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THE MEANING OF GLOBALIZATION IN REALIZATION OF SUSTAINABLE DEVELOPMENT CONCEPT IN POLAND¹

1. Introduction

Process of globalization, in general meaning, can be defined, as intentional operation having on aim acceleration the growth of economic subject leading the economic activity, in this trading, capital services flows and, which are the effect of treating the whole world, as the one great market of sale. The role of globalization in realization of sustainable development conception is not without meaning. It is connected with danger to environment, which can be caused by – amongst the others – intensification of international trade (excessive specialization of production) or the growth of direct investments, especially for mediation of transnational corporations (neglecting the principles of environment protection).

Globalization of environmental threats can result from the globalization trends: economic, technological, cultural, political and environmental (Table 1).

Table 1. Potential environmental possibilities and threats caused by globalization

Globalization trends	Potential possibilities	Potential threats
Economic	<ul style="list-style-type: none"> - new markets for technology of environment cleaning - development of global oriented instruments accelerating the globalization 	<ul style="list-style-type: none"> - deregulation and liberalization leading to “avoiding” of environmental standards - the widening of unbalanced export oriented production - intensification of transportation
Technological	<ul style="list-style-type: none"> - access to the best technologies - better information about technical trends and the ways of environment protection 	<ul style="list-style-type: none"> - negative influence of new biotechnologies on biodiversity
Cultural	<ul style="list-style-type: none"> - widening of common understanding of paradigm of sustainable and permanent development - widening of cultural man nature 	<ul style="list-style-type: none"> - loss in differentiation cultural and the monoculture - widening of unbalanced style of life (Americanization of life style)
Political	<ul style="list-style-type: none"> - formation of the global initiatives and institutions that enable environmental moderation of globalization process 	<ul style="list-style-type: none"> - ignoring, lack of perception by global institutions local needs and the preferences

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	- development of global non - governmental and supranational organizations,	
Environmental	- more effective allocation of environmental resources by specialization - reducing of burdensome influence by progressive specialization	- growing scale of global damages (change of global climate)

Source: Janikowska O. & Janikowski R., *Globalization and sedate development* [in:] A. Budnikowski & M. Cygler (Ed.), *The Globalization of economy and the environment protection*, Oficyna Wydawnicza SGH, Warsaw 2002, pp. 21-29.

Moreover, environmental threats can be divided on several categories, making up both global as well as local problems:²

- 1) triggered in global scale – possesses local and global ecological consequences for basic natural capital (destroy of ozone layer, global climate changes),
- 2) triggered in local scale – possesses in local scale with regard on generality of phenomenon, the meaning both local, as and global for basic natural capital (starve the dirtying the sweet water, dirtying sea's and oceans, degradation of surface of the soil),
- 3) triggered locally – possess meaning for remaining natural capital, restrictive the access to definite natural resources (the excessive exploitation of deposits of raw materials),
- 4) triggered locally – possesses the scale of local influence, but are present all around the world (i.e. accumulating wastes, in this dangerous, limiting biodiversity in local scale).

A special meaning the problem of globalization and the conception of sustainable development has in agricultural production.

Agricultural production is based on environmental natural resources, i.e. soil, water, air and the whole landscape with its biodiversity. It should be therefore sedate, and the tasks of use of farm should be fulfilled both under economic, social, and the protection of environment aspects. Therefore, using with resources of soil should be balanced from both economical, social and environmental protection point of views. These principles are realized in a special way by ecological agriculture as sustainable system of food production. At present in Poland it develops very dynamically, what is proved though the huge growth of number of ecological farms as well as area of cropland.

The intensification of agriculture (modern technologies, intensive fertilization, applying plants' protection means, the intensive breeding and animals' farming) give the significant growth of food production, but often, by lowering agricultural products quality, exerting near this the negatives influence on environment. The agricultural production has been led basing on natural resources of environment, that is the soil, water, air and landscape with all its biodiversity, and therefore is should be aimed on equalization of agricultural production in its economic, social and protection of environment aspects.³

² Czaja. S., *Spory wokół problemu globalnych barier ekologicznych w teorii ekonomii* [in:] *Globalizacja gospodarki a ochrona środowiska*, SGH, Warsaw 2002, pp. 173-183.

³ Poczta W. (Ed.), *The care about quality of food and the natural environment in traditional agricultural production*, EKSPERT-SITR Spółka z o.o., Koszalin 2003, pp.142-143.

In last time it the attention is focused on the principles of development sustainable, being sure kind exit from threat, created by the agricultural production. In Report of the World Commission on Environment and Development the sustainable development – the stable development – means the development, which satisfies the present needs, not depriving future generations the possibility of satisfying their needs.⁴

In Polish law⁵ record concerning sustainable development is also presented, defining it as social and economic development, in which also the process of integrating of political, economic workings and social, with preserving of natural balance as well as the durability of basic natural processes, to guarantee a possibility of satisfying basic needs of individual communities or citizens of both present and future generations.

The idea of development sustainable is realized by the ecological oriented production of safe food and care about natural environment agriculture.

Criteria which rules ecological agriculture were worked out by International Federation of Organic Agriculture Movements (IFOAM). It based on four fundamental principles: the health, protection of environment (ecology), the honesty and the responsibility. Following these principles has on aim durable functioning of the ecosystems, production of safe food, proper nutrition, animals' welfare and also social justice.⁶

Year by year the systematic growth of number of ecological farms as well as processing plant can be noticed. Dynamic development of them happened from beginning nineties in last century, that is since a moment, when Polish agriculture in result of system transformation passed varied changes. These changes included from one the side the possession questions, tillage and the animal breeding structure, and from the other side moving the whole process just on ecological production.

The aim of study is showing relations between the ecological farms functioning and the realization of idea of sustainable development.

2. Methodology of researches

Questionnaire investigations in 33 ecological farms possessing certificate (2 in of them in each voivodship) has been conducted. During that work information concerning: area of soils, number of animals, and also the conditions of keeping and feeding of animals has been gathered.

3. Results

On basis of conducted investigations was shown, that average the area of ecological farm is equal to 46.93 ha in this area of cropland 36.53 ha. Range of cropland area in studied farms is however enough diverse, because some possessing the small area, the other large. The biggest areas of cropland are in małopolskie (15.77 ha) and lubuskie (90.13 ha),

⁴ *Our common future, Report of the World Commission on Environment and Development, PWE, Warsaw 1991, pp. 67.*

⁵ *Ustawa z dnia 20 listopada 2009 r. o zmianie ustawy Prawo ochrony środowiska oraz niektórych innych ustaw (Dz. U. 18.12.2009, No 215, poz. 1664) and Ustawa z dnia 27.04.2001r. Prawo ochrony środowiska (Dz. U. No 62, poz. 627 with change).*

⁶ *Tyburnski J. & Żakowska-Biemans S., Introduction to ecological agriculture, SGGW, Warsaw 2007, pp. 169-170.*

and the smallest in podkarpackie (6.67 ha), kujawsko-pomorskie (10.84 ha), pomorskie (11.41 ha) and śląskie (12.50 ha) voivodships – Table 2.

Table 2. Average the farmhold of land areas the and arable of land in mentioned below voivodships [ha]

Voivodship	Area of grounds	Area of cropland
Dolnośląskie	16.07	15.48
Kujawsko-pomorskie	12.86	10.84
Lubelskie	31.84	29.41
Lubuskie	95.05	90.13
Łódzkie	31.95	24.29
Małopolskie	218.6	151.77
Mazowieckie	31.8	19.45
Opolskie	14.19	14.05
Podkarpackie	7.70	6.47
Podlaskie	18.44	16.76
Pomorskie	13.66	11.41
Śląskie	14.19	12.50
Świętokrzyskie	22.04	17.16
Warmińsko-mazurskie	48.40	44.36
Wielkopolskie	26.75	25.81
Zachodniopomorskie	48.35	46.21
Average	46.93	36.53

Among those areas the highest number belongs to IV (43.8%) land classification class II (3.8%) and I (0.1%) class represented the least numerous areas. Total number of grass-land amounted 42.7%, including meadows about 30.5% and pastures 12.2%. 16 farm holds owned forests of areas ranging from 0.04 to 147ha (average 12.13ha) which counted for 15.9% land area in the examined households.

The plant production should be led without use of means for the plants' protection.

Table 3. Average number of animal in ecological farmholds [pieces]

Animals	Average
Cow	5
Laying hen	51
Broilers	30
Porkers	47
Rabbits	32
Sheep	72
Horses	7
Goat	11

Almost every ecological farm leads breeding milk cow and laying hens (Table 3). Cows' number in majority of farms was on level 1-4 pieces, in 5 farms was 5-16 pieces and in 1 farm 40 pieces. Porkers were breed on 12 farms. Their number was not higher in almost all farms 14 pieces. 80 pieces were bred only on 1 farm.. In turn laying biggest number counts 10-50 pieces, and in 3 farms there was 100, 300 and 340 pieces, but in the latter case it was native race called: green – legged hen. Broilers were presented on 2 farms in the

number of about 30 pieces, and on 6 farms 3-60 rabbits were bred. Average animals' number per 1 farm showed, that the most of them are sheeps – 72 pieces, laying hens about 52 pieces, and the least is the number of horses – about 7 and cow – about 5 pieces. Different animals' species in this bees were also presented on some farms (Figure 1).

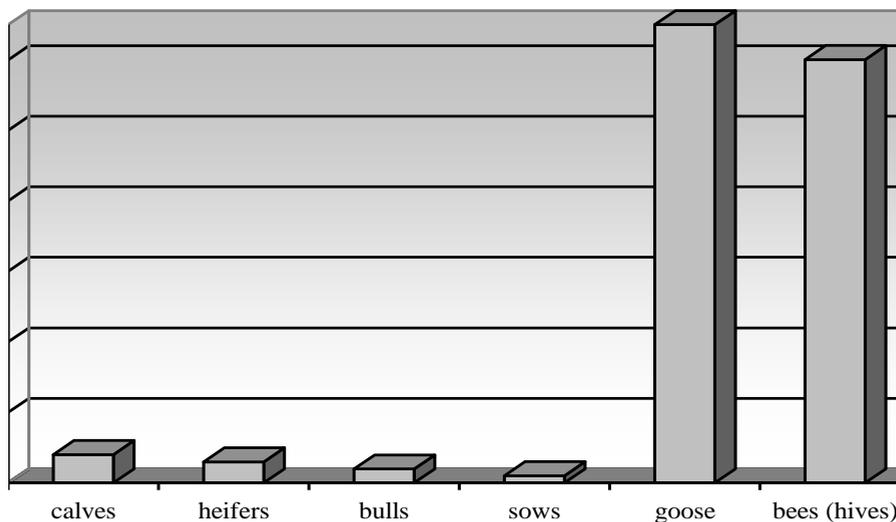


Figure 1. Average number of other animals in ecological farmholds [pieces]

The production of milk from cows in ecological farms has enough diverse level equal to 2,500-9,750 liters annually. In turn number of eggs was in a range 50 to 95%. Animal feeding based in nearly all farmholds on the fodder produced at place, like corn mixtures, corn waste, leguminous plants, crushed cereal meal, grass, hay, hay silage, root crops (potatoes, fodder beet, carrot, parsley) and other, e.g. fodder pumpkin.

The area of animal buildings was equal to 70-2,400 m², and the area of place for animals 40-2,400 m². Number of animals per m² of place in majority of farms appointment is lower 1.1-24 – time, in 3 farms higher 0.6-1.4 – time (Table 4).

Animal buildings in the largest percentage of ecological farms were built 20-36 years ago (57.1%). New buildings (3-14 years) counts 10.7%, 40-65 years – 17.9% built before the war (70-100 years) – 14.3%. Animal buildings were built in 72.7% from brick, from wood 6.1%, and those remaining (21.2%) from different materials.

Almost all buildings are equipped in windows (96.8%), gravitational ventilation is in 75% of buildings, remaining percentage is equipped with the mechanical (9.4%) or mixed (15.6%) ventilation – Table 5. In every animal place there is the beading, permanent access to water in 73.3%, animals are kept on tether on 55.6% farms, however on some farms both system with tether and without tether are applied. Animals can use playground on 86.7% farms, and pastures on 96.7%. Moreover on farms keeping cow milk, hand milking is done in 66.7%, remaining employed the mechanical system of milking.

Table 4. The area of barn building, the area of buildings for animals and stock density in animal buildings in particular farmholds *

Number of farm	Area of barn building [m ²] of places accessible	Area for animals [m ²]	Minimum appointment on area of places [pieces]
1.	170	170	130
2.	100	50	32
3.	183	120	17
4.	1,600	1,200	50
5.	220	200	55
6.	70	40	18
7.	2,400	2,400	750
8.	120	60	15
9.	792	352	112
10.	160	45	41
11.	80	40	5
12.	200	86	32
13.	220	120	128
14.	100	40	19
15.	200	200	69
16.	66	66	115
17.	136	64	28
18.	497	160	84
19.	82	58	21
20.	190	28	9
21.	382	310	60
22.	100	60	46
23.	240	240	330
24.	586	454	240
25.	128	100	56
26.	360	360	124
27.	520	360	230
28.	300	300	187

* lack of data collected from all investigated ecological farmholds.

Table 5. The conditions of animal maintenance in ecological farmholds

Specification	Percentage
Natural lighting	96.8
Gravitational ventilation	75
Keeping on beading	100
Permanent access to water	73.3
Maintenance on tether	55.6
Playground	86.7
Pasture	96.7

4. Discussion

Following many principles of ecological agriculture, and the conception of sustainable development the inseparable part of the farm should be the animal production basing on harmonious relationships between the ground production, plants and the animals, and also

respecting physiological and behavioral needs of the animals, feeding them with good quality fodders, produced according to principles of the ecological agriculture.⁷

Animals' number has to be correlated strictly with size of accessible area. The aim is avoidance of the problems of excessive pasturage and erosion of pastures, making possible scattering the manure, avoiding the unfavorable results for environment, including pollution of grounds as well as the waters, both underground, and surface.⁸ Numbers of animals should therefore be equal to 0.5-1.5 SD/conversion hectare. Moreover important is the proper selection of species and the animals' races, their origin, the conditions of keeping, in this the minimum area of places, treatment of animals, the feeding as well as the prophylaxis and the veterinary treatment of the animals.⁹

Aim of the suitable choosing the animals is the assurance of satisfactory level of animal production, and keeping simultaneously the variety plant production. The animals welfare is the most important as well as the easiness of using the farm fodders. They should originated from they own breeding or others ecological farms. It does not to admit to receive the animals bred from genetic engineering as well as with transplantation of fetuses.

In ecological farms extremely essential is assuring proper keeping and animals' feeding. For assurance animals' welfare the following should be possible: access to play-grounds, pastures, and in closed buildings it is forbidden to use complying systems and tether. For creation of proper microclimate in buildings for animal should be assured first of all lighting (natural as the best) as well as the gravitational ventilation. Animals moreover have to have permanent access to drinking water and fodder. Feeding should be based on fodders leaning on produced with ecological methods. The special requirements concern the prophylaxis and the veterinary treatment of animals because the conventional treatment can be used only in case of saving animal's life, prevention of its suffering or in time of inaccessibility of healing means.¹⁰

The analysis of results showed, that in studied ecological farms in majority basic requirements concerning maintenance with range of animals' numbers, feeding and prophylaxis were fulfilled. In over 46% animals' number was on recommended level (0.5-1.5 SD /conversion hectare). However, there was many farms of low or somewhat less animal number, which can lead to shake equilibrium fodder – manorial in ecological farms. It can be noticed, that predominates is the production of milk and the eggs in studied farms, in somewhat smaller degree the production of pork, while in the smallest different animal production, i.e. of the goat's milk, chicken and rabbit meat. Among bred little animals spe-

⁷ Tyburski J. & Żakowska-Biemans S., *Introduction to ecological agriculture*, SGGW, Warsaw 2007, pp. 169-170.

⁸ Council Regulation (EC) No 834/2007 of 28 June 2007 on organic production and labelling of organic products and repealing Regulation (EEC) No 2092/91; Commission Regulation (EC) No 889/2008 of 5 September 2008 laying down detailed rules for the implementation of Council Regulation (EC) No 834/2007 on organic production and labelling of organic products with regard to organic production, labelling and control.

⁹ Siebeneicher G. E., *The textbook of ecological agriculture for different directions and the fields*, PWN, Warsaw 1997, s. 13-49 and 405-490.

¹⁰ Council Regulation (EC) No 834/2007 of 28 June 2007 on organic production and labelling of organic products and repealing Regulation (EEC) No 2092/91; Commission Regulation (EC) No 889/2008 of 5 September 2008 laying down detailed rules for the implementation of Council Regulation (EC) No 834/2007 on organic production and labelling of organic products with regard to organic production, labelling and control and Siebeneicher G. E., *The textbook of ecological agriculture for different directions and the fields*, PWN, Warsaw 1997, s. 13-49 and 405-490.

cies there were few farms which lead i.e. water poultry's production or broilers. How results with investigations the area of accessible places for animals in many farms is non fully utilized, which can also have influence on microclimate in their interior. Causes of this state can be the lack of grant-in-aid on animal production.

Table 5. Minimum of the area buildings for animals in particular ecological farmholds

a) for cattle, sheep, goats and pigs

Specification	Area accessible for animals	
	Minimum weight of animal [kg]	Area [m ² /szt.]
Designed to reproduction cattle and fattened as well as horses	to 100	1.5
	to 200	2.5
	to 350	4.0
	over 350	5, min. 1m ² /100 kg
Milk cows		6
Bulls		10
Sheep and goat		1.5
Sow with piglets to 40 day life		7.5
Porkers	do 50	0.8
	do 85	1.1
	do 110	1.3
Piglets	above 30 day of life and to 30 kg	0.6

b) for poultry

Specification	Number of animals /m ²
Laying hen	6
Crumble to fattening (in stationary shed)	10, maximally 21 kg of alive weight on a 1 m ²

Source: *Council Regulation (EC) No 834/2007 of 28 June 2007 on organic production and labelling of organic products and repealing Regulation (EEC) No 2092/91 and Commission Regulation (EC) No 889/2008 of 5 September 2008 laying down detailed rules for the implementation of Council Regulation (EC) No 834/2007 on organic production and labelling of organic products with regard to organic production, labelling and control.*

The conditions of animals keeping are enough diverse in individual farms, though in majority requirements were fulfilled with this range. However not all farms has been adapted to required criteria. It means mainly lack of permanent access to water for animals in about 27.7% the farms, applying the systems with the tether in 55.6% the farms and also the inaccessibility of playgrounds and pastures for all animals. Applying of exclusively own foders in almost all farms is the satisfactory fact, thanks which, questioned persons express the opinions about good wholesomeness and the high productivity of kept animals'. There is no need of applying pharmacological means also, and veterinary help depends on basic interventions only that is cutting hooves, disinfest, obligatory vaccinations.

5. Conclusions

Results of the conducted investigations shown, that the estimated ecological farms, according with national and union rules in majority fulfill criteria of sustainable development the both in regarding to producing of safe food, protection of environment, as well as the economic regards are concerned. Therefore it could be stated, that they set in the process of globalization.

6. Literature

- [1] Commission Regulation (EC) No 889/2008 of 5 September 2008 laying down detailed rules for the implementation of Council Regulation (EC) No 834/2007 on organic production and labelling of organic products with regard to organic production, labelling and control.
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- [10] Ustawa z dnia 27.04.2001r. Prawo ochrony środowiska (Dz. U. No 62, poz. 627 with change).

Summary

The doubtless immense influence on the economic development of Poland have the processes of globalization, in particular since Poland's accession to the European Union. Globalization is not only the economic problem, but also joining many discipline of science process, in this the economy, sociology, technique or the protection of environment. Sustainable development in Poland is the effect globalization of transformation in world economy, the links oneself inseparably with intensive development of technology and the production. Processes of transformation often cause for natural environment the danger of air, water or soil pollution. It can affirm, that globalization brings Poland therefore both chances, as well as danger, because it determines from one side development and gives the possibility of structural changes and from the other side sure compulsion puts on, having on aim form efficient institu-

tional system and legal. Additionally strongly politicized economy in Poland slows down processes restructure in all her areas.

Keywords: sustainable development, processes of change, globalization

ZNACZENIE GLOBALIZACJI W REALIZACJI KONCEPCJI ZRÓWNOWAŻONEGO ROZWOJU W POLSCE

Streszczenie

Na rozwój gospodarczy Polski bez wątpienia ogromny wpływ mają procesy globalizacji. W szczególności proces ten nasilił się w momencie wstąpienia Polski do Unii Europejskiej. Globalizacja to nie tylko problem ekonomiczny, ale z uwagi na złożoność procesów, także wielu innych dyscyplin naukowych, w tym techniki, socjologii czy ochrony środowiska. Zrównoważony rozwój w Polsce jest efektem przemian globalizacyjnych w gospodarce światowej, łączący się nierozdzielnie z intensywnym rozwojem technologii i produkcji. Procesy transformacji często powodują zagrożenie dla środowiska naturalnego powietrza, wody czy gleby. Dlatego efektami globalizacji są zarówno szanse, jak i zagrożenia, ponieważ określa ona z jednej strony rozwój i daje możliwość zmian strukturalnych, a z drugiej strony zakłada pewien przymus, często instytucjonalny lub prawny.

Słowa kluczowe: zrównoważony rozwój, procesy zmian, globalizacja

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