

Regional sustainability transitions:

Reducing the environmental impact of farming

Introduction

This research focused on three case studies of co-ordinated efforts undertaken to reduce the environmental impacts of agriculture.

These were the 'green tides' in Lannion's Bay, Brittany, France (which resulted from poor agricultural practices on an environmentally sensitive area), organic farming undertaken to improve water quality in Munich, Germany and the implementation of Integrated Farming Standards by large fruit growers' cooperatives in northern Greece. All three cases involve changes to farming practices, in response to problems caused by intensive agricultural production.

Since the 70's, the green tides have been major problem in Lannion's Bay (also called "Lieue de Grève"), located in the North of Brittany (France), at the extreme West of the Department of Côtes d'Armor, with consequences for tourism and of the image of the region. Studying the evolution since the 1990's of the efforts to stop this phenomenon is the objective of the first case study.

The second case studied is an organic farming support programme launched by the municipal utilities of Munich. Since 1880, the city of Munich has been sourcing their water in the Mangfall valley, south of Munich, in the Miesbach district (Upper Bavaria). The contract farmers are service-providers for a good potable water quality. A particularity of the region is that it hosts the largest continuous area under organic farming in Germany.

The third case study is about the implementation of Integrated Farming Standards by large fruit growers'

cooperatives in an area of northern Greece. The produce is both for fresh consumption as well as for canning of fruit and fruit salads. The area is the regional department of Imathia, in the region of Central and East Macedonia, Northern Greece.

Background

In the Imathia case, there is a history of intensive fruit production. Owing to the decline of the textile industry, a significant unemployment problem developed. Irrigated crops like peach tree, cherry, pear, apple trees as well as cotton, corn and sugar beat, give the picture of an intensive agricultural model. It is the main peach producing area in Greece. Currently vast areas are covered with peach tree monoculture while vineyards are located in the mountain foothills. The main aim of the farmers and their collective organisations has been to exploit the full potential of their land in order to produce the largest quantities possible thus increasing their subsidy receipts. Subsidies were given as a means to stabilise producers' prices hence quality has not been of real concern.

In Mangfall, agricultural production faces the challenges and opportunities of a less favoured area with a considerable scenic beauty, in the vicinity of a metropolitan urban centre. The question extensive dairy farmers, a lot of them part time, have been facing, was whether to invest in their farm and intensify or abandon agriculture. In the case of Lannion, intensive livestock production, is held responsible for a large share of the green algae appearance. A number of agricultural programs have been implemented to reduce nitrogen losses in the river since the 1990s, but green tides re-appear every year.

Global trends

The concept of sustainability, officially adopted in the Rio conference in 1992 and its particular expressions for the agricultural sector, has been particularly important to each of these case study areas. The main issue has been the increased concern about negative externalities caused by intensive agriculture, which has found its expression in different ways at the different case study areas. Linked to this are global concerns about food safety, which influenced two of the cases. These global concerns and trends, have caused responses by the society and authorities. Most prominent manifestations of the societal responses are the policy measures launched by the EU, state and/or regional and local authorities in reaction to the pressing issues. These policy measures (mainly through the two CAP pillars and EU environmental policy) have acted, in their turn, as external pressures to the initiatives under examination.

In the case of Lannion Bay a specific plan to reduce green algae (the main symptom of the environmental problem) was prepared with the involvement of all levels of administration, and local stakeholders. In Mangfall Valley, water quality improvement is stated as an objective of the state and regional territorial planning documents and hence a target for the respective authorities and administration sectors. However, the initiative under examination seem to be detached from these documents, rather as an agreement of two parties using existing policies to reinforce implementation of the agreement.

In the case of Imathia, as in all Greece, a reform aiming at the decentralisation of public administration has coincided with the implementation of policy measures run under the EU structural funds. Regional (NUTS2) authorities have been (up to 2010) appointed by the central government, hence they have been acting as mere transfer belts of policies. In this case, it seems that formal state institutions have played a role of minor importance.

What has changed

All three case studies are characterised by the prevailing role of technical change in their evolution. In Lannion Bay the change affected few specific land management practices, primarily consisting of the replacement corn or other cereal crops with grassland, while in Mangfall Valley and Imathia a more complex process of technical change has taken place since these included the change to organic and integrated methods of farming.

In Lannion Bay three phases have been distinguished as having already taken place while a fourth is expected. The first was a predevelopment phase, a few farmers began to rethink their agricultural production model. This was followed by a take-off phase: with the expansion of the association, networking and establishing collaboration with institutions and the partial inclusion of their rationale in national (CTE) and EU (AEM) policy frameworks. There was then an acceleration phase, divided into two parts: the failed one where the measures taken (merely technological adaptations), although implemented by farmers, did not have the expected results. And the new acceleration phase, currently ongoing, where the initial proposal of the niche actors has been partly adopted, supported this time by scientific research and accepted by the elected local authorities.

Key lessons learned

In Lannion Bay, France, the change towards grassland fodder system was thought as sufficient to solve the algae problems. This avoided a more radical change of the existing situation i.e. a change in all its elements (governance, politics, values, elites). However, at present, the algae

problem is still not resolved: the technical action on rivers' water reduced the nitrate concentration, but not enough to solve green tides problems. Recent research results suggested that the evolution of farming systems should probably be much more radical and connected to other actions in order to protect the environment of wetlands. This appears unlikely at present.

In Mangfall Valley, the particularity of the transition was the crucial role of one actor since farmers were not well organised. This actor is closely involved and has as its main goal to sustain the drinking water quality of the city of Munich at a high level. The initiative has been proved attractive due to financial incentives but also due to the fact that it constitutes a very good alternative in the dilemma 'intensify or abandon' imposed by the global trend. Since 1992, when the initiative started, organic farming has been the mainstream in the water catchments in the Mangfall valley. There were, then, few other water suppliers in Bavaria and Germany that were operating in voluntary collaborations with farmers in the catchments. Twenty years later, most federal states suggest voluntary collaborations as well-functioning practice. Nevertheless, this type of arrangement has not yet been taken up into any Water Acts except the one of Lower Saxony.

In Imathia, transition is characterised by the strengthening of collaborative action and collective institutions. Although its main objective stated was the enhancement of environment practices, the initiative addressed an important deficiency of the previously existing production system: the failure to ensure an acceptable (by the market) level of pesticide residues. The initiative was adopted to fit the needs of Producer Groups. The realisation of the potential of the initiative i.e. rationalisation of management practices and increased role of advice, both technical and managerial, led to a reorientation of the Producer Groups' goals since they could reduce environmental impacts and economic costs and improve quality.

In the two latter cases the technological changes embedded in the initiative, contributed significantly, towards an improvement of the situation concerning the sustainability issue addressed by the initiatives, something that cannot be said for the Lannion bay case. This can be one of the factors that could explain the success of these initiatives.

Another factor that could have contributed in the transition process in the Mangfall and Imathia areas, have been the early adoption of the initiative by the existing actors and networks while in the case of Lannion Bay, although the initiative has been the constituting reason for the formation and expansion of a new network, existing actors and networks have not been placed favourably for the initiative, but rather rely on the mere technological change for the solution of the acute problem.

For further information

See the FarmPath project web-site:

www.farmpath.eu

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