Marketing of organic products in north-eastern Poland

Editors

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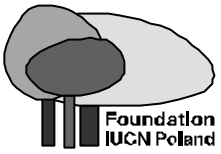

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FROM THE PUBLISHER

In the past, IUCN – The World Conservation Union has focused on the conservation of natural resources. The projects and research studies on ecosystems, in particular wetlands, grasslands and river valleys not only confirmed the relation between economic activity of humans, the nature and the landscape, but indicated directly the situations, when a seemingly simple decision of humans means "to be or not to be" for certain species of plants and animals.

Threats to nature resulting from the agricultural activities of humans change with time. While in the past the excessive industrialisation of agriculture and in particular excessive use of chemicals were regarded as the most serious source of threats, now, in the new economic situation, the collapse in the market for agricultural products, and especially cessation of any agricultural activity and abandonment of arable land are posing additional threats to biological and landscape diversity. Hence attempts are being made to maintain agricultural activity at a level sufficient to provide a livelihood for farmers and their families while ensuring, at the same time, the maintenance of the natural values of rural areas. Organic agriculture as a system which is sustainable in terms of ecology, economy and social aspects, which activates the natural mechanisms of agriculture production through use of natural means and methods of production, ensuring continuous fertility of soil and health of plants and animals, seems to be a model solution to this dilemma.

Thus the word "marketing" in the title of this IUCN publication should not surprise anybody. The project "Marketing of organic products in north-eastern Poland", carried out from 1998–2000 by IUCN Poland in co-operation with the Avalon Foundation from the Netherlands, is an example on how to develop agricultural production on land of high natural value and in areas protected by law. Organic farmers know how to draw profits from nature without damaging its resources while maintaining the beauty of the rural landscape. We hope that this example will be encouraging to other farmers.

We are grateful to the Business and Finance Unit of IUCN for the opportunity to translate this publication from Polish into English thereby broadening the dissemination of the findings of this project.

Dr Zenon Tederko

Director of Foundation IUCN Poland

1. HIGH NATURAL VALUE OF FARMLAND IN CENTRAL AND EASTERN EUROPE

By Gerwin Verschuur

1.1. Introduction

Large areas of farmland in Central and Eastern Europe (CEE) have retained a high habitat value for many plant and animal species, in spite of intensive agricultural production and the often extensive land improvement schemes of the Communist era. Reports show that farmland birds that are markedly declining in EU countries have significant populations in Central and Eastern Europe. Examples of such species are the White Stork, the Swallow, the Corncrake and Whinchat. Some grassland areas also have high botanical value.

Since 1990 habitat conditions for wildlife on farmland have further improved in many applicant countries as a result of the agricultural depression. The use of pesticides and fertilisers has greatly decreased and a large proportion of fields have been left fallow.

Grassland ecosystems on the other hand are threatened because of the economic difficulties in keeping livestock. Herd numbers have halved, and a large-scale abandonment of valuable grassland has taken place. For example, semi-natural grasslands of European importance in protected areas along the Baltic Sea coast and in the White Carpathians are being lost because of a lack of cattle or sheep for grazing.

An extrapolation of current trends shows that, without intervention, a further concentration of agricultural production on the best soils and in the most productive herds will occur. In all applicant countries, this would lead to the irreversible loss of high natural value farming systems which form an important part of the common European natural heritage.

1.2. Two possible solutions

Two solutions are presented in this article. The first approach is to pay farmers for habitat conservation, compensating them for loss of income and the extra costs of maintaining extensive farming systems. In the European Union, agri-environment programmes make this type of intervention possible. Because of the complexity of this approach, applicant countries in CEE are all preparing pilot agri-environment schemes to gain experience.

The second approach is to increase the value of the products produced in high natural value farming systems. The marketing project in north-eastern Poland is an example of this. The combination of the two approaches provides a push and a pull at the same time. Governments give a push by offering a financial incentive in the form of an area payment and consumers pull by paying more for products coming from high natural value farmland. The synergy of both approaches should be enough to maintain ecologically sound farming on high natural value farmland.

1.3. The case for marketing support

In the marketing project in north-eastern Poland the emphasis is on promoting products from organic farming because this is a well-defined, natural farming system for which there is a growing market. The project is based on the assumption that by developing the market for organic farm products, the natural value of farmland will benefit. The market-development support for organic farming is also pragmatic because it saves the time and effort which might be spent on new standards or certification programmes to which the marketing activities could be linked. It is also doubtful whether consumers would pay an extra amount of money just to get certified produce. The market for organic products is still a small one, and competing certification claims could weaken its development. The marketing project has two objectives: first, to improve the prospects for organic farming by enlarging the market for organic products; and second, to raise awareness among farmers and consumers of the link between nature conservation and organic farming.

The project, which will finish by the end of the year 2000, offers help to farmers in organising marketing groups, and developing their markets and product promotion, as well as providing practical farming advice.

The expected results of the project are:

- An increase of 30% in the area under organic cultivation;
- A 50% increase in the number of farmers joining the marketing groups, and increased cooperation within the groups;
- No further abandonment of high natural value fields by the project farmers for the duration of the project;
- Labelling of organic farm products emphasising the high natural value of the farmland in the region.

1.4. The case for agri-environment programmes

The 1992 reform of the EU's Common Agricultural Policy (CAP) made the introduction of agri-environment schemes, based on Regulation 2078/92, obligatory for all member states. This regulation became one of the key policy instruments for integrating environmental objectives into the CAP. In the following years many member states built up substantial agri-environment programmes, so that by 1998 such schemes already included about 20% of the total agricultural area and they are now considered a key environmental instrument of the CAP. Their importance is underlined by the fact that they are the only obligatory element of the new Rural Development Regulation (1257/1999/EEC) which is part of the Community's agricultural policy framework for the period 2000–2006.

In its Communication on "Accession Strategies for Environment" (COM (1998) 294 final) the European Commission states that preventive measures through integration of environmental and sustainable development considerations into sectoral policies, such as transport, energy and agriculture, need adequate attention both in the applicant countries and in Community financing and other policies.

This thinking is reflected in the objectives and measures of the Special Accession Programme for Agriculture and Rural Development (SAPARD), the main Community instrument for pre-

accession measures for agriculture and rural development in the applicant countries. EC Regulation 1268/1999 states that Community support shall relate to the "sustainable adaptation of the agricultural sector and rural areas in the applicant countries". Consequently, Article 2 of the Regulation defines "agricultural production methods designed to protect the environment" as one of the measures eligible for Community assistance under SAPARD.

Internally, the Commission has reached a common view that pilot agri-environment schemes, including payments to farmers, can be co-financed under SAPARD, provided the EU applicant countries put forward appropriate proposals for their implementation. Given the administrative and technical complexity of agri-environment schemes however, it is advisable that the countries receive support in this.

1.5. The agri-environment projects

The context described above is the motivation for three joint projects by Avalon, IEEP, Veen Ecology and national working groups in ten applicant countries to develop agri-environment schemes for Central and Eastern Europe. All three projects are supported by the Dutch Ministry of Agriculture, Nature Management and Fisheries and the Dutch Ministry of Foreign Affairs (MATRA Fund/Programme International Nature Management). After a duration of two and a half to three years all projects are due to be completed between the end of 1999 and the end of the year 2000.

The project partners have set themselves the following operational objectives:

1. To assist in the preparation of pilot agri-environment schemes in all participating countries;
2. To develop recommendations for the design of national agri-environment programmes in those countries;
3. To draw up plans for the implementation of agri-environment measures in Central and Eastern Europe as a whole.

The project implementation is divided into three phases. During Phase 1 the western project partners secured the agreement and co-operation of the ministries of agriculture and environment in each country. They also prepared a detailed project manual for the development of agri-environment programmes. This manual consists of nine individual modules that cover a range of topics from the history and rationale of agri-environment schemes to administrative details of their implementation.

The task of the national project co-ordinators during this phase was to set up representative national working groups to elaborate proposals for a national agri-environment programme. These working groups include representatives of the national agriculture and environment ministries, relevant experts, and NGO members.

The workplan for Phase 2 and 3 envisages the preparation of agri-environment schemes for one or two pilot areas in each country on the basis of the project manual. Through this project the national working groups and western project partners offer assistance to the relevant national institutions in the elaboration of agri-environment proposals for the draft national agriculture and rural development programmes for SAPARD. Recommendations for the design of a national agri-environment programme in each country will also be developed. Finally, the reflections of all

project partners in Phase 3 will be used to develop recommendations for the implementation of agri-environment programmes in Central and Eastern Europe.

1.6. Implementation of pilot schemes in Central and Eastern Europe

It is hoped that the project outlined above will be only a first step in the development of agri-environment schemes in Central and Eastern Europe. The commitment by governments in the applicant countries to implement pilot agri-environment schemes will be crucial. Also important will be the technical and financial support of the European Commission and EU member states to these schemes.

2. ASPECTS OF AGRI-ENVIRONMENT PROGRAMME REALISATION

By Anna Liro

2.1. Introduction

Protection of the environment and biological diversity is an integral part of the European Union Common Agricultural Policy, which was reshaped by the so-called MacSharry's Reform introduced in 1992. That reform aimed to solve the problem of production surpluses and change the previous face of agriculture in Western Europe which had tended to pursue concentration, specialisation, modernisation and stimulation of agricultural production at the cost of damage to the environment and a decrease in crop quality. As a result of the reform, the EU, operating within the Common Agricultural Policy, started to promote new concepts like multifunctional development of rural areas, extensification of production by introducing production quantity limits and awarding bonuses for making crop production techniques more environmentally friendly.

Within the scope of the reform, so-called accompanying measures were issued. They created a mechanism aimed at encouraging non-agricultural use of croplands or extensification of agricultural production or at least maintaining low expenditure forms of management. Financial losses or additional costs resulting from such voluntary limitations were compensated from the European Agriculture Guidance and Guarantee Fund (EAGGF) either as annual payments per hectare or per stock numbers (livestock units). These payments continued for at least five years.

The trend of changes initiated in previous years has been maintained in the recently carried reform of the EU Common Agricultural Policy, so-called Agenda 2000 which ordered all EU countries to continue implementing agri-environment programmes. At present it is the only obligatory device in the new regulation concerning the development of rural areas which encloses various legislative acts within the framework of accompanying measures such as agri-environment programmes (regulation 2078/92), afforestation of private lands (regulation 2080/92) and structural pensions (regulation 2079/92).

The main document regulating methods of agricultural production consistent with environment protection and landscape maintenance requirements is EU Regulation No. 1257/99 dated 17 May, 1999 concerning the support for rural development by the European Agriculture Guidance and Guarantee Fund (EAGGF). The part of the regulation concerning agri-environment programmes does not have an equivalent in Polish legislation. Its implementation would involve development of an adequate system of actions, defining the amount of bonuses for the farmers for undertaking these actions, establishing the conditions of participation and organising a system of control and monitoring.

The process of Poland's integration with the European Union as regards agriculture is considered one of the most difficult problems to overcome because of the disproportionate levels of development between Polish agriculture in relation to EU member countries. Poland's integration with EU will cause intensive modernisation of Polish agriculture resulting in land merging and extending cropped areas on individual farms, setting aside of marginal lands, changes in existing crop structure and intensification of agricultural production. Some areas of great importance because of farmland biological diversity protection may undergo some alterations. That is why agri-environment programmes will have a great influence upon maintaining the high natural value lands connected with agriculture.

2.2. High natural quality farming systems

Not until the last decade was it noticed that farmlands have a great importance in the creation of a national pool of biological diversity. Previously the role of these areas in creating conditions for the existence of some species in ecosystems and their surroundings was frequently forgotten, therefore the knowledge about nature resources in farmlands is incomplete. There are big gaps in the identification of important rural areas with regard to the maintenance and formation of biological diversity. The state of biological diversity is best documented in farmland within national and landscape parks and as far as permanent grasslands are concerned (marsh habitat database – Institute for Land Reclamation and Grassland Management, IMUZ). According to research conducted in the farmland area of Turew region, the richness of plant species characteristic to that territory (951 species including 42 endangered and 23 protected species) is similar to that found in some national parks (Ryszkowski, 1995). Semi-natural meadows and pastures connected with post-marsh habitats possess high natural value as, in those areas, some rare species of plants and animals, especially mud-water birds, have been preserved until today. It is essential to classify rural areas according to their biodiversity resources and to prepare maps of those areas threatened by changes taking place in agriculture.

High natural values are usually connected with small, family-run farms where traditional and extensive production methods are preferred. These farms usually employ mixed farming systems and may consist of many small fields dispersed throughout the countryside, even in different villages. Such farms can be found in highlands where severe physical and geographical conditions have made the intensification process impossible to implement but also in those regions which didn't undergo the process of collectivisation and therefore whose cultivating structures, unchanged for decades, have left the areas underdeveloped. The plain lands of eastern Poland, dominated by traditional farms and with a rich and complex landscape structure, are a rare phenomenon in Europe. The farms have extensive arable lands, connected by a system of natural river valleys and lowering of water basins are of great importance to the protection of biological diversity. That is why some bird species in danger of extinction have found refuge there (e.g. the corncrake population – an indicator of extensive meadow and pasture management – has been increasing in Poland).

Generally speaking, all areas where extensive agricultural management has been carried out for ages and where many species have adjusted their life-cycle and land use to agricultural practices have key significance for the protection of biological diversity in farmlands.

Farmland occupies 60% of Poland's territory. As far as the property structure of the land is concerned, private ownership prevails (80% of farms). The negative features that the farms share are as follows:

1. Fragmentation (farms whose area does not exceed 10ha make up over 57% of arable lands);
2. Large part consisting of less fertile soil;
3. Low financial supply and underdeveloped technical infrastructure;
4. Low level of agriculture and lack of modern agricultural approach, ineffective agricultural services;
5. Overemployment.

Collective and socialised agriculture underwent a great change during the initial phase of the country's political and structural transformation that led to the decline of most of the state farms (Panstwowe Gospodarstwo Rolne or PGR) and the exclusion of extensive land acreage out of agricultural production (lying fallow). It has been estimated that only 30% of Polish farms meet European standards and can be classified as high-commodity farms.

After the new economic policy was introduced in Poland in 1990, the trend based on achieving large crop yields and intensification of production decreased due to a sharp rise in the costs of production. In Poland there still is a prevalence of small-scale agriculture which is characterised by low use of mineral fertilisers and crop protection chemicals. From an ecological point of view it is an advantageous situation as in many farmlands of the country the great diversity of both agrocenoses (especially in arable lands) and agricultural landscapes has been preserved. It is also visible in the Green Lungs of Poland region, where the soils are less polluted and fertilised than in the highly developed countries of the EU.

As far as the spatial arrangement is concerned, farmland varies according to the structure of arable lands and the degree of their spatial transformation and also to the techniques of crop production. There are some agricultural regions where the level of production is comparable to the EU countries whereas other regions have low crop yields and continue using traditional methods of land cultivation. The state of natural value preservation varies as it depends on the degree of land transformation and cultivation techniques applied on these grounds. In Poland there are vast areas of semi-natural arable lands that form habitats for many endangered species of plants and animals. The regions of high biological diversity have been protected by various nature protection programmes and incorporated into a domestic ecological network – ECONET-Polska.

2.3. Nature protection goals at the farm level

Knowledge of the effects that the intensification of agricultural production has had on nature, especially on plants and animals, is more beneficial than identification of the state of biological diversity. It is estimated that modernisation of the agrarian structure in Poland and multi-functional development of rural areas as well as intensification of agricultural production will be accelerated due to Poland's planned integration with the EU. Some alterations regarding property are already visible. They are leading to liquidation of field mosaics and afforestation of spaces between fields and also to new land improvements. The Polish rural landscape is changing as well. It is losing its traditional features.

Biological diversity is particularly endangered in the following areas:

1. Areas that are lying fallow; areas that incorporate post-marsh habitats in river or marginal stream valleys; areas where abandonment has led to an uncontrollable succession of trees which changes the character of a habitat to a degree that it becomes unattractive to many endangered bird (e.g. the plover) and animal species;
2. Former collective and state farms which have been partially leased; short-term leasing may lead to resource and land grabbing (tree cutting, peat exploitation);
3. Areas incorporated into field consolidation programmes especially in the regions having great biological diversity resulting from the existence of traditional dispersed small fields and fine-surfaced mosaics of meadows and pastures, plantings and arable lands;
4. Farms that have restored large-scale production systems.

The protection of biological diversity in farmlands in Poland is not covered in a systematic manner that would be consistent with the priorities and regulations of CAP. In fact legislative and economic mechanisms aiming at supporting the ecological processes in agriculture and protection of nature value in farmlands do not exist. There has been one step made towards the creation of methodical conditions for the protection of agricultural production. The State Ecological Policy approved by the Parliament in 1991 assumed that state development would be in accordance with the model of sustainable development that should constitute the basis for any actions in favour of biological diversity protection. Similar importance can be assigned to the document issued by the Minister of Agriculture titled "Implications of social and economic policy for rural areas, agriculture and food economy until the year 2002" which addresses the problem of afforestation and tree planting in marginal and watershed areas. However, prevailing importance was assigned to the tasks concerned with acceleration of structural alterations in agriculture and renewal of multifunctionality in rural areas which, far from respecting the needs of biological diversity protection, may cause degradation of nature similar to that in highly developed countries.

The creation of suitable conditions for biological diversity protection in farmland regions is therefore a priority. It has been reflected in 'The national strategy for the protection of living nature resources', 1991, and in the project 'The national strategy for biological diversity protection'. The directions of actions suggested in the strategy refer to the records of the Convention on Biological Diversity of which Poland is a signatory and Poland's future integration with agri-environment regulations of the European Union.

The programme of nature protection in farmland regions in accordance with EU Regulation 2078/92 should include the following objectives:

1. Maintenance of existing agrocenoses diversity at genetic, species and ecosystem levels together with their characteristic processes and types of influence by extensification of production or maintaining extensive production; prevention of rural depopulation;
2. Reinforcement (renaturalisation) of weakened nature values e.g. in river valleys consisting in enlargement of grassland acreage or changes in the use of degraded pastures and meadows; creation of a biological shield along watercourses;
3. Restitution of biological diversity elements as enclaves of wild nature i.e. trees, ponds, baulks, marshes that have disappeared from the given area;
4. Creation of new values in the agricultural landscape by the application of various forms of management which lead to an increase of heterogeneous agrarian space and continuity of nature structures.

2.4. Criteria for selecting areas for implementation of EU Regulation 2078/92

Taking into consideration the state of maintenance of nature in agricultural landscapes in Poland and the varied degree of agriculture development, an assumption has been made that agri-environment programmes should comprise two kinds of measures:

1. Actions aimed at nature protection in selected areas (zone programmes);
2. Actions addressed to all farmers (programmes prepared for the whole country, non-zonal).

Realisation of zone programmes requires the preparation of some rules and criteria for the identification of areas where the supporting programmes for integration of agricultural economy

and nature/environment protection shall be implemented in accordance with Regulation No. 2078/92. It has been assumed that priority would be given to areas which are distinguished by high natural values and are susceptible to degradation as a result of changes in land management either towards intensification or abandonment. Such areas, in accordance with EU terminology, are described as "environmentally sensitive areas" (ESAs).

The selection of environmentally sensitive areas (ESAs) should be based on the following criteria:

1. Natural (the degree of nature maintenance in species communities, their rareness and uniqueness, richness of species and habitats, presence of endangered and disappearing species);
2. Ecological (susceptible to transformations, biocenotic and physiotactical functions in the landscape);
3. Geographical (representation with regard to physico-geographical divisions);
4. Economic (traditional type of land management, degree of transformation as a result of former use).

Because the objective of this programme is to maintain the biological diversity of agrocenoses both in legally protected areas and those outside the protected area system, the status of legal protection constitutes an important complementary criterion.

Considering those general criteria it is advisable for the vulnerable areas to include the following types of plant communities:

1. Halophilous communities (*Asteretea tripolium*);
2. Natural assemblages of high and transitional moors which function as so-called ecological lands excluded from productive use (e.g. *Oxycocco-Sphagnetea*, rush communities – *Magnocaricion*);
3. Natural and semi-natural grasslands – wet and fresh meadows connected with hydrogenic habitats which constitute refuges for specialised plant and animal species, and serve as water storage basins and places where biological sediments can accumulate. The most important plant communities are, for example:
   - *Molinietum medioeuropaeum* – flora-rich community in fertile habitats containing calcium carbonate,
   - *Calthion* – damp and wet meadows,
   - *Arrhenatherion elatoris* – fresh communities of fresh wet meadows,
   - *Cynosurion* – fertile meadows, especially the group of *Lolio-Cynosuretum*,
   - *Caricion fuscae* – low mesotrophic moors, the most common community is *Carci-Agrostietum caninae* occurring in moor hollows among meadows and in acid low moors all over the country,
   - *Caricion Davallianae* – carbon-head moors;
4. Grasses and xerothermic brushwood (e.g. *Cirsio-Brachypodion pinnati*);
5. Mountain and high-mountain grasses.

The basis for selection of ESAs should also be specific landscape systems distinguished by natural structure and habitat richness such as:

1. Mosaic silvan-meadow-pasture systems;
2. Diversified agricultural landscapes rich in elements such as: infield plantings, small water basins, sedges, meadow enclaves etc. which constitute refuges and ecological corridors for many plant and animal species; they also serve as soil protection and protect against the wind and limit erosion and migration of organic elements (biogenes) in nature.

Another criterion for designating areas as ESAs is the occurrence of endangered animal species, most of all bird refuges, for example:

1. Open areas of national and international importance, e.g. the common snipe, the redshank, the ruff, the black-tailed godwit, Montagu's harrier;
2. Open areas with enclaves of plantings and shrubs, e.g. the thrush nightingale, the red-backed shrike;
3. Marsh areas, e.g. the aquatic warbler, Savi's warbler, the marsh harrier;
4. Mosaic silvan-meadow-field, e.g. the corncrake, sandpipers, the ortolan bunting, yellowhammers.

It has been assumed that the first ESAs will be designated in existing protected areas – national parks and landscape parks whose agricultural areas satisfy the accepted criteria. National parks that include vast areas of valuable grasslands occupy the area described in detail in the next chapter, the Green Lungs of Poland region.

2.5. EU Regulation No. 1257/99: Implementation and economic instruments

Within the framework of EU Regulation No. 1257/99, there are planned some regional programmes for:

1. Protection of biological diversity in farmland regions;
2. Promotion of organic agriculture;
3. Prevention of, and counteraction against, soil erosion;
4. Low water retention in farmland areas.

The key programme is that concerned with biological diversity which will be implemented in the following areas:

1. Hay meadows and pastures with floral and ornithological values;
2. Land of ecological use all over the country;
3. Ecotonic zones around water basins all over the country;
4. Farmland regions with a varied and traditional structure of rural landscape in selected areas.

Within the framework of biological diversity, the following measures for particular farms or farms incorporated in village districts are planned:

Measures relating to nature protection:

- Withdrawal from planned general and detailed land melioration except in instances where grasslands are turning into marshes;
- Extension of grassland wetting in marsh habitats by modernisation of existing melioration systems;
- Liquidation of sewage accumulation and waste storage in local infield marshes;
- Special development of zones around water basins and water-courses (within the limits of 2–12m) bordering upon arable fields;
- Protection of slopes against erosion by planting bushes and turf;
- Elimination of ground work and ploughing;
- Elimination of illegal peat exploitation.

Measures relating to land management:

- Limiting numbers of livestock per hectare of grasslands according to agreed limits;
- Maintaining specific herd structures of cows, sheep, horses and goats;
- Reducing the use of fertilisers (giving preference to organic fertilisers produced on the farm) and the use of substances that lower soil acidification, with a view to eventually abandoning their use completely;
- Reducing or completely abandoning the use of crop protection chemicals.

Measures relating to the active protection of biological diversity:

- Maintenance of a specific way of managing permanent grasslands (swathe techniques enabling animals to escape from fields; formation of mosaic structures of grasslands);
- Leaving arable lands and grasslands in high moor habitats to lie fallow, extension of grasslands acreage;
- Restricting mowing during bird breeding seasons and during protected plant development cycles (e.g. as their seeds are ripening);
- Regulation of grazing (rotary grazing every 2–3 years);
- Manual cutting or mechanical removal of bushes;
- Strict adherence to the ban on grass burning;
- Marking bird nests in grassland; using farming methods that are favourable to the establishment of colonies of insects such as wasps and wild bees; protecting stork nests;
- Tolerating damage caused by protected animal species.

Measures relating to the protection of the structure of the agricultural landscape:

- Maintenance of the traditional structure of dispersed small fields;

- Cultivation of traditional varieties of crops and farming of old animal breeds,
- Transformation of arable soils into grasslands especially in river valleys, watersheds, steep slopes and water-courses;
- Formation and protection of silvan-field communities, baulks, infield plantings – unproductive elements of agricultural landscapes.

Formation of economic instruments supporting these measures will be subject to the following rules:

1. Agriculture extensification payments will be calculated by the hectare although rates will vary depending on class of soil quality, natural values, farm market production, the degree of arable land and grassland degradation;
2. Financial encouragement will be applied in the case of actions concerning biological diversity and cultural element protection according to a suggested score;
3. Subsidies will be given to compensate the costs of tree planting, afforestation, hedge planting and renovation of traditional elements of rural architecture;
4. Farmers joining the programmes individually or collectively (village districts) are obliged to keep adequate records and attend training sessions.

3. MULTIFUNCTIONAL AND SUSTAINABLE DEVELOPMENT OF RURAL AREAS

By Andrzej Bednarek

In the last few years many doubts have been voiced concerning the current development trends in agriculture, not only in Poland but also in Europe. The decrease in food prices and production profitability as well as the criticism received by farmers from ecologists and consumers makes it necessary to rethink the future development of agriculture. As recently as the early 90s, many of us travelling around Europe were still impressed by the perfectly levelled fields in Dutch polders, and the tens of hectares of wheat or corn and industrial and computerised farms whose owners were proud of their large harvests and extraordinary profitability. Nowadays, many analysts from that part of Europe express their fear of the future of those "modern" farms. It is believed that nowadays great production efficiency no longer guarantees economic success. This is due to the fact that great competition on the food market and increasing consciousness of consumers make the quality of products, the methods of food production and the ecological safety of consumers gain priority. Many Polish farmers state that in contemporary Poland it is not enough to sow and collect the crops but also to sell the crops to provide their families with an adequate or at least sufficient living standard. However, selling crops gets more and more difficult and the prices for common foodstuffs continue to fall. According to recently published information, the prices of selected agricultural products have decreased by 30% in the last two years. These factors make life in rural areas become more difficult and for many families it means hardly being able to make ends meet.

This disturbing picture of rural areas is intensified by the prospect of Poland's incorporation into the structures of the European Union. A large group of politicians claim, spreading their arms helplessly, that the only solution for rural areas is to oppose Poland's integration with the EU. However, it is not the EU that is a threat, but out-of-date conceptions in our agricultural policy and especially the imitation of those outdated conceptions of agricultural development which were in force in the West in the 70s and 80s.

3.1. The state of organic agriculture in Europe

Organic agriculture is today perceived in the EU as one of the key directions for agriculture and food economy development. It is accompanied by a significant growth in crop acreage and in the number of organic farms as well as the expenditure of the European Union and member states which support this production sector. In the whole of western Europe in 1985 there were only 6,300 organic farms which occupied about 100,000ha (less than 0.1% of all farmland in the EU). 13 years later, almost 2.1% of farmland (2.8 million ha) are cultivated organically on over 113,000 farms. In that time the area of organic crops in the EU has grown 13 fold.

At the same time specific states and regions differ. In many countries the percentage of farmland cultivated organically is 3–10% of the total (Austria, Sweden, Finland, Italy, Denmark, Germany) but in some regions the percentage is up to 50%. In other EU member states the acreage of farmland cultivated organically is no more than 1% (Greece, Belgium, Portugal, Ireland, France).

Such a significant development of organic agriculture has been due to crucial re-evaluations of EU agricultural and environmental policies. New agricultural policy, outlined in Agenda 2000, has also affected the rules supporting organic agriculture. The significant role in that respect was

performed by so-called agri-environment programmes which were defined in the EU Regulation No. 2078/92. Based on that in 1998, 65,000 organic farms occupying an area of over 1.3 million ha received 260 million euros of support (on average 4,000 euros per farm) from the EU and national funds.[1]

Over 11% of expenditure connected with agri-environment programmes was assigned to support organic agriculture especially in France, Austria, Germany and Finland. The significant participation of these states in support provided by the EU was due to the fact that they also contributed greatly in financing the projects undertaken. In Austria the agri-environment projects were applied to 28% of organic farms occupying almost 20% of farmlands within the organic system. To support them, 25% of the financial means that Austria had within agri-environment funds were assigned. Much greater support was obtained by organic farmers in Italy as 25% of organic farms used nearly 40% of the financial means from these funds.

Apart from supporting individual organic farms, the EU funds are assigned to support the following activities:

1. Marketing, food-processing and producer groups;
2. Structural changes;
3. Counselling and demonstration programmes;
4. Training courses for farmers;
5. Scientific research development.

As can be seen, group activities are preferred, especially producer groups, food processing and joint trade-projects.

In parallel with the development in production (organic farms, food processing), the market for organic food has also expanded in Western Europe in the last few years. It was estimated that in 1998, EU consumers spent 5–7 milliard euros on organic food whereas in 1997, the Polish people spent 18.7 milliard euros (80.8 milliard PLZ) altogether on food, only three times more than the value of the European organic food market.

Assuming that the area of organically farmed land continues to rise by 25% annually, as over the last 10 years, it has been estimated that in 2005 the percentage of arable crops grown organically will have increased to 10% and 5 years later to 30% of the total acreage of EU farmland. This means that the total area of arable crops within the organic system will amount to 15 million ha in the EU. It is believed that there will be 600,000 organic farms in the EU by then. It is estimated that by the year 2005, the organic food market will have reached the value of 25–35 thousand million euros.

The data presented above shows that organic agriculture and the market of organic food will be of greater importance in the coming decade. It needs to be reflected in the agricultural policy of Poland and not only because Poland is about to become a member state. Organic agriculture is not just an alternative means of food production. With it comes an increase in food quality, safer food for the consumer, a less negative influence upon the environment and also the protection of agricultural landscapes. It also has many positive social and economic implications that shall be discussed in the next part of this chapter.

[1] 4,000 euros equalled 17,200 PLZ according to the exchange rate in October 1999. It was 860 PLZ annually per 1ha of arable land.

3.2. The definition of organic agriculture

There is no one adequate definition of organic agriculture. Different sources provide many different definitions. In some cases, the principles of organic agriculture are based on negation (exclusion) of certain agricultural practices and emphasising the importance of others. That is the type of definition provided by the US Department of Agriculture: "Organic farming is a production system which eliminates or seriously limits the use of synthetic components of soil fertilisers, pesticides and growth stimulators and feed additives. In order to maximally increase production capability in the system of organic farming it is advisable to apply crop rotation, harvest residua, organic manure, papilonaceous plants, green manure, organic matter coming from outside the farm to provide soil fertility and to supply plants with indispensable food material but also to apply biological pest control in order to fight insects, weeds and other harmful organisms. The concept of soil as a living system and the idea of stimulating the activity of useful organisms are the essential themes of organic farming."[2]

In the definition accepted by FAO/WHO[3], the ecological and economic functions of such a land management system are stressed. "Organic farming is a comprehensive management system supporting biological diversity, organic cycles and soil biological activity. It is based on low external expenditure and the lack of use of fertilisers and pesticides. It also takes into account the fact that regional conditions demand the creation of local systems". But it emphasises that "organic farming can only guarantee that agrochemical substances were not used in the production process however, it cannot guarantee a complete exclusion of chemicals use because of global environment pollution". The following statement is also of great importance: "Restrictions concerning food produced through organic methods distinguish it from other farm products by the production method which is an integral part of identification, marking and advertising".

EU solutions concerning organic agriculture are of a more operational and instructional character. Firstly, the system of control and certification of farms as well as other economic subjects concerned with organic farming are introduced. Secondly, the government authorities are placed under an obligation to exercise that control. Then the minimum requirements for the above-mentioned authorities are defined and finally the sanctions for non-compliance with those requirements. To define minimum requirements the EU legislator specifies methods allowed in organic farming, means of agricultural production and additives used in food industry that can be applied only by farmers and food processors.

The adoption of a law concerning organic farming that would introduce regulations similar or equal with the EU solutions is being planned in Poland.

Is the noticeable expansion of organic farming and food in Western Europe just a fashionable trend that contemporary society has succumbed to? Or is the change of attitude towards agriculture rather a necessity since consumers, overwhelmed with the volume of information about existing and possible hazards, are desperately seeking safe food? Or is it that maybe agriculture, just as other fields of economic activity, needs to move towards the kind of development that is more adjusted to the surrounding environment and aimed at less exploitation of natural resources. In the long term, the third approach should be closest to the truth.

[2] N. Lampkin. 1990. *Organic farming*. Farming Press Book, Ipswich,UK.
[3] Commission of *Codex Alimentarius* FAO/WHO, Ottawa, 15–18 April 1997.

3.3. Sustainable development

Since the mid-70s there has been rising criticism of narrowly understood economic development aiming at maximum income that in the social dimension leads to the reduction of work places and in the economic dimension to emission of large quantities of waste.[4] At the UN conference in Stockholm in 1972 a concept of eco-development (sustainable development) was presented. It contrasted with views on economic development of that time. Two years later during the 3rd Managing Session of the United Nations Environment Programme (UNEP) it was stated that a society realising the idea of sustainable development is "a society that recognises the priority of ecological demands which cannot be disturbed by civilisation growth or cultural and economic development, capable of self-controlling its own development in order to maintain homeostasis and symbiosis with nature therefore respecting economical production and consumption as well as waste utilisation, caring for future consequences of present actions including future generations' health needs".[5]

Despite the dispute that has been going since then, a generally acknowledged definition of sustainable development has not been stated. According to A. Hopfer[6], eco-development means: "performance of any economic activity in harmony with nature in such way not to cause non-reversible changes in nature or management that is ecologically admissible, socially demanded and economically substantiated". Other authors accept a more analytical approach to the definition of sustainable development claiming that sustainable development is: a continuous, limited social-economic development with respect for nature and use of its natural resources[7] or recognition of the priority of ecological demands that should not be disturbed by civilisation growth and cultural and economic development.[8] Brown writes about a new philosophy of global development including, among other things, sustainable agriculture and industrial activity that need to be associated with the environment in such a way as not to violate its internal harmony.

The concept of sustainable development is also close to the idea of an ecological-social market economy that is developing at the moment in Germany, Austria and Switzerland. Apart from the ecological dimension, it also includes other areas exposed especially in the concept of limited growth: economic dimension, cultural-institutional dimension, demographical-social dimension, technical-technological dimension, the ethical-axiological and conscious dimension.[9]

Organic farming but also an integrated system of agriculture[10] correspond to the principles of sustainable development both in their theoretical and practical dimension. By propagating that system, the sustainable development tendencies are strengthened locally and regionally due to performing various ecological, economic and social-cultural functions.

The author of this chapter will further refer his idea of sustainable development to the multi-functional development of rural areas. That problem has been discussed in detail in a recent study:

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[4] B. Piontek, F. Piontek, W. Piontek. 1997. Ekorozwój i narzdzia jego realizacji. Wyd. Ekonomia i Środowisko, Białystok.
[5] Ochrona Środowiska człowieka-humanistyczne widzenie świata. Prace Naukowe Polskiego Klubu Ekologicznego, t.I. Kraków 1984.
[6] A. Hopfer. 1992. Funkcje obszarów wiejskich z perspektywy ekorozwoju. Ekorozwój obszarów wiejskich. Zesz. Probl. Post. Nauk Roln., 401. Warszawa.
[7] W. Bojarski. 1990. Kultura materialna i duchowa a zasady ekorozwoju. Aura, 6. Kraków.
[8] S. Kozłowski. 1994. Droga do ekorozwoju. Warszawa.
[9] T. Borys (red.). 1999. Wskaźniki ekorozwoju. Wydawnictwo 'Ekonomia i środowisko', Białystok.
[10] E. Majewski i inni. 1998 Wytyczne integrowanego systemu produkcji rolniczej, Wyd. FDPA, Warszawa.

"Coherent Structural Policy of Rural Areas and Agriculture Development".[11] However, it needs to be stressed that the main fault of this document is the sectoral treatment of environment protection in social-economic processes (i.e. infrastructurally). Nevertheless a contemporary, sustainable development approach demands that the environment be treated integrally i.e. as a part of sustainable, socio-economic development.

3.4. Functions of organic agriculture in nature

Functions of organic agriculture in sustainable development can be divided into two groups. The first group includes natural functions, the second includes socio-economic functions.

The positive influences of an organic farming system upon the natural environment include:

1. The elimination of environmental toxins;
2. Management of organic matter on the farm;
3. The stimulation of biological activity in the soil;
4. The extension of biological diversity of an agricultural landscape;
5. Raising the level of agro-system ecological stability.

Environmental toxins

The organic system puts less pressure on agrocenoses and surrounding ecosystems due to the elimination or essential limitation of the use of environmental toxins. As stated earlier, the use of mineral fertilisers is excluded here as they are the main source of biogenic substances which are transmitted from fields to underground and surface waters. Organic fertilisers used interchangeably, especially compost, natural fertilisers in the form of ground rocks (e.g. dolomites, basalt flour) and green manure cause much less threat in that respect.

In the system of organic farming the use of synthetic pesticides is excluded. The elimination of insecticides and acaricides fosters the protection of useful fauna of agrocenoses. The abandonment of fungicides and herbicides improves conditions for the development of soil organic life that is favourable for maintaining its fertility. In some cases it is allowed to use so-called natural pesticides produced from vegetable raw materials. Although they belong to the group of quickly decomposing substances, they can have, similarly to synthetic pesticides, a negative impact on the biotic elements of the environment.

Despite the limitation of the direct negative impact of that type of agriculture upon the environment one should also pay attention to the energy-saving aspect of that system. With the elimination of agrochemical substances, a general saving of energy use necessary to performing time-consuming industrial processes is gained.

Organic matter management

A negative feature of conventional agriculture is the considerable waste of organic matter. In the organic system, crop residues and other organic substances accumulated on a farm as well as communal sewage substances are a desirable material for the production of organic fertilisers.

[11] Document accepted by the Cabinet in July 1999.

Organic agriculture introduces a system of composting organic substances formed on a farm as a general rule of fertiliser preparation. A positive effect of that rule, from the ecological point of view, consists in closing the cycle of matter circulation within a farm. The beneficial economic implications of this result from the elimination of the need to use organic materials from outside the farm which leads to a reduction of direct and indirect costs.

Biological activity in the soil

Organic agriculture restricting external expenditures on crop maximisation puts emphasis on natural methods of soil fertility increase due to which it is possible to maintain crops at an optimal level.[12] The methods used in organic farming incorporate the following actions:

1. The use of composts and other organic fertilisers;
2. Limitation of mineral fertiliser use on soil therefore minimising damage to soil fauna;
3. Use of mineral fertilisers by mixing them with composts;
4. Limited use of measurements connected with deep soil ploughing or application of non-ploughing techniques that do not violate the structure of soil organism groupings which take an active part in soil-forming processes;
5. Abandonment of chemical pesticide use, especially herbicides and fungicides, that limit the capability of groups of soil organisms;
6. Use of appropriate crop rotation and maintenance of ecological buffers thanks to which soil life is enriched.

Biological diversity of agro-ecosystem

Owing to rich crop rotation, application of co-ordinated crops, maintenance of baulks and other ecological buffers in agrocenoses, organic agriculture is favourable to the increase of the mosaic structure of an agricultural landscape. It also contributes to a rise in biological diversity because habitats formed in that way create favourable conditions for the existence of many plant and animal species and microorganisms. It should also be stressed that the elimination of environmental toxins fosters the development of organisms groupings and organic structures thereby raising the level of biological diversity.

Ecological stability of agro-ecosystem

Maintenance of agro-ecosystem stability is of fundamental importance for productive efficiency in organic farming because of the limitation of crop-creating external expenditures (agrochemicals). Agrocenoses as open systems are characterised by a low level of organic balance and because of the concentration of plant production they are particularly susceptible to mass occurrence of phytofags, weeds and pathogenic microorganisms. In conventional agriculture agrochemicals restrict the development of these unfavourable factors from the agricultural point of view.

In an organic system, agrochemicals are substituted by adequate agrotechnical means and the employment of internal mechanisms suspending biological production. These actions favour the development of natural mechanisms ensuring a high level of organic stability. By stimulating soil biological life and biological diversity in agrocenoses some networks of trophic connections,

[12] G.E. Siebeneicher. 1997. Podrêcznik rolnictwa ekologicznego. Wyd. Naukowe PWN, Warszawa.

competitive structures and paratrophic bonds develop. They lead to homeostasis of ecological systems. Owing to these natural mechanisms, agrocenoses run on an ecological system are much more resistant to factors destabilising the system (e.g. gradating pests occurrence).

It should also be noticed that stable agro-ecosystems have a beneficial influence upon the whole agricultural landscape since they do not constitute organic barriers that would make it difficult for organisms to move within bigger units. In consequence it can be claimed that the general acceptance of the system of organic agriculture either locally or regionally can be of great importance taking into consideration sustainable development not only for single farms but also for local development.

3.5. Social and economic functions

Organic agriculture can have extensive implications in various spheres of economic and social activity. A few social and economic functions of organic agriculture which are important from the point of view of sustainable development, either local or regional, are:

1. Shaping innovative and educational attitudes;
2. Production of a new category of products in accordance with environmental standards;
3. Extension of ecological safety of food;
4. Increase of agro and eco-tourist attractiveness of the region;
5. Activation of new sources of income and limitation of unemployment in rural areas.

Sources of income and unemployment

Organic agriculture generates additional sources of agricultural and non-agricultural income which can significantly influence the economic stability of local communities. Additional sources of income result from the following reasons:

1. Farmers producing by organic methods usually receive income as a so-called ecological bonus;
2. Rise in attractiveness of products owing to their organic farms label – easier retail; [13]
3. On-farm food processing and direct sale of organic products on a farm – as a result of that farmers can receive additional income which is connected with lowering price margins owing to shortening the chain of distribution.

Apart from income resulting from agricultural production or food processing and selling crops, the farmers who run organic farms can expect additional subsidies from government and international sources which are involved in the realisation of agri-environment programmes in Poland. Since 19 March 1999 in Poland, there has been a regulation of the Minister of Agriculture and Food Economy that enables payment of direct subsidies to organic farmers.

[13] J. Tyburski. 1995. Charakterystyka gospodarstw ekonomicznych w Polsce. W: Ekologiczne i integrowane rolnictwo w Polsce. Raport-1995. (red. A. Radecki, A.Bednarek, B. Zawadzki, J.£abêtowicz). Wydawnictwo Fundacji ‘ Rozwój SGGW’, Warszawa.

At present, a key problem in rural areas in Poland is real and hidden unemployment.[14] The general acceptance of the organic farming system may cause a significant decrease in this. This type of farming typically needs a larger work force. Many maintenance measures demand manual or mechanical work (e.g. weeding, compost formation). Additional expenditure on labour is connected with the creation of organic infrastructure of the farm. In a process of organisation of on-farm food processing and retail many inhabitants of a village can find employment. New jobs will also be created in connection with the development of agro and eco-tourism projects.

Agro-tourism and eco-tourism

Organic farms have to increase the attractiveness of rural areas through the development of agro-tourism. Foreign experience shows that it is more desirable to holiday in those areas which are influenced by less intensive agricultural economy. An additional factor to the possibility of rest, especially at weekends, is the opportunity to provide people from city agglomerations with food. Organic farms may offer not only more diverse rural landscapes but also high-quality food products.

Consumer safety

Consumer safety is an important function of sustainable development. It is connected with potential or real contamination of food products by agro-chemical residues. Moreover, ecological safety includes not only the environmental conditions of cultivation and stock-breeding but also the application of environmentally friendly technologies of agricultural production and food processing. Higher market value can be reached by those products which have been made using environmentally friendly technologies and prepared in conditions favourable for living organisms.

With regard to methods of cultivation and breeding used on farms, that system is characterised by the production of food either not contaminated by agro-chemical residues or with a degree of contamination much lower in comparison to conventional agricultural products. The limitation of external expenditures and production energy-saving mean that organic farming, unlike other agricultural systems, can guarantee the supply of the safest food for the consumer. Favourable factors here are:

1. Use of composts to fertilise soil limiting water pollution by biogenes;
2. Elimination of synthetic crop protection chemicals limiting the possibility of food contamination by their residues;
3. Ban on the use of growth regulator and veterinary medicines decreasing a risk of food contamination by undesirable chemical substances;
4. Ban on the use of genetically modified organisms excluding the influence of these organisms on human health and environment and improving the product image;
5. Limitation of the use of synthetic preservatives and additives in food processing lowering the risk of product contamination.

Innovative and educational attitudes

Organic agriculture is a system that demands different qualifications and modes of action from farmers than in conventional agriculture. It requires deep knowledge of the interrelations between

[14] M. K³odziñski. 1999. Aktywizacja gospodarcza obszarów wiejskich. Problemy rozwoju wsi i rolnictwa. Warszawa.

populations inhabiting agrocenoses and the conditions of their habitat. A farmer has to know how to evaluate the state of crops by himself and undertake adequate preventive actions which will allow him to obtain sufficient crops. He has to think holistically to estimate completely phenomena taking place on his farm. A farmer must also be innovative – not only in the field of agricultural production but also in on-farm food processing and product retail. Therefore, organic farming demands numerous skills from various levels of the educational system and vocational training.

Due to advanced production technology, an organic farmer needs help from agricultural advisory bodies. Demonstration programmes and training courses organised locally and regionally are of great importance here.

3.6. Conclusions

Organic agriculture is an optimal system of farming under conditions of sustainable development. That system of agricultural production combined with other fields of economic activity in rural areas can be treated as a base for social and economic development on a regional scale. Other domains closely related to organic agriculture can be: rural and on-farm food processing, also rural retail trade and the sphere of services supporting sustainable development, especially education, training, business organisation and also agro- and eco-tourism.

Since eco-development is a socially approved and accepted direction of economic development, adequate government and self-government institutions bear responsibility for initiating and supporting the initiative in that respect at a local level. An appropriate system of financing should serve that goal, for example through agri-environment programmes such as those in the European Union.

It should be stressed that, as it stands, the idea of sustainable development presented above through incorporation of the system of organic agriculture and accompanying projects is of importance mainly on a local basis. It affects mostly areas having high organic sensitivity marked in Poland by the so-called domestic ecological network ECONET.[15] Sustainable development of the north-eastern region of Poland, the so-called Green Lungs of Poland is of great importance here. However, a similar type of development should be considered in other regions like: Tuchola Forests, Świętokrzyskie mountains or Lower Carpathian Region.

Nevertheless, undertaking adequate practical actions demands an earlier preparation of local and regional strategies of sustainable development. It requires a transformation of strategic programmes of municipalities so that particular fields of social and economic development are integrated with the environment in accordance with the principles of sustainable development.

[15] A. Liro. 1998. Strategia wdrażania krajowej sieci ekologicznej ECONET. Fundacja IUCN, Polska. Warszawa.

4. AGRO-ENVIRONMENTAL CONDITIONS FOR ORGANIC FOOD PRODUCTION IN THE GREEN LUNGS OF POLAND REGION

By Andrzej Radecki and Bogdan Zawadzki

4.1. Introduction

General characteristics of the Green Lungs of Poland region

The region of north-eastern Poland, made up of unique forest areas and clusters of lakes, requires a separate approach to the process of structural change. Agriculture, next to forestry is the domain which is most closely connected with the correct function of natural silvan and water clusters. The way of running farms, the degree of production intensity, proportions of animal and plant production have a great influence upon forests, fields and inland water ecosystems.

Interested in maintaining the stability of ecological processes and ecosystems in these areas, administrative governments of voivoidships and municipalities of this part of Poland have signed an agreement to carry out joint activities aimed at sustainable development and have described this region as "Green Lungs of Poland".

At the beginning, between 1988-1990, voivodships of the time like Bia³ostockie, £om¿yñskie, Olsztyñskie, Ostro³êckie and Suwalskie were included in that region. Shortly after that neighbouring municipalities joined the agreement:

In 1993:

- The whole of the Ciechanowskie voivodship (as it was then),
- 19 Bug river municipalities of the Siedleckie voivodship,
- 12 municipalities of Brodnickie lake district which belonged to the Toruñskie voivodship at that time,

In 1994:

- 24 municipalities of eastern and north-eastern part of Elbl¹skie voivodship of the time.

Altogether, the area of the Green Lungs of Poland (GLP) region covers 60,000km^2 which constitutes about 1/5 of the area of Poland.

According to the present administrative division of the country, the area covers three voivodships (then, it spread over nine voivodships):

1. Podlaskie (whole);
2. Warmiñsko-Mazurskie (a great part);
3. Mazowieckie (a small part).

That constitutes 315 municipalities altogether.

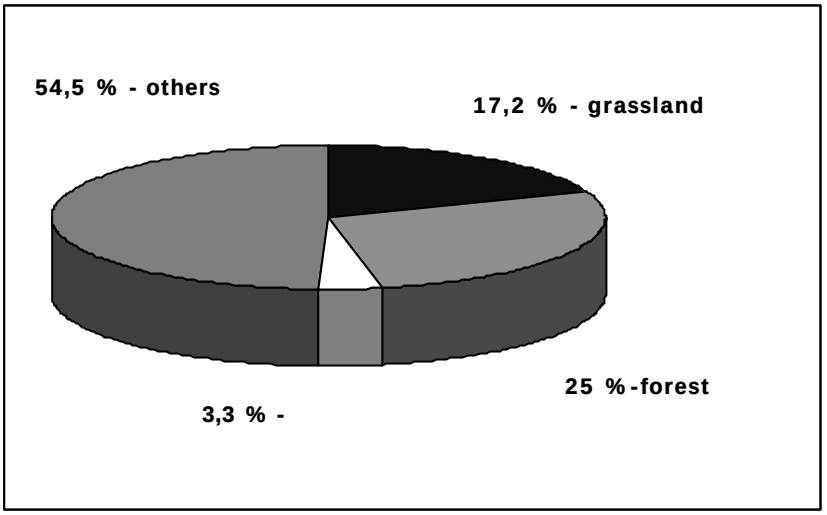

Figure 4.1 Area of grassland, forest and water in the Green Lungs of Poland region (GUS, 1995)

Voivodship	Pastures and meadows [%]	Forests [%]	Water bodies [%]
Bia³ostockie	21.0	32.6	1.0
£om¿yñskie	19.4	21.3	1.2
Olsztyñskie	17.0	31.8	4.5
Ostro³êckie	21.4	31.6	1.2
Suwalskie	18,1	32.4	7.8
Ciechanowskie	16.0	17.1	1.2
Toruñskie	8.0	17.8	3.0
Siedleckie	15.4	22.5	1.3
Elbl¹skie	19.0	17.4	8.3
Average	**17.2**	**25.0**	**3.3**

Table 4.1 % area covered by grassland, forest and water in the GLP region (GUS, 1995)

The average values vary only slightly from the average data for the whole country since, according to Central Statistical Office (GUS), forest cover over the whole country is 28% and meadows and pastures about 13%. The area of farmland in comparison to the country's average (46%) or to the rural areas average (49%) also does not especially distinguish that part of Poland from the rest. However, there is a great diversity of land use among individual parts of the GLP region which can be clearly seen in Table 4.2 and Figure 4.2.

Voivodship	Total rural areas [ha]	Farmland		Arable land	
		Thousands ha	[%]	Thousands ha	[%]
Bia³ostockie	964.5	566.7	58.8	365.0	37.8
£om¿yñskie	644.9	434.7	67.4	308.6	47.9
Olsztyñskie	1,206.4	639.7	53.0	439.4	36.4
Ostro³êckie	633.1	387.9	61.3	251.5	39.7
Suwalskie	1,021.0	526.2	51.5	339.0	33.2
Ciechanowskie	622.8	466.3	74.9	359.2	57.7
Toruñskie	161.7	108.4	67.0	94.1	58.2
Siedleckie	262.3	182.9	69.7	138.7	52.9
Elbl¹skie	376.5	234.5	62.3	164.7	43.7
Total	5,893.2	3,547.3	60.2	2,460.2	41.7
Poland total	29,223.1	17,795.8	60.9	14,305.0	49.0

Table 4.2 Land use in the Green Lungs of Poland region (GUS, 1995)

The smallest percentage area of arable land and farmland is in the municipalities belonging to former Suwalskie voivodship and Olsztyñskie voivodship. This area is dominated by forests and waters.

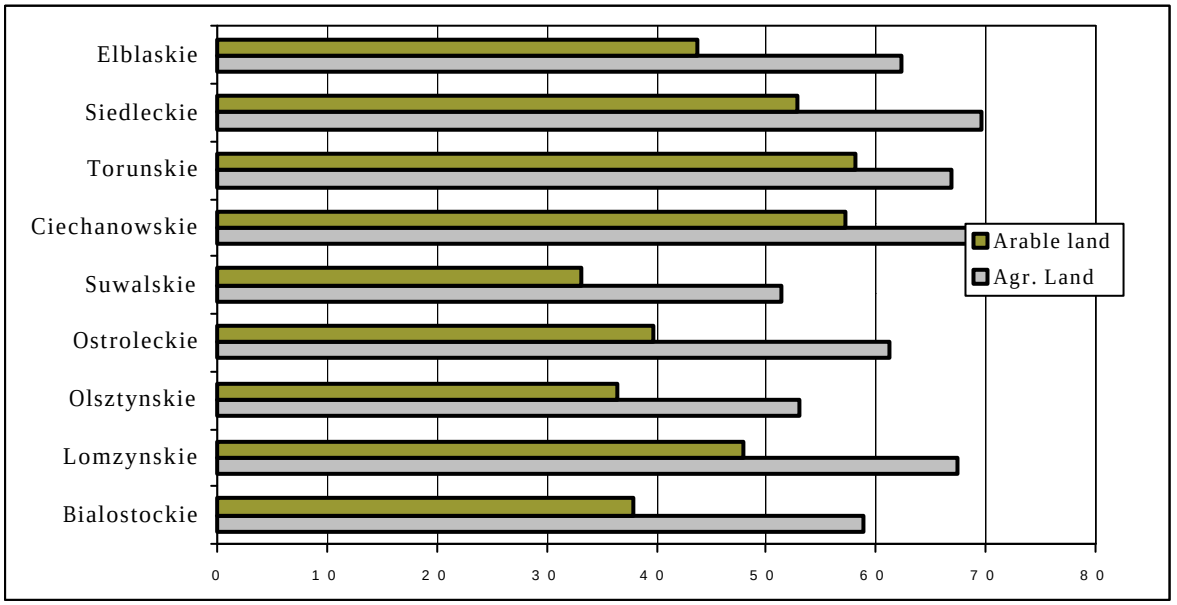

Figure 4.2 Land use in the Green Lungs of Poland region in thousands ha?

In the Green Lungs area, there are a lot of permanent grasslands. Most of the meadows and pastures (more than 20%) are in the municipalities of former Bia³ostockie and Ostro³êckie

voivodships and the least in former Toruñskie and Siedleckie voivodships. The greatest afforestation is in the municipalities of former Bia³ostockie, Suwalskie, Olsztyñskie and Ostro³êckie voivodships (over 30%) and the least in the municipalities of former Ciechanowskie, Elbl¹skie and Toruñskie voivodships (under 18%).

Enlargement of the region between 1993-1994 by adding municipalities with a prevalence of arable land and therefore high level of agricultural activity made this whole region, occupying 20% of the area of Poland, structurally very similar to arable land in the whole country.

As far as the number of protected areas is concerned, the Green Lungs of Poland region is also diverse. (Table 4.3.)

Voivodship	**Total protected landscape area**		**Total nature reservations**	
	Number	**Area [ha]**	**Number**	**Area [ha]**
Bialostockie	5	242,126.0	50	7,890.0
£om¿yñskie	4	65,618.0	11	846.8
Olsztyñskie	1	416,882.7	44	10,112.4
Ostro³êckie	-	-	12	620.7
Suwalskie	17	587,520.0	47	15,274.2
Ciechanowskie	8	230,936.7	16	999.5
Average for 6 voivodships	5.8	257,180.6	30.0	5,957.3
Average for 1 in 49 voivodships	8.0	139,210.9	24.6	2,660.8

Table 4.3 Number and surface area of protected nature areas (GUS, 1995)

However, the Green Lungs of Poland region differs in industry (Tables 4.4 and 4.5) and population density (Tables 4.6 and 4.7) from the rest of the country.

Voivodship	**Amount of pollution** [tons/km^2]		**Sewage disposed of into surface waters** [hm^3]	**Amount of industrial waste harmful to the environment** [thousand tons]
	Dust	Gas		
Bialostockie	0.2	1.04	29.6	2,120.3
£om¿yñskie	0.4	1.0	12.2	28.9
Olsztyñskie	0.1	0.7	42.8	757.9
Ostro³êckie	0.4	5.6	446.2	9,943.9
Suwalskie	0.1	0.7	18.0	0.7
Ciechanowskie	0.2	0.4	10.4	9.0
Katowickie	10.6	91.4	643.7	882,550.5
Poland Total	-	-	9,961.0	2,020,331.7

Table 4.4 Levels of pollution: air, sewage and industrial waste

The selected data on environment cleanliness in a territorial scheme of former voivodships points clearly that the area of Green Lungs of Poland region distinguishes itself in that respect compared to the other voivodships in this survey.

However, there is no information concerning environment cleanliness in the scheme of municipalities for the rest of the Green Lungs of Poland region.

Voivodship	Cr	Zn	Cu	Pb	Hg
Bialostockie	0.7	21.8	3.3	6.5	0.1
£om¿yñskie	0.8	24.4	3.7	7.1	0.1
Olsztyñskie	1.6	48.9	7.4	14.4	0.3
Ostro³êckie	0.9	23.0	3.8	7.4	0.4
Suwalskie	1.1	33.7	5.1	9.9	0.2
Ciechanowskie	1.0	29.8	4.6	8.9	0.2
Katowickie	25.1	508.0	52.5	204.5	5.3
Poland	117.0	2,749.0	498.8	957.7	33.6

Table 4.5 Total yearly emission of heavy metals (GUS, 1998)

The high level of emission of gases into the atmosphere in Ostro³êckie voivodship is caused by 22 heavy industrial plants including one which annually discharges over 20,000 tons of gas pollutants into the atmosphere (mainly sulphur dioxide).

Table 4.4 shows that in Ostro³êckie voivodship there is twice the amount of sewage disposed of in surface waters than the average in Poland. That amount exceeds many times the amount of sewage disposed of in the remaining part of the Green Lungs of Poland region. Nevertheless, it should be noticed that they are predominantly cooling waters, conventionally called clear (out of the total of 446 hm^3, cooling water takes up 424 hm^3).

If we analyse the amount of industrial waste harmful to the environment accumulated in 1997, the Green Lungs of Poland region stands out positively compared to the rest of Poland. Only in former Ostro³êckie and Bia³ostockie voivodships is the amount of heavy industrial waste significant.

The whole area of the Green Lungs of Poland region also distinguishes itself in a positive way from the rest of Poland when it comes to the emission of heavy metals. Only in former Olsztyñskie voivodship is the emission of zinc and lead, caused by industrial plants, high.

The data in Tables 4.4 and 4.5 points clearly at the low level of industrialisation of that region which is surely connected with the very little environment pollution but also at a great differentiation in the area in that respect. In the Green Lungs of Poland region there are municipalities or groups of them whose soils, waters and air are pure but there are also municipalities or villages with a high degree of pollution caused by local industrial plants.

The unique, from the nature point of view, character of the Green Lungs of Poland region is also helped by the small number of people inhabiting these areas and an unusually small number of big urban clusters (Tables 4.6 and 4.7).

The total number of population in that area varies from 47 to 70 people per km^2 in comparison to the average for Poland – 124 people per km^2. The number of people in rural areas is equally low although in the area of two former voivodships (Ostro³êckie and Ciechanowskie) the rate does not vary greatly from the average for Poland.

In the entire Green Lungs of Poland region (20% of the country's area), there is only one town with over 200,000 inhabitants and two towns with 100–200,000 inhabitants. That is, only three large cities out of the 62 in Poland as a whole.

Voivodship	**Total population**		**Population in rural areas**	
	per Km^2	**[%]**	**per Km^2**	**[%]**
Bialostockie	70	56.4	26	52.0
£om¿yñskie	53	42.7	32	64.0
Olsztyñskie	63	50.8	25	50.0
Ostro³êckie	63	50.8	41	82.0
Suwalskie	47	37.9	21	42.0
Ciechanowskie	69	55.6	42	84.0
Poland total	124	100.0	50	100.0

Table 4.6 Population density (GUS, 1998)

Voivodship	**Population [in thousands]**			
	> 200	**100–200**	**50–100**	**10–50**
Bialostockie	1	1	1	7
£om¿yñskie	-	-	1	4
Olsztyñskie	-	1	1	12
Ostro³êckie	-	-	1	5
Suwalskie	-	-	2	8
Ciechanowskie	-	-	-	6
Katowickie	4	11	22	42
GLP region (1/5 of Poland's area)	1	2	6	41
Poland total	20	42	93	410
Average (1 in 49 voivodships)	0.4	0.9	1.9	8.4

Table 4.7 Number of cities in the voivodships

To conclude, the Green Lungs of Poland region stands out from the rest of Poland by virtue of its low population density and low level industrialisation which distinctly influences the environment cleanliness of that region. When analysing the structure of land use one may observe a great

difference between individual voivodships within the region but when the region is taken as a whole and compared to average data for Poland, the proportional differences between farmland, grassland, forests and water seem to blur.

4.2. Methodology

Multiple weights method

In order to determine the suitability of certain rural municipalities in the Green Lungs of Poland region for organic farming, a method of multiple weights developed by Dr Edward Majewski[16], has been applied. It enables us to quantify factors which characterise the natural and economic conditions necessary for a proper development of that production system in terms of quantity and quality.

The basic principle behind the method is to evolve a set of 27 factors comprising nine indicators combined into three groups of criteria: agricultural, economic and ecological. Individual factors have been attributed with different action force by assigning appropriate weights to them. Weights reflect the significance that a particular factor possesses in regard to objectives and conditions of organic production but also in regard to its influence upon productive and economic results of farms.

A final result of the calculation is an overall suitability index which constitutes the sum of weighted group wellbeing indexes for all the factors in the three groups of criteria.

Each of the factors is quantified as a parameter of an interval from 0 (the least favourable value of a given feature) to 1 (the most favourable value).

An overall suitability index is determined by 'weighting' selected features at three levels:

I. Weights of individual factors creating groups of criteria;

II. Weights of partial 'suitability indexes' (three indexes within each group of criteria);

III. Weights of groups of criteria.

Weights of levels I and II have the character of objective measures reflecting the influence of 'weighted' factors upon the effects achieved in organic agriculture (e.g. soil quality vs. potential planning or the condition of organic production e.g. a degree of environment pollution). They are fixed as function dependencies but also as parameters defined by experts.

Weights of level III (groups of criteria) in the analysis are of a subjective character and have been used to estimate suitability of particular municipalities for organic production in respect to a single group of criteria.

Weights at each level of the calculus are determined as values in an interval from 0 to 1 on the condition that the sum of weights around each index must equal 1. A weight of 0 can be assigned to a group of criteria in order to exclude a given group from the analysis.

[16] 'Waloryzacja obszarów wiejskich Polski dla potrzeb rolnictwa ekologicznego', Ed. A. Radecki. SGGW, Warszawa 1999.

Overall suitability index

Final calculations were made on a spreadsheet taking a municipality as the basic unit for the analysis. Each municipality was assigned an overall suitability index with a value between 0 and 1. Value 0 would mean that in a given municipality organic production cannot be carried out because soil and/or air contamination are above accepted standards.

The closer the overall suitability index value gets to 1, the better the conditions for organic production methods both in agricultural and economic conditions and for the meaning of this production system for environment protection.

To present the results a technique of graphic illustration has been used (GIS – a system of geographic information). Maps were made corresponding to various variants in which certain criteria prevailed to a different degree. A division into five groups (or classes) has been made and these have been marked by a different colours:

1. Group 1 (the highest index) – dark green;
2. Group 2 (a good index) – a medium shade of green;
3. Group 3 (an average index) – light green;
4. Group 4 (a weak index) – yellow;
5. Group 5 (the lowest index) – sandy.

Intervals of values of the highest index in reference to the variants applied in this analysis are as follows:

1. Single variant – agricultural criteria 0,700-0,625;
2. Single variant – economic criteria 0,890-0,600;
3. Single variant – ecological criteria 0,882-0,700;
4. Complex-proportional variant 0,760-0,600.

Criteria for identification of the areas for organic production

Determining the criteria for selection of the especially favourable areas for organic production has been based on the assumption that such areas must have appropriate natural conditions (soil, water conditions, agro-climate, and relief) and guarantee, at the same time, effective economic functioning of organic agriculture but also satisfy important social requirements, the most important of which is environmental protection in areas particularly precious because of their nature and landscape values, etc.

Favourable natural, economic and infrastructure conditions are of great importance from a farmer's point of view since they guarantee a quantitatively appropriate level of agricultural production and give the possibility of selling the manufactured organic products conditioning at the same time the economic profitability of this type of farming.

Evaluation of the land from the point of view of potential for organic agriculture development was based on three groups of criteria: agricultural, economic and ecological.

Agricultural criteria include the conditions of organic agriculture development resulting from nature, demographic, organisational and socially-cultural conditions. In this group of criteria, three derived indexes have been accepted:

1. An index of agricultural quality of the land;
2. An index of structure and organisation of agricultural production;
3. An index of soil culture.

Economic criteria characterise the conditions of organic agriculture development resulting from market, infrastructure and socio-cultural conditions. Based on the analysis of accessible sources of numerical data at municipality level, three derived indexes were also accepted in this group of economic criteria:

1. An index of a potential market;
2. An index of market infrastructure;
3. An index of potential demand.

Ecological criteria characterise the state of natural environment conditioning agriculture development and enable by that a selection of zones that have varying suitability for organic agriculture development. In that group of criteria the following derived indexes were accepted:

1. An index of ecological sensitivity;
2. An index of landscape and tourism values;
3. An index of clean, unpolluted land.

Details on the calculations of values and weights of particular indexes and factors and also weights for groups of criteria and an overall suitability index are included in a scientific study entitled "Waloryzacja obszarów wiejskich dla potrzeb rolnictwa ekologicznego" ("Delimitation of rural areas for the needs of organic agriculture") described by a team from the Agriculture University in Warsaw and edited by Prof. Andrzej Radecki.[17]

4.3. Identification of areas particularly favourable for organic farming in the Green Lungs of Poland region

315 municipalities located in the Green Lungs of Poland region were analysed. In order to display results depending on the priority of individual criteria groups, three single variants have been applied considering separately agricultural, economic and ecological criteria but also one complex proportional variant.

Potential conditions for organic agriculture to function in particular municipalities, estimated exclusively on the basis of agricultural criteria, are illustrated in Table 4.8.

Particular indexes in the group of agricultural criteria have been assigned various weights. The index of agricultural quality of the land, due to the principal importance of soil and climatic conditions, has been assigned 50% weight which means that this factor has influenced 50%. 20%

[17] 'Waloryzacja obszarów wiejskich Polski dla potrzeb rolnictwa ekologicznego', Ed. A. Radecki. Wyd. SGGW, Warszawa 1999.

was the influence of the index of structure and organisation of agricultural production concerning the cultivated area on the farms, existence of permanent grasslands and the human factor (demographic age). 30% was the influence of the soil culture index meaning reaction and soil richness in phosphorus and potassium.

Making such assumptions, values in the range 0.346 to 0.768 were registered for the municipalities analysed. From the viewpoint of suitability for organic production, only those rural areas with points in the range 0.625–0.768 should be taken into consideration.

Voivodship (with number of municipalities in brackets)	**Municipalities with overall suitability indexes in intervals**									
	0.768–0.625		**0.625–0.55**		**0.55–0.475**		**0.475–0.40**		**0.40–0.28**	
	No.	**[%]**	**No.**	**[%]**	**No.**	**[%]**	**No.**	**[%]**	**No.**	**[%]**
Bia³ostockie (50)	-	-	3	6.0	24	48	23	46.0	-	-
£om¿yñskie (39)	1	2.60	12	3.8	19	48.7	7	17.9	-	-
Olsztyñskie (48)	5	10.4	12	25.0	27	56.3	4	8.33	-	-
Ostro³êckie (39)	-	-	1	2.56	15	38.5	23	59.0	-	-
Suwalskie (43)	-	-	4	9.3	27	62.8	8	18.6	4	9.3
Ciechanowskie (44)	-	-	12	27.3	18	40.9	12	27.3	2	4.55
Siedleckie (19)	-	-	10	52.6	9	47.4	-	-	-	-
Toruñskie (12)	-	-	1	8.33	7	58.3	3	25.0	1	8.33
Elbl¹skie (21)	10	47.6	11	52.4	-	-	-	-	-	-
GLP total (315)	16	5.08	66	21.0	146	46.3	80	25.4	7	2.22

Table 4.8 Evaluation of rural areas in the Green Lungs of Poland region using the agricultural criteria

It turns out that these requirements are met by only 16 municipalities (5%) scattered throughout the area of the Green Lungs of Poland. The greatest concentration of municipalities (10) in which the overall suitability index reached the required value was in former Elbl¹skie voivodship and they are as follows: Braniewo, Frombork, Gronowo Elbl¹skie, Lelkowo, Markusy, M³ynary, Pieniê¿no, P³oskinia, Stegna and Wilczêta. In Olsztyñskie voivodship, there were five municipalities: Bisztynek, Jeziorany, Kiwity, Ma³dyty, and Srokowo; and in Lom¿yñskie voivodship only Grabowo municipality.

According to agricultural conditions taking into consideration 9 basic factors, most municipalities (~ 90%) achieved low or very low indexes of suitability for organic production.

The results clearly show that the area as a whole does not have ideal conditions for agricultural production which will cause problems with the propagation of an organic agriculture system in this area. This system gives better results when the soil and climatic conditions are better.

Classification of municipalities according to economic criteria also proved unfavourable. In this variant neither agricultural nor ecological criteria were taken into consideration. Based on nine adequately balanced factors, economic and derived index criteria were estimated. The potential market index which decides, to a high degree, the number of potential buyers of organic products was assigned 60% weight. 25% was the weight of the potential demand index considering the incomes of city dwellers while 15% was the infrastructure index which indicates roads, warehouses and places of agricultural product purchase as well as telecommunications development.

The calculated values revealed a very wide range, from 0.120 to 0.663. Because the highest weight in this group was assigned to the index of potential market (size of population in big city agglomerations), all municipalities showing high values (35) were in the vicinity of the Warsaw agglomeration (see Table 4.9). These are 19 municipalities of the former Ciechanowskie voivodship, 9 municipalities in Siedleckie voivodship and 7 municipalities located in Ostro³êckie voivodship. They constitute only 11% of all municipalities within the Green Lungs of Poland region. The remaining rural areas, far from big ready markets, registered low or very low values of the overall suitability index. It is one of the main factors limiting or excluding the establishment of organic farms in large parts of the GLP region. When making such an important decision it should be remembered that for proper functioning of farms, especially organic ones, the balance between production and selling is necessary since only then may one talk about the profitability of such farming.

Voivodship (with number of municipalities in brackets)	**Municipality indexes in intervals**									
	0.60–0.89		**0.60–0.45**		**0.45–0.30**		**0.30–0.15**		**0.15–0.12**	
	No.	**[%]**	**No.**	**[%]**	**No.**	**[%]**	**No.**	**[%]**	**No.**	**[%]**
Bia³ostockie (50)	-	-	-	-	-	-	50	100	-	-
£om¿yñskie (39)	-	-	-	-	-	-	5	12.8	34	87.2
Olsztyñskie (48)	-	-	-	-	-	-	48	100	-	-
Ostro³êckie (39)	7	17.9	6	15.4	-	-	6	15.4	20	51.3
Suwalskie (43)	-	-	-	-	-	-	2	4.65	41	95.5
Ciechanowskie (44)	19	43.2	-	-	10	22.7	-	-	15	34.1
Siedleckie (19)	9	47.4	1	5.3	-	-	7	36.8	2	10.5
Toruñskie (12)	-	-	-	-	-	-	12	100	-	-
Elbl¹skie (21)	-	-	-	-	14	66.7	7	33.3	-	-
GLP total (315)	35	11.1	7	2.2	24	7.6	137	43.5	112	35.6

Table 4.9 Evaluation of rural areas in the Green Lungs of Poland region using the economic criteria

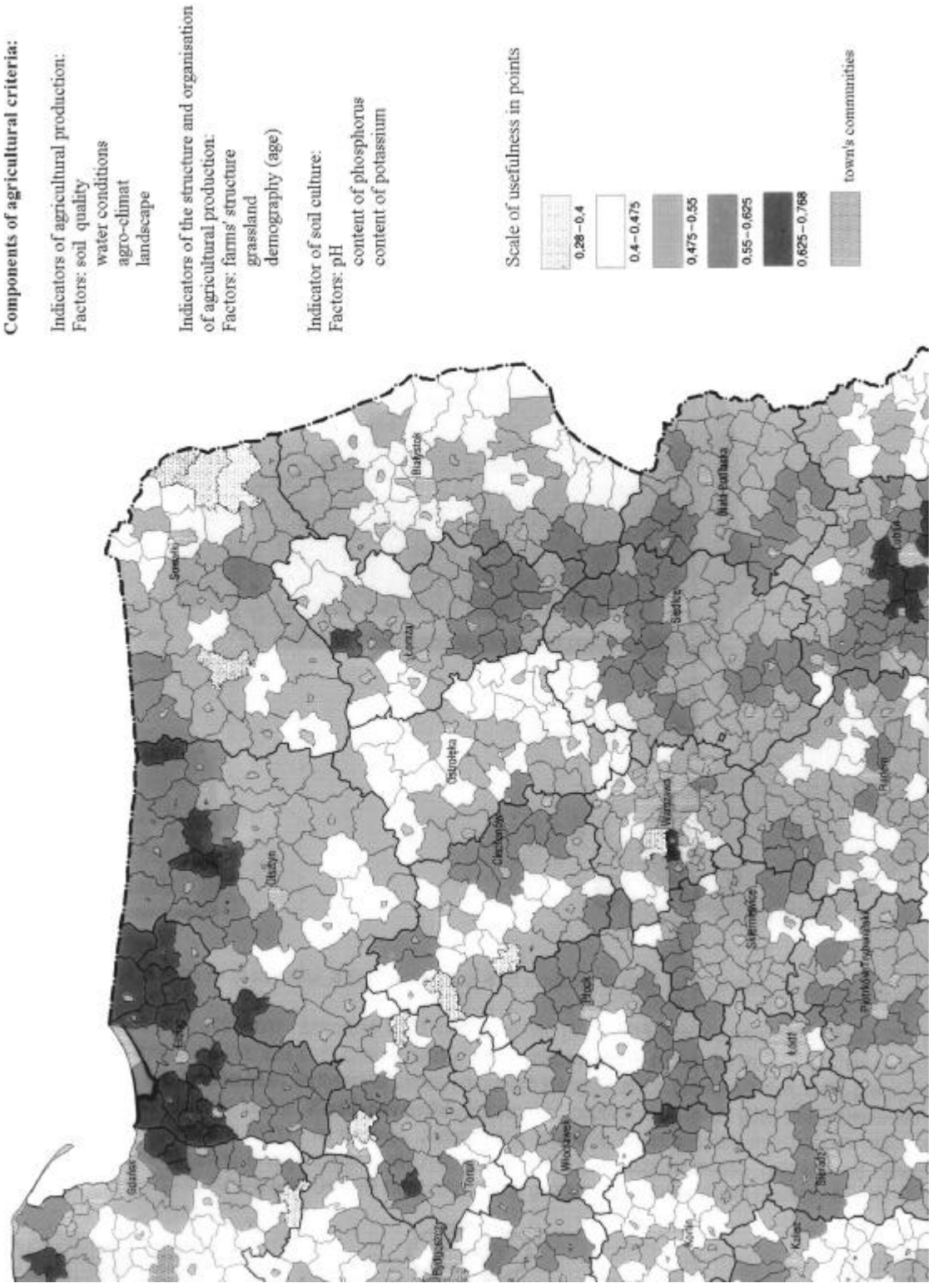

Figure 4.3 Conditions of development of organic farming in communities according to agricultural criteria (singular variant)

The system of organic farming, in comparison to other agricultural systems, takes advantage to the highest degree of natural conditions existing in a given municipality and one of its basic goals is to minimise threats for the environment. For this reason, an evaluation was carried out of suitability for organic farming development considering only the natural conditions of a given municipality and excluding agricultural and economic conditions.

In the case of ecological criteria, a series of factors grouped into three indexes, of which the ecological sensitivity index was assigned the weight of 50%, were used for quantification. The ecological sensitivity index gives consideration to the occurrence of legally protected areas in municipalities which are distinguished by a high level of biological diversity. The index of clean, unpolluted land was assigned the weight of 30% and the index of landscape and tourism values was given 20%.

Values calculated for each municipality varied greatly, from 0.142 to 0.808. Only 26 municipalities (8.3%) reached the highest values (over 0.700). The greatest concentration of them is in former Bia³ostockie voivodship – eight municipalities. They are grouped around Bia³owie¿a and Knyszyñska Primeval Forests in the following municipalities: Bia³owie¿a, Czarna Bia³ostocka, £apy, Mielnik, Narewka, Pœwietne, Turoœñ Koœcielna and Wasilków.

Voivodship (with number of municipalities in brackets)	**Municipalities with indexes in intervals**									
	0.882–0.70		**0.70–0.50**		**0.50–0.30**		**0.30–0.15**		**0.15–0.086**	
	No.	**[%]**	**No.**	**[%]**	**No.**	**[%]**	**No.**	**[%]**	**No.**	**[%]**
Bia³ostockie (50)	8	16.0	30	60.0	12	24.0	-	-	-	-
£om¿yñskie (39)	1	2.6	21	53.8	17	43.6	-	-	-	-
Olsztyñskie (48)	1	2.1	15	31.3	32	66.7	-	-	-	-
Ostro³êckie (39)	-	-	10	25.6	28	71.8	-	-	1	2.56
Suwalskie (43)	1	2.3	16	37.2	26	60.5	-	-	-	-
Ciechanowskie (44)	6	13.6	28	63.6	10	22.7	-	-	-	-
Siedleckie (19)	5	26.3	14	73.7	-	-	-	-	-	-
Toruñskie (12)	3	25.0	9	75.0	-	-	-	-	-	-
Elbl¹skie (21)	1	4.8	18	85.7	2	9.5	-	-	-	-
GLP total (315)	26	8.3	161	51.5	127	40.3	-	-	1	0.3

Table 4.10 Evaluation of rural areas in the Green Lungs of Poland region using the ecological criteria

After that, there are six from the former Ciechanowskie voivodship: Lidzbark, Lipowiec Koœcielny, Lubowidz, Lutocin and Strzegowo Osada; five in the former Siedleckie voivodship: Ceranów, Korczew, £ochów, Sadowne and Stoczek; and three in the Toruñskie voivodship: Górzno, Nowe Miasto Lubawskie and Zbiczno. The former Lom¿yñskie, Olsztyñskie, Suwalskie and Elbl¹skie voivodships only had one municipality in each: Zbójna, Piecki, Ruciane-Nida and Tolkmicko, respectively.

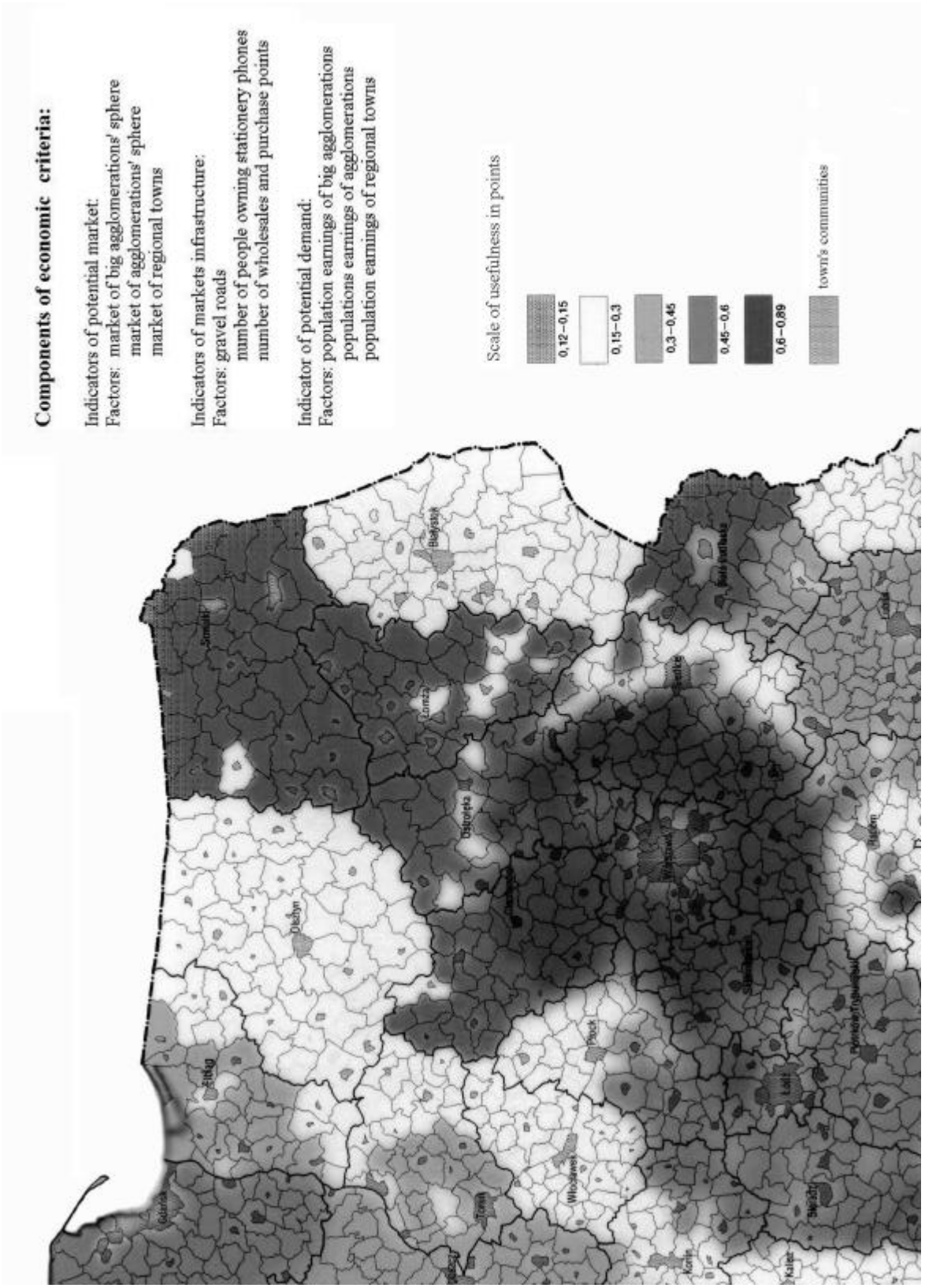

Figure 4.4 Conditions of development of organic farming in communities according to economic criteria (singular variant)

When referring to the ecological criteria, the area of the Green Lungs of Poland region taken as a whole does not stand out particularly compared to other parts of the country. It results mainly from a small number of legally protected areas and a less developed tourist-recreational base. Within that region there are some areas with very good tourist conditions and valuable tourist attractions.

The results point to an interrelation between the weight assigned to particular criteria and the achieved picture of municipalities' suitability for organic method production. Taking into consideration solely agricultural criteria, the best conditions were found in municipalities possessing the best soils. Considering strictly economic criteria the highest values were achieved by the municipalities located close to the big Warsaw agglomeration (a potentially big retail market). When using ecological criteria as the only means of evaluation, quite a different situation was found. In this case the municipalities with high indexes were concentrated close to the areas of a protected landscape. It is clear, therefore, that taking into account only single criteria in the final result is not viable as it may distort the final evaluation. In order to provide right functioning of organic farms it is necessary to secure a high level of all contributing factors considered by the three groups of criteria.

These conditions are satisfied by the complex proportional variant in which each group of criteria has been assigned the weight of 33%. Having made adequate calculations, municipalities were assigned new values of the overall suitability index ranging from 0.204 to 0.717 (Table 4.11). The highest values (0.600–0.760) were achieved by only 33 municipalities (10.5%), among which eight were in the area influenced by the Warsaw agglomeration (a potentially big market) and the remaining 25 showed a very high index of ecological conditions (over 0.700).

Voivodship (with number of municipalities in brackets)	**Municipalities with indexes in intervals**									
	0.760–0.60		**0.60–0.50**		**0.50–0.40**		**0.40–0.30**		**0.30–0.17**	
	No.	**[%]**	**No.**	**[%]**	**No.**	**[%]**	**No.**	**[%]**	**No.**	**[%]**
Bia³ostockie (50)	7	14.0	21	42.0	20	40.0	2	4.0	-	-
£om¿yñskie (39)	1	2.6	17	43.6	20	51.3	1	2.6	-	-
Olsztyñskie (48)	2	4.2	11	22.9	35	72.9	-	-	-	-
Ostro³êckie (39)	-	-	8	20.5	23	59.0	7	17.9	1	-
Suwalskie (43)	1	2.3	11	25.6	26	60.5	5	11.6	-	-
Ciechanowskie (44)	6	13.6	29	65.9	9	20.5	-	-	-	-
Siedleckie (19)	9	47.4	10	52.6	-	-	-	-	-	-
Toruñskie (12)	3	25.0	9	75.0	-	-	-	-	-	-
Elbl¹skie (21)	4	19.0	15	71.4	2	-	-	-	-	-
GLP total (315)	**33**	**10.5**	**131**	**41.6**	**135**	**42.9**	**15**	**4.8**	**1**	**-**

Table 4.11 Assessment of rural areas in the Green Lungs of Poland region based on the overall suitability index in the proportional variant

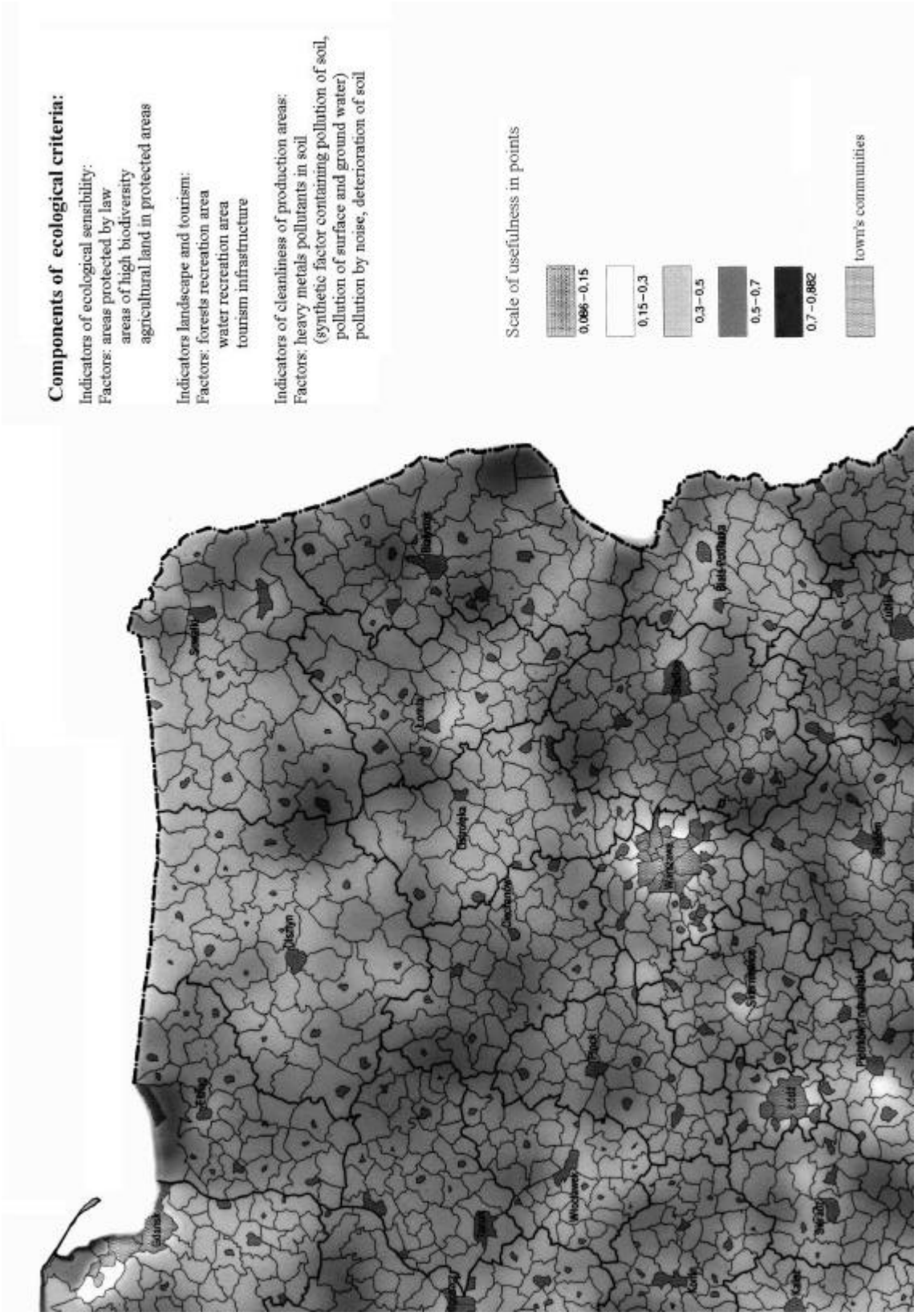

Figure 4.5 Conditions of development of organic farming in communities according to ecological criteria (singular variant)

In the former Siedleckie voivodship there were five municipalities in the Warsaw sphere of influence: Liw, Łochów, Miedzna, Sadowne, Stoczek and four municipalities in the Bug river region: Ceranów, Jabłonna Lacka, Korczew, Sterdyń. Of the six municipalities in the former Ciechanowskie voivodship with the highest point values, two of them were located in the Warsaw sphere of influence – Joniec and Sochocin, and four were on the Wkra river: Lidzbark, Lutocin, Regimin and Strzegowo Osada. High ecological indexes were achieved by three municipalities of the former Toruńskie voivodship: Górzno, Nowe Miasto Lubawskie and Zbiczno.

Moreover, high suitability indexes in the complex proportional variant were given to seven municipalities of the former Białostockie voivodship, four in Elbląskie voivodship and single municipalities in Łomżyńskie and Suwalskie voivodships. They are: Białowieża, Czarna Białostocka, Łapy, Mielnik, Narewka, Poświetne, Turośń Kościelna in the former Białostockie voivodship; Frombork, Milejewo, Młynary, Tolkmicko (Elbląskie voivodship); Zbójna (Łomżyńskie voivodship) and Ruciane-Nida in Suwalskie voivodship.

In the municipalities where, despite low index values when using agricultural and economic criteria, the high index of ecological factors (areas of protected landscape and environmental cleanliness) will be predominant, any decisions concerning organic agriculture development should be made with great care as there will be a need to provide greater financial support to these farms functioning in not so favourable soil and climatic conditions. Greater financial expenditure on transport and storage of products from organic farms should be also anticipated. It would probably be justified to create big local plants for organic product processing and packing and for their transportation to big agglomerations.

4.4. Conclusions

The GLP region is very diverse in natural and agricultural respect. The great distinction of this part of Poland is very little industrialisation and low population density. The small number of industrial plants and population clusters means that, in comparison to other regions of Poland, favourable indexes of air, water and soil cleanliness are found there.

Within the region there are areas with an extremely nature-valuable landscape as well as typically agricultural land or forest. Soil conditions are also very diverse which has implications for organic farming. Definitely unfavourable for the development of this type of farming are the economic conditions resulting from a small population and especially from a lack of city agglomerations which constitute the best market for organic food.

In order to create the appropriate conditions for the distribution of organic products to other regions of Poland, for storage of the products during the peak tourist season as well as for their export, it is necessary to create an adequate warehouse and processing base. When selecting municipalities in the area of which such production and distribution centres would be created, one should follow the best agricultural conditions that ought to provide the producers with good harvests without using industrial methods of agricultural and horticultural production.

That does not exclude the possibility of establishing organic farms in municipalities that have worse agricultural conditions. However, such farms would require a different form of financial support than the farms located in better natural and agricultural conditions.

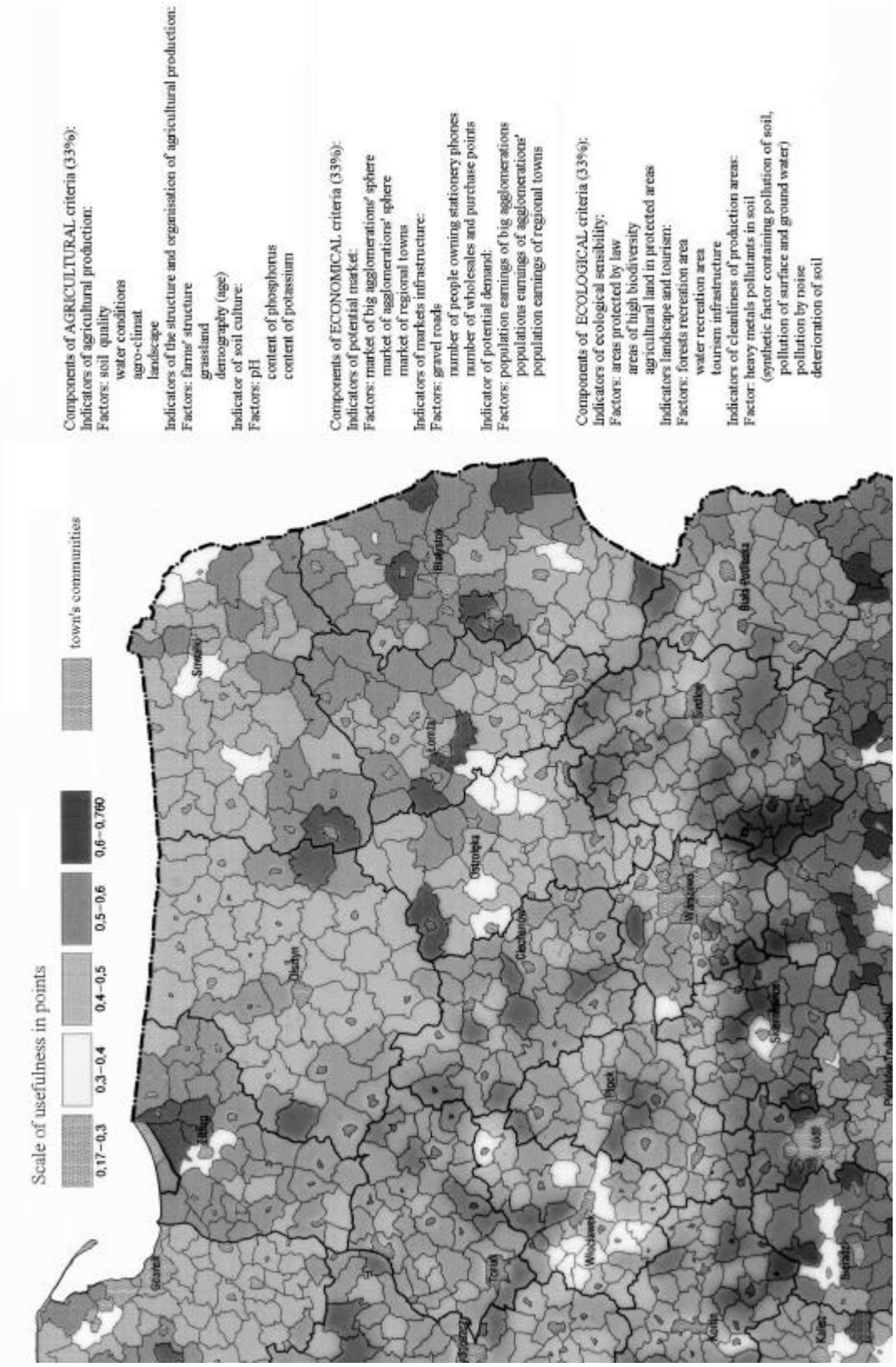

Figure 4.6 Conditions of development of organic farming in communities according to proportional complex variant

Special attention should be paid to the municipalities with a very high ecological index in which, despite worse agricultural conditions, the organic system of agriculture should be promoted. A system of stimuli and financial encouragement motivating the establishment of organic farms must be created for the farmers living in these areas. Materials manufactured on these farms would enlarge the source of raw materials for processing plants and organic food warehouses based in the region.

When marketing the products manufactured in the GLP region, its trump cards i.e. low levels of industrialisation and population density, and clean water, air and soil, should be exploited to the full.

5. ORGANIC FARMERS' MARKETING GROUP NETWORK

By Edward Majewski

5.1. Introduction

On the organic food market in Poland there is a specific cause and effect connection: limited demand does not stimulate sale increase and the creation of new organic farms while a small demand accompanied by a lack of sufficiently active forms of promotion, a narrow range of goods and not always satisfactory quality of offered food are not attractive for retail sale, do not favour the development of distribution channels and do not stimulate increase in demand.

The number of organic farms in Poland is still small. They are also scattered throughout the whole country, the production is run on a small scale and the dominant method of selling produce is direct sale based on local demand.

Food from organic farms is delivered to the consumers through fairly simple distribution channels. Organic products are most commonly sold by the producers directly at local farmers' markets or through an underdeveloped network of small retail outlets consisting mainly of little stores which apart from products from organic farms offer also illegally labelled, so-called "health food".

Farmers from organic farms sell only a part of their produce as organic food due to the requirement of performing multidirectional production and also because of the small production scale and a limited market. The remaining part is sold at the price of conventional products. One-off deliveries of small batches of goods to the market raise unitary costs of transport and limit the possibility of reaching more attractive markets. It should be added that often the inadequate quality of organic food and its packaging as well as a lack of promotion do not help capture the market and consumers. Such a situation has a disadvantageous influence upon the potential for development of the whole organic food market but also on the economic effectiveness of farms using organic methods.

In the predictable future a sharp increase in demand for organic products should not be expected, due to the lack of wealth of most Polish consumers and also from looking at existing trends in the rise of demand for organic food. It is equally difficult to expect a fast rise in the numbers of organic farms and considerably increased sales.

The question that arises is what are the prospects for organic farming development in Poland. What chances do existing organic farmers have to improve their current position within the food market?

Regardless of how optimistically or pessimistically one evaluates the potential demand for organic food in Poland, it must be said that existing possibilities for sales of organic produce are not fully exploited by farmers. Therefore it may seem that those producers who retreat from implication of organic production methods and do not renew their certificates arguing that selling organic products is too difficult, and the income from organic production too small, are not wholly correct.

One should rather seek reasons why some producers of organic food do not manage on the market and do not achieve a satisfying income and find solutions to existing problems.

In these circumstances uniting farmers from farms using organic methods of production into marketing groups is undoubtedly the most important way of strengthening their position on the market at present. Group distribution of organic products may bring many benefits to the farmers such as enlarging product choice as delivered to single buyers, the possibility of one-off deliveries of large batches of goods, favouring selling to more attractive and distant markets, or making it easier to add value by preliminary processing of their products.

Group marketing managed by farmers from organic farms should make it easier for them to play a more active part on the market, to better understand the consumers and achieve more efficient distribution of their produce.

Apart from the expected, short-term economic benefits it can be anticipated that in the longer term, organised action on the part of the farmers could also significantly contribute to the development of the organic food market.

The food market in Poland is changing fast. New economic entities are operating on the market – most of all, big supermarkets chains are developing, the relationship between materials and food producers and other links in the distribution chains are changing. The behaviour of consumers is also changing. Does it mean that on the contemporary market there is no place for farmers from small farms including farmers producing on a small scale on organic farms?

Not necessarily. Old habits and traditional forms of organisation will still be appropriate for small, local markets. However, the producers who would like to occupy a stronger, more permanent position on food markets, including organic food markets, must adjust more to the new conditions of the market game. That demands from them the replacement of existing forms of activity by more active forms of behaviour on the market.

The co-operation of organic farmers in marketing groups would certainly make it easier for them to achieve that goal.

5.2. General concept of the marketing group network

Within the framework of the IUCN Foundation and Avalon project "Marketing of organic products in north-eastern Poland", some steps were taken towards the formation of four marketing groups consisting of the farmers from organic farms in the region interested by the project.

Three of these groups revolve around their nearest bigger city centres: Brodnica, Olsztyn and Rajgród. The fourth group consists of the farmers living on the Biebrza river, in the buffer zone of the Biebrza National Park – an area of extraordinary natural and tourist values.

In the first, preparatory phase of the project, after having made the necessary farm and market analyses and having defined existing channels of distribution, a general concept for the organisation of marketing groups was prepared and at the same time a detailed business plan was created for each group. This phase of the project had the following stages:

1. Identification of groups and farmers interested in co-operation;
2. Identification of farm characteristics;
3. Analysis of existing and potential markets;
4. Discussions with farmers: goals and principles of marketing groups functioning, farmers' plans;

5. Evolving a general concept for marketing groups;
6. Preparation of preliminary business plans;
7. Discussion with farmers; presentation of the general concept and preliminary business plans;
8. Verification of assumptions and the development of the final version of business plans.

Preliminary analyses revealed important differences between particular groups, both with respect to farm layout, financial situation and farmers' experience, and to market conditions.

Farms in the Brodnica region are on average the smallest in size. Because of their small size but also favourable location in relation to a few cities constituting close markets, the farmers are oriented towards vegetable production. Members of this group have also managed their farms with a certificate of organic production for the longest period of time.

Despite a favourable location close to the tourist region and their proximity to a potentially big market for organic products (the city of Olsztyn), farms belonging to the Olsztyn group are mostly oriented towards grain cultivation. Currently the produce most in demand (vegetables and potatoes) do not figure highly in their overall production. It results from a large area and extensification of these farms' organisation.

Farms belonging to the Rajgród group are characterised by a greater proportion of grassland. Particular farms vary in the production structure. They are many-sided but in each of them it is possible to distinguish orientation towards a particular production activity. The farms from this group are dispersed over a vast area. The long distances between them limit the development of such forms of activity which demand systematic, frequent contacts between the farmers.

The fourth group is made up of farmers from one village in the region of Biebrza. All of them are oriented towards milk production. Farmers from this group have so far not been producing by using organic methods. It has been assumed in the project that conversion to organic methods and certification of these farms will take place.

Based on preliminary analyses, a general concept was created for each potential marketing group where each of them, because of existing conditions, would clearly specialise in a particular activity. These are:

1. The Brodnica group - storage and adding value to vegetables;
2. The Rajgród group – livestock management and slaughter, and the sale of pork and beef;
3. The Olsztyn group - grain processing and feed production;
4. The Brzostowo group - milk processing.

However, co-operation between groups or individual farmers within any group is not ruled out but to be encouraged.

5.3. Marketing group projects

General explanation

For each group, a general concept was prepared and after discussions with the farmers, a business plan was elaborated. It has been assumed that marketing groups will have the character of co-operative organisations with equal rights for all participants. Detailed solutions concerning the legislative form and organisational structure of the groups will be established with the farmers later on in the project.

When developing business plans, the preliminary assumptions of the authors were verified after discussion with the farmers considering, among other things, knowledge of local markets and possibilities to base planned processing.

A steady growth in sales has been assumed in financial plans which is achievable mostly by adjusting the production structure on farms. In a statement of source and application of funds and in a financial outcome it is aimed to maximise the prices got by farmers for their products delivered for co-operative sale. In each year of the financial plan the prices have been calculated with the help of the optimising function in the spreadsheet. Prices were fixed at a level ensuring, after covering the remaining operation costs, a maximum income enabling them to pay off the loans and eventual development investments. Sale values in the financial plan were calculated according to sale prices of organic products from 1998. For the products which are not yet on the organic food market e.g. beef and pork, the current prices from conventional production were increased by 30%.

In a statement of source and application of funds it has been assumed that the farmers would pay in small amounts of money as a membership fee. The amount varies in the individual business plans depending on the need to finance the initial phase of group activities regarding planned investments and depending on the possibilities for credit. As regards investment credits, interest has been estimated according to the rates for special credits with state support (at a yearly rate of 5.5%).

It should be stressed that, in all the business plans, the financial result may be the basis for the evaluation of effectiveness of obtained solutions. A principle of minimising income to the level necessary to ensure paying off the credit and investment financing was accepted. As the financial costs of the group get smaller, income for the goods produced increases.

Farm characteristics

The average size of farm in the whole community is 21 ha and it varies from 13 ha (vegetable group) to 39 ha (grain group) with single farms ranging from 3.44 ha to 113 ha.

The area of permanent grassland and the numbers of livestock differ in particular farms.

Total production volume from those branches of production which are to constitute the basis for each group's activity has been taken as the starting point for forecasting sales in each business plan. It has also been assumed that while maintaining the many-faceted character of an organic farm it is possible to adjust the production structure in most of the farms to enable an increase in the production activity which is a particular group's specialisation.

5.4. Organisation of the Brodnica marketing group

Characteristics of the Brodnica group

Because of the production structure, the location of farms close to a few cities constituting potential markets and the experience and preferences of the farmers up to now, it has been decided that the Brodnica marketing group will specialise in adding value to, and storage and distribution of, vegetables.

Some planned investments include a storage building, necessary equipment and a delivery van. The value and schedule of the investment assumed in the financial plan are as follows:

Storage building	125,000 PLZ	March/April 1999
Equipment	21,000 PLZ	May/June 1999
Delivery van	34,000 PLZ	September 1999
Total investment value	180,000 PLZ	

The farmers are thinking of the possibility of buying a disused storage building located in the vicinity which after necessary adaptation can be used for vegetable storage. An alternative to that is building a storage facility on land belonging to a member of the group. The estimated costs in both cases are similar.

At the beginning, the investment will be financed from credit (130,000 PLZ) with farmers themselves contributing 32,000 PLZ.

At the current stage of planning, a legislative form of the created marketing group has not been decided on yet, similarly the organisational structure and the range of group members' responsibilities have been left for later discussion and decision. The leader of the group chosen earlier will carry out his function until a formal organisation is established and the system of management defined.

Markets and distribution channels

In the past, the main market for farmers from the Brodnica region was Warsaw. However, together with the development of organic farms in Mazowsze and competition intensification within a still narrow market, deliveries from Brodnica to the Warsaw market have become unprofitable mainly because of higher transportation costs. At present farmers supply mostly the local market.

It can be assumed that within a short time period there will be a rapid increase in the number of organic farms and the expected demand for organic potatoes and vegetables on the markets in Brodnica and Toruñ may be even higher than the production potential of the group. That is why it has been assumed in the business plan that the Brodnica group will be oriented to supplying the local market if more attractive markets are not found or if a significant rise in the scale and size of production in the marketing group does not take place. A considered alternative was vegetable production for a nearby organic vegetable processing plant. However, it has been recognised that the sale of vegetables for direct consumption, having added value by washing, packing etc., will be more profitable for the farmers. There is still the possibility of selling any eventual surplus to the processing plant.

The distribution channels of the farmers belonging to the Brodnica group are very simple at present. Because of the relatively small scale of production, vegetables from the farms of farmers belonging to the group are mostly delivered to the shops or farmers' market in Brodnica. A significant part of their production, mainly animals for slaughter, is sold to traditional buyers as conventional produce without any bonuses for the use of organic methods.

In the marketing plan for the group a significant extension of distribution channels is not anticipated.

In the period covered by the business plan, the marketing group will be delivering potatoes and vegetables to retail outlets. Depending on changes in demand, an increase in production and the possibility of extending of the group and its scale of operations, it may become essential to find new buyers and markets.

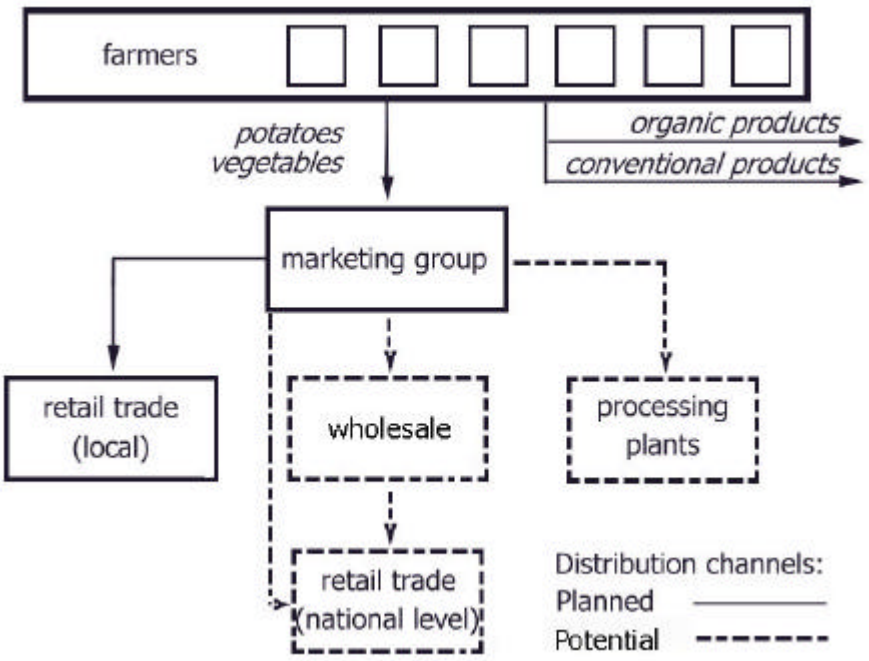

Figure 5.1 Planned distribution channels and alternative markets for the Brodnica marketing group

Financial plan

Sale. Sales figures have been calculated on the basis of the percentage of produced potatoes and vegetables destined for collective storage and distribution declared by each farmer.

In the first year of the business plan the anticipated sale is 398 tons. In the following year it rises to 511 tons and finally to 641 tons in 2004. It has been assumed that the members of the group will increase vegetable production on their farms. Further growth of sales would be possible by enlarging the size of farms or admitting new members to the marketing group. It would be beneficial because of the turnover increase and improvement of economic efficiency of the group.

A list of products that include a production structure planned by the farmers and consumers' needs contains:

1. Products for storage: potatoes, onions, beetroots, carrots, cabbage;
2. Products for immediate sale: strawberries, cucumbers, other fresh vegetables cultivated on a small scale.

The greatest contribution to sales will be cabbage (56%), potatoes (26%) and carrots (11%).

Marketing mix. Details of the marketing plan include further promotional activities will be established in the second phase of the project and will include probable changes in the market situation. Because of the need to prepare a financial plan, some basic assumptions have been made regarding the particular elements of the marketing mix:

Product simple ways of increasing product values, apart from storage, such as cleaning, sorting and packing, are provided for in the project. Assuming that at the present stage of organic market development, packaging is a less important factor for the consumer, the use of traditional, and possibly the cheapest packaging is assumed;

Price average wholesale prices of vegetables are fixed on the basis of the prices received by the farmers in the previous year and also by the prices formed at various levels on particular markets (e.g. Warsaw) between 1997–1998;

Place the main buyers will be shops in local city centres – Brod**nica and Toruñ; long-**term agreements with shop owners would be desirable. Transport will be provided by the farmers (members of the marketing group), namely, the delivery truck included in the investment plan. If the volume of sales increases sufficiently to lower the unitary costs of transport, selling to more distant, potentially more attractive markets will be economically justified;

Promotion the basic means will be some informative leaflets, product labelling (packaging) and occasional promotion of the group's activities in the local media. A relatively small volume of sales and territorially limited market do not necessitate more advanced and costly promotion.

Parameters and results of the financial plan. The financial plan has been based on the following assumptions:

- Sale prices have been calculated on the basis of current wholesale prices for organic produce;
- Purchase prices from the farmers have initially been kept deliberately low in order to put money aside for paying off the investment loan and other group expenses;
- The loan (130,000 PLZ) will be paid off within 4 years. The interest rate has been fixed on the terms of preferential credits (5.5%);
- When preparing the financial plan, prices from 1998 have been used except for those economic parameters (e.g. prices of raw materials purchase from the farmers) whose variation is justified.

Specification	1998	1999	2000	2001	2002	2003
Sale	297,958	327,754	360,529	396,582	436,240	479,864
Variable costs	257,653	245,262	287,819	337,809	392,147	437,463
Permanent costs	15,274	39,807	40,170	40,728	41,114	42,980
Profit (before tax)	25,031	42,684	325,540	8,046	2,980	-579
Tax	9,011	14,513	10,413	5,414	0	0
Net profit	16,020	28,172	22,127	12,632	2,980	-579
Income tax rate [%]	36	34	32	30	30	30

Table 5.1 Costs and projected profits [PLZ] for the Brodnica marketing group

In accordance with the principle presented earlier the profit achieved by the marketing group has been fixed at a low level so as to guarantee the payoff of the loan and the necessary investment expenditures. As the financial commitments of the group are paid off, the prices of raw materials purchased from the farmers will be raised.

5.5. Organisation of the Rajgród marketing group

Project concept and farm characteristics

The group of organic farmers from the region of Rajgród consists of eight farmers. Their farms are spread over a vast area, with distances between single farms of up to 100 km. That makes co-operation between the farmers more difficult and limits the range of activities of the group.

In the past the farmers from the Rajgród group took the initiative to create a marketing group combined with opening an organic food shop but for various reasons that project failed. Bad experience from the past explains why the farmers are reserved when it comes to the idea of undertaking collective action again.

Because of these limitations but also because of the natural farming conditions (permanent grassland making up more than 50% of the farmland on average) the farmers have been offered a simple form of co-operation. The marketing group will specialise in the sale of beef and pork from livestock slaughtered on the farms of group members.

The main source of income from plant production is the sale of small amounts of vegetables, potatoes, grains and the seeds of leguminous plants. On the animal production side, the highest value comes from the sale of milk. Every farm also produces beef and pork.

In the present production structure and in natural conditions fostering agricultural production on the farms from the Rajgród group, specialisation into cattle and pig breeding for sale in the form of half-carcasses seems to be the most rational and the least risky project for the farmers. In order to achieve the necessary 'critical mass' of sale it is possible to increase the production of cattle for slaughter in a short time and also increase the volume of sales by co-operating with farmers from other groups who also breed cattle and pigs on their farms.

In the marketing group concept presented to the farmers it has been assumed that the cattle produced on particular farms will be delivered to a slaughter-house according to a special schedule and then sold as half-carcasses. Such a solution does not require any investments in permanent assets and does not carry any risk for the farmers participating in the project. The basic requirement is efficient organisation and delivery of the cattle to the agreed slaughter-house in accordance with a strict and precise schedule.

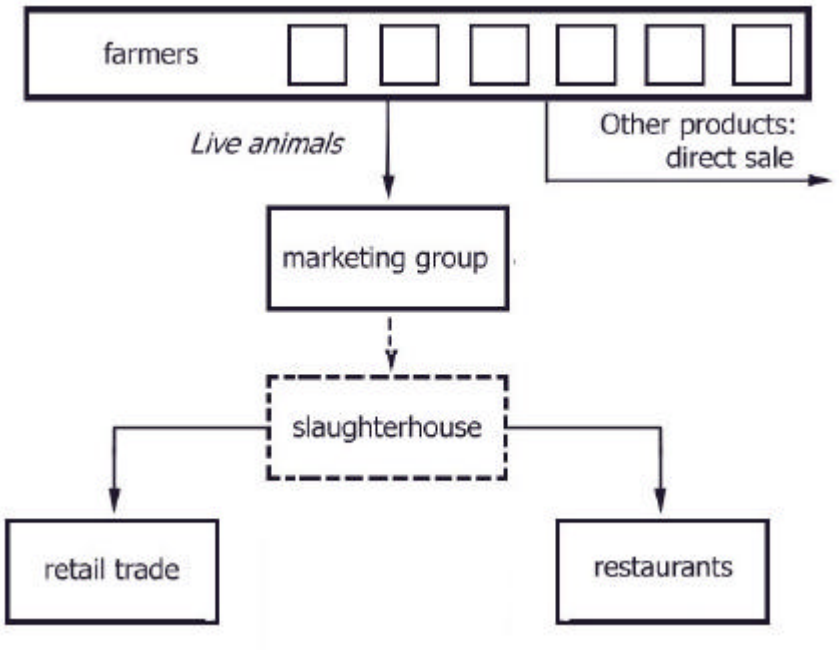

Figure 5.2 Distribution channels for the Rajgród marketing group

Despite that, the farmers have still adopted a sceptical attitude towards the project. It probably results from the previous negative experience which makes them disinclined to believe in the possibility of succeeding in the new project.

Organisation and the investment plan

It was assumed in the business plan that eight farmers would create the basis for the Rajgród marketing group. Once the programme is underway, farmers should be encouraged to increase the size of the group and production potential by offering membership to other organic farmers.

More animals for slaughter and an increase in the volume of meat sold would constitute a significant factor of profitability growth making market development easier.

Preliminary steps undertaken were as follows:

1. Selection of the group activity co-ordinator;
2. Agreement on the number of animals for slaughter and for sale, based on farmers' individual declarations;
3. Choice of a slaughter-house and identification of potential buyers of half-carcasses;

4. Development of a schedule for animal deliveries to the slaughter-house;
5. Transport of half-carcasses.

In order to ensure efficient organisation and realisation of livestock deliveries to the slaughter-house, it would be necessary to rationalise the system of communication between farmers which is possible, at low cost, by using mobile phones. In this way, no investment in permanent assets is required.

The financial plan assumes the raising of 8,000 PLZ, for the initiation of activities, from membership shares.

Market and distribution

Production of cattle on organic farms is mostly a side activity. A market for organic meat does not yet exist in Poland. This is stressed by the farmers and used as an argument against the concept developed for the group's activities. According to market research it is not an obstacle but on the contrary – an opportunity to find a market niche. The organic food consumers interviewed placed meat and meat products top of the list of those products, which according to them, are missing from the market. Moreover, as there is a lack of competition, undertaking such activity could create possible changes to the market which could lead to an increase in sales with the help of adequate promotion.

Preliminary research into the Warsaw market points at the possibility of finding buyers for half-carcasses in the retail chains. Buying half-carcasses and dividing them into portions is a common practice in bigger shops.

Restaurants and canteens are also potential buyers of organic meat.

Financial plan

Sale. The sale of half-carcasses in particular months has been planned for the whole period of the business plan assuming an increase in sales from 20.8 tons (12.4 tons of beef and 8.4 tons of pork) to 55.8 tons in the year 2003 (27.5 tons of beef and 28.3 tons of pork). This growth can be achieved by appropriate adjustments to the group members' farms, enlarging livestock numbers and also by enlarging the group. There is also the possibility of co-operation with farmers from other marketing groups. Especially profitable could be co-operation with the Olsztyn (grain) group, which is discussed further on, because of the possibility of a common sale of grains and purchasing mixtures of concentrated feed. Farmers from the Olsztyn group could also apply for membership in the Rajgród marketing group or sell meat produced by them.

Marketing mix. At the present stage of planning and development of a potentially big market in organic meat, a simple marketing plan seems to be enough. Therefore the marketing mix includes:

Product Beef and pork will be sold in half-carcasses and the sale of portioned and packaged meat can also be discussed; that would be a more rational and profitable solution but only if there is a considerable increase in sales;

Price The sale price has been fixed on the basis of the average retail price of conventionally produced beef and pork; it has been assumed that the 30% margin (the difference between the price of carcasses and the retail price of meat) which is added in the retail trade corresponds approximately to the premium for an organic product; it is anticipated that in a situation where there is a shortage of

organic meat on the market it will be possible to negotiate better prices than those accepted in the business plan if the prognosis concerning demand is correct;

Place Warsaw is undoubtedly a very promising, big market in which finding regular buyers and outlets for regular deliveries of large quantities of meat (shops, restaurants) is very probable. With the planned volume of sales, the costs of transportation would be fully justified economically. Apart from aiming towards at a big, final market the possibilities of selling to local markets should also be recognised;

Promotion **F**olders prepared during the project and notices and other visual information in shops; in case of very low sales, it is advised to limit the number of buyers to the minimum, therefore there will be no need for large-scale promotion and advertising campaigns.

Detailed assumptions in the financial plan. The basic constituent of the Rajgród marketing group costs is the cost of livestock. The marketing group buys the livestock for slaughter from the farms of its members. The prices of livestock have been calculated at the highest possible level after taking into account the costs of the group activity. The financial forecast for the Rajgród group is shown in Table 5.2.

Specification	1999	2000	2001	2002	2003	2004
Sale	145,841	179,888	267,638	321,341	389,610	389,610
Variable costs	133,313	141,780	219,986	280,230	341,989	342,930
Permanent costs	30,240	31,920	33,840	45,240	46,080	46,680
Profit (before tax)	-17,712	6,188	13,812	-4,130	1,541	0
Tax	0	0	2,136	0	49	0
Net profit	-17,712	6,188	11,676	-4,130	1,491	0
Income tax rate [%]	34	32	30	30	30	30

Table 5.2 Costs and projected profits [PLZ] for the Rajgród marketing group

As in the other financial plans, the minimum income from the group activity has been assumed as it will be realised in the form of possibly high purchase prices paid to the farmers for the raw material delivered.

5.6. Organisation of the Olsztyn marketing group

Project concept and farm characteristics

Ten farmers from the region of Olsztyn have expressed their interest in the creation of a marketing group. The farms are mostly mixed production but there is a clearly visible orientation towards the cultivation of crops. Farms from the Olsztyn group are characterised by large areas of arable land. Because of the scale and structure of production and also because of the distances between the farms it has been decided that the best form of group activity will be the milling of grain for bread (flour production) and organic production of concentrated feed mixtures.

The great distances between the farms and their proximity to the city of Olsztyn (in the centre of the group) make it difficult to base a warehouse for grain processing and storage in a centrally located place to minimise the costs of transport.

After discussions with the farmers it was agreed that grain processing will take place in two centres:

1. Flour milling will be organised in co-operation with one of the local mills (there are at least two places to be considered); in the business plan there is also provision for building their own grain silos on premises leased from the mill owner;
2. Concentrated feed will be produced on the farm which produces the largest amount of grain; a significant part of these crops would be destined for feed creation; one of the farm buildings can be adapted for fodder production after some necessary modernisation work and some investment in building grain silos is also needed.

Transport of grain to the processing plant will be done at the expense of individual farmers. The marketing group must take responsibility for storing, processing and distribution of goods produced.

Group organisation and the investment plan

It was agreed that the group should offer membership to other organic farmers from outside their area in order to increase production potential and scale. The increase in quantity of processed grain would constitute a significant factor ensuring achievement of the 'critical mass' concerning production volume and the growth of economic activity of the project.

Due to low attendance at the meetings no decisions concerning the organisation and management structure of the marketing group have been made yet. Similarly, the final decisions concerning location of the processing can only be made by all members of the group. Therefore the assumptions included in the business plan are of a preliminary nature and will be verified once the farmers come to a decision about the formation of the marketing group.

Initially planned investments are as follows:

Grain silos	41,000 PLZ	March/April 1999
Equipment	11,000 PLZ	May/June 1999
Total investment value	**52,000 PLZ**	

Investments, as well as initial grain purchase, will be financed by a bank loan (50,000 PLZ). A collection of 18,000 PLZ for the initiation of the group's activities from membership shares was also assumed.

Markets and distribution

Farmers from the Olsztyn group do not have previous experience in collective distribution. At present they sell their products on the local market. A significant part of their produce (mainly livestock) is sold at standard prices with no added premium for organic production.

At the present stage of discussions, identification of particular buyers of particular products would be premature. On the basis of actual market recognition it can be found out that there is a potentially big demand and a receptive market for both organic flour and concentrated feeds.

The market for organic flour in central and north-eastern Poland is dominated by just one processor who has had a monopoly up till now. Selling the grain to his processing plant has been discussed as a possible alternative. However, running the processing individually will provide a greater income and will also enable higher effectiveness in the production of concentrated feed mixtures.

The market for concentrated feed is promising. The livestock on most organic farms are fed from fodder produced on the farm with additional grain also produced on the farm. The mixtures of feed and concentrates enriched by mineral additives, allowed in organic farming, result in a highly effective feed containing a balanced set of nutrients. It can be expected that with the right promotion and high quality production, the domestic market in concentrated feed will develop fast. Potentially, there is also the possibility of exporting feed if the right quantity and quality of deliveries can be guaranteed.

An illustration of possible distribution channels for the Olsztyn marketing group is presented in Figure 5.3.

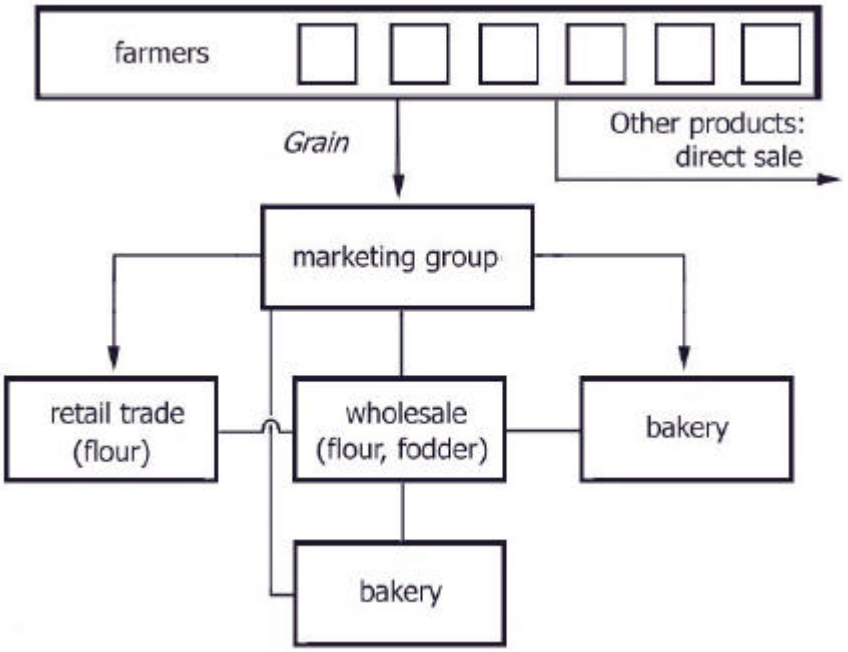

Figure 5.3 *Distribution channels for the Olsztyn marketing group*

Financial plan

Sale. The estimated volume of sales is 505 tons in the first year of the plan, of which 32 tons (6%) will be wheat flour, and 120 tons (24%) rye flour. As sales rise to 686 tons in the year 2004, the percentage structure will remain the same. The sale of feed will reach 420 tons. Depending on demand and possible development of the group, one may expect to exceed the quantities accepted in the business plan.

Marketing mix. A detailed marketing plan including a promotion plan will be developed in the second phase of the project and will be adjusted during the formation of the marketing group. The following assumptions have been made in the business plan:

Product Wheat and rye flour will be sold to retail buyers in 1 kg packs while bigger packs will go to bakeries; animal feed (of various kinds) will be delivered in packs of 25 kg or 50 kg each or loose if buyers require larger quantities;

Price Estimated wholesale prices have been fixed at the level of average retail prices of particular conventional products in the years 1997/1998. It has been assumed that the difference between these prices is approximately the margin (premium) for organic products;

Place The areas of Olsztyn and £om¿a are potentially the main markets for concentrated feed sales; flour will mainly go to the Warsaw market and other markets can be discussed depending on the production volumes achieved;

Promotion Leaflets prepared within the framework of the project should be used and also distinctive labelling; information to be disseminated through agricultural advisory centres and advertisements in the farming press.

Detailed assumptions for the financial plan. The financial plan has been based on the following assumptions:

- Purchase prices of grain and leguminous plants. The marketing group is a buyer of products from the farms of its members; unlike other units dealing with the purchase of raw materials this marketing group does not have to be oriented towards high profits. The prices given to the farmers for their produce may be as high as the achieved income allows, after covering all the expenses incurred by the group; anticipated prices of sale and purchase have been compiled in Table 5.3;
- An investment credit (50,000 PLZ) will be paid off within the period of 4 years; the interest rate has been provided on the terms of preferential credits (5.5%);
- Permanent prices from 1998, except for those economic parameters (e.g. purchase prices of raw materials from farmers) whose variability has been explained above, have been used.

Specification	1998	1999	2000	2001	2002	2003
Sale	316,400	485,680	544,525	544,525	544,525	544,525
Variable costs	275,632	404,790	460,195	475,355	475,915	476,366
Permanent costs	37,768	77,890	81,330	66,170	65,610	65,159
Profit (before tax)	3,000	3,000	3,000	3,000	3,000	3,000
Tax	1,080	1,020	960	900	900	900
Net profit	1,920	1,980	2,040	2,100	2,100	2,100
Income tax rate (%)	36	34	32	30	30	30

Table 5.3 Costs and projected profits [PLZ] for the Olsztyn marketing group

5.7. Organisation of the Brzostowo marketing group

Characteristics of Brzostowo village

Brzostowo is a small village located on the Biebrza river in Biebrza National Park. Natural conditions, especially the high proportion of permanent grassland, most of which are water meadows, favour cattle breeding. Most of the farmers from Brzostowo specialise in milk production. At present farmers from Brzostowo use conventional methods of farming with low production expenditures. Because of special requirements concerning the protection of Biebrza Park and also because of the presence of populations of bird species important on a European scale, some attempts have been made to persuade farmers to switch to organic production.

The main commercial product on all farms is milk. Total milk production is estimated at about 255,000 litres. Milk is sold through a local milk collecting point to a nearby milk co-operative. Plant production with permanent grasslands constituting 45% of the total area of arable land is mostly geared towards cattle feed production. Farms have a similar area of arable lands (the average farm size is 15 ha), and herds usually consist of 5–10 animals.

In the region where Brzostowo is located there is no possibility of selling bigger quantities of milk from organic production. On the other hand the total milk production from all farms is too small to be sold as organic or to process in the local milk co-operative. After discussing alternative solutions it has been decided that the Brzostowo marketing group would focus on milk processing.

The business plan shows the financial feasibility of the project. However the attitude of the farmers from Brzostowo indicates that there is very little probability of their organising themselves into a marketing group. They are sceptical about the transformation of their farms into organic ones and besides they do not show readiness to co-operate in a group and to taking a financial risk connected with performing extra-agricultural economic activity.

Group organisation and the investment plan

It has been accepted in the business plan that 12 farmers create the initial group. Because of the nature of the activity assigned to the Brzostowo marketing group, the eventual possibility of extending the group to include other members is limited. The limiting factor is the distance of other organic farms outside the Biebrza region from the milk processing plant in Brzostowo.

Due to the need to keep down investment costs and also because farmers were not prepared to perform individually such economic activity as food processing and sale of ready-made products on the distant markets, the simplest form of milk processing has been accepted in the concept for the marketing group. Raw milk would be skimmed to a fat content of 3,2% and then pasteurised and packaged. Cream would be produced from the surplus fat (12% and 18%).

To start low-scale processing the following investment expenditure would be necessary:

dairy building	56,800 PLZ	March/October 1999
equipment with sewage treatment plant	295,850 PLZ	May/October 1999
refrigerated lorry	60,000 PLZ	March 2000
total investment value	**412,650 PLZ**	

In order to reduce investment costs and also the level of risk, it was agreed to buy second-hand equipment for milk processing and the farmers will use their own labour to build the dairy building.

Optimum efficiency of the milk processing line (2000 litres per day) could not be fully exploited at the present production level. Full use of the dairy production potential has been assumed for the last year of the financial plan.

In order to realise the investment, a loan of 340,000 PLZ and farmers' membership shares totalling 60,000 PLZ have been assumed.

It has also been assumed that one of the farmers will perform the function of a manager and another, after appropriate training, will be responsible for the realisation and control of the production process. The employment of two permanent workers in the dairy and two drivers (full time and part-time) for the transport of finished products has been provided for.

Markets and distribution

At present, the Brzostowo farms sell their milk to the local milk co-operative.

Once the marketing group is established and the organic milk processing is underway, pasteurised milk and cream would be delivered to the Warsaw market. According to market research, milk and other dairy products are sought after by "organic" consumers.

Potential buyers are organic food warehouses but also selected chains of retail shops. During the transition to organic production, milk and cream would be sold with the Brzostowo label but with no added premium for organic food. It has been assumed that farms will be able to apply for a certificate of organic production in the second year of the plan and from the year 2001, milk and cream can be sold with an "organic" label.

In order to secure the financial feasibility of the project in a short time period it would be necessary to increase milk production on the farms to a total of 660,000 litres to fully exploit the efficiency of the dairy processing line. This can be achieved by farms specialising in milk production, by increasing the size of their herds and their milking capacity or possibly by admitting new members to the group.

Financial plan

Marketing mix. A detailed marketing plan including the promotional plan will be developed in the second phase of the project and will be adjusted to the market situation while the group is being formed. The following assumptions have been made in the business plan:

Product The basic product will be pasteurised milk which will constitute 72% of sales; the remaining 28% will consist of cream with 12% and 18% fat content, made in adequate proportions 75% and 25%;

Price Estimated wholesale prices have been accepted at the level of average retail prices of milk from conventional production in 1997/1998; the difference between wholesale and retail prices can be assumed to be approximately the same as the premium for organic products;

Place The main market will be Warsaw because it has potentially the greatest demand for organic milk and dairy products; the surplus will be sold on local markets;

Promotion Leaflets prepared within the framework of the project.

Detailed assumptions for the financial plan. The financial plan has been based on the following assumptions:

- As with the other marketing groups, the purchase price of milk from the farmers for their products will be at as high a level as the achieved income allows for covering all expenses and paying off the loans; due to high investment expenditures a considerable rise in purchase prices will not be possible until after a few years of activity (from 0.66 PLZ per litre in 1999 to 1.11 PLZ per litre in 2006);
- The investment loan will be paid off over a period of seven years; the interest rate has been assumed on the terms of preferential credits (5.5%);
- When preparing the financial plan the permanent prices from 1998 have been applied except for those prices (e.g. the price of raw materials purchase from the farmers) whose variability is explained above.

The financial results of the Brzostowo marketing group anticipated in the business plan are presented in Table 5.4.

Specification	1998	1999	2000	2001	2002	2003	2004	2005	2006
Sale	0	609.6	920.5	1166.1	1166.1	1166.1	1166.1	1166.1	1166.1
Variable costs	0	408.6	662.3	864.3	870.3	865.3	898.8	885.5	944.9
Permanent costs	13.58	201.2	228.8	238.7	240.2	237.2	231.3	250.0	212.7
Profit (before tax)	-13.58	-0.29	29.4	63.0	55.5	63.5	35.9	30.5	8.4
Tax	0	0	7.9	17.5	16.6	19.0	10.7	9.1	2.5
Net profit	-13.58	-0.29	21.4	45.4	38.8	44.4	25.1	21.3	5.9
Income tax rate [%]	36	34	32	30	30	30	30	30	30

Table 5.4 Costs and projected profits [PLZ] for the Brzostowo marketing group

5.8. Barriers to farmers uniting into marketing groups

General observations

The concept of organising four marketing groups was generally well accepted by interested farmers in the initial phase of the project. The group activity is most of all oriented at collective marketing and the sale of produce as well as “adding value” by processing raw materials. Carrying out very simple forms of co-operation with possibly low investment expenditures has been assumed in this project. Farmers uniting into marketing groups should enable them to strengthen their position in the marketplace and the business plans show the financial feasibility of the planned projects.

In spite of that, when the decisions concerning project realisation are being made, the farmers reveal great scepticism and do not take any concrete actions that would lead to implementation of developed plans. Despite the comprehensive help on offer from the project realisers, both

organisational and financial, there seems little chance that all four marketing groups will be formed. What are the reasons for this?

Observations made during work on the concept and business plan, and discussions with the farmers, enable us to identify a number of barriers which constitute significant obstacles to farmers undertaking such co-operation. Some of them are objective limitations and drawbacks. However, it seems that subjective factors are dominant. The consciousness that such barriers exist and the necessity to overcome them is in the interest of the farmers themselves and should also be taken under consideration when advising.

Traditional image of a farmer

Farmers still perceive themselves as food producers who are connected by traditional bonds to the land where the buying and selling is taken care of by other people or other links in the distribution chain. Starting a marketing group places on farmers the duty of being active in the marketplace and of taking on some of the functions traditionally performed by organisations dealing with purchasing and food processing. A traditional farmer then becomes a contractor playing a role other than the one he has been accustomed to for many years, namely, running his farm. Not all farmers can accept that change, and not all of them are properly prepared for it. Therefore success in the creation of these marketing groups depends, among other things, on whether there are any leaders amongst them who are ready to take up the challenge and convince other members of the group that they are capable of performing new tasks.

Lack of financial means for group organisation and investments

Insufficient financial resources can be a significant factor which limits group activity especially if it requires significant investment. However, this is often a false argument. In the business plans as presented, the required financial layout is often quite small, plus the project budget has provided financial help for the groups that does not need to be repaid. Despite that, in discussions some farmers have continually mentioned the argument of limited funds as one of the obstacles of undertaking collective activity. There are far greater barriers than finance including one that can be described as “resistance to change”.

Resistance to change

“Resistance to change” is an extensive domain of management theory and practice. Radical changes implicit in the intentions to undertake processing and commercial group activity often provoke “defensive” reactions in those whom they concern. Every change destroys the existing order of things and reveals unknown (not previously experienced) prospects, provoking fears of failure. These are natural and common reactions but they do strongly impede the introduction of changes, and the adoption of new solutions. Overcoming the resistance depends, among other things, on realising the potential advantages of change and fostering aspirations to perform a more important role in the new reality.

Tendency to risk-taking

Farmers are constantly exposed to risk e.g. a reduction or loss of harvest due to bad weather or the problem of selling their produce at a profit. Undertaking the co-operation and implementation of new activities (processing, marketing, selling) definitely carries a risk of failure, including a financial one. Therefore, a tendency to risk-taking is demanded from those farmers who decide to create and manage marketing groups.

However, it should be stressed that group activity limits, at the same time, the risk that is taken individually by each farmer. When farmers use the excuse of greater risk as an argument against joining in a marketing group, this is often a symptom of "resistance to change" and an example of a subjective factor, not a real obstacle.

Knowledge factor

More active forms of farmers' participation in the "market game" and, most of all, running the "company" which is the marketing group demand other skills and wider knowledge than those needed for farming. Apart from new technological skills indispensable if a group undertakes farm product processing, it is also necessary to develop knowledge of company management or marketing (economic knowledge).

Conflict of interests

There are many factors affecting the success of collective projects. One of the most important is definitely the participants' (partners) common vision regarding objectives and principles of an activity and even a readiness to subordinate individual goals to the interests of the group. Not being able to achieve a full coming together of the farmers' interests became one of many important obstacles to the formation of marketing groups.

This list of barriers is certainly not complete, it only points at some of the most important in the development of farmers' marketing groups in Polish agriculture. These barriers need to be overcome if the marketing group concept is to come to fruition. That demands more intensive counselling work oriented not only at technical problems but also directed at consciousness-shaping and knowledge and skills improvement.

6. ORGANIC FARMERS' MARKETING INITIATIVES

By Dorota Metera

6.1. Introduction

Looking at more than 15 years of organic agriculture development in an organised form, it seems that the organic food market was started by farmers themselves. When the first farmers declared their products organic, there also appeared the first customers who would come to the farms in person. Initially the term "organic food" was not used as consumers were intuitively looking for "country" or "non-sprayed" products. Only then did they find out from a farmer that such products were called "bio-dynamic" or "organic". At that time a system of control or a trademark were not needed as the product make was the farmer's last name. Even today, in spite of the fact that the EKOLAND trademark is well-known to the organic food consumers, trust in familiar farmers is of great importance to some customers. The Association of Organic Food Producers EKOLAND was only registered in 1989 and the first inspection of farms leading to the granting of certificates took place in 1990.

6.2. Direct sale

For many farms, especially the small ones, direct sale on the farm premises is still a basic way of sale. However, this form has many drawbacks: the small number of farms, too narrow a range of products, farmers' reluctance to register commercial activity and keep records, and finally the small number of cars. Apart from the ecological and economic point of view, customers don't usually go to the country just to do some shopping unless there is another incentive or reason e.g. visiting known farmers, getting their children acquainted with the country or helping on the farm.

However, some farmers have accustomed city inhabitants to shopping on their farms by offering them improved forms of supply as in a shop on the premises where, apart from the products made there, one can buy other products including, most of all, products from other farms, processing plants and warehouses.

Home deliveries are also expanding, both in the form of weekly deliveries or as so-called winter reserves e.g. bigger packages of potatoes, onions or fruit and vegetable products produced by housewives.

A more sophisticated form of selling country produce is by organising parties and organic buffets at bigger meetings, conferences or harvests. Parties for 100–200 people take much preparation, invention of an interesting menu, collection of necessary cutlery and crockery and organisation of efficient service therefore only a few people specialise in that. However, their activity has not been sufficiently advertised yet.

Dozens of organic farms have been offering agro-tourism over the last few years, as a source of additional income. Addresses of these farms can be found in tourist guides published by municipalities, regional organisations or on the Internet. Some farms are advertised by friends and it is difficult to book a room there for so-called long weekends, school holidays and vacations in the period from spring to autumn. Attractive surroundings, a family atmosphere and home cooking are the best advertisement for the guests from Poland and from abroad.

Food fairs come from the tradition of purchasing so-called country produce in the marketplaces. Customers willingly visit food fairs, often with an irrational belief that they are cheaper than shops. However, what is more important is the fact that one can meet a producer-farmer there and talk to him. In the 80s organic farmers at the first food fairs in the then Voivodship Centre of Agricultural Advance in Przysiek near Toruñ began to come to the street fairs in Warsaw. Lectures on healthy food and the quality of organic and macrobiotic products delivered at that time in the EKO-OKO club shaped the first group of customers. These activities were advertised by "Gazeta Wyborcza" and "Twój Styl" magazine and on television. Apart from vegetables, potatoes and grain products one could buy vegetarian dishes and books on nutrition. They prepared the ground for the first health food shop, "Green Eye", created in 1991. Today organic and country food fairs take place on the occasions of various meetings e.g. Harvest Feast on Jasna Góra Hill in Czêstochowa, organic farmers' conference in Przysiek near Toruñ, Olsztyn, Zielona Góra and Sanniki and fairly frequently in Warsaw and £ódŸ. In Pña and Bydgoszcz farmers have their own stalls on the market.

The clientele of food fairs are usually people who would never enter a health food shop. The effort of fair organisers is often not compensated by the profit. However, they still hope that maybe a customer will one day visit that kind of shop in search of something that tastes better.

6.3. Retail and wholesale trade

The first shop to stock organic products was "Bios" in Foksal street in Warsaw and it appeared in 1989. The shop which today is called "Sources of life" is a shop with vegetarian food. Its selection slowly expanded to take in first vegetables from organic farms, and later flour, groats and pasta. After that, three more shops were opened in Warsaw and by the end of 1991 organic farmers were delivering their products to dozens of shops in the country. In 1991 the first warehouse of vegetables and grain products was created by merchants from the "Bios" shop. In 1993 there were already 60 shops and a few warehouses with organic products, and by 1994 there were over 80. In some supermarkets, shops or market stalls one can find other products labelled EKOLAND. However, there is no shop whose stock is based entirely on organic produce since it is still too narrow and seasonal.

Difficulties in supplying shops with a full range of organic produce are caused mainly by the farms being spread out. The biggest problem is the need for fast delivery of fresh and seasonal products such as vegetables and fruit, milk products, eggs and herbs. They are delivered to Warsaw shops by the farmers from Mazowieckie voivodship (about 80 km).

Dry goods are brought to the shops directly from the farmers and from a mill, a pasta production plant or through warehouses. Warehouses often have their own transport, e.g. "Provita" warehouse delivers its products to 30 shops located in the north and south of Poland. The route is planned in such a way that the produce is collected from the farmers in a given region and transported to Warsaw or other bigger cities at the same time.

In the last few years, organic products can frequently be seen on the shelves of supermarkets or even hypermarkets. They get there via warehouses or directly from the farmers and processors. This form of sale requires great efficiency from suppliers: having a bank account, adequate financial resources to cope with delays in payment, preparation of bar codes for the products, having a phone and a fax machine, a dependable delivery truck and the ability to adjust to the higher quality requirements of a supermarket. Since the beginnings of co-operation are usually difficult, it is good if a person responsible for co-operation with suppliers understands inexperienced farmers and has a positive attitude towards organic products. Despite the high

prices of many products, they have many buyers, especially when it comes to the products which are not offered by conventional production e.g. whole-meal wheat and rye flour, buckwheat groats, whole-meal pasta. However, it can happen that a hypermarket sells common vegetables such as roots, carrots or cabbage that are both organically and conventionally produced.

6.4. Product range

The supply of organic products is variable because it follows a natural, strictly seasonal method of distribution. On organic farms where production is multilateral, there are traditional periods of big supply e.g. eggs in the spring. Supply of cheese and other milk products, especially goat's cheese, is biggest in the summer. Whereas the supply of these products is more or less stable, except for vacations, a great increase in demand has been observed over the last few years.

Inexperienced new customers will be satisfied with the assortment of organic food offered by shops. They are offered grain, vegetable and fruit products as well as a lot of fresh vegetables and potatoes and various milk products from time to time. However, for a more sophisticated consumer, the choice offered by shops is a little too small. There is a shortage of fruit in the harvest season. In many shops there is no meat sold because of existing sanitary regulations (meat and its by-products can only be sold in vacuum-packed containers).

"Provita" warehouse provides 50 types of products of organic quality, mainly grain, fruit and vegetable products. In a well-supplied shop one can find more products from organic farms in the following groups of goods:

Fresh produce:

- Fruit and vegetables,
- Potatoes,
- Cow and goat milk products: milk, yogurt, cottage cheese, cheese, butter,
- Eggs;

Dry goods:

- Grain seeds: wheat, rye, spelt, barley,
- Crushed seeds and flakes of wheat, rye, spelt, barley,
- Bran of various grains,
- Groats: wheat and rye groats, millet groats, buckwheat groats,
- Whole-meal pasta: wheat, rye, spelt, with the addition of herbs and lasagne;

Fruit and vegetables:

- From tomatoes: juice, puree, tomatoes in own juice,
- Pickles and sour cucumbers,
- Pasteurised fruit: red and black currants, strawberries,
- Juice: apple, carrot, currant.

Products from organic farms are usually sold in packs labelled with the producer's address and attestation number. Producers most commonly use the labels printed on request by EKOLAND. In

such cases it is important to place on it the address seal of the farm, the attestation number, the description and weight of the goods, the date of production and consumption. Few producers so far have developed their own labels on which they may place the EKOLAND mark by agreement

6.5. Prices

Usually prices are agreed between individual farmers and a warehouse or a shop. In some regions co-operating farmers e.g. in P³ockie and Toruñskie voivodships settle on fixed common prices for organic products in a given region. In case of supply of products to a warehouse a margin of 15% should be added, for a shop this is about 30%. If farmers supply their products, most often fruit and vegetables, directly to the shop they receive a price corresponding to the retail price of conventional produce. A spread price of 25-30% is added to the purchase price. Prices of fruit and vegetables, especially seasonal ones (e.g. lettuce, strawberries) whose prices can change from day to day are more flexible.

6.6. Processing plants

An important market for organic products is processing plants. Most of them (apart from bakeries in Toruñ) were started by farmers. At present, the following processing plants operate with the EKOLAND accreditation:

1. Biobakery "W Grzybowskiej Arce" in S³ubice, Mazowieckie voivodship;
2. Mill "EKO" in Tuczki, Warminsko-Mazurskie voivodship;
3. Fruit and vegetable processing plant "Good Food Bio" in Ponne, Kujawsko-Pomorskie voivodship;
4. Ryszard Piasecki's Bakery in Toruñ;
5. Zofia Mirkiewicz's organic grain processing plant;
6. Pasta production plant "Bio" in Pokrzydowo, Kujawsko-Pomorskie.

Farmers' co-operation with processing plants is mostly regulated by written or oral agreements before the crop season starts which is a convenient solution for both parties. Farmers can adjust their production to the processor's requirements and settle the price level. The only risk is weather variability which can be the cause of crop failure or overproduction and low prices.

6.7. Export

For some years attempts have been made to organise production for export. The most important export produce so far has been soft fruit: strawberries and black and red currants. The necessary quantity can only be prepared by a group of farmers who usually set themselves up as an informal association with the option of registering as a legal entity if necessary, such as the Radzanowskie Ecological Association. Only a few farmers are able to individually package goods for export e.g. vegetables or apples since that requires having an appropriate area of the farm or orchard and organisational abilities, fulfilling quality norms, using appropriate containers, organisation of transport, etc. Part of these duties can be taken on by the export company although one of the

specialised organic farms takes care of shipment of goods for export by itself from beginning to end.

One more barrier to the export of organic products is the necessity to possess a certificate of entitlement, which is connected with big costs. Controls are most frequently made by a Dutch unit SKAL and the owner of the certificate for the products being checked is usually not a farmer but an exporter or importer.

6.8. Examples of producer group activities

The Brodnica group of grain and vegetables producers

Meetings of farmers in that region began in the early 80s when the farmers became acquainted at the first organic farming courses. Owing to their leaders' ingenuity they started to sell their products together to the shops in Warsaw and the Gdañsk region. When the first food processing plants were created: fruit and vegetable "Bio" in Golub-Dobrzyñ and pasta production plant "Bio" in Pokrzydowo the farmers adjusted slightly their production to the needs of the processors. That is why uniting organic farmers into groups of grain and vegetable producers was not difficult to set up in that region. They had been connected by trade, neighbourly and friendly ties for a long time. Some of them e.g. Mieczys³aw Babalski – the chairman of EKOLAND Association for many years and at present the chairman of Kujawsko-Toruñski Division, the advisor of Agricultural Advisory Centre and the owner of a pasta production plant are leaders of that group. Farmers sell their products to "Bio" pasta processing plant in Pokrzydowo, they supply vegetables and other products to shops in Bydgoszcz and Toruñ and co-operate by combining the transport of goods and distributing biological crop protection products. The situation of farmers in the group is good and there are even some problems with a shortage of products. In the course of regular meetings with processors the farmers agree on the kind and area of cultivated vegetables and the method of supply and payment. On the basis of trade experience up to that moment they have come to the conclusion that apart from maintaining contacts with their buyers they will develop and modernise grain processing and vegetable storage. They presented their activities at the meeting of the Commission of Agriculture and Environment Protection in Regent District Council in Brodnica and at the session of Kujawsko-Pomorska Chamber of Agriculture and at the meeting with the board of directors of the Regional Advisory Centre for Agriculture and Rural Areas Development in Przysiek. In the near future they are going to look for a sponsor to assist in financing the adaptation of a store building, and purchase of grain silos, pasta machines, and a computer and fax machine.

They have also published another leaflet on organic food for consumers, destined for distribution at such promotional meetings as the Earth Day in Warsaw, the inauguration of the agro-tourist season, Drwêca Days and Organic Harvest Feast. Thanks to their co-operation with Brodnica Landscape Park, 600 participants in school excursions from all over the country have visited organic farms this year.

The U¿ranki group of milk producers

This group is focused around the farm of Agata Szlagier-Jab³oñska who, since 1993, has been managing an organic farm geared towards the production of milk, cottage cheese, goat's and cow's cheese. At present milk from two other farms is processed there and 10 organic farmers have expressed a willingness to co-operate in the future. Agata Szlagier-Jab³oñska delivers her products on a regular basis to a few organic shops, bars and restaurants in Warsaw and her sales

do not decrease despite the holiday season. She has also had conversations about delivering to road-side bars, chains of salad bars and restaurants.

Moreover, Agata Szlagier-Jab³oñska has participated in various trade-promotion meetings such as: organic buffets at conferences e.g. at the Ministry of Environment Protection, Natural Resources and Forestry or in parliament. She regularly attends various fairs: Organic Harvest Feast, Exhibition of Farm Animals and a celebration of the World Day of Environment Protection in Warsaw, P³ock, Sanniki, Stare Pole and Miko³ajki.

There is a greater interest in organic products (numerous invitations to conferences and fairs) among customers and in organic methods of production among farmers (a growing group of interested farmers). Further increases in sales and extending the group of buyers to include grocery stores, supermarkets, etc depend on the registration of processing plants and in order to do that it is necessary to organise courses on sanitary regulations, product analyses, to develop norms and to apply for the control of consistency with the criteria of organic farming. In the summer, mobile sales at marinas and camping grounds are organised, accompanied by tastings and conversations with clients.

The group is also planning to organise a permanent market in P³ock and a seasonal local market (guest houses, hotels) as well as to search for new buyers in the Gdañsk region, £ódŸ and in the south of Poland. The farmers of the region can, through the group mediation, count on permanent advice from the experts of the Agricultural Counselling Centre. Owing to the competence of Agata Szlagier- Jab³oñska in U¿ranki village there are organised courses of organic farming, the village is visited by tourists, also from abroad and by students, also foreign ones, who can have practical classes there.

The Brzostowo group of milk and herb producers

Farmers in Brzostowo use extensive farming methods, close to organic ones, but their farms are not certified. Many farms have land in Biebrza National Park. An additional source of income for these farms are tourists – mainly bird watchers from home and abroad. Farmers, or rather their wives and children, traditionally collect herbs growing wild and sell them to “Herbapol” and other herb companies.

Marian Zysk – the advisor at the Agricultural Counselling Centre has found an organiser of herb collection. An export contract and purchase agreement have been signed, the IUCN foundation has received approval for herb collection from the management of Biebrza National Park and a Dutch control unit SKAL has made the inspection. Herb collection is carried out in the area of Brzostowo and in five neighbouring villages to provide the necessary quantity and does not over-exploit the existing natural resources.

In Brzostowo there has been a training scheme on agro-tourism organised by ECEAT. As far as the present situation is concerned, one farm has expressed willingness to take on such activities, while other farmers are considering it.

The plans of the group for the near future are: organising training on herbal product quality, on organic farming and strawberry production, organising trips to the best organic farms in Poland, finding a frozen food company with which they could co-operate next year and restoration of the strawberry growing that used to take place in that region in the past.

The Olsztyn group of grain and milk producers

Farmers from the group keep in touch with each other at the organic farming courses and meetings organised by the Agricultural Advisory Centre in Olsztyn. The meetings are organised by Teresa Kajka, the advisor at the Centre. Having estimated the production volume the farmers under the advisors' direction started talks with potential buyers of their products: a fodder producer, a mill, a slaughter-house and a bakery. It is possible to have the grain ground at a nearby mill. In the autumn the conversations with a slaughter-house will be restarted whereas a feed production plant has declared itself not interested in that kind of production at present. The possibilities of selling vegetables to the Warsaw market have been discussed, however this year the farmers do not have the production volume required and they are planning to start it next year. The group members have a tendency to expect external assistance at all stages – they are not prepared to take out any loans or make any great commitment to other group members. They have in their plans to get acquainted with sanitary regulations connected with selling farm crops, to establish contacts with the chain of "Biedronka" stores and warehouses in Olsztyn and enter into co-operation with a bakery and a slaughter-house.

The Rajgród multi-directional group (vegetables, grain)

Organic farmers from this group have known each other for a few years from meeting at farming courses and have been trying to find markets together. They have gone for excursions to other organic farms and to organic food fairs. Last year they established contacts with a Dutch foundation "Wólka" which placed an order for fruit products which are to be exported to Holland and they renewed contacts with the "Good Food Bio" company from Golub-Dobrzyñ and with "Symbio" company dealing with the export of soft fruit.

Marian Zysk (the advisor at the Agricultural Counselling Centre) has established contacts with the Natural Museum in Drozdowo which carries out training and promotional activities concerning organic farming. Articles on organic farming have appeared in the local press and in "Agricultural News" of the Agricultural Counselling Centre in Szepietowo. The effects achieved within the scope of the project was good sales of grain and buckwheat and some vegetables. Agro-tourism provides an additional source of income. Due to the collapse of the pork and beef market, some farmers specialise in milk production. In the near future some training programmes in agro-tourism and fruit and vegetable production – the most profitable directions – are planned as well as the extension of the offer by herbs from field crops.

7. DEMAND FOR ORGANIC FOOD

By Henryk Runowski

7.1. Introduction

Development of organic farming in Poland is constrained by the possibilities of selling its products. This means that the internal and external demand for organic food is a basic determiner of the spread of organic methods of farm production.

In order to identify existing demand for organic food in Poland some research has been done among four sections of the population:

1. A general survey of Polish adults, nationwide, using a random sample of the inhabitants of Poland maintaining the proportional participation of voivodships as it is in the population of the inhabitants of Poland; the research included 1167 people; the survey was conducted by the Centre of Public Opinion Research;
2. The inhabitants of small and average-sized towns such as: Brodnica, Łomża and Suwałki. 300 people in total were interviewed; the survey was carried out by Master of Engineering, Artur Czerniecki;
3. The inhabitants of big city agglomerations (supermarket customers); a survey was carried out in three supermarkets in Warsaw including personal interviews with 212 people; the research was conducted by students of Warsaw University;
4. The customers of organic food shops; research was carried out among 500 customers of organic food shops by means of personal interviews; the survey was done by Barbara Bajer and Małgorzata Janiszewska.

The research was carried out in order to get answers to the following questions:

1. What is the ecological consciousness of the consumers and their knowledge of the term "organic food" in various social sections?
2. What are the differences in demand for organic food?
3. What kinds of organic food are consumers most interested in?
4. What organic products do the organic food shops lack?
5. What are the preferred outlets for organic food purchase for those interviewed?
6. What price differential between organic products and conventional products are the consumers willing to accept?

Research results have been compiled in Tables 7.1–7.9.

7.2. Ecological consciousness of consumers and the level of knowledge about organic food

The results of the nationwide survey point to the fact that the ecological consciousness of the consumers is not high. People buying organic products pay attention mostly to the date of consumption (82%) and the price (79%) and only then to vitamin content (56%), preservatives (49%), the producer (40%) and the packaging (34%) – see table 7.1. A survey conducted amongst Warsaw supermarket customers showed that they pay attention mainly to the consumption date (85,4%), then preservatives (41%), the price (37,3%) and vitamin content (32,1%).

Product features	**Degree of interest [%]**			
	high	**average**	**low**	**hard to tell**
Producer	40	24	32	3
Kind of packaging	34	29	33	3
Vitamin content	56	18	23	4
Consumption date	82	5	11	3
Price	79	10	9	3
Presence of preservatives	49	18	28	5

Table 7.1 Degree of interest in selected features of food products, as shown by the survey

From the statements of those interviewed in the national survey it appears that as many as 41% buy organic food; moreover, 71% of supermarket customers interviewed admitted to buying organic food. These answers are fairly surprising. One explanation for the figures being so high is that people are really not sure exactly what constitutes organic food. Another cause may be the fact that some companies add words such as: ”bio”, “eco”, “organic”, “health food” etc. to the labels on their products (which do not actually meet the requirements of organic food production).

Organic food is purchased mainly by inhabitants of big cities (47–55%), people with secondary and higher education, well-off people but also by pupils and students (a consequence of wider ecological education taking place in schools). Villagers admit to buying such food to a smaller degree. People who tend not to buy these products are: villagers, elderly people, people with primary education and those who are in a difficult financial situation.

The main reason for buying these products is concern for one’s family and one’s own health (94%), followed by concern for the state of the natural environment (66%) and then taste (58%) – Table 7.2.

Factors	**Degree of motivation**			
	high	**average**	**low**	**hard to tell**
Better taste and smell of organic products	58	23	17	2
Better look of organic products	43	27	28	3
Concern for the state of natural environment	66	17	13	4
Concern for family and one’s health	94	1	4	0
For no particular reason	15	16	53	16

Table 7.2 Factors determining purchase of organic food as taken from the nationwide survey.

Most people revealed ignorance of any symbols on the product packaging. The mark of the Association of Organic Food Producers – EKOLAND – was the most recognised (21%) but at the same time it was not recognised by 64% of respondents.

The concept of organic food was defined correctly by 49% of people in the nation-wide survey, 49.1% of those included in the supermarket research and 43% of shoppers in small- and medium-sized towns. The correct definition of organic food was provided by 86.6% of people interviewed in organic food shops who said that it was food produced without the use of any chemicals. Only a few percent of people think that it is an advertising trick. However, more detailed analysis of the answers provided shows that the knowledge about the essence of organic food is much smaller if taking into consideration correct answers to the questions concerning the definition of organic food, how to recognise it and the institutions responsible for organic food certification in Poland. The number of people who gave the right answers came down to about 10% of the surveyed population. This then is the figure to be used when talking about people knowing the essential facts about organic food. This low percentage can be a result of insufficient promotion and propagation of knowledge on organic food both in schools and through the mass media.

Among the sources of information on organic food, those in the nationwide survey mentioned television (81%), radio and press (about 35%) – Table 7.3.

Supermarket customers mentioned television (66.5%) in the first place, the press (45.8%) then radio (25.5%) and family and friends (38.2%). The sources of information on organic food for the shoppers in small and medium towns were television (38%), press and literature (31%) and friends (31%).

Specification	**Total [%]**	**Including**			
		Men	**Women**	**City**	**Village**
Radio programmes	36	37	35	38	33
TV programmes	81	84	78	82	79
Newspapers, magazines	32	31	33	38	23
Information through family or friends	11	11	12	13	9
Contacts with organic farmers	3	3	4	4	3
Other	6	6	6	7	4
Never heard of organic food	5	5	5	3	8

Table 7.3 Sources of information on organic food as taken from the nationwide survey

Almost 5% of those in the nationwide survey had never heard of organic food nor had 0.5% of the those surveyed in the supermarkets.

The results reveal that the ecological consciousness of consumers in Poland is not especially high. About 10% of people can define correctly what organic food is although the percentage of people who say they buy such food is 4–5 times bigger.

7.3. Differences in demand for organic food

When looking at the demand for organic food in relation to where people live, it must be said that organic food is purchased mainly by inhabitants of big cities. They are mostly people with secondary (51%) and higher (56%) education who describe their financial situation as good, including managerial staff and private businessmen. The representation of pupils and students is also extensive. Amongst the group of people who do not buy organic products, elderly people prevail, together with inhabitants of villages, and people with primary education who describe their financial situation as bad. More data characterising the people surveyed nationwide is shown in Table 7.4.

Characteristics of respondents	**Answers [%]**		**Number of people**
	Yes	**No**	
Respondents total	41	59	1108
SEX			
Male	33	67	533
Female	48	52	576
AGE			
Up to 19	46	54	94
20-29	44	56	206
30-39	46	54	251
40-49	42	58	208
50-59	36	64	142
60 and more	31	69	207
EDUCATION			
Primary	28	72	309
Vocational	35	65	295
Secondary and post-secondary	51	49	367
Higher	56	44	134
PLACE OF LIVING			
Country	28	72	399
City up to 100,000 inhabitants	44	56	350
City 101-500,000 inhabitants	55	45	216
City over 500,000 inhabitants	47	53	143

Table 7.4 Characteristics of people taking part in the nationwide survey.

The research conducted among supermarket customers revealed that as many women as men buy organic food. The group of organic food purchasers was slightly differentiated by age. People aged 30–39 admitted to buying organic food more often than any other age group. The age group

that bought least often was 50–59. Families with four or more children bought organic food more frequently than families with two or three children. It was also often declared by people having only one child.

The purchase of organic food was declared the most often by the people describing their financial situation as rather good.

7.4. Type of organic products purchased

The nationwide survey revealed that the products bought the most often, i.e. once a week, are bakery products, milk and dairy products, fruit and vegetables and then eggs, fruit and vegetable products – see Table 7.5. The least popular products are soya ones. This may be a result of too little knowledge of how to include these products in the menu and almost no tradition of eating them.

When studying the relationship between the frequency of purchase of particular products and one's place of living it may turn out that people living in rural areas buy organic food less often than city inhabitants. It is a result of the possibility of producing some products for one's own use. That is also why e.g. 40% of farmers participating in the research claim that they do not buy bread a few times a week (16% of rural inhabitants) while among city inhabitants only 9% of population claim it. Similar interrelations apply to the purchase of fruit and vegetables. 24% of the country population buy them a few times a week while 58% of the city population declares such frequency. Fruit and vegetables are bought a few times a month by 31% of the respondents living in rural areas and by 22% of respondents living in the cities. Fruit and vegetable products are bought a few times a month by the people aged 20–39, city dwellers and those with higher education.

Type of product	**Purchase frequency [%]**			
	A few times a week	**A few times a month**	**More rarely**	**Not at all**
Vegetables and fruit	50	25	12	14
Fruit and vegetable products	20	36	19	26
Tofu and other soya products	5	24	27	44
Milk and dairy products	66	14	5	14
Eggs	33	32	9	26
Flour	13	39	27	21
Groats	10	41	30	19
Bread	72	11	7	11

Table 7.5 Frequency of purchase of selected groups of products nationwide

The research conducted in organic food shops shows that 39% of respondents buy these products a few times a week, 37% of respondents buy them a few times a month, 19% buy them occasionally. Only 5% of respondents buy organic products every day. Most people buy dry products, mainly groats, crushed seeds and grain flakes (to prepare one's own cereals) and the seeds of leguminous plants. The most frequently bought fresh products were eggs, radishes, lettuce, potatoes, chives, cow's and goat's milk and cheese. The most popular fruit were apples,

strawberries and raspberries. In the group of fruit and vegetable products, juice and tomato products dominated. Next came pasteurised fruit, sour cucumbers. Other products mentioned included bread, soya products, sweets and mineral water. Sprouts, flour, delicacies and oil were also popular.

Specification	Purchase frequency [%]				
	A few times a week	A few times a month	More rarely	Not at all	No answer
Vegetables and fruit	34.0	24.1	7.5	6.6	27.8
Fruit and vegetable products	16.5	33.0	16.5	6.1	27.8
Tofu and other soya products	4.7	15.6	28.3	23.1	28.3
Milk and its products	38.2	16.0	15.1	2.8	27.8
Eggs	14.2	27.4	12.3	17.9	28.3
Flour	6.1	12.3	34.9	18.4	28.3
Groats	6.1	11.8	33.0	21.2	27.8
Bread	41.0	14.6	6.1	9.9	28.3

Table 7.6 Frequency of purchase of organic products by supermarket customers

The research shows that the customers of organic food shops differ in their preferences from the customers of supermarkets and groceries who more often buy dry goods. All surveyed groups showed a great interest in buying fresh vegetables and fruit, milk products and eggs.

7.5. Perceived lacks in the range of organic food on offer

Those taking part in the nationwide survey identified a lack of certain products in the range of organic food offered, such as meat and its products (54% of people), coffee (28%), tea (33%), products for babies and children (23%); 12% mentioned a lack of some other products (see Table 7.7). Inhabitants of big cities complained more frequently of a lack of organic products in shops. Similarly, people with secondary and higher education perceived more gaps in the choice of organic products than people with primary education.

Looking at social and professional groups, the lack of meat and its products was perceived mostly by private businessmen (74%), housewives (64%), directors and specialists (62%). The lacks are noticed least by farmers (36%), pupils and students (42%), the unemployed and labourers (47–48%). However, assessments concerning the lack of coffee show slightly different results. Its lack is noticed mainly by high-position employees and specialists (32%), pupils, students and farmers (30%). There are slight differences in answers given to the question concerning the lack of organic coffee – 27 to 32%. Interestingly enough, when looking at the figures from the viewpoint of financial situation, the lack of organic coffee is most noticed by the group with a poor financial situation (36%). Similar interrelations appear when it comes to the lack of organic tea.

From the research conducted among the customers of organic food shops it appears that the choice offered by these shops does not satisfy 32.4% of respondents. The answer to the question of what

the organic shops lack was mostly (33.3%) "a wider assortment". 35% of the people who answered that question, could not precisely define the term a "wider assortment" and mention concrete products. The remaining customers expressed a wish for greater quantities and variety of products, especially fruit and vegetables. It was also believed that supplies of fresh produce should be more frequent.

Specification	Respondents [%]		Not interested in buying [%]
	Yes	No	
Meat and its products	54	33	14
Coffee	28	47	25
Tea	33	53	14
Products for babies and children	23	32	46
Other	12	33	54

Table 7.7 Kinds of food lacking in organic food selection according to the nationwide survey

Almost 15% of respondents felt a lack of leguminous plant products (soya and lentil cutlets, tofu and its products, etc.) and over a half of them (62.5%) were vegetarians. The remaining products that the respondents complained about were: dairy (8.6%), bread (8%), vegetable products (6.2%), no-sugar products (4.9%), meat (3.1%) and eggs (2.5%). No product was mentioned by 6.8% of customers however, they complained about the small number of organic food shops.

7.6. Preferred outlets for purchasing organic food

The results of the nationwide survey revealed great differences in preference when it came to places to buy organic food (Table 7.8). Respondents had a choice of places where such food can be purchased: a market, a specialised shop with organic food, a supermarket (a general store), an organic farm or other places.

It results from the respondents' statements that they would most preferably buy organic food in a specialised shop (80%). Women (80%) rather than men (77%) would buy there as well as people aged 50-60 (89%) and young people up to 30 years (85%). Especially interested in purchasing in such places are businessmen (96%), unemployed (90%), workmen and pupils and students (84-85%). When looking at social and professional groups, supermarkets are most appreciated by businessmen (70%) and least by farmers and housewives (48–49%). From the viewpoint of practising religion, supermarkets were most popular among non-believers (76%), and least among believers and those who regularly attend mass (58%).

Specification	Respondents [%]		Hard to tell [%]
	Yes	No	
Marketplace	17	78	5
Shop specialising in organic food	80	16	4
Supermarket, general store	59	36	5
Organic farm	53	42	5
Other	6	40	54
MEN			
Marketplace	20	75	4
Shop specialising in organic food	77	19	4
Supermarket, general store	62	33	5
Organic farm	48	46	6
other	6	38	55
WOMEN			
Marketplace	16	79	5
Shop specialising in organic food	82	13	4
Supermarket, general store	57	37	6
Organic farm	56	39	5
Other	6	41	53

Table 7.8 Preferred outlets for organic food shopping according to the nationwide survey

48% of men and 56% of women prefer to purchase on a farm. When it comes to various age groups, such form of shopping is most preferred by young people up to 19 years old (68%) and least preferred by 50 year olds (45%). More people who live in the country prefer to purchase direct from a farm (68% of those surveyed) than people who live in the biggest cities in Poland (35%). However, when taking into account inhabitants of all cities, including small towns, more choose to buy directly from a farm than villagers do (68%). Similarly people with higher education show less interest in purchasing directly from an organic farm (43%) than people with primary education (66%). Not surprisingly, when looking at social and professional groups, more farmers (88%) would prefer to purchase on farms than for example other specialists (43%). Less interest in purchasing directly from a farm is declared by believers not practising regularly (39%) and non-believers (44%) than by practising believers (54%).

Willingness to shop for organic food in places other than those mentioned is expressed by less than 6% of the surveyed population. More interest in alternative outlets is expressed by people in a very bad financial situation 21%, less among those who have a good or average financial situation (4%).

Of those surveyed in supermarkets, most prefer to buy organic food there (56.1%), then in a specialised shop (47.2%). Less people would like to purchase directly from an organic farm (16%), a market (10.8%) or elsewhere (1.4%). This means that supermarkets can be attractive places for organic food purchase. A high position in the ranking is also occupied by shops specialising in organic food. The least popular are markets. Direct sale on organic farms as a form of organic food purchase occupies a variable position.

7.7. Acceptable price differences between organic and conventional food

Bearing in mind the fact that the price of organic food has an influence upon the level of interest in buying it, the respondents were asked if they could accept higher prices of organic food than the prices of their conventional equivalents. The nationwide survey showed that almost half of the people asked (47%) would be able to pay more for organic food than for conventional. However, a little less (40%) were not willing to and the rest did not have an opinion. It is significant that more women (49%) were prepared to pay higher prices for organic products than men (44%) and similarly more people of the age group 20–29 (56%) were willing to pay more than people over 60 (37%). City dwellers were also ready to accept higher prices of organic products (52%) than the country inhabitants (38%). Readiness to pay more increases along with education since only 33% of people having primary education are ready to pay more for organic products while 74% of respondents with higher education declared such willingness.

People occupying managerial positions and specialists, as well as private businessmen, were more willing to pay higher prices for organic products (67–76%) than farmers (30%), retired people and pensioners, unemployed and housewives (38–39%). It is not surprising that among people in bad financial situation only 28% were ready to pay more for organic products while as many as 66% of well-off respondents said they would.

The supermarket customers were more willing than those in the nationwide survey to accept higher prices for organic food. Readiness to pay higher prices for that kind of food is declared by 66% of those surveyed.

A declaration of willingness to pay more for organic products does not tell us much. That is why people were then asked how much higher the accepted price of the organic product could be than the price of the conventional product. 72% thought that the price difference should not exceed 10% (see Table 7.9).

One in five people thought the difference should not exceed 25%. Only 3% of respondents were prepared for the price to be higher even by 50% and for 4% of respondents the price is not important. The data shows clearly that the commonly accepted price difference is small, which may be a basic reason for the limited supply of organic food given that production costs are higher than in conventional production. It is worth stressing that there is a great concurrence of respondents' opinions independently of their group affiliation regarding the accepted rise of prices of organic products in reference to the conventional product prices. In each group surveyed, the percentage of those prepared to see a price difference of not more than 10% varies from 60% to 80%. The price higher by not more than 25% is accepted only by 10-30% of respondents depending on their demographic, social and professional features. It is understandable that higher prices (by not more than 25%) can be accepted by one in three businessman and people in a good financial position. The figures are much lower when looking at pensioners (15%), farmers (7%) and labourers (13%).

Among those surveyed in supermarkets, 41% are likely to pay 10% more for organic products than for conventional products. A little over 20% of respondents are able to accept higher prices but not by more than 25% and 2.4% of respondents not by more than 50%. The price is not important for 1.9% of respondents. However, it should be pointed out that 34% of respondents did not give any answer to the question. More young people (up to 29 years) are willing to pay up to 50% more for organic products than others.

Specification	Acceptable price difference between organic and conventional food				
	£ 10%	£ 25%	£ 50%	Price is not important	I have no opinion
Nationwide survey					
TOTAL	72.0	20.0	3.0	4.0	-
Men	71.0	22.0	4.0	4.0	-
Women	74.0	19.0	3.0	4.0	-
Customers of organic foodshops					
TOTAL	44.0	27.0	13.0	-	16.0
Men	37.0	32.0	16.0	-	15.0
Women	46.0	25.0	13.0	-	16.0
Supermarket customers					
TOTAL	41.5	20.3	2.4	1.9	34.0
Men	40.5	20.3	3.8	1.3	34.1
Women	41.7	20.5	1.5	2.3	34.1

Table 7.9 Acceptable level of price difference between organic and conventional food

Among those surveyed in grocery stores in small and medium towns as many as 74% would accept prices not higher than 10% and half of them not more than 5%. Prices up to 25% higher than conventional products would only be acceptable to 18% of people while prices not higher than 50% would be acceptable to 8% of those surveyed.

2% of customers of organic food shops think that organic products should not differ in price from conventional products.

The research shows that most consumers are ready to pay 10% more for organic products than for conventional ones. However, those accepting higher prices up to 25% is quite numerous. A few percent of respondents would be able to pay, if they had to, prices higher by 50%.

The conclusion to be drawn from this is that in the present situation on the organic food market, price does not constitute the most important barrier in obtaining effective demand for organic food.

7.8. Expenditure on organic food

The nationwide survey revealed that people who buy organic food spend 187 PLZ per month on it on average. Women spent more on that kind of food (194 PLZ) on average than men (176 PLZ). Taking into consideration the age groups of those surveyed, it turned out that people aged 30–49 spent the most. People aged over 60 as well as the youngest people (up to 19 years old) spent the least on organic food.

The surveyed supermarket customers buying organic food spent on average 135 PLZ per month with men spending 157 PLZ and women 121 PLZ. Just as in the nationwide survey, the greatest expenditure on organic food was incurred by people aged 30–49, the least is spent by people aged 60 years old and more as well as people from 50 to 59 years old (85 PLZ).

Looking at education levels, among the surveyed supermarket customers, the greatest expenditure was declared by people with secondary (186 PLZ) and post-secondary education (182 PLZ). By social and professional group, the greatest monthly expenditure on organic food was found amongst people occupying managerial posts and specialists (211 PLZ), labourers (210 PLZ) and businessmen (205 PLZ). The least expenditure was by farmers (90 PLZ), pupils and students (122 PLZ). The level of monthly expenditure on organic food reveals a connection with people's financial situations. In the nationwide survey, people describing their financial situation as good spent 187 PLZ per month on organic food. This is less than among those people who described their situation as bad (225 PLZ) which seems rather surprising. One important explanation could be that people have different approaches to defining their financial situation. It is possible that many people defining their financial situation as good actually have a lower income than those people who perceive their situation as average or even bad.

From the research conducted among supermarket customers, people describing their financial situation as very good devoted 237 PLZ per month on organic food and those in a difficult financial situation spend 108 PLZ. Considerably less (119 PLZ) was spent on organic food by those people who defined their financial situation as quite good.

7.9. Prices of organic and conventional food in specialist and ordinary retail outlets

At the beginning of July 1998 some research was conducted concerning the prices of organic and conventional products in five specialised shops with organic food and four shops with conventional food. All products came from the following groups: vegetables, fruit, fruit and vegetable products, grain products, animal products and others. Generally, the prices of vegetables in organic shops were 80% higher than in shops with conventional food. However, there was a great difference between particular sorts of vegetables. The greatest price differences concerned garlic and haricot beans as well as fresh cucumbers, green and yellow peppers and potatoes (2.5 times more). Fresh fruit in organic shops was on average 40% cheaper than in shops with conventional food and fruit and vegetable products – about 60% more. In grain products the price differences of organic food were close to 68% more than conventional food and in animal products over 50%. On the average the prices of organic food were higher than conventional food by 67%. It means that these differences are much higher than in the case of the prices shaped by the farmers. It shows from the research that usually farm products from organic farms are sold at a price 25% higher than the prices from conventional farms. The phenomenon of price differences between organic and conventional products getting bigger in particular phases of the circulation is observed not only in Poland but in other European countries.

Swiss data shows that the price achieved by the producers is 2.5 times lower than the price of organic apples in a retail outlet. In Poland the differences between the prices given to a farmer and retail prices of organic food are lower so far. That results mainly from the elimination of warehouses from disposing these products.

7.10. Size of the potential organic food market in Poland

Estimating the potential market for organic food in Poland is difficult because there are many factors to be taken into consideration. These include: only a very brief tradition of organic food production, very low levels of consumer ecological consciousness and understanding of the essence of organic farming, distrust of organic products owing to insufficient legal regulation and also a lack of data on current volumes of sales of organic food. Despite these difficulties, an attempt to evaluate the market for organic food has been made. The basis for establishing the prognosis for the market of organic food are the following assumptions:

- The survey shows that about 10% of Polish adults know precisely what organic food is. This part of the population is treated as the basis for the prognosis for the organic food market. According to the data of the Central Statistical Office yearbook from the end of December 1996, the population of age 18 and older is estimated at 28.2 million people. Extrapolating from this, we can take it that around 2.8 million people understand the term "organic food".
- The research revealed that average expenditures on organic food purchase were about 187 PLZ per month. That value of monthly shopping was accepted for the organic food market prognosis.

Based on the numbers provided, one can say that the value of the organic food market could be estimated at 523.6 million PLZ today. Assuming that prices realised by farm producers are on average 60% of the retail price of organic food, one may calculate that the value of organic production on farms will be 315.3 million PLZ. The estimated current sale value of the products from organic farms in Poland is 14.9 million PLZ. This means the average annual income per organic farm is 49,700 PLZ (that amount comes from the research of 1997) as the number of organic farms was 300 in that year in Poland. Taking into consideration the existing differences between prices realised by the farmers and retail prices, one may estimate the value of organic food in Poland at the turn of 1998 at 25 million PLZ. That figure does not include the import of organic food but that does not figure greatly in the Polish market so far. Comparing the estimated potential value of the organic food market (315.3 million PLZ) with the actual sales figures of organic food (25 million PLZ), it is clear that demand for organic food is many times bigger than supply. However, that calculation is much simplified which results from the omission of the accepted price difference between organic and conventional food. Realising the fact that these price differences are 60% on average, when there is a great price differentiation between certain goods, the market prognosis should include all those people willing to accept the prices higher even by 50% and those for whom the price is not important (see Table 7.9). In the nationwide survey, this was 7% of all people surveyed and 20% of those who know the essence of organic farming. When correcting the above calculation of the potential organic food market at the value of 315.3 million PLZ one may come to the conclusion that the actual absorptive capacity of organic food consumers is 63.1 million PLZ (315.3 million PLZ x 20%). This is still two and a half times bigger than the estimated value of organic food sales.

In the opinion of the author of this article, it is necessary to introduce another correction to the assumptions made. It has been assumed that organic food is, and will be, bought only by those people who fully understand the concept of organic farming. That assumption is not reflected in the results of the research which was conducted among the customers of organic foodshops. They showed that 86.6% of respondents knew that organic food is produced without the use of any chemicals, 50.7% correctly identified the organisations attesting organic food and 27% stated correctly that he/she recognises an organic product by the attestation mark at the package. On the basis of this data one could conclude that the term "organic food" is fully understood by 1/4 of

respondents. This would mean that in spite of the fact that these people cannot fully define the term they still buy organic food. Going back to the earlier calculation according to which the potential market value was 63.1 million PLZ, multiplying this by four brings us to a value of over 250 million PLZ, i.e. 10 times more than the current sales value of organic food in Poland.

The introduced value of the organic food market refers to the present state. The results of research conducted in west European countries show that every year the number of people interested in organic food increases. In many countries the volume of sales, especially in the early stages of organic farming development, has doubled every year. Although organic food sales have decreased lately, the sales volume is still high. Taken together with future possibilities for export of organic products and more intensive promotion of them, it can be assumed that the market absorbing capacity for organic food in Poland will increase fast. In order to fulfil the growing demand for that food it is necessary to create the opportunities for farm development and for building up the infrastructure needed for the organic food market.

FINAL REMARKS

The historic changes which have taken place in the last few years in Poland and other countries of Central and Eastern Europe have given an opportunity of development to these countries. These countries – pursuing the prosperity of their citizens should improve their level and there is no other way but economic development. The ideal would be sustainable development which in the case of agriculture is defined as high quality food production, products and services provided in a long time including a social and economic structure in such way so the base of natural resources - both renewable and non-renewable remained preserved. Organic agriculture meets these requirements completely.

That vision can only be realised after fulfilling the following conditions:

- Ecological consciousness of farmers and consumers;
- Agricultural activity of farmers;
- Creation of an efficiently functioning market;
- Adequate legal regulation;
- Support from the state in a form of programmes and subsidies.

Only connecting these tasks will allow for the full blossoming of organic farming.

The year the project began, organic farmers, and consumers and retailers of organic food already existed, but with their small numbers and limited financial means, they were not able to form a strong lobby in favour of organic farming. The situation has now changed slightly. The project of subsidies for organic farms, prepared by the Organic Agriculture Group who are close to the Minister of Agriculture and Food Economy, was accepted by the Minister. In 1999, for the first time, organic farmers could receive direct subsidies (Regulation of the Minister of Agriculture and Food Economy on March 19, 1999 on the rates of subsidies). The Organic Agriculture Group together with the Department of Agriculture Development have finished their work on drafting an Act concerning organic farming which after acceptance by the Economic Committee of the Cabinet will be passed on to Parliament.

Now is the time to analyse other elements on the way to organic agriculture development; further propagation of organic farming among farmers, intensive marketing education of farmers, promotion of organic food among consumers to strengthen the market position of organic food.

The programme “Marketing of organic food in north-eastern Poland” is one of the elements of this strategy. It is never-ending work for all of us: farmers, advisors, retailers and consumers.

Dorota Metera

Project Co-ordinator

SUMMARY

1. The high natural-value farmland of Central and Eastern Europe

Farmland in Central and Eastern Europe has retained exceptional habitat value for many rare plants and animals, in spite of the long period of intensive agricultural production during the previous economic system. The present tendency to lay fallow some arable land and concentrate farm production on the best soils threatens the irreversible loss of valuable farming systems which are part of the European natural heritage. Agri-environment programmes are one attempt to slow this tendency, as well as to support the development of organic farming through helping to market organic and regional products.

2. Aspects of agri-environment programme realisation

In the European Union methods of farm production in accordance with the demands of environmental protection and conservation of landscape are regulated by the regulation of the European Council, and in matters of rural development by the European Agriculture Guidance and Guarantee Fund (EAGGF). Several Polish regional and national programmes are planned, mainly focusing on the protection of biodiversity on farmlands, promotion of organic agriculture, soil erosion prevention and counteraction, as well as the depopulation of agricultural regions. The work will be supported in part by subventions.

3. Agro-environmental conditions for organic food production in the Green Lungs of Poland region

The north-eastern region of Poland, which abounds in exceptional forest areas and lakes, has been designated the Green Lungs of Poland. After carrying out an assessment of 315 districts with respect to the possibilities for organic agriculture development, it was recognized that economic conditions are definitely not favoured by the region's low population, and especially by the lack of municipal agglomerations. However in the districts with a very high rating for ecological quality, an ecologically-sound farming system should be promoted, and for the farmers there should be a system of economic incentives.

4. Multifunctional and balanced development of rural areas

The growth in area of organic farming in Europe in the last 10 years has been approximately 25% per year. It is estimated that organic farming and the market for organic foodstuffs will play an ever greater role in the future. Organic agriculture is an optimal farming system which takes place in conditions of sustainable development. Because sustainable development is a socially recognized direction of development, the appropriate administrative and state institutions ought to take responsibility for its initiation and support.

5. Organic farmers' marketing group network

The organisation of farmers into marketing groups makes strengthening their market position easier. In this project, business plans were prepared for four organic farmers' marketing groups: Brodnica, Rajgród, Olsztyn and Brzostowo. However there are many problems surrounding the cooperation of farmers in the marketing groups, such as resistance to change, a lack of leadership on the marketing side, lack of financial means, and fear of risk-taking.

6. Organic farmers' marketing initiatives

The organic food market in the project area was created by the farmers themselves, at first through direct farm sale and at local markets, and later through more inventive forms of sale such as agrotourism, home delivery and organic food informative receptions. Gradually organic wholesalers and retail shops as well as organic food processing came into being, and export developed. Within the scope of the project the farmers organise courses, excursions and food-fairs, and seek sales opportunities at local and larger city marketplaces, as well as work for the improvement of processing and storage conditions.

7. The demand for organic foods

The development of organic agriculture in Poland depends on the possibilities for the sale of its products. Research has shown that about 10% of adult Poles know what organic food is. On that basis it's possible to calculate that potential sales of organic food could reach 70.3 million PLZ, which is three times greater than present estimated sales. To satisfy the demand for that amount of organic food, it will be essential to create new possibilities for organic farm development.