a total of 112 in Sweden, and *rural municipalities close to urban areas* in the study, 84 (54%) of a total of 156 in Sweden.

Out of the responded municipalities, 59% stated either that it was *very important* or *important* not to reduce the acreage of agricultural land in the municipality, while four municipalities stated that this was not important at all. Those factors considered most important to the value of agricultural land were promoting agricultural entrepreneurship (79%) and production of food (73%). A little less than half (47%) stated that the exploitation of agricultural land for housing and infrastructure was either a *very important* or *important* value (see Table 1).

**Table 1** Factors important for the value of agricultural land

<i>Factor:</i>	<i>Very important (%)</i>	<i>Important (%)</i>	<i>Less important (%)</i>	<i>Mostly unimportant (%)</i>	<i>Loss of response (%)</i>
Market value	17	36	26	7	14
Recreation value	26	40	19	4	11
Exploitation for housing construction and infrastructure	16	31	33	8	12
National environmental goals	23	52	11	3	11
Gives job opportunities	25	40	17	6	12
Production of food	43	30	11	3	12
Production of energy crops	12	21	42	12	12
Support agricultural enterprise	43	36	7	3	11
Other: 0					

The results also highlight the existence of a number of ongoing conflicts of interest in respect of the use of agricultural land. Some municipalities have clear policies for the protection of agricultural land. In reality, however, actual planning practice may differ significantly from the stated policy. Below are a number of quotations from the survey that illustrate this planning dilemma:

*“There is a local environmental goal that says that valuable agricultural land should not be utilised for exploitation. If the city is to grow in size agricultural land must be utilised. This represents a conflict of interest.”* (Municipality of Kristianstad)

*“There is a guideline in the comprehensive plan that brings up the protection of agricultural land. Exploitation is allowed only when an important social interest exists. Some urban expansion will occur on farmland.”* (Municipality of Uppsala)

*“The premise is that as far as possible avoid urban expansion and in particular on agricultural land. There is however no prohibition against using agricultural land. Agricultural land is a very important resource in meeting our need for food and other crops.”* (Jönköping)

*“Access to farmland will, to a required extent, be needed to ensure an effective and sustainable supply in the future.”* (Municipality of Hjo)

*“The political perception most people have is that it is important to preserve farmland. The reasons for this may vary. The most common reasons are, landscape aesthetics, preparedness for the coming food crisis and that agriculture provides job opportunities.”* (Municipality of Dals-Ed)

This study also included analysis of seven comprehensive plans conducted by text analysis (Bergström and Boréus, 2005). The general impression was that the majority of the plans did not provide a clear strategy in relation to how agricultural land should be protected or developed. Indeed, two of the surveyed municipalities did not state any specific commitment to the protection of agricultural land at all. The main threat seemed to be the development of new city land. Many of the municipalities noted that different densification strategies may increase the possibility of preserving agricultural land. When food was mentioned as a reason to preserve agricultural land, it was often formulated in a

future perspective. Another main objective here was described as profiting from the agricultural sector through the creation of new enterprises and, more generally, from the creation of a stronger ‘enterprise culture’. Some of the plans stated that the local food supply will likely be important in the future; the need for land that can produce biological raw material can be expected to increase; and that agricultural land will have a greater significance as the world’s population increases. Two of the municipalities did, however, not make any reference to food at all when describing the agriculture sector. One municipality, indeed, noted that food production was not the primary motive to preserve agricultural land.

## 5.2 *Study 2 – main findings*

A national survey regarding national Environmental Objectives is annually conducted by The Swedish National Board of Housing, Building and Planning (Boverket) and RUS. In 2011, a question concerning the preservation of agricultural land was added to the survey, up on the request of our research team. The response rate was 76% (220) of the Swedish municipalities (in total 290). The questionnaire item ‘Does the municipality have a policy on the preservation of agricultural land?’ was answered in the affirmative by 26% of the responding municipalities, 9% answered ‘No, but work is in progress’, while a further 65% answered ‘No’. The result was compared with a map of soil fertility zones in Sweden, to see whether there was any geographic concurrence between the existence of fertile land and municipal policy for the preservation of good cultivable land. The analysis shows that there is no clear correlation with either fertile or less fertile farming areas. Thus, many of the municipalities in the areas with good agricultural land lacked a policy for the protection of such land.

From those municipalities that replied and which had a policy for the preservation of agricultural land, a selection of the 20 municipalities located in the most intensive farming regions was made. A majority of the municipalities expressed the following excerpt:

“By building densely and concentrating new development in the towns and certain chosen localities, further urban development of agricultural land can be limited. Urban development will be given priority over preservation of agricultural land within or directly adjoining existing settlement in the towns and cities, the priority development localities and the attractively situated housing areas.” (Municipalities of Linköping and Norrköping, 2010)

Thus, most of the municipalities investigated had a polarised attitude where safeguarding agricultural land is judged important, but the land can be built on where this is found to be justifiable. This suggests that an acute conflict exists in respect of land use but also that there is a desire to ‘strike a balance’ between the different interests. Several of the municipalities investigated made a direct link between the preservation of agricultural land and suburban infill development. The Municipality of Lund, for example, stated: ‘Infill and conversion are an important strategy for the city’s development, with a view to conserving good agricultural land’ (Municipality of Lund, 2010). The City of Malmö stated: ‘A densely developed city is more economic with resources and energy efficient than a sparsely developed, sprawling one, and agricultural land can be saved’ (City of Malmö, 2010). The majority of the comprehensive plans examined did not, however, indicate how many hectares of different kinds of land had been reserved for urban development.

Following the review of comprehensive plans, three municipalities were selected because they had forwarded more advanced arguments concerning the above-mentioned issues, namely Malmö, Lund and Helsingborg, all located in Skåne, the southernmost and most intensive agricultural region of Sweden. Demographically, these are three relatively large and growing municipalities. Their central urban localities are surrounded by very productive agricultural land, which brings the issue of land use to a head. Semi-structured interviews were conducted with officials from planning departments in the three municipalities. Several examples of methods for agricultural land preservation and infill development were revealed in the interviews. The infill discussion was encountered at the comprehensive planning level, primarily in connection with the development of new areas and with reference to mass transit planning. The urban planners saw several reasons for saving agricultural land and going for infill development. The most common motives mentioned were: that it saves municipal land resources which leave a wider range of land use options for the future, favours efficient public transport rather than private car use, and that infill helps to put more life into cities with amenities and meeting points close at hand.

### 5.3 *Study 3 – main findings*

A national survey was conducted in 2013 by the SBA on behalf of the Government Commission: *Regeringsbeslut 3, L2013/480* (Landsbygdsdepartementet, 2013). SLU was a part of the reference group; Granvik was representing SLU. In total, 111 municipalities responded out from the 150 that was selected as respondents, which gave a response rate of 74%. A majority (82%) stated that they will need to exploit agricultural land during the period up to 2020. This exploitation is expected to continue at about the same rate as has occurred since the mid-1980s, with an expected exploitation rate during the period from 2010 to 2020 at between 2200 and 7700 acres. This figure may be regarded as somewhat inflated, however, since the sample is not representative for the whole of Sweden as it only includes municipalities with a relatively high degree of agricultural land. Two-thirds of the municipalities indicated that they had a documented policy to preserve agricultural land. And 90% of these municipalities stated that the policy is also included in the municipality's comprehensive plan. The presence of a documented policy seemed, however, to have little effect on the practical work associated with the regulation of agricultural land in the municipalities. These municipalities did not have a lower exploitation rate in the period 1998–2010 than municipalities without such a policy. Moreover, the municipalities' priorities in respect of agricultural land were relatively low, ranked as number 12 out of 16 different interests. This low priority score was independent of the municipalities' local character, for example population dynamics or share of agricultural land. Finally, the municipalities that actually stated that they give relative high priority to agricultural land did not, however, differ markedly in terms of documented policy or maintained a lower proportion of exploited agricultural land during the period 1998–2010.

## 6 Discussion

The empirical findings, in respect of the preservation of agricultural land, help us to understand the Swedish 'state of art' on this topic. The results of the three separate

empirical studies show that, while a relatively high degree of the responding municipalities stated an interest in the preservation of agricultural land, their actual planning practice did not confirm such an approach. In comparison with other interests, the preservation of agricultural land was not afforded a high rank. As such, having a policy on the preservation of agricultural land seemed to have little effect on the actual practical work undertaken by the municipalities. These municipalities did not display a lower exploitation rate than those without such a policy. In addition, no clear correlation was found between whether a municipality has access to fertile or less fertile agricultural land and whether it has such an avowed policy in respect of the preservation of agricultural land. The factors that were considered to be the most important in respect of the value of agricultural land were the promotion of agricultural entrepreneurship and the production of food.

One explanation for the results outlined above may be that many municipalities are untroubled by heavy development pressure or – relating to studies one and two – are located in forest areas. It is, however, rather more understandable for municipalities in intensively farmed areas to have a policy of this kind, which in turn makes it surprising that there is no clear geographic congruence between municipalities with this kind of policy and the most fertile areas. As such, many municipalities in areas with access to good agricultural land lack a policy for the protection of such land, though it is also possible that they seek to protect their farmland via other means. The results also show that the municipalities lack concrete methods to enable them to strike a balance between the preservation and the development of agricultural land. It is nevertheless clear that certain municipalities intend to protect agricultural land. Above all, those municipalities highlight infill development as a workable strategy, although, as yet, there are no formally established methods for using infill development in areas that are already urbanised.

From a historical perspective the value of agricultural land may seem obvious in relation to food support. In a contemporary planning context this connection is, however, no longer a given fact when the agricultural land could have a greater economic value from a sale for exploitation, than it has as a resource for food production. As such, the fundamental dilemma in respect of the agricultural land is that it is a resource based on local production but which is often for external consumption. The need for food within the municipality is, moreover, not reflected in the level of food production in the area from either a current or an expected future perspective. This makes it difficult to grasp the possible consequences of new development on agricultural land from a food security perspective.

Given both that agricultural land is, to some extent, already being abandoned in Sweden, and that the profitability of farms is relatively low, perhaps the loss of this land should not be seen as a problem if it can instead fulfil other functions. Broadening the perspective and looking beyond current circumstances, to the global context, make things to look rather more problematic. Financial shocks, urbanisation and food crises coupled with climate change challenge the current patterns of agricultural land use and thus influence current modes of planning in this field. Self-sufficiency and emergency preparedness are becoming more common on the political agenda. Resilience can be built or eroded, partly depending on the adaptive capacity by, *e.g.*, politicians and planners. Despite the fact that agricultural land is said to be a Swedish national resource, according to the Environmental Code, it has no strong legal protection in relation to other competing interests for land. The risk with a decentralised planning system, such as in

Sweden, is that no one takes responsibility for the development of agricultural land as a whole. Each municipality makes their own decisions and strategies. In the long term, however, this may have devastating consequences and prove to be a very high risk strategy for the Swedish people in respect of the issue of food security. In the neighbouring countries, Denmark and Norway, the preservation of agricultural land is central to the planning system. Both countries have put in place strong national and regional control of the spatial planning system. In Denmark, at every new election, the government is obliged to present a national plan that forms the basis for regional and municipal planning. Their planning system also incorporates agricultural analysis as a tool in the planning process. Norway has since the 1950s had strong laws for the protection of agricultural land called 'jordvern'. In order to strengthen the protection of agricultural land in Norway significant changes were made to the planning and building law in 2009. More clearly defined national and regional interests are expected to form the basis for a planning system similar to that of Denmark (regjeringen.no, 2012-03-17). In Sweden, there is no such development taking place.

However, future prospects in a Swedish perspective is that it is likely that agricultural land use will to a higher extent than today become a topic of concern on the Swedish political agenda. In June 2014, the Environmental Objective Committee (in Swedish Miljömålsberedningen) finished their policy work on a national strategy for sustainable land use in a long-term perspective (Miljömålsberedningen SOU 2014:50, 2014). The strategy includes statements regarding agricultural land and suggestions for sharper texts in the Planning and Building Act. One example is to include a strategy for preservation of agricultural land in the comprehensive plan, and the County Administrative Boards having responsibility for controlling that the municipalities comply with the law in this matter.

## **7 Conclusions**

Even though many of the municipalities claimed an interest in the preservation of agricultural land, few had a policy concerning this and the planning practice told another story. The review of comprehensive plans also showed that formulations in the Environmental Code Chap. 3:4 or similar wording were being used as a general policy, which, however, not necessarily was taking into account in practice. The conclusion is that agricultural land is exploited today in Sweden in a great extent without taking into account what the legislation requires. Neither when it comes to formulation of what is meant by important public interest, nor to weigh these interests in relation to continuing farming, or examine alternative locations for exploitation. This is inconsistent with the legislation which has a long-term perspective on resource conservation, and states that agricultural land is a Swedish national resource. Furthermore, the food production in general seems to be very little reflected upon in local planning, both in current and in a future perspective.

Further on it is clearly relevant to continue to conduct research on the potential connections between resilience theory, planning theory and implementation theory related to the issue of agricultural land, in the light of the two ruling paradigms. What we have found is a clash between the planning paradigm that emphasises the weighing of different claims, trying to find the best option in every given situation, and the

environmental paradigm, saying that there are absolute standards that have to be upheld at all costs. An example of the latter is a ban on exploiting farmland, but in practice many Swedish municipalities stick to the first paradigm.

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