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Environmental Awareness of Polish Farmers

Introduction

Since the early 1970s environmental issues have increasingly been regarded in both a local and a global context. Environmental pollution and the manifold increase in the use of natural resources are acknowledged to endanger the life and well-being of future generations. As a response, new environmentally appropriate technologies are being developed, legal frameworks are being set and a number of organizations concerned with creating new prospects for an environmentally safe future have emerged. Thus, nowadays environmental issues should constitute an important part of every discourse regarding future, sustainable development.

With the widely growing concern for environmental problems various studies have been conducted in order to examine changes in attitudes and human behaviour. For example, Dunlap and Van Liere attempted to construct scales aimed at measuring ecological attitudes. Their environmental paradigm (NEP) scale was a basis for many other studies.¹ The largest studies seem to be: the Gallup survey 1992, in which public opinion data of 29,628 individuals from 24 countries, representing 29% of the world's population were collected and the study by Louis Harris and Associates in 1988–1989, which gathered information from 8325 individuals in 16 countries. Many studies also tried to link environmental attitude and behaviour to age, gender, income, political ideology or level of education.²

For Poland the survey by Dunlap and Gallup 1993 on the "International Public Opinion towards the Environment" shows that only 1% of Polish respondents volunteered to indicate environmental problems as one of their country's most important issues. However, when asked straightforward to rank environmental issues according to their importance, 66% of the re-

¹ See Bloom 1995, Scott 1995.

² See for a summary of different studies: Baldassare and Katz, 1992.

spondents felt very seriously concerned. Another study by Burger *et al.* found that one third of Polish society had pro-ecological attitudes. This group has been described as "more well off and better educated people, between 30–49 years of age, ... they are inhabitants of large towns, declaring more often than others their participation in elections". The group of people indifferent to ecological issues included "first of all older and relatively poorer people living mostly in villages", younger respondents (< 29 years) also seemed to be less aware of ecological issues.

Most of the foreign and Polish studies were primarily carried out among urban dwellers, whereas rural areas were surveyed less intensely. As indicated above, some studies found differences in the way pollution was perceived by the rural and urban population (Mydlak 1996, Burger *et al.*, 1994). All these studies pointed out that farmers are obviously less concerned about environmental issues than people living in urban areas.

On the other hand, agriculture has often been accused of producing unhealthy food, contaminating the soil and water, using natural resources in abundance and using the natural ecosystem one-sidedly. This resulted in the development of farming systems focused on the integration of environmental aspects into agricultural production and sustainable farming became a leading concept. Integrated Farming is based on this idea aiming to link the economic and environmental dimension of farming.

Integrated Farming has been known in Europe since the early seventies. Initially, the concept of Integrated Crop Protection was developed, emphasizing the integration of a variety of plant protection methods mainly to limit the overuse of plant protection agents. Benefits were expected from using the existing natural self-regulating mechanisms more consciously and effectively. It was soon acknowledged that the entire crop production system needed to be taken into consideration, which became known as the concept of Integrated Crop Management. Ultimately, the entire farm enterprise was considered, comprising crop production as well as animal husbandry, known as Integrated Farming or Integrated Production. Integrated Farming is a relatively new concept in Poland and has been advocated since 1992 by a group of researchers from Warsaw Agricultural University. A survey conducted among Polish farmers in 1996 by this group served to examine the prospects for Integrated Farming in Poland in the process of agricultural modernization.³

It was therefore important to study the attitudes and behaviour of farmers with regard to their perception of environmental problems as well as their motivation to take on such new concepts. Moreover, it was interesting

³ KBN project 5 P06J 005 09 *System integrowanej produkcji rolniczej jako droga modernizacji i rozwoju rolnictwa w Polsce* (The system of integrated agricultural production as a way of modernizing and developing agriculture in Poland).

to study these issues with regard to the integration process with the European Union and the development of the Common Agricultural Policy (CAP), for the CAP is increasingly paying attention to the production of healthy food produced in an environmentally safe way.

The specific aim of the study was:

- to learn about farmers' perception of environmental problems,
- to find out about the motivation of farmers to engage in pro-environmental activities,
- to examine the extent to which farming practices followed by farmers complied with those recommended in Integrated Farming.

It has to be acknowledged that this study did not attempt to understand or describe the way farmers perceive their natural environment, nor did it attempt to examine the actual impact of farms on the environment.

Methodology

655 farmers from all over Poland were interviewed, with the exception of the mountainous regions in the south and some heavily polluted areas unsuitable for food production. Local extension advisers conducted interviews with the use of the redesigned questionnaire.

The farmers were chosen in the following way. First, 2–3 communes were selected in 30 voivodships.⁴ Criteria for the selection of communes were the soil quality representative for the region and predominating agricultural production. A random sample was then taken of all commercial farms bigger than 10 ha, (ranging between 10 and 590 ha) and depending largely on agricultural production as a main source of income. All farms were family farms and the average size in the sample was 24 ha (Polish average is 7 ha).

The questions regarding environment were part of a larger questionnaire, which was to find out about the present farm structure, technologies and financial performance of the farms. The questionnaire comprised five main parts: a technical inventory of the farm, questions on economics, animal production and crop production practices and the environment.

The part on environment aimed to find out about the farmers' perception of environmental threats and their motivation to get involved in pro-environmental activities on their farms. Questions on environment were firstly analysed *per se*. Secondly, the answers to three questions were linked and three groups of farmers with differing levels of environmental concern were distinguished. These groups were then analysed with regard to age, income and size of farm and region.

⁴ In Poland there were 49 voivodships (districts) in the former administrative structure and 2200 smaller administrative units — communes.

In the next step a set of nine questions indicating pro-active environmental attitudes, e.g. farmers' investment policy, their training needs, objectives for the development of their farms etc. were chosen and analysed as above.

Finally, the groups determined above were examined with regard to the farming practices applied. In this regard the answers to a set of 45 questions comprising "good management" practices were linked to different perception and attitude groups of farmers.

In this study results of research carried out in the same Polish regions in another group comprising 721 farms in 1999 were also used.⁵ As with the earlier research, there were only commercial farms in the group with an arable land area above 8 ha where the income from agricultural production was the main source of livelihood for farming families. In the evaluation of the relationship of farmers to the natural environment attitudes were categorized according to their sensitivity towards environmental issues.

Discussion of Results

PERCEPTION OF ENVIRONMENTAL PROBLEMS

In order to study farmers' perception of environmental problems, they were asked about environmental pollution and the overuse of natural resources in relation to other problems such as crime, alcoholism etc.

Table 1

Sequence of farmers' concerns

Crime	1
New diseases	2
Atomic energy accidents	3
Alcoholism	4
Drug addiction	5
Pollution of the natural environment	6
Communication catastrophes	7
Exploitation of natural resources	8

Crime was perceived as a very serious problem, followed by new diseases, atomic energy accidents and alcoholism. Environmental pollution and the use of natural resources were ranked sixth and eighth on the list.

The sequence of concerns listed by the farmers in our study differed from the findings of CBOS (1992) and Burger (1994), who conducted studies on a broader sample of the Polish population. They found that their

⁵ KBN project 5 P06J 009 15 *Jakość zarządzania w gospodarstwach rolniczych w Polsce* (Quality of management on Polish farms) Majewski E. (edit.), 2001.

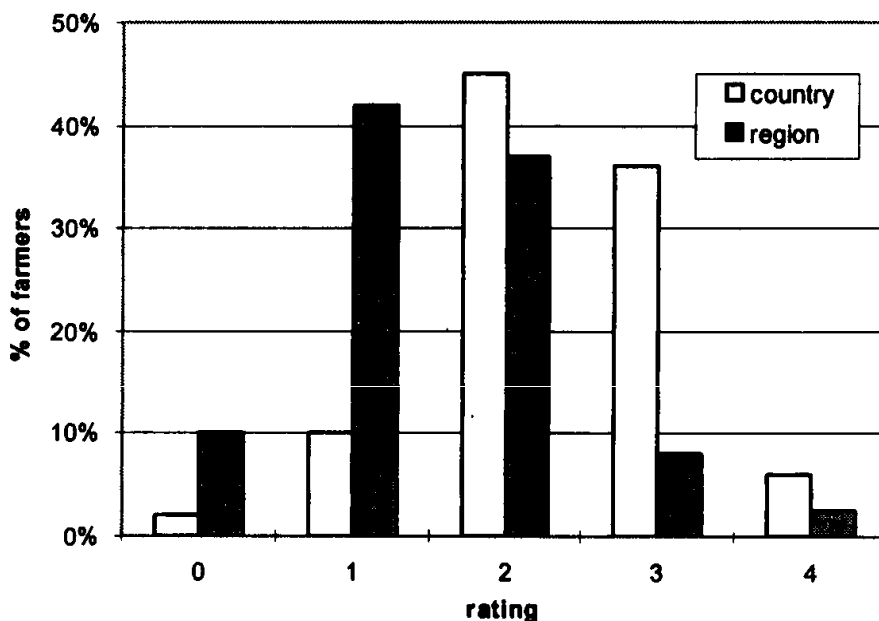
respondents ranked environmental pollution highest, followed by crime, alcoholism, new diseases and others. But Burger also reports that people in rural areas chose new diseases, crime and alcoholism as the first most important threats, which is a similar sequence to the one in our study.

Furthermore, 49% of the surveyed farmers stated that they were seriously or very seriously concerned about environmental pollution. 43% of farmers felt the environment was endangered country wide, but only 11% of farmers were concerned about the state of the natural environment in their regions. 61% of the farmers stated that they had not observed any unfavourable changes in their local natural environment over the past few years and 61% of the farmers stated that agriculture “does not” or “not really” harm the environment.

Compared to the survey by Dunlap and Gallup (1993) and CBOS (1992), who surveyed a representative sample of the Polish population, the perception of environmental problems among farmers in our study is lower than indicated by these authors for the entire population. This asserts the above findings. Dunlap and Gallup found that 66% of their respondents felt very seriously concerned about environmental issues. Similarly, the respondents of the CBOS study state that 76% of the people interviewed rate environmental pollution as a very serious problem. In our study only 49% of the farmers rated environmental pollution as seriously or very seriously worrying.

Diagram 1

Perception of environmental problems by farmers with regard to the country and the region perspective



Threats to environment rated within the range: 0 – non-existent, 4 – very serious.

Various studies have also shown that the perception of environmental problems depends very much on the area of reference. The general trend is that the nearer the area of reference the lower the level of concern. In our study it turned out that only 11% (diagram 1: column 3 and 4) of farmers regarded the state of the natural environment as seriously or very seriously endangered with regard to their region, whilst 43% of farmers expressed their serious concern for the whole country situation. Dunlap and Gallup found 71% of the Polish respondents rating the state of the environment (including the natural and man-made environment) in their community very or fairly bad, whereas this number was 88% with regard to the quality of the environment country wide.

These observations are in line with those of Mydlak, who studied the environmental awareness of 370 farmers in Poland. The immediate environment of the farm was perceived to be less threatened than the environment at village, then voivodship and ultimately country level. She also reported that 61% of the farmers were satisfied with the state of their natural environment, which is as many as in our study.

Burger made similar observations. He reports that employees of industrial plants rated the state of the natural environment a lot better where they lived as opposed to their place of work, the voivodship and country level. Moreover, he found that employees in rural areas rated the state of the environment in their immediate surroundings a lot better than employees in small and big cities.

PERCEPTION OF ENVIRONMENTAL PROBLEMS WITH REGARD TO AGE, EDUCATION AND FARM SIZE

A closer analysis of answers to different questions revealed that a group of about 30% of farmers in the sample was consistently "not really" or "not at all concerned" and about 20% of farmers were consistently concerned about environmental issues. 50% turned out not to have a clear position. These findings are in line with those of Burger, who reported 20% of the rural respondents in his sample to have a pro-environmental attitude.

The perception of environmental problems in our study did not depend on age or farm size. Moreover, no relation in awareness with regard to the level of education was observed. But the share of farmers with a vocational training was higher in the pro-environmental group while the share of farmers with a basic education was lower. No significant difference was observed for farmers with a university degree or higher education diploma.

Our findings differ from those of Burger, who observed environmental attitudes to be dependent on age and income. His study also revealed that the higher the level of education the greater the share of respondents belonging to the pro-ecological group. In our sample the share of people with a higher education was very low. However, as mentioned above, his sample

included the urban population, with a much higher level of education, on average, than this analysed sample of farmers. Moskal, on the other hand, found that environmental attitudes in rural areas depended on age (younger people under 25 and older people over 55 were generally less concerned).

Our results also indicated that particularly in the north-eastern part of Poland the number of farmers who are concerned about environmental issues is slightly lower while the number of farmers who are "not" or "not at all concerned" is higher. Similarly, Burger reports a lower number of respondents with pro-environmental attitudes in the eastern parts of Poland. This is probably due to the fact that the environment is generally regarded as very clean in these areas (Green Lungs of Poland).

Summarizing, our study confirms earlier findings that farmers' perception of environmental problems is lower than that reported for urban areas. Other problems such as crime, new diseases and alcoholism preoccupy farmers a lot more. Yet there is a group of about 20% of farmers which consistently expressed their concern about environmental issues. In this group the share of farmers with basic education is lower, whereas the number of farmers with vocational training is higher. The environmental attitude of farmers does not seem to differ with regard to age or farm size.

MOTIVATION OF FARMERS TO ENGAGE IN PRO-ENVIRONMENTAL ACTIVITIES

The answers to questions indicating a level of pro-active environmental attitudes, e.g. farmers' investment policy, training needs, aims for the development of their farms etc. were analysed to find out about farmers' motivation to get engaged in pro-environmental activities on their farms (table 2).

Table 2

Self declared motivation of farmers

Groups of farmers	No. of farms	%
1. No, I don't see any need	220	34%
2. Yes, but I have other things to do	242	37%
3. Yes, but I cannot afford it	154	24%
4. Yes, it takes my full attention	22	3.4%

34% of the farmers stated categorically that they did not see any need to take pro-environmental measures on their farms. Other farmers had a number of ideas on how to improve the environmental performance of their farms.

27% of farmers mentioned the need to improve sewage management. Other ideas volunteered by under 10% of farmers were linked to the improvement of plant protection measures (8%), fertilization (5%), natural infrastructure (10%), waste disposal (7%) and energy use (4%).

Farmers were also asked to choose 10 objectives among a set of 25 for their farming activities.

Answering this question 20% of farmers stated that they would consider building a water treatment plant, 15% of farmers considered planting trees, 7% establishing ecological hedges and 10% chose the objective to convert into organic farming. 27% stated they would reduce the application of fertilizers and pesticides, whereas 18% opted for increasing the use. The extent to which these objectives had a high priority cannot be concluded from our study.

The number of ideas to improve the environmental performance of farms was small. Most farmers focused on one particular action and they did not seem to have a conceptual approach with regard to the realization of pro-environmental objectives. The very low motivation for actually taking a pro-environmental approach became very clear when farmers were asked what they would invest in if money were abundantly available. Only three farmers volunteered pro-environmental investments. One considered building a sewage treatment plant, another planting trees and a third farmer planting hedges.

Nonetheless, farmers differed with regard to level of motivation. It was estimated that 28% of the farmers were not in the least motivated. This again is in line with the self-declared indifference towards environmental issues by 30% of farmers. 47% of the farmers were estimated to be slightly more motivated and about 25% of respondents could be considered rather motivated. These three groups did not differ with regard to age or farm size, but within the "rather motivated" group there were comparatively more farmers with vocational training, and the share of farmers with basic education was noticeably lower.

In all, the general level of motivation was low. 30% of the farmers clearly stated that they didn't see a need for action and only 25% of the farmers seemed to be fairly motivated. Farmers had ideas on how to improve the environmental performance of their farms, but the extent to which this would result in action is not obvious.

AGRICULTURAL PRACTICES WITH REGARD TO ENVIRONMENTAL ATTITUDES

Farmers' perceptions of threats to the environment which might result from applying different farming practices were examined. The practices chosen for comparison were not particularly selected from an environmental point of view but constituted rather "good agricultural practices". For simplicity most of the practices were ranked equally important and were not prioritized. Farmers were asked to rate each of these practices within a scale ranging from "0" — no negative impact to the environment at all, to "4" — very serious threat. The farmers' rating was compared with

an expert's assessment. Table 3 shows the ranking of farmers for the set of farming practices and the deviation with the expert's opinion.

Table 3
Farmers' perception of the environmental impact of farming practices
in comparison with the expert's opinion

Farming practices	Farmers' rating (% of farmers)					Average ranking		Devia- tion
	0	1	2	3	4	farmers	expert	
Excessive use of fuel and energy	2.2	22.4	38.3	34.0	3.1	2.13	4	1.87
Combining cereals	26.3	47.8	23.5	2.4	0.0	1.05	1	0.05
Use of organic fertilizers	53.5	39.6	5.8	0.9	0.2	0.56	2	1.44
Use of mineral fertilizers	3.7	22.0	61.5	12.0	0.8	1.84	2	0.16
High share of spring cereals in the rotation	32.1	41.4	23.9	2.5	0.2	0.97	2	1.03
Storing manure in the field	18.7	43.8	29.6	7.0	0.8	1.27	4	2.73
Use of non-selective insecticides	1.1	10.1	35.4	46.1	7.3	2.49	4	1.51
Applying liquid manure in winter	14.1	34.0	27.7	20.1	4.1	1.67	4	2.33
Deepening the farm's pond	30.8	42.3	21.9	4.3	0.6	1.02	0	1.02
Burning fields and hedges	2.6	5.0	12.7	43.2	36.5	3.07	4	0.93

The highest congruity in opinion was found in relation to such practices as "combining cereals", "use of mineral fertilizers" and "burning fields and hedges". A noticeable difference in opinion was observed with regard to organic fertilizers. Storing manure in the field might result in the drainage of nutrients, which the expert is obviously much more concerned about than the farmers. Quite critical ranking by the expert towards the application of organic fertilizers might be considered controversial. This is due to the fact that the farmers have no influence on the process of mineralization of manure and that this might result in the potential loss of nutrients and leaching to the ground and drainage water. Finally, it should be emphasized that the excessive use of energy is not considered environmentally critical by farmers. It indicates that farmers do not recognize non-renewable resources as an element of the environment.

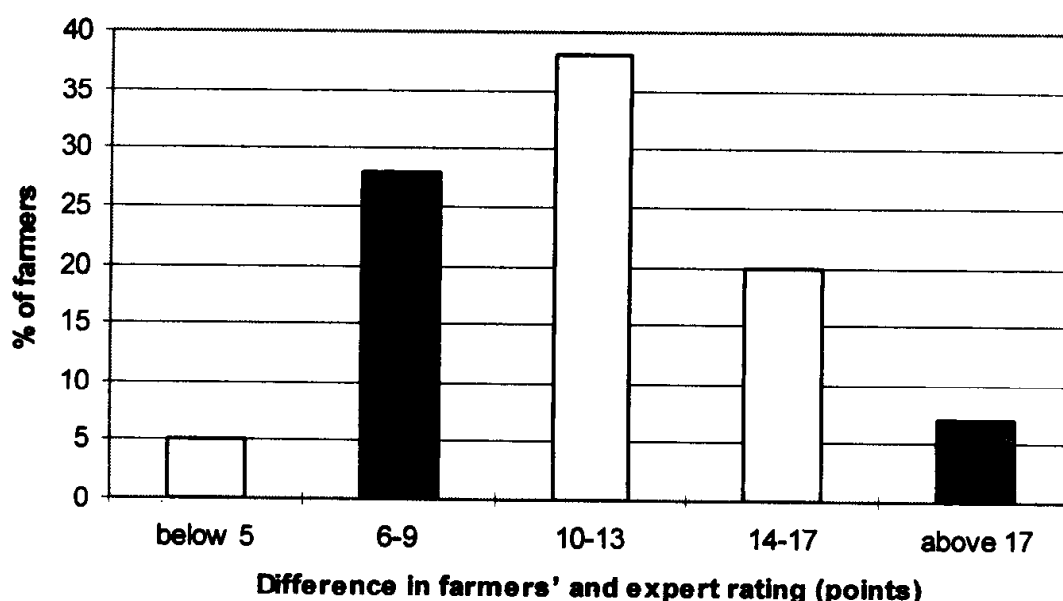
According to the expert's rating the sum of points allocated to each of the practices was 27, out of a possible maximum total of 36, as compared with 16 on average scored by farmers. The number of points obtained by farmers ranged from 3, which indicates neglecting entirely by the farmer potential threats to the environment, to 31 points, which is very close to the expert's rating.

The distribution of farmers as related to the level of accordance with the expert rating is presented in diagram 2. It allows distinguishing three major groups of farmers in the sample differentiated by the level of perception of

potential environmental threats which agricultural operations may generate. Farmers, who might be considered as the most aware of negative impacts for the environment (difference in rating below 5 and 6 to 9 points) amounted to 31% of the sample. At the other end of the scale there were 28% of farmers (difference in rating more than 14 points) associating no threats with farming practices. The large middle group (41% of farmers) did obviously not present clear views on the issue.

Diagram 2

Distribution of farmers regarding the level of differences between farmers' and expert ratings on the environmental impact of selected farming practices



FARMERS' ATTITUDE TOWARDS BENEFICIAL FAUNA

The creation of natural conditions favouring the growth of a beneficial fauna population is a strong argument for establishing and maintaining an ecological infrastructure within a farm. It is not only a matter of biodiversity. A number of predators and parasites act as natural crop protection agents. It is important to check the extent to which farmers appreciate the role of beneficial fauna in agrocenosis. That is why when asking the question "indicate those predators which may play beneficial functions..." we have attempted to determine the farmers' attitude to listed species. In a more general sense this illustrates their attitude to nature.

Farmers were asked to express their opinion by grading from 1 (very harmful) to 10 (highly beneficial). The farmers' rating has been compared with the expert's evaluation (table 4).

Table 4

Usefulness of selected species of fauna for agricultural production in farmers' and expert's opinion (% of ratings on a 1-10 scale)

Specification	Distribution of farmers rating (%)										Average rating		Deviation
	1	2	3	4	5	6	7	8	9	10	farmers	expert	
	Singing birds	2.7	5.5	4.5	5.4	14.6	7.1	3.9	14.1	3.0	39.2	7.02	
Toads, lizards	2.0	9.6	8.2	8.2	24.2	10.8	5.3	11.5	3.4	16.9	5.49	10.00	4.51
Pheasants, partridges	1.3	3.3	3.3	2.3	13.0	8.4	6.7	16.7	5.4	39.6	7.58	8.00	0.42
Rooks	16.2	20.7	16.8	8.2	19.6	4.5	2.8	4.3	1.1	5.7	2.27	3.00	0.83
Moles	14.1	20.0	16.5	9.6	21.1	5.9	2.1	3.5	1.6	5.6	2.43	4.00	1.57
Wild boars	32.4	24.5	18.6	5.9	11.2	1.6	1.6	1.6	0.0	2.7	0.87	3.00	2.13
Earth-worms	0.8	2.9	4.2	4.6	10.9	5.4	5.1	15.0	3.9	47.1	7.81	10.00	2.19
Mice	40.1	35.5	10.5	3.9	5.3	2.0	0.7	0.0	0.7	1.3	0.57	0.00	0.57
Sorex *	34.3	28.7	13.4	4.6	10.6	1.4	1.4	3.7	0.5	1.4	0.98	8.00	7.02
Predatory insects and spiders	8.4	16.6	12.1	4.8	21.2	6.2	6.2	10.9	2.7	10.9	3.71	8.00	4.29

* Incentivores.

In relation to "singing birds", over 33% of farmers gave less than 5 points in the 10 point scale, and only 39% of farmers graded accordingly with the expert at the maximum (10 points). In the case of a number of other species, which might be considered beneficial and practically causing no damage to crops (pheasants, partridges, toads, lizards and earth-worms) the average farmers' rating did not differ significantly with the expert's evaluation. However, a relatively small percentage of the interviewed population expressed an unfriendly attitude towards undoubtedly beneficial organisms. Diverse opinion differed the farmers' and the expert rating with regard to sores and predatory insects, which are natural enemies of harmful insects (7.02 and 4.29 points respectively). It might be concluded, that farmers don't have sufficient knowledge on the biology of some species. This also means, that the need of protecting beneficial fauna might not be recognized by a large number of farmers.

The Categorization of Farmers' Attitudes Towards the Natural Environment

The hitherto presented evaluation of farmers' ecological awareness was based on the results of research carried out in 1996. In the research repeated in 1999 another group of farmers was interviewed but both the size of the sample (721 farms from across the whole country) as well as its characteristic (commercial farms with a surface area of above 8 ha of arable land) were similar. Results confirm earlier observations that farmers in Poland have rather a mediocre ecological awareness and environmental matters are rated low on the farmers' list of priorities.

According to the majority of farmers (66%) agricultural production is not a threat to the environment (answers "definitely not" and "essentially not"). Only 3.5% of those interviewed were in the group which recognizes the existence of threats ("to a great extent", "very clearly") (table 5).

Table 5

Does agricultural production threaten the natural environment?

Responses	Definitely not	Essentially not	Moderately	To a large extent	Very definitely	Total
Number	160	315	220	23	3	721
Percentage	22%	43,5%	31%	3%	0,5%	100%

The idea of allocating some arable land to the creation of an ecological infrastructure for farms is unpopular among the researched group. Farmers are only willing to allocate a smallish area of land for the creation of buffer strips, hedges, ecological baulks and afforestation which are significant as

regards the habitat of beneficial fauna, shaping the landscape or the direct protection of streams and water reservoirs. 34% of those interviewed do not consider that this serves any purpose at all (table 6).⁶

Table 6
Willingness to allocate some arable land for an ecological infrastructure

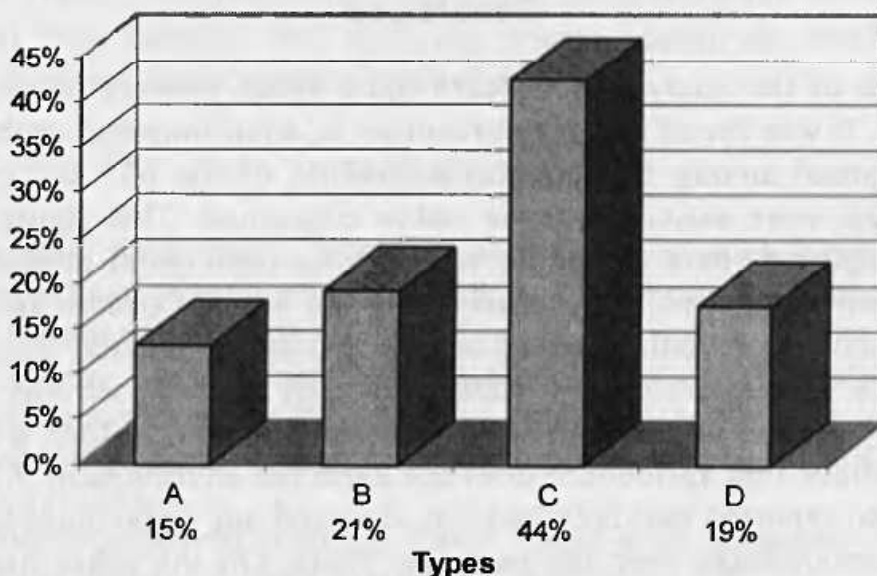
Specification	Declared area of ecological infrastructure (% of arable land)				
	0	0-1	1-3	3-5	above 5
Number of farmers	244	286	150	29	12
Percentage of those interviewed	34%	40%	21%	4%	2%

On the basis of farmers' opinions or statements concerning selected environmental issues partial categories of ecological awareness among those interviewed were singled out: A – high, B – average and C – low ecological awareness (table 7).

After allocating points to each question in the different categories (A – 6 points, B – 3 points and C – 1 point) a total result was established describing 4 types of farmers' attitudes towards the natural environment: A – great sensitivity, B – moderate sensitivity, C – inadequate sensitivity, D – low sensitivity. Results of the test are presented in table 7 and diagram 3.

Diagram 3

Types of farmers' attitudes regarding sensitivity
towards the natural environment



⁶ According to the instructions of integrated production 3–5% of arable land is allocated to the development of an ecological infrastructure (Majewski et al, 1997).

Table 7

**Categories and farmers' attitudes
regarding sensitivity towards the environment**

Questions	Categories and types of attitudes	Number of farmers	Percentage of farmers
Evaluation of the level of environmental danger due to agricultural production*	A	212	29%
	B	369	51%
	C	140	19%
Readiness to act in favour of environmental protection on the farm*	A	93	13%
	B	405	56%
	C	223	31%
Types of attitudes (total result)	A	15%	110
	B	21%	155
	C	44%	318
	D	19%	138

* Average for the interviewed group.

Source: own research.

36% of those interviewed showed a high level of sensitivity towards the natural environment (categories A and B). Most of the interviewed farmers largely deny the existence of an environmental threat as a result of agricultural production and have no intention of getting involved in environmental protection.

Conclusion

The aim of the study was to learn more about farmers' environmental awareness. It was found that the perception of environmental problems was not widespread among farmers. Only 20–30% of the 655 farmers in the 1996 sample were estimated to be rather concerned. This figure is lower than the reported share of people with pro-environmental attitudes in the entire Polish population, particularly in urban areas. Farmers did not generally perceive a particular need to take on pro-environmental steps on their farms. 30% of farmers clearly stated that they did not see any need for specifically getting involved in environmental matters. Further, 61% of the farmers believe that agriculture does not harm the environment. 61% of the farmers also reported that they had not observed any unfavourable changes in their surroundings over the past few years. On the other hand, when asked for ideas with regard to improving the environmental performance of their farms, 70% of farmers presented some ideas such as improving sewage management or improving plant protection measures. A more compre-

hensive approach for farm development with a larger environmental component was, however, not prevalent. These findings were confirmed with regard to investments, which could be considered by farmers in a situation when funds were abundantly available. Only three farmers volunteered a pro-environmental investment.

No significant difference was found in the perception of environmental problems and the motivation of farmers with regard to their age and farm size. Among farmers with a vocational training the share of environmental awareness was found to be slightly higher in comparison to the share of the group with basic or higher education.

Research carried out on a similar group of farms in 1999 confirmed the results obtained 3 years earlier. They showed that the attitudes of 36% of farmers may be qualified as being of moderate and high sensitivity towards the environment, while inadequate sensitivity was represented by 44% and low sensitivity by 19% of those interviewed.

The overall low perception of environmental issues and low motivation of farmers to get involved in pro-environmental activities is most likely due to the fact that farmers are currently more concerned with financial problems and the security of their families and farms. Moreover, in many parts of Poland the natural environment is still very rich and the intensity of production relatively low.

In all, these findings indicate that the adoption of more sustainable farming practices or farming systems, like Integrated Production comprising a large environmental component, might be difficult. In addition, there will most likely be little understanding of farmers for the increasingly important environmental policies of the EU. Providing more insight into environmental issues, demonstrating ways for integrating the environmental component into farming and applying proper incentives would support changing farmers' environmental attitudes.

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