

Abridged version of study

Nature conservation in the agricultural landscape at a crossroads

Failures, successes and new approaches

on behalf of the Michael Otto Foundation for Environmental Protection, April 2014

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Foreword

Dear Readers,

The diversity of natural life forms is the legacy of many millions of years of evolution history, for which we are responsible in a special way. Unlike previous generations, people today now have the ability to transform nature through their ways of living and doing business to such an extent that habitats become lost and biodiversity dwindles. This process has already begun with the onset of industrialization and accelerated dramatically over the last six decades. Protecting nature is not only a moral obligation but also an economic necessity. In other words, if we continue to idly watch the extinction of species, we cut off our noses to spite our faces.

The government has recognised the need to act and adopted the National Strategy on Biological Diversity in 2007. We must accept the fact that the objectives set to protect biodiversity are far from being achieved. The loss of biodiversity and the loss of natural habitats is steadily on the rise in Germany and a reversal of this trend is not in sight. Understanding the reasons behind this loss and promoting the conservation of biodiversity is therefore an important concern of my foundation.

In this respect, the Michael Otto Foundation for Environmental Protection is especially dedicated to the issue of agricultural biodiversity which is endangered in a very special way. This is because agricultural businesses are today under very high economic pressure which they attempt to cope with through constant increase in production. The goals of intensifying agriculture on the one hand and preserving biodiversity on the other hand are often diametrically opposed. It is precisely because of this conflict that cooperation between nature conservation and agriculture is urgently needed today. With support by government and science, common approaches and effective measures to protect biodiversity in agriculture can be discussed in and developed.

To stimulate such a dialogue, the Michael Otto Foundation commissioned the present study which is not limited to a simple review of the effectiveness of conservation measures, but rather deduces claims from the study which are then used to enrich the overdue dialogue. The study is therefore recommended to all those persons who, in preserving biodiversity in rural areas, are open to harmonising nature conservation and agriculture.



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Initial situation

The greatest threat to biodiversity lies in the competition with economic land use. This is true in Germany as well as in most other European countries and especially applies to the agricultural sector. About one-half of Germany is comprised of land used for agriculture which is why undesirable developments carry a particularly high significance in this country. Agriculture in Germany has become more intense in recent decades. For several years, arable land has no longer been exclusively used for the production of food but also for the production of renewable fuels such as biodiesel and biogas. A shift from fossil resources to renewable agricultural products will not just occur in the energy sector, it will also gain in significance in other sectors of the economy. Farmland can hardly be expanded to include more area. As a result, pressure to use the land will rise, leading to further intensification of production.

Against this backdrop, the present study aims to analyse the extent of the effectiveness of currently available instruments in nature conservation and ascertain as to whether they are sufficient for future needs. This involves identifying factors of success and failure in an initial step, subsequently followed by introducing alternate methods of nature conservation prevalent in other countries. Finally, the case of whether these methods can be applied to Germany will be investigated.

The study does not pursue the intention to demonstrate a decision for the “proper” path in nature conservation in Germany. Rather, it aims to summarise key facts for discourse among experts. From a perspective standpoint, the study aims to contribute to a discussion in a larger social context.

Given several alternative strategies for nature conservation, the central question needs to be raised as to which direction nature conservation in the agricultural landscape of Germany should take in terms of management for the benefit of protected goods.

The situation with biodiversity in the agricultural landscape is dire. Of 20 typical farmland breeding birds in Germany, 15 species are currently on the decline on farmland. No species has been increasing. Three species have declined in population by more than half since 1980. Six of the eight meadow birds (grassland-breeding waders) have strong negative breeding population trends, with two of them in danger of extinction over the next few years in Germany. In addition, the area of wet grasslands rich in plant species has declined in the floodplains of Northwest Germany by 85 per cent since about 1950. The size of mesophilic (semi-humid) grassland area has shrunk, primarily due to rededication to intensive grasslands, by about 84 per cent. Projections show that the populations of typical plant species of humid and mesophilic grasslands in this period dropped by 95 to 99 per cent as did those of arable land. Thus, only small populations often many of the characteristic, formerly widespread species remain today.

Given this situation, it is obvious that conservation measures taken up to now have not been successful, as they could not compensate for the losses caused by the intensification of agriculture. Through several examples (farmland birds, grassland birds), it will be examined whether the measures taken remained unsuccessful due to insufficient extent or lack of quality.

Analysis of failures and successes

Birds on arable land

Certain agri-environment schemes (known as ‘dark-green measures’), the establishment of protected areas and targeted conservation measures are the instruments to protect the birds of arable land such as the partridge, skylark and corn bunting.

Agri-environment measures in Germany which are effective for birds on arable land comprise less than 0.5 per cent of the farmland area. Several studies, however, show that about 10 per cent would be necessary to stabilise populations. A key criterion regarding the quality of agri-environment measures is to review their effectiveness regularly through monitoring. A study revealed, however, that this only occurs in two or three states in Germany, with the city-states not counted. It can therefore be assumed that it is not known how most agri-environment measures impact bird populations on arable land. The relatively low number of evaluation reports available suggests that consultation and cooperation at the operational level are vital. It is also apparent that ecologically farmed areas have higher average bird populations than conventionally farmed ones. As organic farming has now reached

an area of more than 6 per cent, of which, however, only a part refers to arable land, a certain conservation potential for farmland birds does exist.

The establishment of protected areas has been able to make only a relatively small contribution in terms of protecting birds of arable land. This is in part due to the fact that the percentage of area is too small (national parks, nature reserves). In other cases, arable habitats do not fall under the EU FFH Directive and are therefore under-represented (national parks, nature reserves, Special Areas of Conservation). Or the reserve regulations stipulate few or no restrictions in agriculture (landscape protection areas, nature parks, EU bird sanctuaries). Only for some biosphere reserves could a protective measure be established. This is attributable to a high percentage of organic farming in these areas.

For some bird species of arable land, including the great bustard and Montagu’s harrier, successful wildlife conservation measures are in place. These are primarily concerned with protecting offspring from predators or agricultural activities.

Grassland birds

Significantly more agri-environment measures have been implemented and reserves established for grassland birds whose threatened existence has been known for quite a longer period as for farmland birds. However, neither the loss in grassland nor population decline was prevented even in protected areas, in particular, in EU bird sanctuaries (SPAs). The breeding populations of some species developed within protected areas at times even worse than outside such areas. There are obviously still major shortcomings in the management of protected areas or in implementing measures. Yet for most species, the protected areas are the only chance for survival. The reason for this is that the needs of grassland birds are no longer compatible with those of intensive grassland farming in most places.

A detailed analysis of various conservation efforts in more than 70 grassland bird sites has shown that the measures do not always led to an increase in population. Successes were particularly prevalent when rising water levels were combined with cultivation restrictions in a large section of the area, for example, abstaining from early mowing. Projects which consisted of specific agreements with individual farmers and

were able to prevent loss of eggs and chicks caused by agriculture also had positive effects. Less effective were those projects in which protective measures had been carried out on only a small section of the area. The same applies to those projects in which only the water level was increased, but no other measures were taken.

In a second step, other factors beyond the protective measures were considered in the analysis. It was found that in addition to quality and scope, personnel expenses for monitoring protective measures (measured in job equivalents per km²) had the greatest impact on the success of the project.



Farmland plants

Numerous field margin programmes were launched on farmlands, among others, as part of agri-environment schemes. However, many of the field margins were only available for a few years. This was due in part to bureaucratic obstacles. The continuity necessary for protecting the target species was therefore often not achieved. Organic farming is generally too intensive and requires too dense agricultural crops to be able to significantly support specialised target species. The remaining characteristic flora of arable fields is seriously threatened by further intensification and the loss of set-aside.

There are many relatively successful projects in grassland conservation to maintain wet grasslands or recultivate them. However, these usually comprise only a small area and are

hardly connected to each other. Good results were achieved in preserving and recultivating dry grasslands, especially in central and southern Germany. However, each case also mostly consisted of only small areas. The largest shortcomings are in preserving mesophilic grasslands.

Overall, the protection integrated in production does not appear to be very promising in the medium term. The reason is that the decisive factors “Very extensive use” and “long-term” are hardly attainable. Only segregative protection through “field reserves” appears to be productive. This is also been demonstrated by the project “Protected farmland – 100 fields for diversity” which succeeded in preserving a habitat network for the most endangered plant species of arable field in Germany.

Conclusion

The following may be drawn from the analysis:

1. The extent and quality of protective measures in Germany are currently unable to stop the alarming loss of biodiversity in the agricultural sector.
2. The finalised “Greening” for the new CAP funding period can also not be expected to bring any significant improvements.
3. It is known which individual protection measures are effective for (almost) all farmland birds and plants.
4. Successful conservation projects are characterised by high personnel costs needed for on-site implementation and monitoring. If these were to be intensified, many protective measures could become significantly more effective. It is therefore recommendable to allocate funds in the amount of roughly one-quarter of the funding for monitoring and maintenance.

To prevent fauna and flora populations in large areas of Germany’s farmland from becoming depleted, new and innovative protective methods are urgently needed. These must combine ambitious, area-specific with more general cross-regional measures and offer accompanying consultation services. Such approaches are being sought after in other western and central European countries in which similar problems exist with biodiversity in the agricultural sector. Approaches in the UK and in Switzerland have been found to be of particular interest and are briefly outlined below.

Alternative approaches

The Hope Farm of the Royal Society for the Protection of Birds (RSPB)

In 2000, the RSPB acquired a 181-hectare, conventionally arable farm in southeast England. The private conservation organisation wanted to demonstrate with this site how farmland bird species can be supported through targeted management without operations suffering economically.

The Hope Farm is roughly the same in size, location and management as of average neighbouring sites. It continues to be managed conventionally. Specific measures to support farmland birds are carried out on an area section of approximately 3 per cent of the land, predominantly on the field margins. These include sowing cereals and perennial mix seeds that provide shelter in winter and food for granivorous bird species. In addition, nectar-rich flower mixtures are grown to provide for insectivorous birds during the breeding season. These activities are conducted such that they are eligible for consideration as agri-environment measures. Skylark plots are created in the winter cereal fields. This comprises a large area of roughly 20 m² that has not been sown, and is spread between the fields. There are two plots per hectare. The use in amount of pesticides was able to be reduced at the Hope

Farm because a pest-resistant variety of winter wheat is grown. In addition to oilseed rape and winter wheat, spring beans were introduced as a third rotation crop to guarantee at least one spring-sown seed in the rotation. All other aspects of arability correspond to those of the surrounding farms.

By using the measures described, the populations of all target species have increased. The skylark population quadrupled within eleven years, and the partridge population has established itself again. At the same time, the operation maintained its profitability, ranking among the 10 per cent of the most profitable businesses around. Both nature conservation as well as economic figures are regularly published by the RSPB to ensure that each step of the procedure is transparent.

The Hope Farm also serves as a centre of research and is a demonstration project which is visited by many interested farmers and researchers. Despite its success, however, the project does not have any direct imitators. Even so, many of the findings from the Hope Farm project have been incorporated into the design of conservation schemes for farmland birds.

The Swiss approach

In Switzerland, farmers are obligated to demonstrate ecological service in their operations once they wish to receive government subsidies. Despite this approach, however, similar problems related to protecting biodiversity exist as in Germany. As new competitors on the Swiss market appeared, the following idea emerged: a unique selling proposition was developed and a market segment between conventionally and organically produced products created using products from a biodiversity-friendly economic situation. The impetus for this approach came from the IP-Suisse, an agricultural association, and Migros, the largest food retailer in Switzerland. The IP-Suisse now expects additional efforts from its members to promote biodiversity. Trade rewards these efforts through higher producer prices which in turn are financed by higher consumer prices. Efforts to promote biodiversity are evaluated using a point system. This information must be personally entered by the farmers annually in forms, and random checks are performed during annual inspections. Points may be earned especially for quantity, quality and location of priority areas for nature. Measures on the production area such as abstaining from the use of herbicides are also rewarded. A performance review shows that there is a close

correlation between the number of points earned and biodiversity on the farms.



Outlook

This raises the question whether the practices from the UK and Switzerland can be applied to Germany and what form they could potentially take. The next steps of action required must also be considered. Ultimately, the role played by the Michael Otto Foundation for Environmental Protection in the process should be reviewed. An expert workshop took place on 4 September 2013 at the invitation of the Michael Otto Foundation in Hamburg, Germany to discuss these issues in a broader framework. The suggestions arising from this event are summarised briefly below:

1. The Swiss approach does not appear to be directly applicable to Germany. This is because a price range for integrated production between organic and conventionally produced products in food retail has not yet emerged in Germany. In addition, the market conditions in Germany and Switzerland appear to be quite different. However, the point system for assessing the biodiversity efforts of farmers developed in Switzerland was met with great interest.
2. Demonstration operations as the Hope Farm were considered by all the experts as an urgent necessity for Germany. They show that protecting biodiversity at maximum operational profitability is possible. Many methods for implementing such a project were discussed. During the discussion,

however, it became evident that, an initial feasibility study should be conducted. This could show which variations are possible but also which advantages and disadvantages they each have. Concrete initiatives should only start once the study has been completed. A key question to be addressed is whether the project can be better implemented by purchasing a farm or through long-term contractual commitments with farmers. Furthermore, it should be investigated as to who should take over sponsorship of the project to gain maximum acceptance among farmers.

3. Investigations of the protective measures in both ornithological and botanic areas have shown that good professional support is a key factor to success. This means that the attempt to establish the topic "Protection of biodiversity" in general agricultural guidance is very promising.

Michael Otto Foundation for Environmental Protection

As a breeding ground for innovative ideas, the Michael Otto Foundation strategically campaigns for future-oriented perspectives in environmental and nature conservation as well as sustainable development. We also invest in education and research in eco-friendly activities and support projects focused on preserving rivers, lakes, floodplains and wetlands. The Michael Otto Foundation aims to lead the way and create an impetus for further best-practice initiatives aimed at preserving a liveable environment for future generations to enjoy.

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