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## CONDITIONS AND SCALE OF ECOLOGICAL FOOD CONSUMPTION

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**Key words:** ecological food, expenditures on ecological food, place of purchase of ecological food, consumption of ecological food.

### Abstract

The study covered households located in different parts of the country in which ecological food is consumed. The subject of study was, first of all, consumption of certified ecological food. The scale of expenditures on ecological food including the type structure of food products was analyzed. Indifferent of the level of expenditures on ecological food, those covered by the study consumed mainly products of vegetable origin as they are available and their range is more extensive. The interest in purchasing ecological food in supermarkets also increases and, as a consequence, in the future supermarkets can become one of the major places of trading in ecological food.

### UWARUNKOWANIA I SKALA KONSUMPCJI ŻYWNOŚCI EKOLOGICZNEJ

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**Słowa kluczowe:** żywność ekologiczna, wydatki na żywność ekologiczną, miejsce zakupu żywności ekologicznej, spożycie żywności ekologicznej.

### Abstract

Badaniami objęto gospodarstwa domowe znajdujące się w różnych częściach kraju, w których konsumuje się żywność ekologiczną. Przedmiotem badań było spożycie certyfikowanej żywności ekologicznej. Przeanalizowano skalę wydatków na żywność ekologiczną, uwzględniając strukturę rodzajową produktów żywnościowych. Niezależnie od poziomu wydatków na żywność ekologiczną badani głównie spożywają produkty pochodzenia roślinnego, gdyż są one dostępne w większym asortymencie. Wzrasta również zainteresowanie żywnością ekologiczną w supermarketach, dlatego te placówki w przyszłości mogą stać się głównym miejscem handlu żywnością ekologiczną.

## **Introduction**

The notion of food is sometimes treated in separation from the natural sources of its origin. Purchasing a product the consumer usually does not associate it with the natural environment. As a consequence, very often, he does not know what he actually eats and that lack of knowledge facilitates marketing artificial and highly processed food by the food manufacturers.

Increasing public awareness develops consumer attitudes and behaviors and persuading them that choosing environment-friendly products could help in solving many environment problems and at the same time cause consumption of healthy, high quality food. It is expected that ecological food can become the food of the future because civilization phenomena are increasingly dangerous to humans and human health.

Ecological food is the food originating from ecological farms where agricultural chemistry is not applied. It is produced in the areas of low environment pollution. Its production requires strictly defined and controlled principles on the basis of which the appropriate product marks are awarded.

The dynamic development of international biological food marker revealed the need of wider than national legal frameworks governing production, control and marking of food produced by ecological methods. In the European Union the Council Regulation (EEC) No 2092/91 on organic production of agricultural products and indications referring thereto in agricultural products and foodstuffs is the most important document. That Regulation governs the four major areas: it sets technical requirements (production criteria), control requirements (control system structure and control procedure), principles of marking of products and conditions of imports.

The notion of ecological food should not be associated with the production aspect only but it should also cover processing, storage, packaging, transport, distribution and trade.

Product label that contains product name, certificate number, producer's address and symbol of one of the certifying bodies is the guaranty that the product was produced by ecological methods.

The increasing demand for ecological food contributed not only to development of ecological farms but also to appearance of dishonest competition.

As indicated by KOŁOŻYN-KRAJEWSKA and SIKORA (1998) marking of products with names "ecological food", "biological food" or "organic food" is possible only when they were produced in farms or processing plants that are certified and controlled.

In highly developed countries an increase in consumption of ecological food can be observed and a similar trans can also be expected in Poland. However, there are still barriers to consumption of that type of food as presented by

GRZYBOWSKA (2003). Such barriers include limited availability of such products, higher prices of ecological as compared to conventional food, lack of full substitution with the conventional products range in the offer as while the range of ecological food of vegetable origin is quite rich as concerns both fresh and dry products, the offer of products of animal origin remains relatively limited.

During the recent years, the food market has been subject to significant segmentation, which is related to different buyer expectations. While there are customers who appreciate ease of preparation of the meals and availability of products on one hand, there are also people choosing environment friendly products that offer them and their families healthy and high quality food on the other. People taking care of their health start opting for products originating from ecological agriculture increasingly frequently.

In Poland that market is at the initial stage of its development. Still some certified products are sold as conventional while the majority of ecological farms produce for their own needs or possess a fixed group of buyers for their products. Production of that type of food in Poland has short tradition while the level of ecological awareness of an average Pole is, unfortunately, relatively low as compared to consumers from highly industrialized countries. The fast increasing demand for ecological foods in global markets offers a chance for its growth also in Poland. As a consequence acquiring knowledge on conditions of demand for such products is of high importance.

The study aimed at determining the level and structure of ecological food consumption in Poland. The study took into account the thesis that ecological food consumers purchase mainly products of vegetable origin while ecological food shops are the sales outlets preferred by the consumers of ecological food.

### **Methodology of study**

The subject of the study was, first of all, the consumption of certified ecological food. The empirical study concerning ecological food consumption was conducted in three selected geographic areas of Poland differing in the environment quality: 1) southern Poland: Kraków, Katowice and surroundings, 2) central Poland – Warsaw and surroundings, and 3) north Poland – Tricity, Olsztyn, Łomża and surroundings. Those geographic areas were selected for the study, as they are the main areas of ecological food consumption in Poland as indicated in the studies by GRYKIEŃ (1997) and ZYSNARSKA (1997).

The studies were conducted in supermarkets, food stores offering in their range of products certified ecological food and specialty shops specializing in ecological food.

The source materials were collected through direct standardized interviews using a detailed interview questionnaire. The interviews were conducted mainly with people purchasing food for the family. In total 352 interviews were conducted of which 332 were accepted for analysis following contents verification.

Three modules were separated in the questionnaire design. The first one allowed identification of people who declared that they had not encountered the term “ecological food” or understood the term wrongly as it was considered that as a consequence they were not aware of existence of such food. The second module allowed identification of people able to identify ecological food but did not consume it or stopped consuming it.

The widest interviews covered the respondents who stated that they were not only aware of what ecological food was but also were consumers of such food. They were the targets of the extensive third module of the questionnaire. The scope of questions in that, basic part of the questionnaire concerned extensive information on type and quantity of ecological food consumed, methods of its identification, places and frequencies of purchase, valued attributes (health, nutritive, organoleptic, commercial, environment protection) and price perception of such products. That last aspect is important, as ecological food is clearly more expensive comparing to conventional food.

The studies were conducted in November 2005. The analysis finally covered 332 households including 142 consuming ecological food.

The analysis was based in particular on grouping the covered population of households according to the level of consumption, income level, social and demographic characteristics, place and frequency of purchases.

The analysis of consumption scale and structure was based on value approach. To allow covering the scale of consumption of all products their average prices in 2005 were used. Aiming at determining the values of year average ecological food consumption in respondent households (PLN/person year) the following levels of expenditures on such food were assumed: low (up to PLN 400), medium (PLN 401 – 650) and high (over PLN 650).

## **Results of study**

### **Level and structure of ecological food consumption among the respondents**

Among the respondent households consuming ecological food the year average expenditures on such food amounted PLN 718.82 (Tab. 1).

In the analysis of types of expenditures on ecological food around 100% more was spent by consumers on products of vegetable origin – PLN 456.01,

representing over 63% of total expenditures. This could indicate a wider range of ecological food of vegetable origin as compared to products of animal origin, where the expenditures on products of that type reached the level of PLN 240.50 per person per year. The studies confirm that the range of products of animal origin is not too wide and, as a consequence, the expenditures on that type of food are not too high (Tab. 1).

Considering the assumed levels of ecological food consumption, the expenditures on cereal products dominated among the products purchased by the respondents. Among the vegetable products, indifferent of the consumption value level, the vegetables (particularly fresh ones), cereal products, potatoes and fruit (particularly fresh fruit) dominated. Among the animal products cow milk and cow milk products, eggs and meat were the most important ones (Tab. 1).

Expenditures at the level of up to PLN 400 per person per year during the period covered were incurred for products of vegetable origin – cereal products, such as bread, other types of bakery products, flour, pastas and bran of various cereals. On the other hand the lowest expenditures were incurred by the respondents on purchase of goat milk and its products as well as soy and lentil.

In case of (PLN 401–650) level of year expenditures per person on ecological food, vegetable products, including cereal products, potatoes, vegetables and fruit had the highest share at PLN 283.36.

Table 1  
Expenditures on ecological products in the population covered (PLN/person year)

| Item   | Total  | Consumption level      |                         |                        |
|--|--------|------------------------|-------------------------|------------------------|
|  |        | low<br>(up to PLN 400) | medium<br>(PLN 401–650) | high<br>(over PLN 650) |
| I. Products of vegetable origin  | 456.01 | 163.82                 | 283.36                  | 563.34                 |
| II. Products of animal origin  | 240.50 | 82.19                  | 167.20                  | 350.84                 |
| III. Other products  | 22.31  | 0.00                   | 5.55                    | 43.26                  |
| IV. Overall average level<br>of expenditures on consumption<br>in the population | 718.82 | 246.01                 | 455.91                  | 957.45                 |
| Structure of respondents   | 100%   | 35.8%                  | 31.7 %                  | 32.5%                  |

Source: Own work based on studies.

The consumers covered consumed mainly ecological vegetable products, indifferent of the level of consumption. A definitely lower percentage of the respondents consumed ecological animal products, although consumption of such products increases.

With the increase of spending on ecological food in total the decrease in the share of vegetable products in consumption structure is observed. Respondents with higher levels of spending increased the levels of purchases of animal origin products and products such as honey, soy or lentils.

The data presented by GRZYBOWSKA and PILARSKI (2002) indicate that in 2000 the average year expenditures per person amounted PLN 180.10 that is almost five times less. It was also shown that the consumers covered spent around 69% of their money on products of vegetable origin.

### Place of ecological food purchase

In 2005, shops with ecological food were the dominating outlet for purchase of ecological food as indicated by 53% of the respondents spending around 43% of the total estimated funds in such shops (Fig. 1).

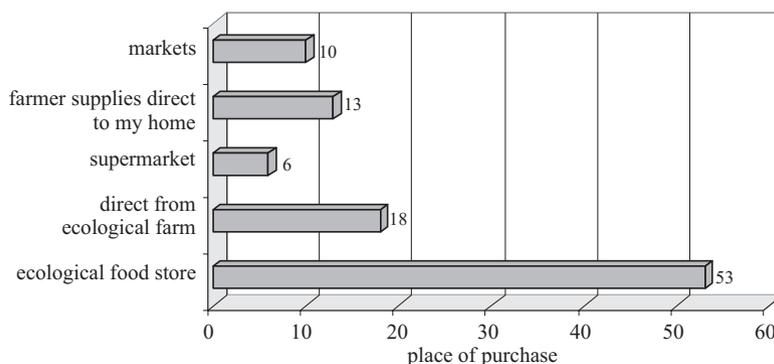


Fig. 1. Places of ecological products purchase according to the respondents (in %) Source: Own work based on studies.

In case of 18% of the respondents it is popular to purchase ecological products directly at the farm while in case of 13% of the respondents the farmer delivers orders to their homes. Through those outlets the respondents channel around 43% of the expenditures they declare for those products (Fig. 2). A very small group of the respondents, around 6%, purchases ecological food from supermarkets and there they channel around 4% of their overall expenditures.

The structure of expenditures on ecological food depends on the place of purchasing such food. Products of animal origin are purchased mainly directly from the producer where around 41% of the spending is channeled or at the shops with ecological food where around 39% of spending is channeled. At the supermarkets the respondents buy mainly the food of vegetable origin.

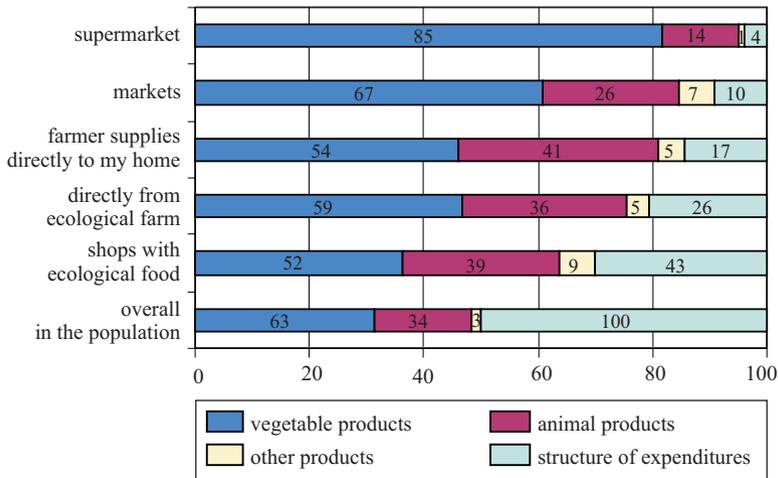


Fig. 2. Structure of expenditures on ecological food considering the place of purchase of such products (in %)

Source: Own work based on studies.

Results of studies indicate that ecological food shops still remain the dominating outlets for purchasing ecological food. Nevertheless, it is worth to expand the range of products available at supermarkets as a consequence of which ecological food will become easier to access for the average consumer.

Availability of products determines to a high extent the development of ecological agriculture. That was noticed by farmers in other countries and as a consequence they embark on initiatives streamlining the sales. As presented by JASKA (1998), one of the methods is establishing a producer group offering the possibility of making contracts for supply of the entire range of “bio” quality products and for supply of larger volumes of products meeting specified standards. It also facilitates securing continuity of supplies and winning permanent clients. Cooperation of that kind allows obtaining higher prices than those that can be negotiated by an individual farmer. Another advantage of producer groups is the possibility of joint advertising and promotion of ecological food, which allows reaching a wider group of consumers.

During the development of the market for ecological agriculture products two basis types of ecological agriculture products’ sales channels have been established. ŻAKOWSKA-BIEMAS and GUTOWSKA (2003) point at the forms of trade linked directly to the movement of ecological farming, i.e. direct sales from farms, shops specializing in sales of ecological food, so-called specialty stores, supermarkets with domination of “eco” product ranges and conventional sales channels with specialty stores, e.g. bakers with the “eco” range and conventional supermarkets.

Direct sale was the dominating distribution method and a way of obtaining revenues for many farms, particularly the small ones. It is also the best-established form of trading in such food. Delivery of ecological products to homes is also spreading. Clients are supplied with products in the form of both weekly deliveries and stocks for the winter.

Organization of ecological receptions, e.g. during conferences, has also become a method for selling products of ecological agriculture. Additionally, ecological farms have been involved in agritourism activities, which is also a source of complementary income.

Organization of sales during which the producer-farmer can be met and talked with is also a very good way of selling ecological products. It offers opportunities for persuading undecided potential customers to the producer's products.

During the recent years important transformations in the structure of sales organization have been observed. In the EU countries large area shops (supermarkets and hypermarkets) have become the dominating form of sales. Retail trade in food products in the majority of Western Europe countries had been subject to transformation mainly as a consequence of the dynamic development of sales networks offering a wide range of food products. It is noticed that with the development of large scale sales systems in the countries of Western Europe the range of products offered by such outlets was expanded by convenience food, functional food and, first of all, ecological food.

In Poland ecological products are also available at shelves of supermarkets and hypermarkets. They go there direct from farmers or through wholesalers. This form of sales, however, requires not only knowledge of the market but also efficiency of the suppliers.

In case of consumers purchasing ecological products from large multiples the environmental conditions are considered the least important as compared to the consumers purchasing at specialty stores selling ecological products.

The share of ecological agriculture products in the product range of supermarkets represents just a few percent while in the specialty stores it ranges from several to several tens percent. Currently an expansion of the ecological food products range at large retail networks can be noticed.

MACIEJCZAK (1999) presents the structure of distribution channels in Western Europe indicating that the importance of supermarkets offering products of ecological agriculture is increasing significantly. They contribute to development of agricultural-food sector, change in consumer behaviors, increase in competitiveness in the market and market focus of the production.

In Poland the interest of trade outlets of that type in trading in ecological food is small. The reasons for that are: low supply of ecological products, absence of organized network of producers and suppliers as well as processors

and, as a consequence, difficulties in securing continuity of sales. Not without importance is also poor identification of demand for ecological food among customers of supermarkets.

The demand for ecological food increases but its distribution must still pass through many channels before reaching the ultimate consumers. Today those channels are insufficient. Also the information on where the product can be available and how to understand the label on the product provided to consumers is inappropriate. As a consequence, larger scale production and consumption will not develop until the distribution system is properly developed.

ARDANOWSKI (2004) indicates that immense opportunities for Poland are offered by opening to the consumer market of over four hundred million people in the European Union resulting from the accession to it. It is also important that the European consumers are more affluent than our domestic consumers. During the recent years also a positive trend of fashion for "healthy" food, and a kind of snobbery related to it have been observed. That fashion results partly from changes in lifestyles and eating habits of the European society referring health and everything supportive to it.

Development of ecological food market requires coordinating activities in legal regulation and organization, political and marketing, stimulating the supply of and the demand for products of ecological agriculture. Among those activities an important role should be played by the system of control and communication concerning certified products involving also design of the appropriate logo. Introduction of the logo for ecological food is an important measure allowing the consumers easier identification of that type of food products and building confidence in products of ecological agriculture.

### **Summary and conclusions**

Polish market of ecological food is characterized by slow but systematic increase in the number of ecological farms. Poland also offers very good natural and social conditions for development of ecological agriculture. The dominating share of family farms, usually involved in universal production, which could be very easily converted to farms producing food by ecological methods, is an important factor supportive for development of ecological agriculture. Development of ecological agriculture in Poland is also supported by low levels of natural environment pollution, large area of protected areas, low levels of application of chemical yield generating media, multidirectional nature of production in peasant farms and large resources of available and relatively cheap labor in agriculture.

The share of ecological products in the Polish market is very small, they represent only 0,06% of the total area under crops. Some certified products are still sold as conventional while owners of shops are searching for permanent suppliers of interesting products such as fresh vegetables and fruit, dairy products and bread. The range of ecological products in Polish shops covers around 200–300 items while in Germany 2000–3000 items.

In the contemporary world people pay more and more attention to what they eat as they realize that the food consumption has major influence on their health. Ecological food is winning an increasing share in the food market.

The studies conducted allow formulating the following conclusions:

1. Independent of the level of expenditures on ecological food the respondents consumed mainly products of vegetable origin as they are available and a wider range of such products is offered. The structure of expenditures is influenced by the place of shopping for ecological food. The respondents spend the most, 41% of funds for products of animal origin if a farmer delivers products directly to the consumer's home and the least, ca. 14%, when they purchase food at supermarkets.

2. As indicated by the study, the ecological food store and direct sales from the farm, at the local market or through the system of deliveries to consumers are important channels for purchase of ecological food. Availability of products of ecological agriculture at supermarkets is marginal, which limits the increase of the scale of demand for that type of products.

3. Opportunities for development of ecological food market should be sought through expanding the range of ecological products, in particular, the availability of products of animal origin should be improved and the range of ecological food products should be expanded.

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