
An overview of the current Reg. 1257 evaluation practices with particular reference to agri-environmental measures in Germany

Karin Reiter and Wolfgang Roggendorf¹

1 Introduction

The regulation for the promotion of rural areas (Reg. (EC) No 1257/1999) and its subsequent regulation (Reg. (EC) No 1853/2003) serve as the basis for EU agricultural structural policy for the promotional period 2000 to 2006. Promotional areas established through the individual regulations such as agricultural development measures, measures to improve competitiveness and the previously accompanying measures of the agricultural reform in 1992, as well as compensatory allowances for disadvantaged areas, are initially consolidated in these two regulations. The Commission's overall intention is to adjust the promotional areas in terms of time and content and thus to target promotional synergy. A further change in the promotional approach is that the nine promotional areas of the regulation are to be evaluated by independent evaluators according to a Commission designed European-wide evaluation grid (European Commission, 2000). The processing of the common evaluation questions is obligatory, should a question or part of the questionnaire not be answered, an explanation must be included (ibid., P. A-3). The Commission reserves the right to stop EU co-financing should the evaluation not meet its criteria.

The chronological course of the evaluation is divided into a mid-term evaluation, which was to be presented to the Commission at the end of 2003, and an ex post evaluation. The goal of the mid-term evaluation is, among other things, to reveal basic errors in the approach and to evaluate the implementation and administrative execution² of the promotional areas. In addition, the Commission recommends that member states carry out an update of the mid-term evaluation until the end of 2005³ (European Commission, 2003), since the results of the ex post evaluation planned for the end of 2008 can not flow into the substance of the new promotional period due to its late timing. Germany will take advantage of this opportunity.

¹ Institute for Rural Studies, Federal Agricultural Research Centre (FAL), Bundesallee 50, 38116 Braunschweig, Germany
Phone: +49 531 596 5221, Karin.Reiter@fal.de Wolfgang.Roggendorf@fal.de

² Implementation and administrative execution of the promotional measures are part of the mid-term evaluation by the FAL. The methodology of the evaluation and results are not included in this article due to the length of the report. The unedited mid-term evaluation can be found on the homepage of the Lower Saxony Ministry for Rural Areas, Nutrition, Agriculture and Consumer Protection under "Current" (<http://www1.ml.niedersachsen.de/proland/frameindex.htm>).

³ „While an update to the mid-term evaluation (envisaged for 2005) is optional it is highly recommended by the Commission.“

In Germany, the Reg. (EC) No 1257/1999 is executed in accordance with the federal principle through the German federal states as so-called development plans for rural areas (EPLR). Thus Germany has 16 state programs. The German Federal Agricultural Research Centre (FAL) was assigned the mid-term evaluation of the EPLR by the states of Schleswig-Holstein (SH), Lower Saxony (NI), Hessen (HE) and North Rhine-Westphalia (NW) as well as the City States of Hamburg (HH) and Bremen (HB). Thus, the FAL is the only German agency accompanying a large number of state programs. This paper places a focus on critical reflection about the evaluation grid required by the Commission with regard to its use in the evaluation process using the example of agri-environmental measures.

2 The Promotional Basis of the Agri-environmental Measures

Article 22 ff. of the Reg. (EC) No 1257/1999 covers the framework for the shape of the agri-environmental measures (AEM). It was established that:

- without exception the beneficiaries have to be farmers;
- the obligatory participation period for AEM is five years⁴;
- obligations with regard to agri-environmental measures must exceed the good farming practices;
- The compensation is calculated on the basis of loss of income, additional costs due to obligations met and the need to offer an incentive to participate. The incentive component can be a maximum of 20 percent. The compensation is graded according to type of land use (annual crops, perennial special crops and other land use). The maximum amounts of promotion per land unit are defined. The EU co-finances half of the payments for the former German federal states and 75% in the new German states as an Objective 1 Area. Overdrawing is possible with permission from the Commission. These so-called Top-ups, differences between the highest sum according to Reg. (EC) No 1257/1999 and give support, are not co-financed.

In contrast to the aspects listed, the content the agri-environmental programs must take is kept very general (see Art. 22, Reg. (EC) No 1257/1999) and allows the states a great deal of freedom in the shaping of programs. The agri-environmental measures, in comparison to the two other promotional chapters of the Reg. (EC) No 1257/1999 are an obligatory part of the EPLR. This single fact shows how great their relevance is.

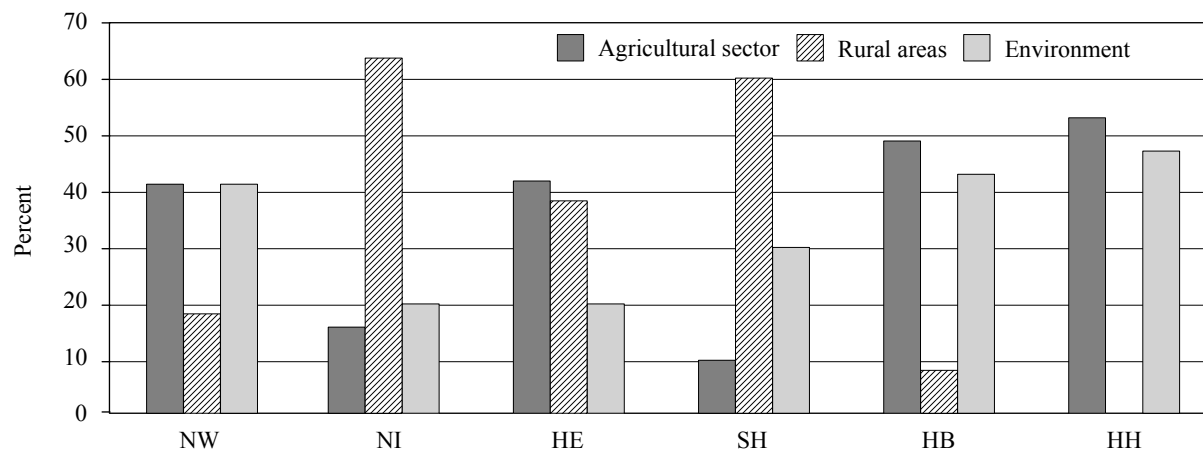
3 The financial significance of environmental measures

Fig. 1 shows the financial significance of the promotional areas measured by the public funding. Three categories are shown: a) the agricultural sectors: here the payments of the individual farm investment promotion and the market structure improvement are included; b) rural areas: these category includes the so-called Article 33 Measures (village renewal, land reallocation, etc.); and c) public spending for the emphasis on environment: this includes agri-environmental measures, the compensatory allowances for areas with specific environmental limits and – if provable – investment projects of the Article 33, primarily supporting environmental goals. The calculations are based on the financial information given by the states for the EU Fiscal Year 2002. From this presentation it can be seen that the volume of expenses for environmental measures includes 20 to 40 percent of the total volume for the states, and is significantly more than 40 percent for the city states. With regard to the significance of the three presented promotional areas, it must be observed that the environmental

⁴ For certain types of programs, a longer participation period is required due to their environmental impact (For example for long term set aside, the participation period is ten years)

measures tend to be over-estimated. This can be explained in that environmental measures are mostly area related support and the payments are realized annually. The other areas of intervention mostly include investment measures, which as a consequence of their long preparation up to payment, can only have a late impact on the budget.

Figure 1: Public fundings 2002 seperated in promotional areas



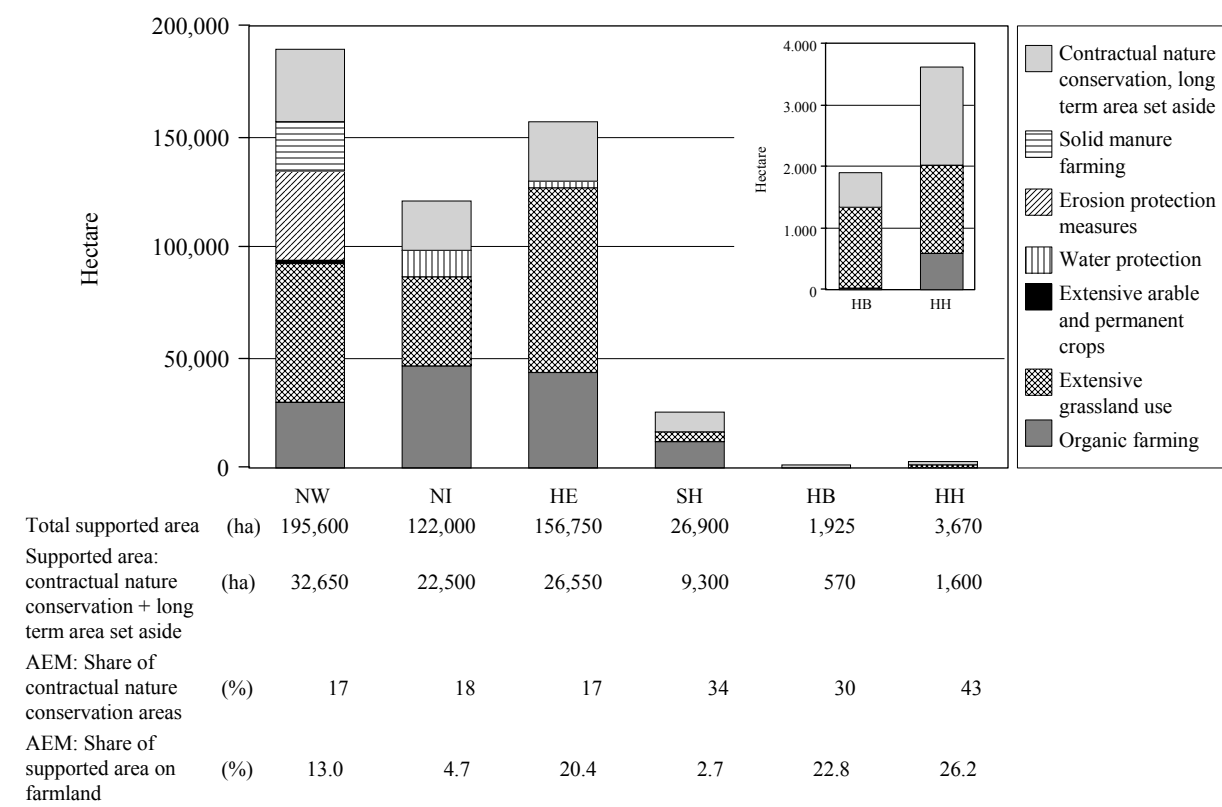
Source: Regina Grajewski (2004).

4 The Spectrum of Agri-environmental Measures

The strong similarity of the agricultural environment programs in the six states can be explained in that the promotional approaches of “market and site-adapted agriculture” (MSL) are a promotional instrument for the „Common task for improvement of agricultural structures and coastal protection” (GAK). The MSL is concentrated on a few promotional activity areas. These target the promotion of the extensification of the land use, particularly through the elimination of chemical-synthetic fertilizers and plant protection substances, as well as the establishment of maximum stocking rates for each unit of land. In addition, organic farming is promoted, and since 2003, several measures⁵ are financed through the redistribution of the national modulation.⁶ The financing of the MSL measures is 60 percent by the German federal government and 40 percent by the state. If EU co-financing is considered, the state contribution for MSL measures in the former German states is 20 percent and in the new 10 percent, up to the promotional upper limits of the GAK. Measured targeted explicitly at contractual nature conservation are excluded from the GAK, since nature conservation is solely the responsibility of the states. This is also the reason why the contractual nature conservation measures of the EPLR in Germany are much more heterogeneous than the pure extensification measures. The agri-environmental programs of the six federal states are comprised, as is typical for all state programs, of contractual natural conservation and pure extensification measures. Of the extensification measures, the MSL measures “Promotion of organic farming,” and “Promotion of extensive grassland farming,” are the most important both in terms of area and promotional sums (see Fig 2). Among the six states, only North Rhine Westphalia and Lower Saxony offer extensification measures above the MSL promotional level. NRW supports, for example, solid manure farming and erosion protection measures, Lower Saxony offers specific extensification measures to protect ground and surface waters in preferred water areas. The portion of agri-environmental in areas fluctuates just as strongly as the portion of contractual nature conservation areas (see Fig 2).

⁵ Modulation measures do not flow into the mid-term evaluation since only measurement data up to and including 2002 are to be considered.

⁶ Financing: in accordance with the German funding limit of 80 percent from the national government and 20 percent from the state government.

Figure 2: Range of agri-environmental measures in the six federal states

Source: Own calculations based on promotional data (2002).

5 The evaluation grid of the Commission – the common evaluation questions

With regard to the common evaluation questions, let it first be said that the authors welcome the introduced obligatory evaluation of the promotional levels for rural areas with standardized criteria. Ideally, these create transparency about the public funding spent, their efficiency, and thus allow a comparison of funding efficiency between the individual promotional areas as well as a state comparison. The problem is in the details.

The common evaluation questions of the Commission are following the promotional chapters into nine chapter-specific question complexes as well as in one set of cross cutting questions. These cross cutting questions look at distributional, occupational, income related, market position and general environmental effects of the support with consideration of displacement and transfer effects. The chapter-specific questions for agri-environmental measures are solely concentrated on their resource protection impact. The contribution of the agri-environmental measures is questioned in terms of protection of the abiotic resources soil and water⁷ as well as biological diversity, also landscape protection aspects and cultural historical contributions of the AEM must be processed. While the “old” agri-environmental measures of the previous promotional period (Reg. (EEC) No 2078/1992) according to the goals of environmental protection, market relief and income security (for agriculture) were to be evaluated, the evaluation grid for Reg. (EC) No 1257/1999 for the “new” measures is concentrated on environmental resource protection impacts. Socio-economic effects are to be evaluated for the total promotional approach.

The evaluation questions for the agri-environmental measures can be subdivided into two categories. The first, clearly the most important, is targeted at the proving of area totals. The areas supported to protect the individual resources must be presented. This implies that the promotion should primarily provide environmental resource relief and avoidance of additional environmental

⁷ The resource air is not considered

pollution. The level of resource protection can not be determined on the basis of area sum. Here, the second category of the common evaluation questions is suitable, which must be processed only for chosen criterias, such as for example the proving of nitrogen balance for specific water protection measures.

The Commission allows the evaluators to choose their own evaluation method. But its Guidelines to Evaluation Programs for the Development of Rural Areas in the Time Period 2000 to 2006 (General direction agriculture, 1999) sets standards, so that, for example the net effects of the promotional measures must be shown and refers in this context to “with and without comparisons” and “before and after comparisons.” Basically the Commission stresses the appropriateness of expenses for evaluation and the level of promotional funding.

6 Advantages and Disadvantages of the Evaluation Grid

The Commission’s evaluation grid has both advantages and disadvantages, these are listed briefly below:

- the evaluation grid provides a set of relatively simple indicators, which is the necessary basis for a partially standardized report. European-wide statistical data is available for many of the indicators. But this information is generally not suitable for an evaluation of the AEM from the perspective of the German federal states due to a lack of dissolution and require deeper analysis.
- It seems problematic that the questions are only partly in accordance with common indicator models (OECD, FAO).
- The principle of documenting the protection of resources by accumulation the promotional areas presents a limiting but practical approach. Since the often very complex interplay of ecological effects is difficult to prove and the actual effects can only be assessed with complicated studies, the emphasis of the evaluation grid is on pressure- or driving-force indicators. These illustrate production-related and management-oriented impacts⁸ and help provide a basis for estimating the environmental impact of various forms and patterns of land use.
- The indicator set permits multiple tallies with its differentiation of the resources to be protected. This is due to the fact that no clear causality is defined between the AEMs and the protective goals with regard to the resources. Thus an agri-environmental measure can in extreme cases contribute to the protection of all resources (soil, water, biodiversity and landscape) and thus be calculated in each subcategory of the evaluation grid. Since differences are to be expected in the evaluation approaches of individual countries and states, European comparisons should attempt to make clear and similar types of assessments, meaning a definition of evaluation standards.
- The evaluation approach presented focuses on the impact of the agri-environmental measures per area unit. To simplify things, the considerations assume that the environmental impact of every area unit to be count is the same. An impact modification according to the locational conditions and the environmental situation of the promoted areas is not obligatory according to the evaluation requirements. This approach implies in some cases seriously false assumption of the environmental impacts since a highly endangered area is assessed with the same weight as an area weakly or not at all affected.

7 The evaluation scheme of the agri-environmental measures within the six state evaluation

Assuming the deficits presented in the evaluation grid, the authors have developed an evaluation scheme to partially compensate for the weaknesses mentioned. This evaluation approach will be presented in the following.

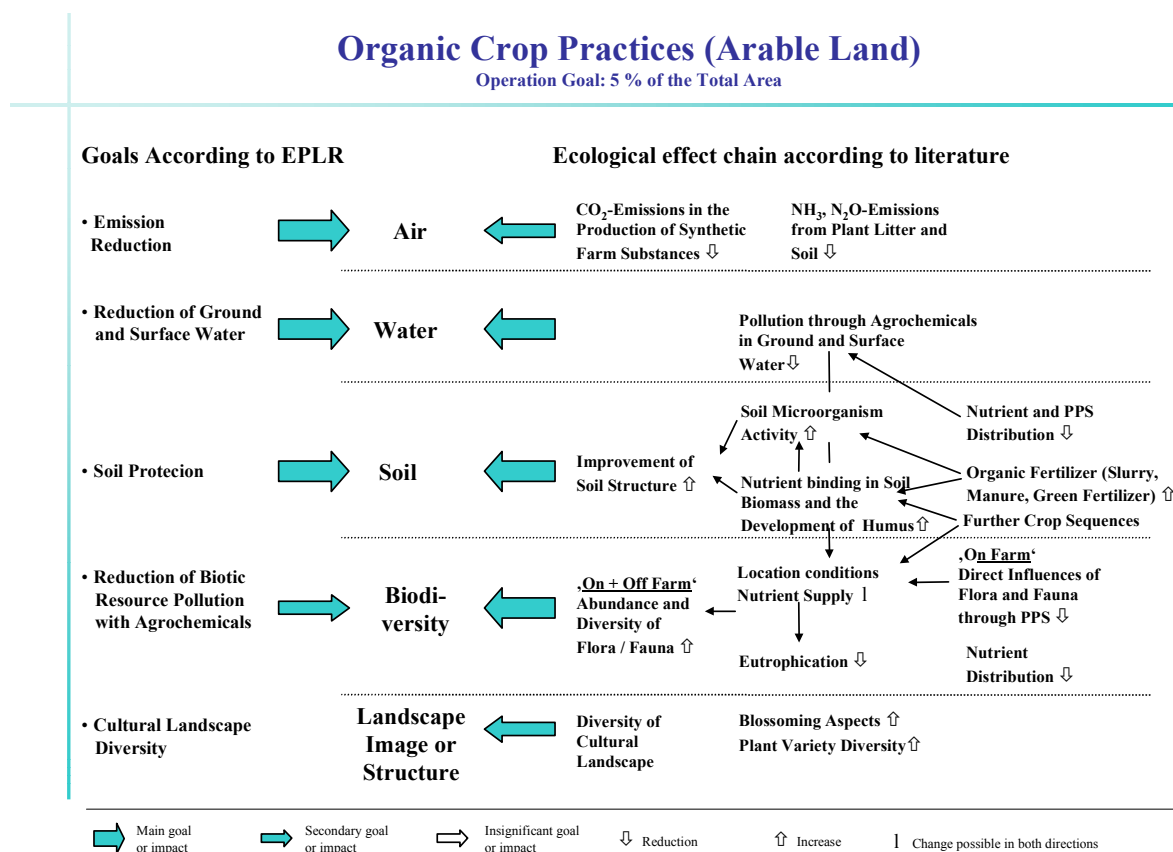
⁸ In approach comparable with the area „Agricultural Environmental Management and Resource Efficiency,“ of the OECD agricultural environment indicators (see also Petersen (2003)).

7.1 The Placement of Promotional Measures in the Evaluation Grid

The format of the evaluation questions implies a clear correlation of agri-environmental measures with their protection goals. The correlation is necessary, but creates difficulties in the practical evaluation tasks. These result from the fact that the assumed causality between resources to be protected and measures is not as clear and deep as hoped. According to the intervention logic of the Commission, only those agri-environmental measures should be implemented that build on the strength-weakness analysis (SWOT) and contribute to eliminating the environmental problems mentioned there. The EPLR as the basis for acceptance of the AEM by the European commission do not follow this causality to the desired stringency and exactness. First, there are weaknesses in the SWOT analyses and secondly, the development plans of the six states have decisive gaps in the formulation of their goals. Unclear or in some cases no goal formulations mean, that in the evaluation process no suitable evaluation scale is available from which consequences can be drawn.

The deficits in the goal formulations of the agri-environmental measures are manifested on the one hand in the fact that the protection goals are defined too generally. For example "abiotic resource protection" is named as a goal without specifying either a specific resource or details of the protection, for instance soil protection from leaching, pollution or compaction. On the other hand, at the practical level, operational goals are only set as hectare figures.

Figure 3: Goal-Impact Diagram for the Example of Organic Crop Practices



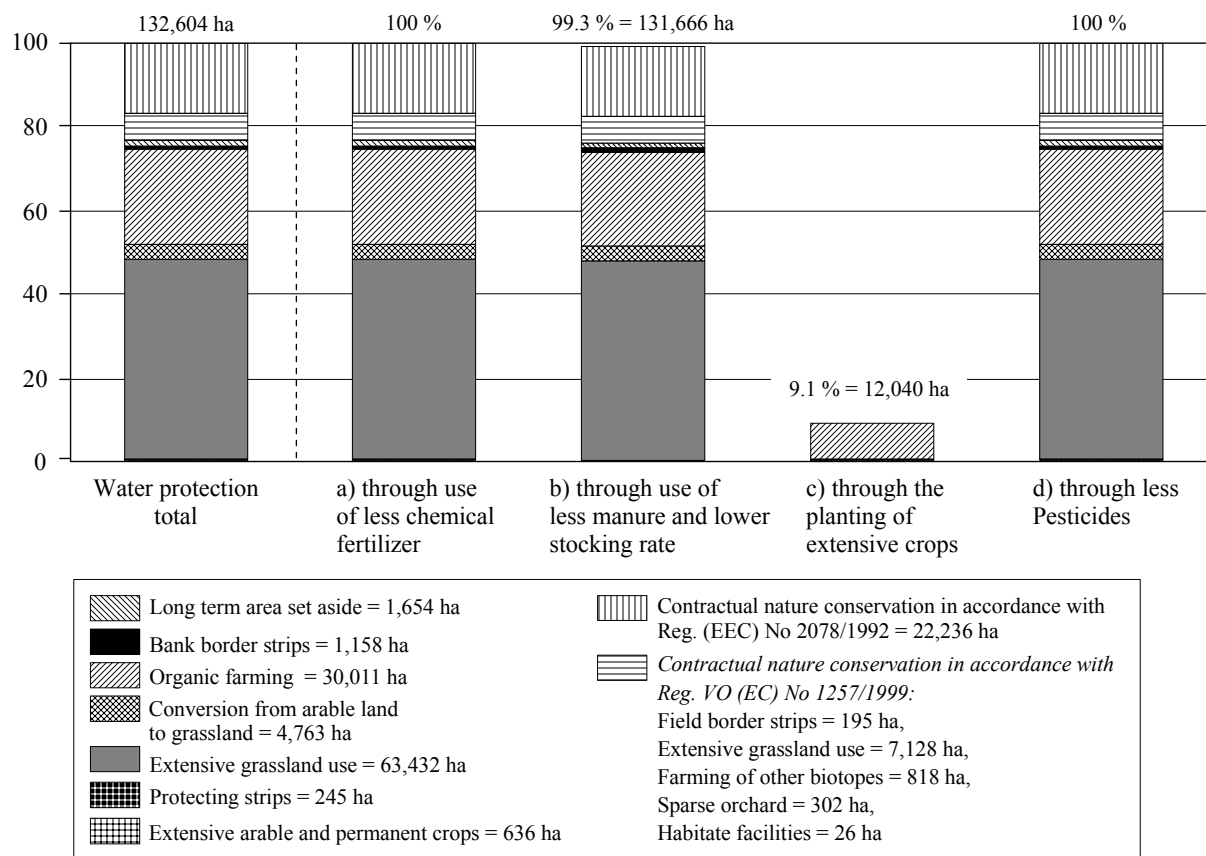
Source: Own diagram.

The inexactness of the goal formulations can partially be explained by the fact that at the time the EPLR was drafted, the common evaluation questions did not yet exist and consequently the level of detail required in the goal formulation was not appropriate. For the above-mentioned reasons, the six participating German states were asked to make the goal formulations for the AEM more concrete for the evaluation. The evaluators provided assistance with a goal effect diagram for each single measure. The basis for the diagrams are the

specific measure goals formulated in the EPLR which will be completed with the expected effects. The effects expected for the measures are supported with specific literature sources. The basis for the selection and processing of the Common Evaluation questions is shown on the effect side of the chart. This was included in order to illustrate those effects which are neither a main or secondary goal of a measure but nonetheless contribute to the protection of resources. Fig. 3 shows for example a goal effect diagram for the measure “Organic Crop Practices on Arable Land.”

7.2 Answering the Evaluation Questions

Figure 4: Protection of ground and surface water by reducing the input of agricultural production substances (state examples)



Source: Own calculations based on promotional data (2002).

In Fig 4 an example is presented of an answer to the evaluation question on area totals. As for all evaluation questions, the extent of the protection of ground and surface water through the AEM is divided into a number of sub-questions. Shown here are the promoted areas under the agreements to reduce the use of agricultural production substances. The breakdown undertaken here is in accordance with the requirements of the evaluation questions.

The information given from the area use directory of all participants in an agri-environmental measures of one federal state as well as the exact land parcel promotional data for the AEM serves as the database for answering the questions. As a supplement, a written survey of participating farmers was conducted. The farmer survey, in contrast to secondary data sources, provides only inexact and subjective results which were then corroborated by a comparison with literature on the topic.

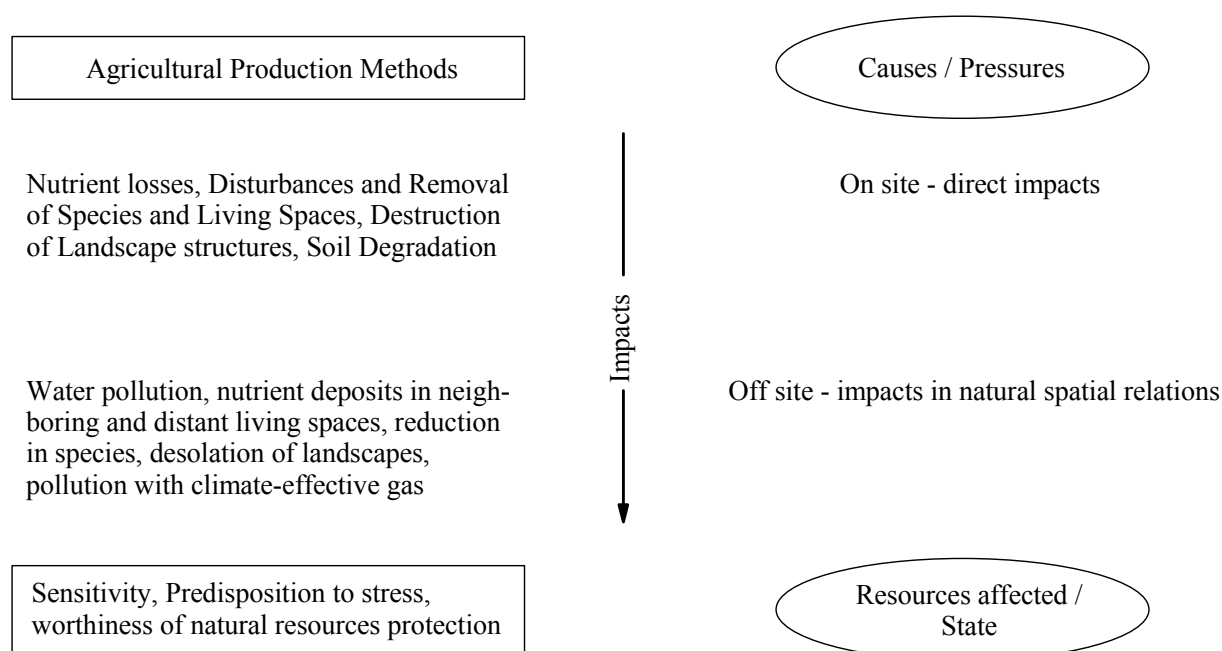
The chosen method of presentation permits a meeting of the resource protection perspective of the Commission and the measurement perspective of the states. While the Commission only targets the protection of the particular resources on the total area, the federal states and their policy formation primarily target the success of individual measures.

8 Further Considerations on the Effect Analysis

If one contrasts the grid and the information from the Commission given in the Evaluation handbook, one finds an evaluation dilemma. In the Commission's questions, as previously mentioned, a focus agreements for the protection of natural resources is consistently required. From this perspective one assumes a potential effect through changes in pollution or maintenance of conservational farming methods.

These considerations are very far removed from the required documentation of net effects in the evaluation handbook, which can only be measured in terms of changes in the farming caused damnification of the environmental resources. From the perspective of a comprehensive impact analysis, a detailed analysis of the ecological effect chain taking into account all of the elements presented in the following illustration and capable of showing the consequences of changed farming methods on the status of the organic protected goods.⁹

Fig. 5. General impact model as basis for impact relations.



Source: own diagram.

Such a comprehensive impact analysis is not affordable within the evaluation by the evaluators and probably more a part of basic research. Also methodical difficulties are encountered because, due to the complex effect relationship, individual impact factors can hardly be isolated and thus the net effects in terms of resources to be protected are not clearly determinable. Also, particularly in regard to the resources water and biodiversity, a serious time-lag can occur before the effects become evident.¹⁰

Documentation and monitoring of effects according to the comprehensive approach sketched were then only possible in approaches by the responsible environmental agency of the six northwest German federal states:

- For impact questions in the area of biodiversity, a systematic monitoring of the effects of selected contractual natural protection measures was carried out in Lower Saxony, but

⁹ Common requirements today following the modification of the premium payments, for example for the approach of a result oriented honoring this documentation is generally required.

¹⁰ In the future only partial overcoming of the sketched problems would be interesting beyond the individual questions, particularly in abiotic resource protection particularly available economic impact models possible to simulate impacts of agri-environmental measures and to replace the missing impact controls to some extent.

only for a limited study period (NLÖ, 2003). In the other states only individual studies coincidentally bear answers to these impact questions.

- Targeted field tests were carried out to document the effect of erosion protection measures in North Rhine Westphalia, as well as extensification measures for the protection of leaching in water protection areas in Lower Saxony (Pamperin et al., 2002).

In the following we will show where we see starting points for pragmatic practices and methods today, that are operable in the framework of the evaluation work and which have been used to some extent in the six state survey.

8.1 Effect per Area Unit

To achieve more exact impact estimates, the determination of the farming intensity is an important starting point. We describe the farming intensity of participants in the agri-environmental measures, ideally differentiated by region, as "Impact per Area Unit." While a maximum of farming intensity is obligatory by the farming regulations linked to the agri-environmental measures, the actual practice intensity level in comparison to the "good farming practices" recommended by the Commission as a reference system, and the level of reductions possibly set by the participants, are significant for estimating the impact. In the Commission's catalog of questions, this approach is only occasionally applied (i.e., nitrogen balances).

For measures of the previous promotional period, the extent and the changes in the farming intensity can be observed in the evaluation of data from the German Test Farm Network (Osterburg, 2001) or in a European-wide study through participant surveys (Primdahl et al., 2003). It is conceivable that in the future (and already being practiced in some German states: Saxony, Saxony-Anhalt) for the determination of production related problem intensity an evaluation of data collected in the framework of the introduction of farm management systems will set up. In the evaluation of the northwest German states these aspects shall be more deeply considered in the update.¹¹

8.2 Accuracy

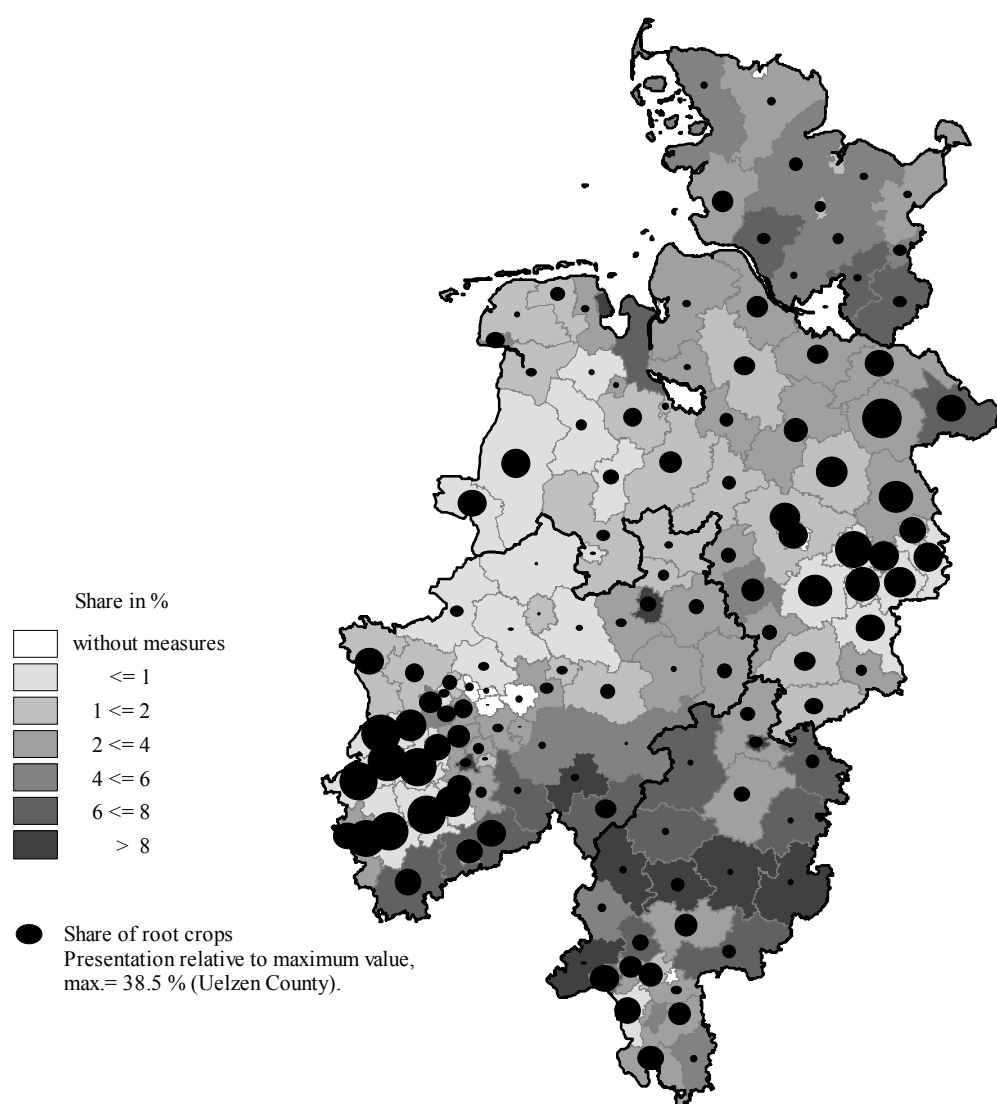
The effect of the agri-environmental measures on every promotional area can be judged differently if one considers information about the situation of the surrounding environment in the evaluation as well. As a basis for this, the comparison of the spatial distribution of participation with target areas desirable or sensible from an ecological perspective can be used, which we described "accuracy". For this purpose a geo-information system was used to link the spatial distribution of the promotional areas with data on the status and endangerment of the protected resources. This approach, adapted from the basic idea of elements of ecological risk analysis (Bachfischer, 1978), tries to illustrate the impact interrelationships sketched above with simple means. Basically it holds true that the more additional information levels are considered, the better the impact estimate.

Relatively simple to realize – if the appropriate environmental information is available – and informative is this approach if the cause effect relationships are simple and concentrated on the promoted areas, such as for example with regard to soil erosion. The procedure becomes more difficult and complicated if the natural context and spatial effect interrelations must be included, such as for questions of biodiversity and the evaluation of effects on the landscape. If such complicated analysis are not feasible, the data on current pollution levels of the protected resources in regions/natural spaces should be additionally considered as a minimum of environmental information. Just this basis allows a diversification of impact estimates per area unit - even with incomplete knowledge of the effects.

¹¹ The farmer survey carried out in the framework of the mid-term evaluation was only able to deliver qualitative results. According to the study, for example, participants in grassland extensification reduced their use of production substances on 70 to 100 percent of the promoted areas.

The results gained in the mid-term evaluation in this manner are very heterogeneous. Although areas with high ecological protection needs crossed with areas of high participation (i.e., erosion prevention in Hessen). As a rule areas with special ecological problem situations (water pollution, lack of diversity) were not reached with the agri-environmental measures. This is due to the fact that support for participation in AEM doesn't compensate the loss of income in high intensity agricultural areas. So participation in AEM is as in the past concentrated mainly in less favoured areas (see also Osterburg et. al. 1997). The results very impressively show the need to steer the agri-environmental measure to certain spaces/regions, in order to be more fair to the call for ecological efficiency in the agri-environmental measures rather like they were formulated by Ahrens et al. (2000). But in order to increase spatial steering of the promotional funds, clearly defined targets are required that for the most part do not exist.

Fig. 6: Share of organically farmed land areas of agriculturally used land (2002) and portion of root crops on the arable areas (1999)



Source: Own calculations based on promotional data (2002) and statistical data.

9 Summary and Conclusions

With the common evaluation questions the Commission has created a framework for evaluation that makes the standardized reporting on the effects of agricultural structural policy possible both on the national level and on the European level. We must wait and see if the flexible form possibilities and each operationalisation of the grid in the member states makes possible the Meta-evaluation strived for by the Commission on the basis of the country reports. From the perspective of the authors, in light of this background, an multinational exchange of the evaluators must be urgently enacted. In this context the Commission has a major role to play.

The evaluation grid is only partially suitable for optimizing the content form of the agri-environmental programs as the sum of the individual measures and for judging the actual effect of the measures. In the opinion of the authors this doesn't go far enough, for example in the case of accuracy. Against this background the results generated according to the evaluation grid do not provide a suitable basis for judging the allocation of the funding made and for making recommendations. Furthermore it is essential to the formation of the agri-environmental program that the evaluation of individual agri-environmental measures be considered. This method is permitted within the evaluation framework but is not obligatory.

A further task for the future is to adjust or reconceive the promotion of the AEM at the GAK level in light of the effects of the mid-term review (MTR). This should not affect only the content form of the programs and measures but also their administrative and data technological implementation.

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