

AGRI-ENVIRONMENTAL PROGRAMS IN RURAL DEVELOPMENT: CASE OF THE
OSTFRIESLAND REGION IN GERMANY

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Received 12 02 2014; accepted 05 06 2014

Rural areas in the EU are highly varied in terms of their spatial, environmental, social and functional features. Their specificity is associated mainly with the agricultural production profile in the area. In recent years, programs aimed at limiting the adverse effect of agricultural production (especially using intensive methods) on the natural environment have become increasingly important. Agri-environmental programs encourage farmers to take preventive or corrective actions in regard to the condition of the natural environment. The aim of this study was to evaluate agri-environmental programs and their influence on the development of German farms in the Rheiderland (Ostfriesland region, Lower Saxony, Germany). This paper presents the principles in the German system of organisation of agri-environmental programs in the years 2007–2013 and planned for the years 2014–2020.

Key words: agri-environmental program, environmental management, regional development, rural areas.

JEL Codes: Q56, R14, R58.

1. Introduction

Rural areas vary in terms of their spatial features, which results from the diversity of their agrarian, demographic and functional structures as well as the level of investment in them. Their character changes with methods of agricultural production. It is a cause for growing concern that agricultural production is becoming increasingly intensive; the percentage of monoculture crops is growing, with narrow specialization, along with changes in materials and equipment used in agriculture. Obviously, all this is apparently justified from the economic point of view, but in the longer term it will cause environmental and socio-cultural crises (Jaszczak, 2013; Swagemakers, 2006). The same theme was analyzed in scientific articles (UE Rural Review... 2013; Pawlewicz, 2012). The same view was presented by B. Camaioni et. al. (2013),

P. M. Bosc et. al. (2012) and E. A. Nuppenau et. al. (2010). The agricultural landscape is connected with the management of rural settlements and areas beyond their premises. In the times of rational usage of agricultural landscape supplies, based on the balanced development of rural areas, it is also essential to determine various functions, which would consider the natural, cultural, infrastructural, economical and social conditioning of particular regions. Only individual approach to issues is connected with shaping, protection and management of agricultural land which will allow for the recognition, evaluation and delimitation of directions for the correct use of its components (Jaszczak, 2010). Rural areas in Europe play a special role in environmental management, in biodiversity preservation, climate change regulation, air, water and soil protection and landscape preservation. Environmental protection efforts, apart from the obvious effects of improvement of surroundings and preservation of biodiversity, also have an economic aspect, due to such factors as reduction of costs arising from the loss of environmental values, the generation of new jobs in eco-services and maintaining the activities of farms, especially in protected areas. Agri-environmental programs are, and will be, increasingly important in the development of rural areas (Gotkiewicz, 2011; Pawlewicz..., 2013; Nuppenau..., 2010). Developing and implementing agri-environmental programs is obligatory for each member state. Community legislation provides the general legal foundations and sets forth their character, scope and methods of implementation. Each country specifies the conditions, objectives, criteria of implementation and forms of payment in accordance with its own priorities. According to the new programs of financing actions associated with agriculture and environmental protection for the years 2014–2020, the rural development programs, financed from structural funds, will be more oriented towards final, measurable effects in terms of environmental protection.

The German experience, which involves 3-level local cooperation in environmental protection, agriculture and administration, should be particularly helpful in determining new trends and patterns of actions (Pragel, 2008). Rural development programs provide the most important source of financing actions, which include environmental management and its protection in Germany and they significantly affect the development of agricultural and non-agricultural functions associated with environmental protection.

This study is a first stage of scientific project concern on the evaluation of current situation of farms and farmland situated in the special protected area. It was important for the authors to analyze how agri-environmental programs in Rheiderland were compatible with farming in protected zones and if their compensated all loss. The authors undertook the research because due to the need to clarify whether agri-environment programs and subsidies to agriculture (in a case of environmental issues) are properly matched to the characteristics of the region Rheiderland. Another issue not yet explained are the economic aspects for example whether subsidies fully compensate the losses in agriculture. This is related to the with adaptation to the requirements contained in the programs.

2. The purpose of the investigation

The aim of paperresearch is to present agri-environmental programs and their impact on the development of the German region of Rheiderland (part of Ostfriesland) in the land of Lower Saxony. The paper also presents the German organisation system of agri-environmental programs with reference to the regional conditions and specificity of farming in the area of Niedersachsen, especially on a local scale. The issues associated with agricultural production have been analysed and their impact on protecting the habitats of wintering birds as well as the relationships between recipient of agri-environmental programs and the implementing institution.

The study takes into account the practical guidelines in regard to the actions taken by farmers aimed at environmental protection. Analyses of farm operations were conducted which benefited from agri-environmental programs on the local level in the Rheiderland area – in the communes of Jemgum, Weener, Bunde. This subject is very important from the point of first research in region, especially from the economic and social aspects. So far, issues concerning the proper functioning of the agri-environmental programs were not addressed in the analyzed region and social studies among farmers and those directly interested in them, they were not carried out. In this context, the research project is innovative, and the results will allow for a broader look at these issues in the future.

3. Methodology of investigations

The source research was based on monographic, data as well as actual analysis, investigated areas and objects for agricultural use were defined.

Source studies involved accumulation and interpretation of information regarding agri-environmental programs for the area of Niedersachsen and the region of Ostfriesland. An analysis was also conducted of the up-to-date monographic documentation and statistical data, including those sources (Die Niedersächsische..., 2011; Landesbetrieb..., 2010). Bulletins and yearbooks, study materials, data on the planned directions of rural development, studies of present and planned investments, planned for environmentally-valuable areas were also used.

The studies based on the local surveys in the region of Rheiderland were conducted in Q2 and Q3 2013. The surveys were conducted on farms in the communes of Jemgum, Bunde, Weener, including those participating in agri-environmental programs in the years 2007–2013 (Tab.1). Preliminary research based on the interview takes into account the following issues: the farm size and the structure of agricultural production, general characteristics of agri-environmental programs, the use of EU and regional funds and their importance for the region. In the next stage, farmers will be asked about issues regarding the participation of farms in EU programs and proposals of adapting these programs to the individual needs. It is also important to ask about the ways of solving conflict situations which are connected with the loss or abandonment of production. The second part of the study involved an analysis of the

agri-environmental programs proposed for the years 2013–2014, taking into account the conditions of acceding to agreements between the implementing authority and the beneficiary (NAU/BAU, 2013).

Analyses of source materials, information obtained from farmers and analysis of the proposals contained in the agri-environmental program for the years 2013–2014 provided the basis for setting the direction of development for farms in the region of Rheiderland in view of making the most of the agri-environmental programs for the years 2014–2020.

4. Results of research

Area of investigation. One of the characteristic features of Lower Saxony is a high share of agriculture compared to other areas. There are more than 299 thousand farms in Germany, 40.7 thousand of which are in Lower Saxony (NAU/BAU, 2013). The total acreage of agricultural land in the region accounts for 15.4 perc. of the total acreage, which is 17 million ha. An important role is played by organic farms; Germany is also the largest producer of organic food in the EU. Family farms operate successfully in Germany, so production and service work is done mainly by family members. However, external labour force is hired increasingly often, which results largely from demographic problems (an ageing population and migration of young people to towns), but also from decreasing profitability of production (Jaszczak..., 2014; Die deutsche..., 2010). Apart from the agricultural production, more and more popular trends in rural development include tourism, renewable energy sources and environmental protection services. A similar situation, which reflects the general condition and rural areas in the land of Niedersachsen, can be observed in the Rheiderland region.

The aim of agri-environmental programs is to provide support to farmers to change the way in which their farms operate, to reduce the negative impact on the natural environment of rural areas, especially by restoring or preserving the condition of valuable habitats and conservation of biodiversity in rural areas, promoting sustainable farming, proper use of soil and water protection and protecting endangered local farm animal breeds and local crop cultivars (Pawlewicz..., 2013).

In order to make farming profitable and to observe environmental protection standards, it is important to use various subsidizing tools, including direct farming subsidies and agri-environmental programs. In the years 2007–2013, agri-environmental programs accounted for about 25 perc. of all the money spent on development of rural areas in Germany (4.4 billion EUR), whereas 800 million EUR was spent on protecting landscapes and plant and animal species as part of the measure 323 entitled “Conservation and upgrading of the rural heritage” (UE Rural Review ..., 2013). As has been said earlier, the new system of implementation of agri-environmental programs in the years 2014–2020 puts a special emphasis on the measurable effects of environmental protection efforts. Studies conducted on the German example suggest earlier implementation plans of such a mode of action. A

German method of contracting actions aimed at environmental protection and caring about the natural environment takes into account target agreements, e.g. for farms; they should be suited to the specificity and character of the structure. Such programs are divided, depending on the farming methods, into “light green ones” (extensive production, soil and water protection) and “dark green ones” (contracted environmental and species protection). Despite long-term plans, research indicates that they have not been fully implemented and the methods of subsidizing different packages were changed during the term of the agreement with the beneficiary (this applies, for example, to compensation for protection of bird habitats).

The results of the study conducted in selected farms in the communes of Jemgum, Weener, Bunde found that the largest number of farms are in the commune of Weener (where the farm area is the smallest) and the largest farms are in the commune of Bunde (Table 1).

Table 1. Number of farms, area of land in selected municipalities (Landesbetrieb...2010)

Specification	Communes					
	Jemgum	Weener	Bunde	Total		
Number of farms	86	109	99	294		
% of farms	29.25	37.07	33.67	100		
Total area of land, ha	6396	5222	8 041	19659		
% of total area of land, ha	32.53	26.56	40.90	100		
Number of farms with differentiation of area						
<40 ha	16	48	19	Number	%	
				83	28.23	
40–50 ha	3	14	10	27	9.18	
50–75 ha	24	24	24	72	24.49	
75–100 ha	24	12	23	59	20.07	
100–200 ha	18	11	18	47	15.99	
>200 ha	1	-	5	6	2.04	
Number of farms with area of arable land and grassland						
Arable land	Number of farms	22	68	88	Number	%
	ha	340	783	4786	178	60.54
Grassland	Number of farms	85	93	81	59	88.10
	ha	6049	4433	3252	3734	69.86

The smallest farms are in the commune of Weener and the largest ones are in the commune of Bunde (from 100 to 200 ha and more than 200 ha) and partly in the commune of Jemgum (from 100 to 200 ha, Table 1). The largest area of arable land is in the commune of Bunde and the largest area of meadows and pastures is in the commune of Jemgum (Table 1). The results of the analysis regarding the farm area and the type of farming coincide with the extent of utilization of subsidies within agri-environmental programs. Larger subsidies were granted to the farms with the greatest area as well as those which consist mainly of meadows and pastures (com-

munne of Jemgum). This applies to subsidizing within wintering bird protection programs, when habitats of such birds are situated in meadows and pastures. Subsidy agreements in those communes were signed by farmers with an implementing institution as contracts and they applied to all the farms where bird habitats were found, regardless of the area which they occupied. The field surveys found that such a method does not seem to be appropriate and farmers demand a fairer method of distribution of compensation funds. The agri-environmental programs for the years 2013–2014 includes the packages-modules presented in Table 2.

Table 2. The agri-environmental program in the communes under study

Package (module)	Short program description	Quota of subsidy	Conditions for subsidy
Rest - and nutrition fields for Nordic guest birds; Permanent grass land	<ul style="list-style-type: none"> • minimum on time a year agricultural use; • prohibition of positioning constructions to scare birds; 	220–250 €/ha	First, new and following application possible
Rest and nutrition fields for Nordic guest birds arable fields	<ul style="list-style-type: none"> • cultivation of winter crop (without rye), rape (colza), clover (arable), grass, grass seed • yearly seeding to 15-th of October; • harvesting is obligatory • prohibition of positioning constructions to scare birds. 	235–290 €/ha	First, new and following application possible
Extensive use of grass land in individual fields with resting periods and preserving stripes (same field)	<ul style="list-style-type: none"> • resting period in spring (20.3 to 20.5): no rolling, planning, liquid manure, mowing (Max. 3 animals or 1,5 GVE); • Only for mowing: 2,5 meter stripe on field border has to stay to 5.6, at minimum half of the filed border; • no chem. agricultural pesticides use of field register; 	115 €/ha	First, new and following application possible
Extensive use of grass land Reduction of agricultural pesticides and fertiliser	<ul style="list-style-type: none"> • in individual fields; • no chemical fertiliser; • no chemical agricultural pesticides; • mowing after 25-th of may (data depends on phenologie); • use of field register. 	110 €/ha	First, new and following application possible
Environmental friendly turnout of liquid manure	<ul style="list-style-type: none"> • turnout with environmental friendly technique; • turnout by machine ring or company; • nvoice presenting to 15-th of November; • liquid manure has to be produced on farm. 	15 €/m ³ , max. 30 €/ ha	No first or new application possible Only following application from 2010

5. Guidelines and proposals for future research

The first results conducted among farmers in Rheiderland show, that in the next programming period, they would prefer the implementation of long-term programs, for example, in which they can apply once every 5 years, and not, as previously annual. However, large importance in the new programs, especially those relating to special agronomic recommendations in a case of the birds protection, should have regular (at least a few times a year) monitoring, including the monitoring of habitats and abundance of birds.

The data and conclusions arising from the land use to date provided for the basis for guidelines for the agri-environmental programs for the years 2014–2020. The following are proposed:

- specific selection of a solution (e. g. in modules, packages) for environmental protection and the program from the proposal for the years 2014–2020.
- adaptation of production (e. g. regime associated with time and with field work) to the conditions specified in the package;
- diversification of compensation (package: geese protection) depending on individual losses caused by it in a farm;
- diversification of compensations (bird protection) depending on the size of the bird population on a field / meadow;
- individual selection of packages (modules) for a farm and adapting them to the production system;
- system of verification – inspection of the process of implementation of individual solutions associated with the protection on a farm;
- expert advice regarding protection and implementation of training programs for farmers.

6. Conclusions

1. The studies have shown that the agricultural land covered by an agri-environmental program in the region of Rheiderland includes mainly meadows and pastures, especially situated in the North-West, as far as the Bay of Dollart (commune of Jemgum). This is partly associated with the main direction of agricultural production in the area.

2. The bird protection package is one of the major programs of pro-environmental measures. Habitat protection is a priority, especially since the area in question also includes the Landschaftspark (formerly Vögelpark), neighbouring on the Niedersächsische Wattenmeer National Park. Subsidies go to farms in the villages of Pogum, Ditzum, Ditzumerhammrich, Bunderhammrich, Landschaftspolder.

3. Despite the common view of the flawless operation of agri-environmental programs in Germany, this study has revealed some disagreements arising from

conflicting interests of the entities engaged in their implementation between farmers, officials and environmental protection institutions.

4. Suggestions for new solutions in the programs intended for implementation in the years 2014–2020 will help to make better use of the funds and will enable individual agreements to be executed between farms and the implementing authority.

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AGRARINĖS APLINKOSAUGOS PROGRAMOS KAIMO PLĖTROS PROCESĖ: OSTFRIESLAND REGIONO VOKIETIJOJE ATVĖJIS

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Įteikta 2014 02.12; priimta 2014 06 05

Santrauka

Europos Sąjungoje kaimo vietovės yra labai įvairios. Jos skirstomos atsižvelgiant į jų erdvinį išdėstymą, aplinką, socialines ir funkcines savybes. Kaimo vietovių specifika yra susijusi su žemės ūkio gamybos kryptimis. Pastaraisiais metais programos, kuriomis siekiama apriboti neigiamą žemės ūkio gamybos poveikį (ypač naudojant intensyvios gamybos metodus) dėl aplinkosaugos reikalavimų, tampa vis aktualesnės. Agrarinės aplinkosaugos programos skatina ūkininkus imtis prevencinių ar atitaisomųjų veiksmy, atsižvelgiant į gamtinės aplinkos būklę. Šio tyrimo tikslas – įvertinti agrarinės aplinkosaugos programas ir jų įtaką Vokietijos ūkių plėtrai Rheiderlande (Ostfriesland regionas Žemutinėje Saksonijoje, Vokietija). Šiame straipsnyje pateikiami Vokietijos agrarinės aplinkosaugos organizavimo principai, taikyti 2007–2013 m. laikotarpiu vykdytoms programoms ir planuojami taikyti 2014–2020 m. laikotarpiu. Tyrimo metu nagrinėti tam tikri nesutarimai tarp ūkininkų ir aplinkosaugos organizacijų atstovų dėl aplinkosaugos reikalavimų vykdymo. Pagrindinis tyrimo siūlymas – sureguliuoti nesutarimus naudojant patobulintą kompensacinį išmokų mechanizmą 2014–2020 m. laikotarpiu. Išmokas būtina skirti dėl ūkininkavimo sąlygų pablogėjimo laikantis griežtų aplinkosauginių reikalavimų, pvz.: gamybos procesų pertvarkymas, kompensacijų diversifikavimas priklausomai nuo ūkio nuostolių bei nuo saugomų paukščių skaičiaus tame areale, išmokų susiejimas su ūkio poreikiais, mokymų ūkininkams organizavimas ir pan.

Reikšminiai žodžiai: agrarinės aplinkosaugos programa, aplinkos apsaugos vadyba, regioninė plėtra, kaimo vietovės.

JELkodai: Q56, R14, R58.