

Effects of Dutch agri-environment schemes

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In *Nature* of October 18th, 2001 (Vol. 413), Wageningen University presents the results of a study on agri-environment measures in the Netherlands. Their findings seem to indicate that the Dutch scheme is not effective or even counterproductive. However, analysis of the presented methods and results reveals that firm conclusions are not justified. Moreover, improved management schemes are recently established.

Kleijn et al. present the results of a Wageningen University study on the effectiveness of Dutch agri-environment schemes, claiming that they are ineffective. As these green farming schemes are generally considered to be an important instrument for biodiversity conservation, the disappointing results have been generating much publicity and commotion, in the Netherlands as well as abroad. For this reason, it is important to know whether the study involved justifies this commotion.

Context of the study

In the Netherlands, where national and regional farm conservation schemes exist since the early 1980s, it is a known fact that some management prescriptions are more effective than others. This has been shown in an extensive series of evaluation studies. This knowledge has been used to design a new national farm conservation scheme, co-financed by the EU, which started in 2000. However, the study by Klein et al. involves two grassland management types from the 'old' scheme: postponing the mowing date for the benefit of grassland birds and botanical grassland management. When considering the results, one should be aware of the following facts:

- several scheme improvements have already been included in the new scheme. For grassland birds, a much more regional approach has been chosen, enhancing a mosaic-like mixture of bird conservation measures for areas over 100 hectares. Under the Dutch circumstances with many relatively small and medium-sized family farms, this minimum area stimulates farms to co-operate. Under the new scheme, 35% of about 100 farmers' co-operatives have concluded such collective contracts including mixtures of protection measures;
- the study includes only two types of conservation measures. Conclusions on these two measures cannot be generalized to the effectiveness of the whole scheme or the effectiveness of non-scheme (e.g. voluntary) farmland conservation measures;
- all agri-environment programmes of EU member states have been evaluated a few years ago. There has been severe criticism on the effectiveness of some scheme elements or the omission of adequate monitoring programmes. As these programmes are substantially co-financed by the European Commission, there is constant pressure from the European Commission to improve the cost-effectiveness of the programmes.

Methodological criticism

Let us be clear: a further and continuous improvement of agri-environment schemes is necessary. This needs to be based on solid monitoring programmes and reliable evaluation studies. The recent study of Wageningen University does – to our opinion – not qualify as such. The methodology used and the results presented raise serious questions:

1. The study compares scheme and non-scheme fields (of 2 ha average and for grassland birds also the surrounding fields up to 12.5 ha) in only one year – a diachronic or transversal approach. This is a fast method, but of limited value. It is generally accepted

that time series, comparing the *development* of bird populations under different regimes, provide much more conclusive evidence. The method applied does not account for differences between fields at the start (e.g. in bird density), which may be substantial and can overshadow the management effects for a long time.

2. No data are presented on the management of the control fields. As voluntary nest protection (otherwise than by mowing late) is almost common practice in important bird areas, there is a fair chance that bird protection measures have been taken on control sites as well. Nowadays voluntary nest protection takes place at one quarter of the Dutch grassland area. If nest protection is practiced on control fields, the study may have compared two types of bird protection rather than measuring the sole effects of management contracts. Recent research shows that bird populations in areas with nest protection are doing better than those in areas without protection.
3. The fields with botanical conservation were under management contract for (on average) six years. As it can take up to 10 years to find substantial differences, this period is rather short.

Farmland conservation versus nature reserves

As postponing the first grass harvest is generally assumed to be effective, the authors are surprised to find no effect of this measure. Instead, they suggest that the disappointing results are caused by soil food shortage due to an insufficient nutrient level. This is surprising, as several soil fauna studies show that macro fauna rarely a limiting factor under management contracts.

In this context, it is even more surprising that (in the Dutch media) the authors suggest creating nature reserves for grassland birds by buying out farmers rather than concluding management contracts. Under strict reserve conditions, manuring and fertilization are often reduced to very low levels, especially as organic manure is concerned. In some grassland reserves, research shows that bird populations have decreased probably due to a decline in soil fertility. In addition: if the authors wish to shift conservation budgets from farmland conservation to land withdrawal for nature reserves, they would at least have to compare the cost-effectiveness of both conservation strategies – which they did not.

Evaluation

It is true that unequivocal studies on the positive or negative results of management schemes are still scarce, as it takes several years before the effects become apparent. Also, proper research is quite complicated, especially now that ‘unprotected’ grasslands are hard to find. Evaluation studies are therefore complex and need to include a rather extensive management period. Nevertheless, thorough evaluation of the various management schemes, in agricultural areas as well as in nature reserves, is indispensable to yield biodiversity benefits for the money spent. However, the discussion on agri-environment schemes and policies does not benefit from disputed research and jumping to conclusions.

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