



LIBERATION



Linking farmland **B**iodiversity to **E**cosystem se**R**vices for effective eco-functional intensific**A**TION

Collaborative Project

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NON TECHNICAL SUMMARY

The purpose of these case studies is to examine concrete examples of policies that have been implemented in order to achieve outcomes relevant for LIBERATION's goals. This includes focusing on instances and examples of local government policies and strategies that, in diverse ways, recognize and forge links between local government concerns and ecological intensification practices that enhance the provision of ecosystem services and farmland biodiversity. The target audience for these case studies include actors and institutions that are engaging in implementation, outreach and advocacy for effective, targeted policies on ecosystem services provisioning and sustainable agriculture more generally, and specifically on local government levels.

The key conclusions from the three case studies are that

- Although they may have been initially designed to target different issues, policies and strategies relevant to ecological intensification already exist on the local and sub-regional level
- All of the cases reveal a critical, formative stage of generation of ideas and priorities, through an investment in processes of information sharing and public consultations, though each have differences in structure, duration and with distinct specific thematic focal areas.

POLICY RELEVANCE

The cases documented within suggest that many policies and strategies that may be relevant to the uptake of outcomes from LIBERATION research already exist at the local and sub-regional level; however, they may have been put in place with somewhat different objectives than simply supporting ecological intensification or even have been originally designed with a wider focus than agricultural production alone. It is assumed that tracing the origin and implementation of these policies, and where links to ecological intensification exist or could be made, could form the basis for the LIBERATION policy work on the sub-regional and local level, provided the peculiarities of their respective historical and agro-ecological contexts are taken into account.

Each one of the case studies has links to deeper policy contexts and ongoing multi-year processes:

- Malmö set a course for reducing the city's climate impacts with targets to 2020, and identified food system priorities through a focused consultation with stakeholders on how they saw sustainable development achieved through food policies. However, this progressive strategy related to food, has not been limited in its ability to impact the nature of the the local peri-urban agriculture. Due to a combination of factors, including the effects of European trade and competition policy priorities and guidelines, the small-scale farms in the peri-urban fringe have been replaced over the past few decades by a large-scale industrial model based on chemical inputs; hence, much of the organically sourced food in Malmö comes from other, more rural regions of Sweden, and as a result the benefit of the policy efforts that aim at reducing the environmental impact of the local food system affect less directly the city and its immediate surroundings (although they do impact farmers practicing ecological intensification nationally). Additionally, land tenure policies – and particularly the concession of peri-urban farm land through short-term leases – hinder investments from the farmers' side for improving the long-term sustainability of their farming methods.
- Hoeksche Waard citizens benefitted with provincial and national programme support for a consultation around 'what does Nature do for you?'- to develop a regional biodiversity action plan - resulting in several projects and strategies in natural resource management that have also generated social, cultural and economic benefits. The Hoeksche Waard case however, also points to the long-term fragility of interventions that are mostly based on financial remunerations for farmers that implement ecologically-friendly practices, as well as the need for strong quantitative data that are able to show the potential positive effect of agricultural

practices in terms of provisioning of ecosystem services; this is especially relevant in light of the declining amount of subsidies under the framework of the new CAP

- Milan has convened around a diffuse visioning process combining the conservation of agricultural, natural and cultural heritage, while mapping resources and flows in the regional food system, and structuring opportunities for local economic solidarity, land preservation, and investing in the strengthening of community institutions – including an attempt at setting in place the city's first own local food policy. Reaching beyond the Lombardy region, Milan also extends its reach into policy formation with other regions around urban-rural landscapes and European territorial cohesion.

In conclusion, we believe that the case studies show the potential for new allies and constituents for ecological intensification in agricultural production on the sub-national levels across Europe. These new constituents can include both communities in urban and peri-urban, and also communities from rural areas, affected, as in the case of Malmö, by the policies and programmes of urban centers.

Linking farmland Biodiversity to Ecosystem services for effective eco-functional intensification

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SEVENTH FRAMEWORK PROGRAMME

THEME KBBE.2012.1.2-02

Managing semi-natural habitats and on-farm biodiversity to optimise ecological services

Collaborative Project

Three case studies of policy options to harness benefits of semi-natural areas



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Linking urban and rural across Europe: Food system innovations and potential implications for ecosystem services and farmland biodiversity

As EU FP7 Framework-funded projects to promote ecosystem services and farmland biodiversity are implemented, a small but critical component usually includes an element of policy analysis. Within the call for “Managing semi-natural habitats and on-farm biodiversity to optimize ecological services” it was recognized that the engagement of local government, and citizens might be a logical motor for transitions to ecological approaches to production. In this context, European local and regional government processes and innovations were scanned for specific relevance to the aims of ecological intensification, resulting in the three case studies represented here. Each captures varying scales and complexity of urban and rural connections. They portray different starting points, employ distinct institutional vehicles and catalytic forces while providing lessons and possible entry points for project results to contribute to relevant policy processes.

Two of the case studies presented here focus on peri-urban regions (Malmö and Milan); while the third (Hoeksche Waard) examines the experiences of provincial, largely agricultural area with links to the nearby urban center of Rotterdam. This choice of case studies reflects a large and growing realization, that it is the choices and inclinations of people living in urbanized settings that determine the pressures on production systems in rural areas.

The target audience for these case studies includes actors and institutions engaging in implementation, outreach and advocacy for effective, targeted policies on ecosystem services provisioning and sustainable agriculture more generally.

The cases documented within suggest that policies and strategies relevant to LIBERATION already exist on the local and sub-regional level; however, they may have been put in place with somewhat different objectives than simply supporting ecological intensification or even have been originally designed with a wider focus than agricultural production alone. Tracing the origin and implementation of these policies, and where links to ecological intensification exist or could be made, is the broader aim of this effort. It is assumed what originally brought about these policies and their means of implementation could form the basis for the policy measures to support ecological intensification on the European sub-regional and local level, provided the peculiarities of their respective historical and agro-ecological contexts are taken into account.

The selection of the following case studies was informed by a mixed strategy of matching national contexts to project partner work at country level – as well as an attempt to span the breadth of intensive and extensive production areas that the larger project geographic activity entails. An additional principle to select these cases was to reflect the broad variety of scales included under the term ‘local government’ – which range from community to county-level, to municipal and metropolitan. An attempt was made to incorporate the perspectives of a cross-section of stakeholders in each of these case study contexts as well, in order to capture insights

from farmers, researchers, local authorities, non-governmental organization representatives, local citizens and others linked to the agro-ecological system. Academic and grey literature scans, consultation and tapping into networks of project contacts, and other independent sources were explored and assessed to establish a narrower field of case study areas and to identify particular individuals to approach for semi-structured interviews and field visits .

Ultimately, three locations - the municipality of Malmö, Sweden; the Hoeksche Waard in The Netherlands; and the metropolitan region of Milan, Italy - were selected for visits in the spring and early summer of 2014, enabling the team to witness sites during relatively active stages of production.

The case studies featured included:

- a city-wide procurement programme for public canteens and school cafeteria meals aimed at maximizing the degree to which organically-produced foods could be sourced and supplied to municipal kitchens in the Malmö story;
- a series of farmer community-led innovations around biodiversity-friendly and agroecologically-oriented practices, supported with university research and national and provincial programmes, converging on the island county of the Hoeksche Waard - while preserving historical and cultural features and an attractive agro-tourist destination in the peri-urban shadow of Rotterdam;
- an agricultural heritage and landscape preservation effort in the Lombardy Region surrounding Milan, linking local economic development, green infrastructure and environmental conservation practices combining farmers, citizen networks, local authorities and philanthropic organization engagement.

Malmö Case Study

The city of Malmö, is home to around 300,000 people, and sits at the southernmost tip of Sweden. At the turn of the millennium its connection with a bridge across the Öresund strait to the city of Copenhagen cemented ties between Sweden and Denmark and to the rest of the European continent. As part of its transition from a ship-building center toward a post-industrial future, the city mobilized interest and managed to tap into a special fund set up by the Swedish government to support “local investment projects in sustainable development” (Jamison,2008). With additional European Commission support, Malmö was able to access multiple sustainability resources and networksⁱ and formed partnerships with other European cities to exchange knowledge and develop projects in urban sustainable development.

The animated adoption of a sustainable development agenda – with, in particular, a priority formulation around a climate strategy – took on a central food system component, among other serious efforts to explore the municipal government’s influence over lowering greenhouse gas emissions and increasing mitigation potentials. The city’s responsibilities include education and elderly care in which food is a major cost; wide support has existed since the 1960s for providing ‘a nutritious meal, free of charge’ in school lunches for all students, mandated by law and state financed.

The city embarked on civic discussions around the food policy structure around 2007-8, and a plan was developed for concentrated, year-long participatory planning processes with broad stakeholder engagement on answering the question: ‘what do you want to see within a sustainable development policy for food?’ The process progressed through a series of meetings convening five focus groups – consulting local authorities and municipal government employees; public school officials, public school cafeteria workers and other public kitchen workers; nutritionists and menu planners; elder care facility food service workers; food wholesalers, distributors, representatives from food processing and food retailers; farmers and their membership organizations.

The initiative generated a matrix of suggested headlines based on the responses of the focus groups in stakeholder meetings. These were consolidated and translated into policy priorities and action plans that were submitted to the municipal assembly. Debate ensued as there was some degree of opposition from both left and right wing parties, but in the end a clear political majority for a sustainable approach to food was found.

The following effort to implement the plan was supported by analysis and organization of a city-wide scale procurement system to develop specifications and to source a high percentage of organic foods in food procurement tenders. A range of new and innovative partnerships were required, as well as the formation of supporting activities, including: training created for public food service workers to prepare meals using less processed ingredients and to enhance nutritional value; promotion of food education curricula, launching of school and community gardens and other projects; and the city strengthened support for local farmers’ markets.

In exploring ways that reduce the 'carbon footprint' of the public food procurement system, the municipality developed waste-reduction and low-carbon strategies on transport, storage, packaging and handling processes. Lowering meat consumption in meals prepared by Malmö's own operations was identified as a crucial way to lower GHG emissions from food purchases. Taken together, the city proposes a goal to decrease the climate effect of all food in the city by 40% from 2002 levels by 2020.

A range of goals and initiatives to promote sustainable development were deemed feasible through the modification of Malmö's municipal food procurement policies, combining health, nutrition, energy, ecological, and transport objectives. These were made memorable through the acronym 'S.M.A.R.T', which entails:

- **S** Smaller amount of meat
- **M** Minimise intake of junk food/empty calories
- **A** An increase in organic
- **R** Right sort of meat and vegetables
- **T** Transport efficient



Figure 1 Cover image of Malmö official 2010 food policy [publication online](#) (City of Malmö, 2010)

Malmö and four other cities were analyzed by a pan-European project combining researchers, policymakers and practitioners in an EU FP7 knowledge management project known as Foodlinks – with three teams dividing their respective focus on urban food strategies, short food supply chains, and food procurement. Among other social and economic dimensions, the team working on food procurement drew a range of observations on what was evident with regard to environmental benefits of applying sustainability criteria to municipal food purchasing:

“From the environmental point of view, sourcing foods based on clear environmental criteria will help societies to reduce their ecological footprint and meet the challenges that current food supply practices pose to the natural resource base and ecosystems.

Examples include purchasing food based on: low impact production methods with reduced carbon inputs and greenhouse gas emissions, biodiversity attuned practices such as pasture reared meat, wild fish caught from sustainable fisheries, and enhanced animal welfare criteria.

New production and consumption approaches reduce the costs of these environmental “bads” and improve the quality of our natural resource base, including the air, water and soil - which provide the ecosystem components upon which our ability to continue growing food and to maintain sustainable local communities depend.”(Foodlinks, 2013)

Interviews with municipal government representatives and farm leaders revealed that Malmö municipality owns close to 50% of the lands surrounding the urban core - an unusually high amount – and that the region hosts some of the highest quality soil classes in Northern Europe. A new growth and development strategy, culminating in a near term closing cycle of a Master Plan, is also under development with the aim of shifting urban growth inwards to create a more compact city, with transport and residential planning accommodating higher densities of residents, hence limiting outward sprawl.

Yet while this might signal an opening for new opportunities for peri-urban development of a more agricultural and recreational nature, we found that the majority of agricultural practices in the peri-urban region were more chemically-intensive, industrial-scale and geared predominantly to export and other domestic markets. The peri-urban landscape had previous strong connections to the local food system as recently as the late 1980s, when a circle of market gardens, small farms and glasshouses surrounded the city; however, market forces dominating at the time gradually eliminated them.

A combination of factors, including the effects of European trade and competition policy priorities and guidelines, and the reality of the current distribution and concentrations of organic production areas means that while Malmö is increasingly sourcing organic food through its nearly 22 million euro budget for procurement, much of that food comes from elsewhere – and benefits the local environments of other places in Sweden and abroad. Procurement regulations across Europe constrain practices that might be perceived as anti-competitive, including more local sourcing of food; tenders and bids for food and other supply contracts are regularly scrutinized for strict compliance by both internal and external actors.

While the city region's procurement policy seeks to lower carbon footprint in all facets of food system, Malmö's own local peri-urban and regional hinterland production is not encouraged in the sourcing for organic production, reflecting a tension between European Union trade rules over geographic preferences in procurement. As a consequence, efforts that might go to support local environmentally-friendly production practices cannot provide stimulus for providing more direct environmental services to the region's citizens (see below for peri-urban farmland leasing policy implications).

Because European regulations on the definition of organic are well elaborated, it is relatively straightforward for a 'green' food procurement programme to adopt specifications for organic procurement. Third-party certification system for organic makes it reliable and assures approval through the legal and administrative channels in the system. An alternative, independent certification system is not in place for other agricultural production claims – such as Integrated Pest Management (IPM) – to convey the local additional direct or indirect benefits of ecological intensification that might accompany particular practices applied in local production of food.

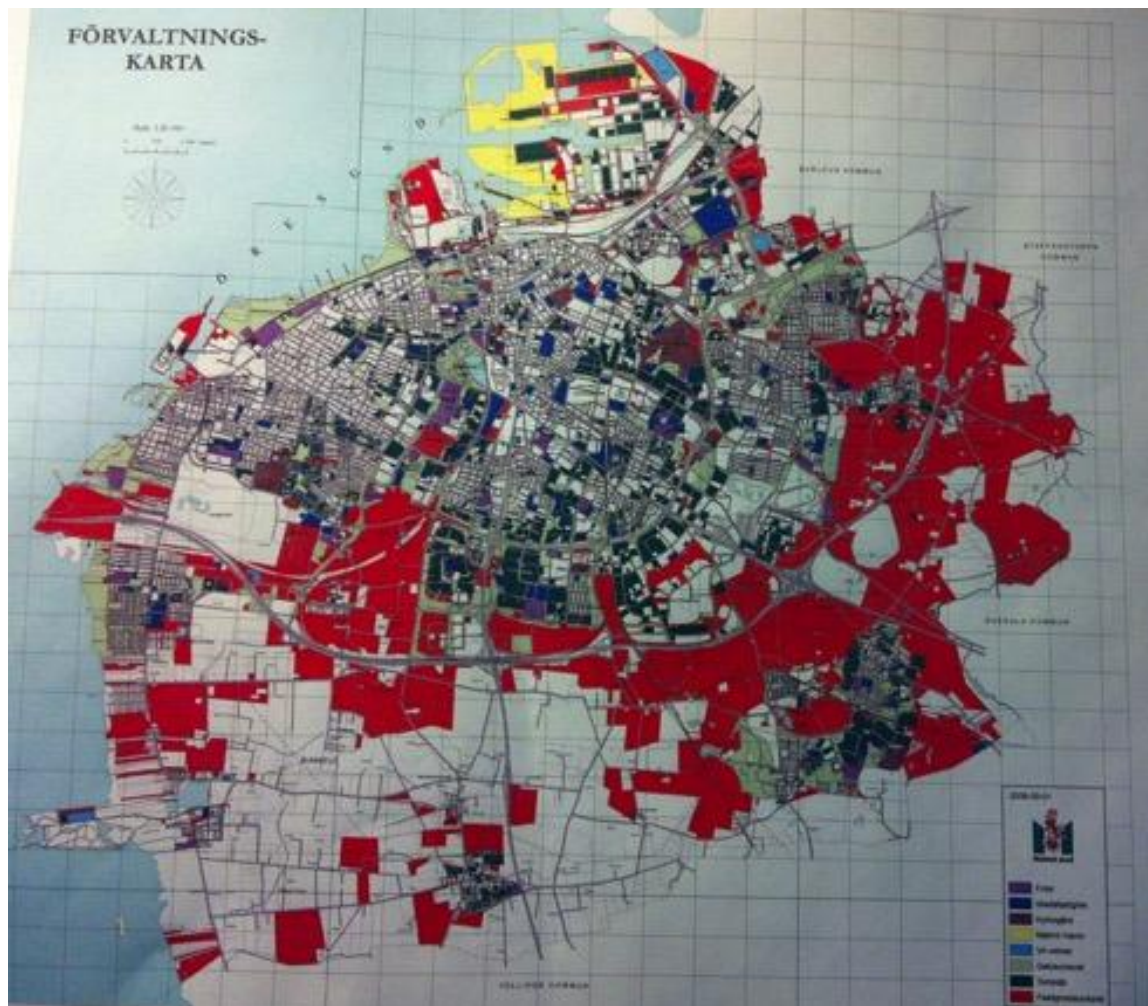


Figure 2 Map of Malmö municipality depicting urban core, ring roads and city-owned farmlands (red area) Source: author's photograph.

Another facet of the challenge in fostering ecologically-intensive farming practices around Malmö could relate to the nature of short-term leases under which the city leases a considerable portion of the peri-urban lands it owns to farmers. Such uncertainty and volatility of tenure might inhibit longer-term investments and more sustainable practices from being incentivized or applied. The issue is a controversial one, and terms for land leases are currently under review by the relevant technical departments in the municipal government.

A locally-based leader in the Swedish National Farmers' Union, Peter Langenbeck was recently quoted in the Swedish press under the headline "Peri urban agriculture increasingly popular in Malmö", and the by-line: *"Malmö takes a cautious position to conversion of farmland. Instead the interest for peri urban agriculture is growing."*:

"Farmland has given way to asphalt and concrete. But the city of Malmö's newly proposed Master plan refers to the countryside as a positive force. With 5 000 hectares of cultivated land and a growing interest in peri urban agriculture, the big city has potential for food production. Small farms have an incredibly important role to play if we speak about locally produced, says Peter Langenbeck, Chairperson in LRFs municipality group in Malmö, who see possibilities with peri urban agriculture. One explanation to an increased interest in preserving the farmland is an improved dialogue between representatives of the agricultural sector and politicians." (Ingvarsson, 2014).

Malmö offers a very good example of European cities aiming to become more sustainable and including food consumption within these efforts. While many factors might be specific to the Malmö or Swedish context – e.g. the existence of a large program of school lunches – public procurement of cities could be a key lever to strengthen the uptake of ecological intensification practices in agriculture in all EU countries.

Hoeksche Waard Case Study

Ever since the mid-90s, through successive regional planning efforts there has been a pattern of engagement between the city of Rotterdam and the citizens of the Hoeksche Waard, an island in the delta just to the south.. After a new draft regional plan came out in 1998, a catalytic external force was the AIR Southbound effort that took place from 1998 onwards (AIR being an architecture center of Rotterdam that has explicitly fostered dialogue about architecture, urban planning and landscape architecture of Rotterdam and its region) (Hajer, 2005). The conversations promoted through AIR, to envision Rotterdam's peri-urban areas in a broad gauged and inclusive process, may have been instrumental in precipitating later efforts to test new concepts in Hoeksche Waard.

In 2003, Ministry and Provincial governments chose to experiment with the idea of developing a regional biodiversity action plan, with Hoeksche Waard as its test bed. Engaging citizens with a number of questions -leading with: *What does Nature do for you?*- they have unleashed multiple threads of activity and ownership in the island community (The Netherlands Ministry of Housing, Spatial Planning and the Environment. (ND).

As it was recounted in project overview material, it was 'not clear beforehand whether the abstract and complex concept of biodiversity would catch on with sufficient numbers of citizens and whether the citizens would be able to apply the concept in a concrete way in their own environment'.

Several criteria were developed in advance to monitor project success:

- Active participation and substantial influence in the development of plans and policy proposals by a broad representation of citizens and their organisations from the area (approximately 100--150 citizens);
- Broad application of the concept of biodiversity and its usefulness to society for functions such as living (home environment), agriculture, working, recreation and nature;
- A substantial number of concrete ideas, plans and proposals for a regional biodiversity policy (at least 10--15 substantial plans);
- Clear statements from the government agencies involved about the way in which they will try to translate the results into policy;
- An answer to the question as to whether it is possible to mobilise citizens to tackle issues relating to biodiversity (The Netherlands Ministry of Housing, Spatial Planning and the Environment. (ND).

These efforts led to a very bottom-up defined set of priorities and projects, including farmer-led initiatives on natural pest control, of direct relevance to the promotion of ecological intensification. Farmer concerns with fostering natural pest control resulted in a set of Functional Agrobiodiversity (FAB) projects, to increase the abundance of natural enemies for natural biological control, including through planting significant lengths of flowering strip

habitats within and around farmers' fields. The local Water Board supported these efforts, out of their concern for reductions in pesticides applied and thus improved water quality.

From 2009 – 2013 and building on earlier research on FAB (2004-2007), Wageningen University researchers and local farmers shared their research and ideas with field GPS equipment and software (plotting the optimal passes/paths for tractors and other equipment) which lead to a new set of maps of farmer fields and the adjoining landscape, raising the knowledge and awareness of farmers regarding low-return areas that could act as habitat (Hoeksche Randen,NA). This in turn has linkages with the negotiation undertaken with the Water Board about shifting from a recti-linear measure of the strips as the basis for compensation to an area-based calculation, as a means of accommodating a more site-specific allocation of appropriate habitat areas. Additionally the mapping of farmers' fields and landscapes made it possible for stakeholders to simultaneously evaluate tractor and other field machinery path efficiencies and different possible habitat configurations. The perceived losses of crop planting areas were lessened based on this new spatial understanding and a mutual agreement was made to uphold both agronomic and ecological values in the process.

At the landscape scale, Hoeksche Waard has showcased the “blue-green veining” concept as “a network of vegetation and water (green and blue respectively) embedded within an agricultural area in order to create benefits for agriculture, nature and society as a whole” (ECORYS Nederland BV,2007). Natural pest control has been an immediate focus, with the premise of the green-blue network or semi-natural mosaic structure of non-crop landscape elements acting as a source of natural enemies, which lead to reduced crop damage by insect pests.

During the Functional Agrobiodiversity Project – from 2004 until 2007 - the blue-green veining idea was also able to take on more supporters as farmers were able to see that habitat for beneficial insects even on parcels at some distance from their own plots could still be providing them with assistance in predation of harmful insects (ECORYS Nederland BV,2007). These new maps formed the basis for another scale of collaboration and negotiation around management practices that would enhance the synergies of better water quality and increased habitat for natural enemies.

Interviews with Hoeksche Waard farmers carried out through this case study confirmed the level of engagement and interest in the process of residents with the planning process. Further plans are under discussion, and have contemplated changes to land use and infrastructure including major transport corridors to traverse the area, as well as space for an industrial expansion zone contemplated, in addition to a large greenhouse complex for the center of the island.

Diverse focal areas have emerged from the community engagement. In 2003 the project Hoeksche Waard – Citizens and Biodiversity project produced the publication "Biodiversity in the Hoeksche Waard: for and by citizens". Some farmers interviewed, who decided to engage in the overall local planning process, decided that instead of joining the agriculture working group, to join the recreation/tourism group - to 'learn what others were thinking'.

Details of the vision creation process - citizens and biodiversity: and other links are provided that describe the mechanics of the engagement process as well as observations evaluating the process, the timing and personal/institutional commitments required, and how to value the knowledge stakeholders contribute.ⁱⁱ This forms a very useful contribution and guidance to other local government areas that might like to undertake a similar process.

Noteworthy in the documentation around the engagement process is the description by Steingrover et al. (2010) describing how stakeholders engaged in blue-green veining network efforts had differing interests and perspectives:

“In our case, the stakeholders not only have interests at different scales—from farm to the entire Hoeksche Waard—but their interests also differ—from farmers with private interests to councils with public interests. Although all stakeholders had a mutual interest in preserving the identity and the agricultural character of the area and were aiming at more sustainable agricultural practices, each group also had specific interests. The water board was mainly interested in the resulting improvement in water quality, and the nature organizations in increasing biodiversity. For farmers, however, natural pest control must be not only effective, but also cost efficient by saving on the costs.” (Steingrover, et al.,2010).

Cooperation Organ Hoekschewaard (SOHW) continues as a vehicle for continued collaboration between farmers, local tourism and other enterprises, citizens and policymakers, focusing on the policy space, landscape, economy, society, and integrated security of the Hoeksche Waard.

Interestingly the high social capital existing in the Hoeksche Waard and the involvement of a number of key stakeholders led to key win-win interventions in the context of the Hoeksche Waard. The participatory approach, involving all relevant stakeholders in order to identify trade-offs and to negotiate such win-win interventions should be a key learning insight for those seeking to build inclusive and effective processes and to gain broad local support. However, the catalytic events in the island’s recent history in gaining the provincial and national programme support for field and landscape-level biodiversity enhancing and agro-ecological innovations may not be replicable elsewhere in the Netherlands.

Attraction of support for funding and implementing these developments was apparently achieved without prior emphasis upon quantitative information on the impact of the measures (i.e. wildflower strips and other semi-natural habitats) on pest control, yield, income or water quality. The assessment of the costs and benefits for the farmer were made in FAB projects to find that field margins could be economically feasible if higher prices could be obtained through accreditation schemes or if public sources of compensation were received, and that the communal benefits and environmental services, such as reduced water pollution, increased biodiversity or more attractive landscape vistas might justify those forms of support (Rijn *et al.*, 2008). Nonetheless, the lack of quantitative data on the effect of the promoted measures on the provision of ecosystem services in farmers’ fields strongly underlines the need for the

research carried out under the LIBERATION project, which will build the evidence base for future interventions.

It could be argued that longer term support for innovative production elements (e.g. buffer or host plant strips in fields) may be contingent upon the continuation of some form of subsidy, or that in future it may depend upon success of alternative sources of incomes, such as emerging market mechanisms linking these beneficial practices to the region's products or the other values that stem from them (floral vistas providing bicyclists and other agri-tourists the attraction to location, revenues generated from parallel enterprises), or a more institutionalized basis for cost and benefit sharing between the local water board and farmers for managing the roadside grass banks. These ideas are further corroborated by some of the interviews held with local farmers, that did point out, that they would probably reduce their use of flower strips if the economic incentives would not be provided anymore. This is not solely an academic thought-experiment, but rather the implementation of the new CAP in the Netherlands might lead to substantial reductions of financial remunerations for flower strips and thus endanger the long term sustainability of the above-mentioned projects. Whether the benefits of such measures are adequately distributed between farmers and other Hoeksche Waard citizens may determine whether the investments made over the years persist and continue to produce both private and public goods.

Milan City Region case study

The extent and variety of food system innovations and depth of commitment that can be witnessed in the greater Milan regional context begs the question of what explains their intensity and breadth. Certainly having a key player such as the Cariplo Foundation – one of the largest bank foundations in Italy – providing a catalytic financial and often strategic role in identifying and investing in high potential elements and agents, helps to explain some of the successes and perhaps some of the visibility of the action occurring at, and tying across, multiple levels. Perhaps the idea that Milan enjoys a peculiar density of *civitas* – civic pride and sense of unity, attachment to place and to cultural history – can also assist in building an explanation.

But neither qualities are unique to the setting, nor does one do justice to the context by overlooking a story of pronounced volatility in both political and economic cycles in the Lombardy region, the turbulence in Italian national political processes (and those of the Mediterranean region generally) of the present and past decade. Indeed, some of the background analysis provided for the Alpine territory-wide Rurbance project by Milan-based stakeholders interviewed in the context of this case study highlights a list of significant challenges the region has confronted. These range from high levels of traffic and congestion, and of air and water pollution – the result of a combination of a protracted period of intensive growth of heavy industry, and of other geographic factors combining to create a basin-wide trapping pattern of pollutants that has few parallels in continental Europe.

In the recent period of industrial decline - and subsequent expansion of the service sector – considerable pressure for growth has been exerted on transport and housing sectors, and other facets of urbanization have impacted the peri-urban and rural land use patterns, placing a premium on landscape-scale planning, though not necessarily identifying how competing actors and forces can effectively collaborate to reconcile and organize these pressures. This might help to explain why Milan is well represented in discussions on a European scale about territorial cohesion and urban-rural partnership, particularly around themes of governance and more integrative forms of planning.

Interviews and presentations in the context of this case study with participants in wider regional discussions also stressed a growing emphasis on the re-valuation of agriculture and rural culture, a recurrent theme in numerous activities being implemented by the protagonists of Milanese food system change. Several presentations harkened to the rural origins of the city, the legacy of the Cistercian Monks in identifying and organizing the regions' water and soil resources so fundamental to the shaping of the landscape's canal systems, the road networks, and field patterns supporting the city region. As Milan protagonists were interviewed, their concerns over their connections to the land were evident in the use of the phrases 'terreno' and 'terra' – two words that in direct translation conflate 'soil' and 'land' but also emphasize both 'spatial', and 'special': the significance attached to the natural endowment of particularly fertile soils with which the region is blessed.

Interviews carried out in the course of this case study illuminated a series of elements contributing to a strong food system dynamic in the Milan area, including: local economic solidarity; flood control concerns; rethinking of local systems including distribution; and aesthetic appreciation for heritage farming systems. Some details on each of these are provided below.

The link with the land is also found in the pronounced commitment to local economic solidarity, as exemplified by the phenomenon of the Gruppo di Acquisto Solidale – GAS. Mutual aid and fair trade are core principles adhered to by these groups, but so too are concerns about the ecological benefits of shorter supply chains, the specific production practices, and the realities of production costs for farmers that might result from adopting these approaches (For an in-depth study of the GAS, see Brunori, et al., 2011). Here lies a potentially important ingredient in understanding the societal support base that might be necessary for a wider uptake of ecological intensification practices. As some proponents of this approach are aware, there is also the potential for these efforts to be criticized as ‘defensive localism’ – in that protective designation of agricultural products may generate trade tensions with other trading partners and producers growing and supplying from further afield.

Another “connective tissue” between producers and consumers is the innovation undertaken to alter the structure of the food system itself, with shorter and better understood food chains having the potential to more directly link the two. The BuonMercato enterprise - a GAS leveraging state of the art information technology to improve the efficiency of its operations – effectively illustrates this. We learned of the development of online tools, in the case of BuonMercato’s distribution system to connect local producers and consumers, or in the applications under development which are working at a region-wide scale combining mapping of food system flows and functions, compiling location and inventorying of actors including producers, processors, learning sites and distribution points – as well as spatial data on existing and under-utilized open spaces, areas under threat of other development, and opportunities for more local production.ⁱⁱⁱ

Numerous institutions perform a long list of functions. They draw attention to missing linkages and to open spaces and gaps in networks as well as fueling greater awareness of the challenges and opportunities. They provide support for the risk taking, acting as engines for the formation of social capital, strengthening community organizations, underwriting visioning processes and broad multi-stakeholder exchanges. Additionally they provide supporting analysis, fund projects for public awareness (among all age groups) and the educational curricula transformation. The renowned Milanese artistic and design community’s talents have also been leveraged in service of appreciating the cultural legacies and deepening food system literacy in the region.

Envisioning a mutually beneficial partnership to sustain this partnership between the city and its countryside, the Cariplo foundation’s representatives describe their aims to develop ‘a sustainable and multifunctional agriculture to address the different challenges of reduced soil consumption, guaranteeing food to the city, and reducing transport costs and emissions’. The opportunity and the challenge to achieve this vision is compelling. Milan is home to one of the

largest belt parks in Europe, the Parco Agricolo Sud Milano, which includes an area of 47,000 hectares, 38,000 being used for agriculture across over 1000 farms - despite being an area of high urbanization. A good deal of emphasis is placed on the historic origin of Milan as a strong rural urban inter-relationship, fed over millennia with an exceptional supply of water and fertile soils.

The local reality of biophysical forces and climatic shifts impacting the region also shapes perceptions among the public. As flooding (and drought) are recurring threats in the Lombardy region, the possible enhanced capacity of soils on agricultural land managed under ecological principles to be more permeable to harvest and store water is conferring new values on ecologically intensified agricultural surfaces. Flood control clearly impacts producers and consumers alike, and is offering new perspectives on revaluing agriculture's functions and services at local and regional levels.

The appeal of rural amenity around and even within the bustling city is noticeable – the view provided to neighbors of the Parco delle Risaie – has even given rise to property values in pockets where initial resistance was strong. Private developers now vie for properties to enjoy this restored feature, though the rest of the city has the benefit of access via the underground metro system which has stations flanking the northern and southern edges of the park.

Most recently, and as a logical extension of the breadth of its work in the agricultural and land use challenges facing the region surrounding Milan, the Cariplo Foundation has become engaged with the Milan municipality in the support for the development of a Milano Food Policy. Among others, key objectives proposed for the development of the city's own food policy – inspired to successful models already in place in North America and elsewhere – are to analyze the current status of the food system in Milan and identify existing projects and policies of interest, to define indicators and mechanisms for participatory monitoring of the Food Policy and to support its implementation in municipal policies and activities of the Cariplo Foundation and of other stakeholders.

A recent adaptation from a press release by Cariplo presented by the International urban food network (IUFN) suggests some priorities that the policy may take on as it is being developed:

- Assessing the existing dynamics characterizing the Milan's agro-food system such as the data, information and indicators on activities and flows, directly or indirectly linked to food topics in Milan, the different stakeholders, and the social, economic and institutional actors
- Gathering and analyzing projects, policies and actions promoted by the municipality and by stakeholders operating on Milan's territory, related to food policy issues
- Determining the national and international initiatives related to food policies and highlighting the potential synergies at a local, supra-local and international scale (identifying a benchmark)
- Support the implantation (*sic*) of the food issue in local policies, in the activities of the Cariplo Foundation and along with the other actors involved
- Studying and defining indicators and tracking mechanisms of the food policy

- Defining public projects in line with the food policy
- Involving all stakeholders, through a communication plan (online dialogue platform, municipal meetings, working meetings, etc) (IUFN, 2014)

The strategy includes also a communications plan, aimed at engaging stakeholders further via online discussions, meetings and round tables (See: <http://www.cibomilano.org/en/>)

On a regional scale, the Milano case, impressively illustrates the possibilities of a well-connected network of actors performing their specific interventions, while being well-informed through the local research and educational institutions. The high levels of cultural and civic values linked to food traditions and landscape preservation are remarkable, but may be difficult to translate or create in other contexts. The strong supportive roles played by regionally-based philanthropic and civic institutions may be difficult to duplicate if there are few counterparts in other regions.

The City of Milan has envisioned using the Milan Expo process to draw attention to its own learning and formative processes around developing a food policy for the metropolitan city region, and is actively encouraging other cities and stakeholders through webinars, learning tours, and planning workshops through its international relations department. Over 30 cities have already enlisted to join in making commitments to design and implement local food system strategies in the coming year, under a project to develop a multi-city [Urban Food Policy Pact](#).

Connecting the case studies

After a review of the three individual cases, this section aims to provide an overview of the key learnings and conclusions to be drawn from the three case studies for future work.

The cases documented within suggest that policies and strategies relevant to LIBERATION already exist on the local and sub-regional level; however, they may have been put in place with somewhat different objectives than simply supporting ecological intensification or even have been originally designed with a wider focus than agricultural production alone. Tracing the origin and implementation of these policies, and where links to ecological intensification exist or could be made, is the broader aim of this effort. It is assumed that tracing the experiences which have brought about these policies and their means of implementation could form the basis for the LIBERATION policy work on the sub-regional and local level, provided the peculiarities of their respective historical and agro-ecological contexts are taken into account. Each one of the case studies has links to deeper policy contexts and ongoing multi-year processes:

- Malmö set a course for reducing the city's climate impacts with targets to 2020, and identified food system priorities through a focused consultation with stakeholders on how they saw sustainable development achieved through food policies; unfortunately this progressive strategy related to food, has not been able to affect the local peri-urban agriculture. Due to a combination of factors, including the effects of European trade and competition policy priorities and guidelines, and the reality of the current distribution and concentrations of organic production areas, much of the organically sourced food in Malmö comes from other, more rural regions of Sweden. The local peri-urban agriculture at the same time remains rather chemically-intensive, industrial scale and geared towards export.
- Hoeschke Waard citizens benefitted with provincial and national programme support for a consultation around 'what does Nature do for you?'- to develop a regional biodiversity action plan - resulting in several projects and strategies in natural resource management that have also generated social, cultural and economic benefits. The Hoeksche Waard case however, also indicate the fragility of interventions that are mostly based on financial remunerations for farmers for ecological mechanisms as well as the need for strong quantitative data on the effect of agricultural practices on the provisioning of ecosystem services;
- Milan has convened around a diffuse visioning process combining the conservation of agricultural, natural and cultural heritage, while mapping resources and flows in the regional food system, and structuring opportunities for local economic solidarity, land preservation, and investing in the strengthening of community institutions. Reaching beyond the Lombardy region, Milan also extends its reach into policy formation with other regions around urban-rural landscapes and European territorial cohesion.

In conclusion, we believe that the case studies show the potential for new allies and constituents for sustainable agricultural production on the sub-national levels across Europe.

These new constituents can include both communities in urban and peri-urban, and also communities from rural areas, affected, as in the case of Malmö, by the policies and programmes of urban centres.

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Endnotes

ⁱ The mayor of Malmo, Ilmar Reepalu, became very active in the Committee of the Regions of the European Union, and at the time he was Sweden Chair of the Committee, presented on **“Malmö: Adopting an integrating and sustainable approach to urban development”**; the city has also been a long-standing member of the Local Governments for Sustainability (ICLEI) global network of local authorities, and regularly participates in other networks, such as the World Cities Summit.

ⁱⁱ “Process observations:

After the process finished, it was evaluated in detail. The most striking observations include the following:

- Good preparation is very important. Special attention should be paid to getting to know the area and its particular characteristics and setting up the recruitment procedures.
- Involving and gaining active cooperation from local organisations is especially laborious and time-consuming in the beginning, but it is essential for a successful project.
- Being present a lot in the area helps enormously. Above all, the public official who acts as project manager must be the new kind of public official: enterprising, involved and present in the area listening to local stakeholders.
- The people in the area have an enormous amount of knowledge. The most important thing is to recruit the right people for the project and to make use of their knowledge and contacts.
- The total project time must not be too long to keep people involved, but it is also particularly important that it is not too short to allow them to fully familiarise themselves with the concept of biodiversity. A total project time of a minimum of 3 months and a maximum of 6 months for the citizen phase and three rounds of working group meetings seems a good choice. After delivery of the citizens’ proposals, a separate co-production phase is advisable to clarify the connections between the citizens’ proposals and to draw up a local biodiversity action plan with support from the authorities. Including preparation, the co-production phase and completion, a minimum of one year must be allowed for in areas where there is already good local organisation.” (The Netherlands Ministry of Housing, Spatial Planning and the Environment, NA).

ⁱⁱⁱ Milan mayor’s office: staff and others providing technical support role with Milan Food Policy Council, and the Corsico municipal authority, - extensive networking with other local authorities on a regional basis, but also with wider local authority networks, exposure tours in central America, sharing ideas about the role of local governments in promoting sustainable food systems.

Collaboration between local authorities and a role for spatial planning professionals and the university linkages are exemplified with AESOP, a network of practitioners and academics sharing a food systems interest reflect an increasing within spatial planning and

development...better engagement with the practitioner base and the policymaking spheres with input from natural and social scientists is a key opportunity. (Personal interviews).