

DIVERSITY OF NATURE CONSERVATION PERFORMANCES ON ORGANIC FARMS

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Introduction

The loss of biodiversity is apart from climate change the most critical global environmental threat. Therefore, ambitious strategies have been adopted to halt the loss of biodiversity and ecosystem services by 2020 (EU, 2011). Besides many well documented advantages of organic farming for the protection of wild flora and fauna inherent in the system (e.g. Tuck *et al.*, 2014), there are special effective nature conservation measures which can be integrated by adapting common agricultural practices on specific requirements, e.g. later cut on forage fields to protect ground-breeding birds (Stein-Bachinger & Fuchs, 2012). Based on the wish of farmers to evaluate and increase nature conservation performances on the farm and to use them for marketing purposes, the organic farmer association Biopark initiated the project ‘Agriculture for Biodiversity’ together with WWF and the Ministry of Agriculture in Mecklenburg-Western Pomerania, Germany. The goal was to develop and implement an evaluation system, which includes the already existing and additional nature conservation performances for the whole farm. Moreover, a better transparency of these performances should encourage consumers to buy organic products that are produced on farms with high biodiversity and special measures for promoting wild farmland species.

Materials and Methods

We developed a catalogue of 109 nature conservation measures and performances (modules) for arable-/grassland and landscape elements for North-East Germany (Gottwald & Stein-Bachinger 2015). Measures from agri-environmental programs were included. Some measures comprise several modules that protect different target species as well as cause different costs for the farmers. Each module was evaluated by a group of experts with a point system according to its efficiency for nature conservation. In total, 120 points per 100 ha based on a whole farm evaluation are necessary to receive a nature conservation certificate, which enables the farmers to get a premium price for their products from the wholesaler. Farmers who work according to the organic standards of Biopark can participate. They are free in choosing different combinations of nature conservation measures and get support from consultants.

Results and Discussion

So far, 46 Biopark-farmers in North-East Germany (31,000 ha, from which 11,000 ha are arable land and 20,000 ha grassland) received the additional nature conservation certificate. Thirty nine farms are mixed farms with arable and grassland, while seven farms manage extensive grassland exclusively. Typical for that region are fairly large farms (on average 680 ha). The site conditions are characterized by low annual precipitation (<600 mm) and low to medium soil quality. Most of the farms keep suckler cows, and only three are dairy farms. On average, 18 nature conservation modules have been implemented considering all 46 farms, while 92 different modules as a whole have been chosen. Mixed large farms (>751 ha) tend to implement a more diverse range of nature conservation modules (NCM) (Table 1). Farms with only 4–5 NCM are mainly extensive grassland farms that implement special effective agri-environmental measures like delayed use of grassland on a large scale. The results show that farms can reach the nature conservation certificate in different ways.

Table 1. Number of nature conservation modules (NCM) implemented on 46 organic farms in North-East Germany (2015)

Farm Size Categories	Number Of Farms	Average Number Of NCM	Minimum Number Of NCM	Maximum Number Of NCM
< 250 ha	13	16	5	24
251–500 ha	8	13	4	20
501–750 ha	8	17	4	28
751–1000 ha	7	24	15	33
>1000 ha	10	23	14	40

Conclusions

As farmers seek alternative ways to balance multiple environmental and economic goals, there is a high potential for the protection and increase of biodiversity with the engagement of other stakeholders in the whole food chain (Firbank, 2005). Nevertheless, tailor made information and advice for the farmers on effective nature conservation measures is indispensable and need to be developed simultaneously. This new evaluation system allows farmers a high flexibility to implement different nature conservation measures which are suitable for a particular farming system. An adaption on different regions in Germany is planned. Consumers get information about the farms and their nature conservation performances on the project website. We hope that this will encourage farmers and consumers to actively promote biodiversity.

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References

- EU.: 2011. *Biodiversity Strategy*. http://ec.europa.eu/environment/nature/biodiversity/strategy/index_en.htm
- Firbank L.G.: 2005. Striking a new balance between agricultural production and biodiversity. *Annals of Applied Biology*, **146**:163–175.
- Gottwald F. – Stein–Bachinger K.: 2015. *Landwirtschaft für Artenvielfalt – Ein Naturschutzstandard für ökologisch bewirtschaftete Betriebe*. www.landwirtschaft-artenvielfalt.de, pp. 208.
- Stein–Bachinger K. – Fuchs S.: 2012. Protection strategies for farmland birds in legume–grass leys as trade–offs between nature conservation and farmers’ needs. *Organic Agriculture*, **2**:145–162. Springer.
- Tuck S.L. – Winqvist C. – Mota F. – Ahnström J. – Turnbull L.A. – Bengtsson J.: 2014. Land–use intensity and the effects of organic farming on biodiversity: a hierarchical meta–analysis. *Journal of Applied Ecology*, **51**:746–755.