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EUROPEAN MODEL OF AGRICULTURE IN RELATION TO GLOBAL CHALLENGES

Abstract

The authors raise an extremely important, yet controversial, issue concerning the future of the European Model of Agriculture (EMA) under the circumstances of increased level of globalisation's impact on the economy. In various respects, the EU agriculture constitutes an exceptional subsystem, which has emerged as a result of implementing the Common Agricultural Policy. The study includes an analysis of the underlying features embedded in this model, significant for its competitiveness under globalisation conditions. The analysis also covers the consequences of globalisation, such as the necessity to verify the category of marginal conditions for conducting agricultural production, and the impact of globalisation on food security.

As a final conclusion, the authors suggest a number of premises indicating that globalisation, without specific political and economic measures, may result in downgrading the EMA, which may lead to its rejection or decline, hence to the marginalisation of agriculture in the EU countries.

Preliminary remarks

Agriculture is a primary branch of the economy. It is, therefore, present in all economic and political systems accompanying people in all regions and climate zones. The economic activity of agriculture – even in the most developed countries in the world – next to the factors and phenomena created by people, is determined by the conditions created by the forces of nature. This results in many forms of agriculture, differing in their structure of production factors, type of products manufactured, efficiency, social and political conditions, etc. These differences, however, do not contradict the existence of common features, similarities, or even far-reaching identity. Therefore, a set of features characterising the Asian, American or European Model of Agriculture can be defined. In this

paper we make an attempt to answer the question of the viability of the European Model of Agriculture (hereinafter: EMA) in the era of a global economy.

The concept of the European Model of Agriculture exhibits a dual role of this sector of the economy: in addition to the objective of food production, there are others related to new functions of agriculture and rural development. It seems that this concept has already become a subject of a new consensus on the contemporary objectives of the CAP.

Reorientation of the EU policy is a consequence of the recent development of the European agriculture. Because of the progress that was made over the past 30-40 years, the current problem of food supply and food security for the EU Member States is changing its nature compared to the post-war period. The issues of environment protection, development of various regions and rural population's welfare protection are growing in importance.

External conditions for the development of the EU agriculture are also changing. Currently, the process of globalisation is the most important determinant of the changes in the EU agriculture, including the Polish one. Globalisation creates a new economic order based on dominance of market mechanism on international scale. The basic question which arises in this context is the question of the impact of this new order that arises on the world economy, each individual country's economy as well as on specific sectors (including agriculture), economic entities, societies and specific people. With regard to agriculture, the EU and individual EU Member States, many issues still require clarification. The most important are:

– What is the practical meaning of agricultural liberalisation and openness across state borders? What might be the consequences of this openness?
– What are the main risks arising from the globalisation of agriculture?
– What consequences the globalisation of agriculture may have for producers and consumers?
– Does globalisation solve the problem of food security?
– How does globalisation affect the marginal conditions for agricultural production?
– Will liberalisation of trade in agri-food products increase agricultural production?
– How does globalisation affect the mobility of factors of production in agriculture?
– What will be the impact of transnational food corporations on the development of agriculture, including the EU one?

A key problem in relation to the EU agriculture is whether the impact of globalisation will be its marginalisation and, if so, what may be its social and economic consequences. The answer to these questions is neither simple nor straightforward. It requires extensive study, debate and analyses. In this text we try to refer only to some of them, including primarily the question of the future of the European Model of Agriculture in the era of globalisation and thus about the future and the shape of the Common Agricultural Policy which created this model.

We hypothesise that **the microeconomic globalisation, showing in i.e. liberalisation of trade in agricultural and food products, will reduce agricultural production in the EU and force it to depart from the European Model of Agriculture. This will lead to marginalisation of the EU agriculture (to varying degrees in each of the Member States) and thus to weakening of the level of food security in the European Union.** In effect, this will result in a need for a radical rethink of the Common Agricultural Policy.

Globalisation of agriculture – the characteristics of the process and its effects

Globalisation is a multidimensional process having economic, social, political, cultural, demographic and technological characteristics. Economic globalisation, so far, has a microeconomic character. It is perceived in different ways, which is reflected in the lack of consensus on its definition. One of the more well-known definitions of globalisation was suggested by J.E. Stiglitz – the Nobel Prize winner in economics. By globalisation, he understands closer integration of the countries and people of the world, caused by a huge reduction in the costs of transport and telecommunications, and the abolition of artificial barriers in the flow of goods, services, capital, knowledge, and (to a lesser extent) people from country to country (Stiglitz J.E. 2006). Emphasised here are the cause (cost reduction and liberalisation) and the effect of this process (integration of countries and people). Stiglitz does not explain, however, whether it is a process on another, new quality level, or another linear phase in the world's development. The majority of scholars opts for understanding globalisation as the former, including J.A. Scholte (2006). Globalisation, according to J.A. Scholte, is "a process of spreading trans-planetary – and in recent times also more specific supra-territorial – links between people, therefore a 'new quality' in life of our planet".

Globalisation does not leave out the agriculture and agribusiness, although it has its specificity, which is a consequence of the specific nature of agribusiness. It is, in fact, a system composed of many heterogeneous economic, technical and social components. This diversity results in heterogeneous processes of globalisation in the food chain. Firstly, the level of globalisation of agribusiness is generally lower than in many other sectors of the economy such as banks, insurance companies, car industry, petrochemical industry, etc. Secondly, globalisation is not developed to equal extent in all parts of the agribusiness. The highest level of globalisation is reached by the "extreme" parts of the agribusiness, including industry, supply of the means of production, processing industry, and trade in food (Kowalczyk S. 2010).

Globalisation, so far, has a microeconomic nature, because it appears at a company level. While governance structure and state authorities are not subject to it. For these reasons, W. Szymański states that we should talk about incomplete globalisation. It is globalisation without a macroeconomic dimension.

Globalisation of agribusiness, including the agriculture, at the current stage of the world economy's development remains doubly incomplete:

– firstly, it does not apply equally to all parts of the food chain (with some parts included only to a very limited extent – for example land);
– secondly, microeconomic globalisation (at companies' level) is not followed by globalisation of the mechanisms of power and agribusiness management (global governance). FAO is here only a minor substitute for such an institution of power (Kowalczyk S. 2010).

Referring exclusively to the agriculture, globalisation of this sector of the economy implies an opening up of agriculture across national borders, with all its consequences. This is equivalent to market liberalisation in terms of farming. One of the basic assumptions of the **paradigm of globalisation of agriculture**, analogous to the globalising economy as a whole is **openness** and thus the abolition of border barriers to the allocation of production factors, and the production and distribution of agricultural products. In view of specific features characterising some of the factors of production in agriculture, allocation openness must be understood according to those inherent limitations. Therefore, openness to allocation of land as a factor of agricultural production will not mean a possibility of its moving from places with worse economic conditions of production to places with better conditions, but the ability to freely, without any restrictions, purchase land in any amount and in any country[1].

Openness of agriculture across national borders also means submission to an unlimited competition of farms operating in all countries.

The negative effect of globalisation of agriculture, measured from the point of view of agricultural producers, is an increase in price competition and development of the process of subordinating entities producing agricultural raw materials to transnational corporations processing or organising processing of these materials (it is not only food, but also other products based on raw materials from agriculture – leather products, chemicals, fuels, cosmetics, medicines, etc.).

Globalisation of agriculture leads not so much to an increase in the efficiency of using limited resources, but to other forms of subsidy (i.e. subsidising transport) and the externalisation of social costs and environmental damage. Furthermore, we believe that the globalisation of agriculture in microeconomic terms leads and will lead to:

- transfer of resources from a farmer to an industry (transnational corporations), or at least to subordinating farms to transnational corporations, occupying a stronger market position;
- changes in land use – from production of basic food to luxury goods and non-food items, which will be a consequence of subordination of agricultural production to the principle of profit maximisation;
- elimination of subsidies for agricultural production forced by supporters of liberalisation of trade in agri-food products.

[1] More on economic globalisation in agriculture can be found in (Sobiecki R. 2007).

The inclusion of agriculture into the globalisation embodies risks arising from transnational corporations, which are the product of these processes. The threat that arises with the development of transnational corporations for the EU agriculture lies in the fact that their aims are purely commercial. For transnational corporations agriculture is a provider of needed raw materials at the lowest possible prices. Thus, the removal of all restrictions to trade in the sphere of agricultural raw materials and food allows primarily reducing costs (not necessarily the prices of finished products) and increasing profits gained by transnational corporations. In an open competition for the supply of needed agricultural raw materials, European agriculture has much lower chances compared to developing countries. These countries are, in fact, able to produce more cheaply, mainly because of cheap labour, favourable natural conditions and low environmental regimes.

There is a struggle for globalisation of agriculture, visible, for instance, at a forum of the largest economic organisation – the World Trade Organization (WTO). One of the manifestations of agriculture's globalisation is to be the liberalisation of agricultural trade. More than 100 developing countries advocate such a solution. In the liberalisation of agricultural trade they see for themselves a chance for export growth, improvement in trade balance, source of funds for necessary imports, and growth in incomes gained by agricultural producers. In their expectations, however, they have to reckon with the fact that it will not necessarily lead to poverty reduction in rural areas and improvement in feeding their nations.

In pursuit of globalisation of agriculture in developing countries a difference of this process in relation to other sectors of the economy should be recognised. Globalisation of agriculture is first and foremost the aim of poor countries, not so much of the most developed ones. It should be noted that the benefits for this group of countries resulting from globalisation of agriculture apply to agriculture at a particular time, at a certain stage of its development, based on specific production technologies and differences in natural and economic conditions of production. In other conditions, and time, some arguments showing the benefits of globalisation of agriculture for developing countries may disappear or not occur at all.

European Model of Agriculture – main features

Two fundamental approaches to the European Model of Agriculture can be recognised, which is part of the concept of sustainable development. The first – the wider of them – as the basic determinant constitutive to the model considers the resource, structural and efficiency characteristics. In this sense, the EMA is equivalent to the type of agriculture that was shaped on the European continent[2]. This model is characterised by, among others, such properties as:

– relatively favourable natural conditions (small share of land completely unsuitable for agricultural production);

[2] We omit in these considerations socialised (socialist) model of agriculture, which was built in the 1920s in the Soviet Russia, and then applied in the socialist countries and which, with some exceptions, survived to modern times (Russia, Belarus).

– the type of farm characteristics such as: limited advancement of concentration processes, multidirectional production, high share of own labour input and diversification of economic activities of farms;
– strong social and cultural ties between farms and local communities;
– an important place of agriculture in the economic policy of the region's countries (significant separateness of agricultural policy and its instruments from regulations relating to other sectors of the economy).

It is a broad approach to the European Model of Agriculture. In addition a narrower approach can be distinguished, relating to agricultural model formed as a result of the implementation of the Common Agricultural Policy. It is a model of agriculture determined by a wide range of regulations and restrictions, on the one hand, and a rich spectrum of benefits, on the other. It is a model of farming functioning for decades in the world, created by politicians, of regulations, restrictions, barriers, duties, privileges and benefits. Model of agriculture with the multi-times limited market mechanism and the agriculture largely insulated from the global markets. This paper analyses such a (narrower) approach to EMA.

The last decades of the 20th century and contemporary globalisation brought a considerable load of novelties to the system presented herein. These novelties consist in more and more strongly articulated "mismatch" brought to the EMA by the phenomenon of global competition and changes in the global balance of power. As a result, there are more and more doubts whether EMA can effectively compete on the global market, whether it is a model capable of survival without a specific "safety net", which is undoubtedly the CAP. And finally, whether it is a model doomed to failure under conditions of pervasive globalisation of agriculture and agribusiness.

Before we make an attempt to answer the above questions, it is necessary to analyse, in more detail, the basic features of the EMA. The ones, which have been shaped in long-term development process of the European agriculture, as well as the ones resulting from the adjustment of the CAP. The purpose of this analysis is a determination of sustainability of these characteristics and their possible implications for the EMA, following intensifying globalisation processes and increasing pressure to liberalise world agricultural markets.

Features of the European Model of Agriculture set out in Agenda 2000

In the *acquis communautaire* the term "European Model of Agriculture" emerged in the late 1990s during the work on the Agenda 2000, although, as underlined by Michael Cardwell, agriculture in the European Community always had a special status, which was anchored already in the Treaty of Rome (Cardwell M. 2004). However, the concept of the EMA was officially adopted in November 1997, when the Agricultural Council agreed on the need for reform of the Community policies, including the CAP. In December of the same year, the European Council meeting in Luxembourg included the EMA package in basic principles of future reforms. Then it was determined that the EMA must be: competitive, multi-functional, sustainable and present throughout Europe, including regions with specific problems (The European Model... 2006). The final decision

on the reforms, known as Agenda 2000, was taken by Council meeting in Berlin in March 1999 (Agenda 2000).

The Finnish Presidency (2006) confirmed the durability of the EMA, the heart of which is – as it was defined – multi-functionality (The European Model... 2006). Multi-functionality understood as a specific integration of a stream of food and raw materials for industry and a stream of public goods provided by agriculture to the economy and society.

An extension of the EMA was another reform of the CAP in 2003. In its basic document *Explanatory memorandum, a long-term policy perspective for sustainable agriculture* the European Commission maintained its willingness to support the EMA. It was stated, at the same time, that in the view of the new challenges the model described in Agenda 2000 requires *"more market orientation and increased competitiveness, food safety and quality, stabilisation of agricultural incomes, integration of environmental concerns into agricultural policy, developing the vitality of rural areas, simplification and strengthened decentralisation"* (Commission... 2003). What is particularly important for the EMA is the fact that the reform of 2003 imposed a number of restrictions and additional duties on agricultural holdings. They are stated in cross-compliance principle that is in linking the obtained benefits with additional responsibilities for the protection of the environment, food safety, animal health and welfare.

This means that the EMA is characterised by a constantly increasing responsibility for the state of the environment and the safety and quality of food produced. Thus, the EU agriculture is increasingly responsible not only for feeding the inhabitants, but also for getting a wider range of public services. High environmental and quality regimes are not without impact on the production costs, and hence – on competitiveness on the global food market. Changes that will occur after 2013 – resulting from the initial EC proposals – will not lead to re-evaluation in this regard, and it seems that the requirements can be even tougher. Among the three basic strategic objectives of the CAP after 2013 the following are mentioned:

- maintaining the production potential of the EU agriculture to guarantee food security for the EU population;
- sustainable management of natural resources in accordance with the requirements of environment, water resources, health and welfare, landscape protection and biodiversity;
- actions to preserve local communities and create additional jobs in the agriculture, assuming a gradual reduction of greenhouse gases (EC 2010).

The European Model of Agriculture, although officially formulated about 25 years ago, in fact, was formed at the beginning of the CAP, in the middle of the 20th century, by successive decisions on the changes in this policy. Looking only at the last decades and the variability of the CAP, it should be noted how the CAP evolves, how it is perceived and what expectations are directed towards it. Currently, they strongly tend in two directions: ensuring safe, high quality food, and providing more and more public services.

These two groups of services provided by the agriculture are the majority of services provided by the ecosystem, i.e. ecosystem services. They were widely discussed in the framework, implemented within an initiative inspired by the then Secretary General of the UN Kofi Annan, Millennium Ecosystem Assessment (MEA), conducted in the 2001-2005[3] period. Ecosystem services within the MEA are defined as benefits that people obtain from ecosystem[4]. There are four basic groups of ecosystem services: provisioning services, regulating services, supporting services and cultural services (Millennium Ecosystem... 2005). There are 17 types of ecosystem services commonly distinguished and their major or significant provider is or may be agriculture. This applies to – of course – food supply and raw materials for industry, but also services related to biodiversity, land management, water resources, air, and, finally, recreation, tourism or aesthetic functions.

Measures implemented both in the field of food safety, as well as new types of public services (ecosystem), require additional expenditures. Their funding may not be entirely left to farmers. Without the support from the EU budget this may mean a gradual displacement of the European agriculture from the EU and the global market by the agriculture based on minimum environmental requirements, quality and minimum standards of safety.

In the EMA assessment it should also be taken into account that the CAP for nearly 30 years has maintained various, but steadily increased production limits and restrictions. These relate to a number of markets and ranges, including milk, suckler cows, sugar, wine, starch, fallow land, grassland, etc. It was not until the reform of 2003, when these constraints began to be phased out. Much, however, indicates that the previous restrictions or the so-called reform, like the famous reform of the sugar market, led to far-reaching irreversible reduction in the potential of the EU agricultural production.

Any expanded regulations, stringent regimes and additional duties ultimately lead to an increase in production costs and thus reduce the competitiveness of the EMA.

Other features of the European Model of Agriculture

The EU agriculture, beyond above-discussed characteristics shaped only by the CAP, is characterised by qualities that arise primarily from the specificity of the region, tradition, and only later from the provisions of this policy. Below presented are the ones that play or may play an important role in determining the sustainability of the EMA and its competitiveness in the global market.

Smaller unit potential of an individual farm

European agriculture is characterised by a relatively smaller scale of advancement in concentration processes in relation to many regions of the world such as both Americas, Australia, New Zealand, north and western Asia (countries of

[3] The Millennium Ecosystem Assessment consists of two parts: analytical and synthetic. Both were published under the title: "Ecosystems and human well-being".

[4] The term "ecosystem" in the EMA is meant as "dynamic interactive team made up of plants, animals, environment micro-organisms and inanimate matter, acting as a functional whole" (Millennium Ecosystem... 2005).

the former USSR), and partly also Africa. The basic factor of production in agriculture, which is land, due to technological advances today is no longer the main determinant of the quantities produced; nevertheless, farm size is still often used as a criterion for assessing the potential and economic feasibility of farms. The following Table illustrates the potential of the European agriculture – measured by the average size of farm area – against the major regions of the world.

Table 1

Average farm size in the selected countries and the EU-27 (in ha of UAA, 2007)*

Specification	Farm size	EU-27 = 100
EU-27	12.6	100
EU-27 Min Romania**	3.5	28
EU-27 Max Czech Republic	89.3	709
USA	181.7	1,442
Canada	295.4	2,344
Australia (2009)	3,007.7	23,871
New Zealand	232.1	1,842
Argentina (2002)	587.4	4,662
Uruguay	2281	287.4
South Africa (1996)***	1,349.1	10,707
Russia (2005)		
– agricultural companies	2,600.0	26,635
– individual farms	75.0	595
Belarus		
– agricultural companies (2008)	3,970.0	31,508
– individual farms	61.3	486

* The following sources were used: Agriculture in the European Union. Statistical and economic information, 2010. European Union Directorate-General for Agriculture and Rural Development, Office of Publications of the European Union, Luxembourg March, 2011; Statistics New Zealand (2008), Farm types used in agricultural production statistics: a comparison between ANZSIC96 and ANZSIC06 classifications. Wellington, New Zealand, September 2008; Census of commercial agriculture, 2007. Finance and production – statistical data. Report No. 11-02-01 (2007), Statistics South Africa, Pretoria 2001, 2010; R. Bongiovanni, J. Lowenberg-DeBoer, Precision: agriculture in Argentina – 2001. The Journal of Crop Production, September 2001; http://bubl.ac.uk/journals/agr/jcropp/; FAOSTAT, Censo Agropecuario y Forestal, 2007. Instituto Nacional de Estadísticas, Santiago de Chile; J.A. Berdegué, R. Fuentealba: Latin America: the state of smallholders in agriculture. The IFAD Conference on New Directions for Smallholder Agriculture January 24-25, 2011. International Fund for Agricultural Development, Rome 2011; Today and tomorrow farms in countries of Central and Eastern Europe. Institute of Agricultural and Food Economics – National Research Institute, Warsaw 2008.

** Malta is omitted as the average farm size there is less than a hectare, but the agricultural area in the country is only 10,000 ha.

*** The average size of the so-called commercial farms. The number of such farms in South Africa has steadily been decreasing since the mid-nineties, when, after winning elections, the power was taken by African National Congress and president Nelson Mandela. At the beginning of the last decade of the twentieth century there were nearly 58,000 (1993) farms of this type, while currently there are less than 49,000 (2007). Apart from commercial farms, there are approximately 1.3 million small traditional farms (Census of Commercial Agriculture 2007).

The EU agriculture is internally complex. The average farm ranges from 3.5 ha of agricultural land in Romania to nearly 90.0 ha in the Czech Republic, where – what needs to be emphasized – it is primarily a consequence of the privatisation model of the socialist agriculture, adopted after 1990, and not a progress in concentration processes. On average, the EU farmer manages less than 13.0 ha, while in the EU-15 this area is larger and amounts to 22.0 ha. Comparison to other regions of the world is extremely limited, because farmers in North and South America have farms 15 to 23 times larger than in South Africa and New Zealand, not to mention Australia and, of course, the countries of the former USSR. Naturally, this does not include all farms in these regions, but the biggest produce the bulk of production stemming from these parts of the world, which then is directed to the global agricultural markets.

Still, the EU agriculture exhibits a higher degree of concentration in comparison with agriculture in parts of Asia (Southeast and South Asia) and African countries.

The lower unit potential of European agriculture is also visible in the level of capital of an average farm, and as a result – in production volumes produced and directed to the market. For example, in 2007 the average farm covered by the EU FADN (The Farm Accountancy Data Network) possessed capital of EUR 237,000 (EU Farm Economics... 2010). At the same time, an average farm in the USA had EUR 610,700 (2009)[5] of capital, and an Australian one – EUR 2,414,400[6].

High share of family labour and part-time work

Another characteristic feature of the EMA is a relatively high level of owner and their family labour input as well as part-time work on a farm. It is a natural consequence of the lower concentration of production potential characteristic of the European agriculture and the possibilities for effective use of their own labour force. The increase in the share of large farms leads to, according to D.G. Symes (1982), a *"relative decline in importance of part-time farms"*. European agriculture continues to rely, however, mainly on owner and their family labour input. In 2003-2007, in the EU-27 the share of external (wage) labour force ranged from 6.4 to 6.9% of the total employment. In countries such as Romania, Slovenia, Poland, Greece it was even less than 2% (Agriculture in the European Union 2010). Whereas, in the USA in 2007 wage labour force accounted on average for 18.3% of the total number of people employed in agriculture, and during peak periods of seasonal works (summer months) it increased to 20.2%, meaning that practically every fifth person working in this sector of the economy was a hired employee (Agricultural Statistics 2010; Census of Agriculture 2007).

The consequence of a smaller scale concentration of the EMA is a significant share of part-time farming. It is a common phenomenon in Europe, even a dominating one. If we assume that part-time farming applies to all farms, in

[5] Calculations based on (Agricultural Statistics 2010).

[6] Calculations based on (2009-10 Year Book Australia).

which the owner is not employed full-time[7], the share of such farms in many EU countries exceeds 80-90%. For example: Lithuania – 98%, Hungary – 94%, Slovakia – 93%, Estonia – 90%, but also Greece – 89%, Italy – 84%, Spain – 81% (Brouwer F. 2006).

Economic change and the reduction in pay in agriculture forces farmers, even in countries with high concentration of agricultural potential, to seek additional sources of income. As a result, in such high-tech and technologically advanced system as the U.S. agriculture, 42.8% of farmers (2007) had additional employment outside the farm amounting to at least 1 day per year. If we assume that a significant gainful employment outside the farm means at least 100 days, the share of such farmers is 32.1%. Thus, every third farmer in the U.S. has an additional source of income outside the farm.

Low volume of production

Another characteristic feature of the EMA, on the map of world agriculture of the developed countries, is its much lower scale of production, primarily as a consequence of lower concentration. While each year an average American farm sells agricultural products worth EUR 98,600 (2007), an EU farm sales amounts only to EUR 25,500 (2007), which is four times less. This shows its income and accumulation potential.

The total revenue from conducted activity per farm amounts to, respectively: the EU-27 – EUR 60,300, the USA – EUR 115,700 and Australia – EUR 238,200. This means that the EU farm revenue is two times lower than its U.S. counterpart and four times lower than the Australian ones. It should also be born in mind that the data for the EU agriculture relates to farms covered by FADN. And these are agricultural holdings that are economically the biggest and strongest. For example, in 2006, this system covered 45% of all farms in the EU[8], but they had 88% of UAA, owned 94% of the cattle and produced 95% of the total gross margin (Rural Development... 2009). In 2009, there were 12,400 farms participating in this system in Poland. Their average size was 17.8 UAA (34), i.e. 2.5 times larger than the average size of farms in Poland.

Low level of specialisation (multidirectional production)

A specific feature of the European agriculture is also its relatively low level of specialisation. As a result, many farms conduct in parallel several branches of plant production and animal breeding of different species. This results in multidirectional production and relatively low range of expertise. An example is the average size of livestock herds. In 2007, their EU average was 27 animals in a cattle herd, including 10 cows, and in the case of pigs 44 animals. In the U.S. statistical herd (2008) consisted of 100 beef cattle, 138 dairy cows and 920 pigs. This is why an average U.S. farm volume of production directed to the market exceeds a number of times the EU one.

[7] In the case that owner's work time on farm is less than 1 annual work unit (AWU), which is an equivalent of full-time employment.

[8] It is to be understood as representativeness of the FADN data. In 2006, there were about 81,000 farms participating in the FADN.

Even more disadvantageous disproportions to the detriment of the latter occur between productivity of Australian, South African or South American and the EU farms.

As a result of such a structure, 38% of the EU farms (2007) (4), which is almost four out of ten farms, do not have any specialisation and conduct a mixed type production. The above situation has not changed practically from the beginning of the first decade of the twenty-first century.

High land prices

Relatively little progress in concentration processes in the European agriculture is a result of limited land resources available and competition for them, a phenomenon present in the EU for many years. This, among other things, created a concept called land hunger and launched migration processes in Europe a few centuries earlier. It was also one of the essential elements constituting the EMA. A model with limited resources of arable land, and thus doomed to substitute it with the other factors of production: first labour, then capital. For these reasons, agricultural land prices in Europe are among the highest, determining significantly the profitability of this model of agriculture, its competitiveness and the need for public support. This is confirmed by the price of land in the EU countries.

In 2009, thus at times of economic crisis, these prices were as in many countries of the "old" EU at the level of tens of thousands of euro. For example, in: the Netherlands – 47,000 EUR/ha, Ireland – 28,000 EUR/ha, Denmark – 27,000 EUR/ha, Belgium – 25,000 EUR/ha, Italy – 18,000 EUR/ha[9]. In other EU-15 countries they ranged from 5,000 to 15,000 EUR/ha. Lower (2,000-4,000 EUR/ha) were only in the EU-12, but here the high growth in prices after the accession provides for levelling of the prices within the EU. The last period (2009-2011), shows a significant recovery in the market of agricultural land resulting from a turning point in the economic crisis and favourable forecasts for the food market. Thus, the price of agricultural land is growing. In the first quarter of 2011 in the UK, the average price of agricultural land was GBP 14,200 (EUR 16,000)[10] per hectare, and the prices of good quality land systematically exceeds the level of GBP 20,000 per hectare (EUR 22,500) (www.propertywire.com/news/europe/uk-farm-land-values).

In Poland, agricultural land prices are also growing. Since the accession into the EU in 2004, the price of land rose from EUR 1,200 to EUR 4,500 per hectare and in western regions up to EUR 5,000 – a four-fold increase[11]. This results from, among other factors, a growing interest in running farms in Poland by farmers from other EU Member States, as well as "enrichment" of land with a specific rent – the EU area payments.

[9] In Luxembourg agricultural land prices exceed even 150,000 EUR/ha (Rynek ziemi rolniczej... 2010).

[10] It was calculated at the rate noted on 31 March 2011.

[11] Current information on agriculture in the world, No 2/2011, MARD. It is worth noting that the price of agricultural land in Poland (trading among farmers) in the last nearly 20 years (1992-2010) rose from PLN 1,200 to PLN 18,000 per hectare – more than a fifteen-fold increase.

Agricultural land prices outside Europe are formed in a different way. For example, Paraguay fertile arable land prices are in the range of USD 2,500-3,500 (EUR 1,900-2,600) per hectare, in the case of pasture land it is USD 400-1,000 (EUR 300-750). Virgin lands suitable for cultivation can be purchased at a price of USD 80-150 (EUR 60-110) per hectare (www.agro.pvoss.de).

In Argentina, agricultural land on average is offered in the range of USD 200 up to USD 900 (EU 150-700) per hectare. Only in the vicinity of the capital city of Buenos Aires land prices, especially in the vine plantations, are higher and may reach USD 20,000-25,000 (EUR 15,000-19,000) per hectare. However, away from the centres of urbanised regions (such as those located in the north-western part of the country), pasture land can be purchased at USD 15 (EUR 11) per hectare (!) (www.justlanded.com/english/Argentina/Argentina-Guide/Property/Buying-Land).

According to the website *AgBrazil*, the cheapest land for cultivation in the Western hemisphere is located in Brazil's Cerrado region (central Brazil). Prices per 1 hectare "quoted" in bags of soybeans are at a level of 50 bags, at the price of USD 10 per bag this gives a price of USD 500 (EUR 375) per hectare of arable land (www.agbrazil.com).

While the U.S. price of arable land in 2009 was at USD 6,500 (EUR 4,600) per hectare, and pasture land – USD 2,500 (EUR 1,850) per hectare[12]. In Canada, the asking prices of land offered for sale are formed depending on the region in a wide range – from CAD 370 (EUR 280)[13] to CAD 6,250 (EUR 4,700) per hectare, but the vast majority of tender offers is in the range of CAD 1,200--2,500 (EUR 900-1,900) per hectare.

In summary, the European Model of Agriculture, and in fact of farms, was shaped by the natural reality and additionally by conditions created by men over the centuries. Thus, a model was created based on a strong relationship with the surroundings and the environment, using own labour force with a relatively low unit concentration, on the one hand, but producing agricultural products in a modern way without over-exploitation of nature and the environment, on the other. It is a model of agriculture producing food primarily "for themselves", i.e. inhabitants of the region, gradually increasing also its export capabilities.

It is also a model of agriculture that maintains stringent quality, environmental and food safety standards. Because of this European consumer receives food of high quality and nutritional value.

But this is not a model capable of effective competition with agriculture based on large-scale commercial farms typical of America, Australia, New Zealand or South Africa. Therefore, it requires financial support from public funds, because it not only fulfils its own economic functions but also a number of public functions.

[12] USDA. At the rate of 31 December 2009.

[13] At the rate of 31 December 2010.

Globalisation and change in approach to marginal conditions for agricultural production

Globalisation leads to a unification of technical progress, which is created by its leaders. The result of this unification is the acceleration of productivity growth in agriculture, and consequently a reduction in unit costs and market prices of agricultural products. The increase in productivity as a result of the application of modern technology, while using the favourable natural conditions of production, makes agricultural commodities more competitive. This leads to the elimination of more expensive goods from the market, and consequently to lowering the volume of production based on traditional methods. Decreasing production leads to a reduction in the demand for labour in agriculture and thus to an increase in unemployment. Globalisation, therefore, leads to a situation where it is the market across borders which has the power to determine marginal production conditions in agriculture. Many countries, therefore, face a problem: to produce food in their own country whatever the cost, or to enable the world market to "solve" the problem of food security.

This is not a new question posed by many developed countries with unfavourable conditions for agricultural production. It should be noted, however, that so far this problem remains a theory. There is no evidence that in the near future, if ever, it will be put into practice.

Globalisation leads to a shift in the approach towards marginal conditions for agricultural production. There is no other sector of the economy such as agriculture, whose fate would depend more on the pace and nature of the globalisation process. The reason for it is the lack of mobility of its basic production factor that is agricultural land, from one place (country) to another, depending on economic conditions that the region (country) creates for capital. The inability to transfer the land as a production factor makes the difference in natural conditions for agricultural production in different regions a relatively permanent one. On the other hand, due to the use in agricultural production of ever more modern technologies the role of the land is reduced in favour of the capital (in the form of modern technology such as genetic engineering). The transfer of farm land as well as most capital resources permanently connected to it is highly limited. In this situation, farmers are deprived of allocation benefits, they could achieve with the free movement of their resources to more efficient sectors (Uniwersalia polityki... 2007).

Globalisation changes the basic logic of the approach to marginal conditions for agricultural production. If we assume that the market operates across borders, without limitation, this would be tantamount to opening room for a determination of marginal conditions of agricultural production from domestic to global space. This seemingly minor change is revolutionising the approach to national conditions for farming. An open, global market allows comparison of national conditions for agricultural production with the ones in all the countries in which the market works. The result of this comparison may be a need to abandon smaller or larger part of the national agricultural production. These

conditions, which were marginal in one country, when compared with the conditions in other countries, can be worse than marginal. Therefore, their use for agricultural production becomes uneconomic and unnecessary, since in other countries, a given production can be created more cheaply.

In theory, farmers cultivating land that under national market conditions was marginal, and at the global market scale became worse than marginal, can still produce. However, the cost of production does not allow them to achieve the break-even point. This will reduce the demand for their goods, as other producers (foreign, producing in better conditions) offer the same or similar products at lower prices. Thus, subjecting agriculture to the mechanism of globalisation leads to verification of conditions for agricultural production based not on country but on global market criteria (Szymański W. 2004).

The process of globalisation intensifies pressure from the agriculturally most productive countries, as well as of the underdeveloped countries with cheap labour force for elimination of tariffs on agricultural products, consequently, a new verification of conditions for marginal agricultural production. This verification is closely linked to the reasons for maintaining agricultural activity at the existing scale both in Europe and in Poland. The pressure to reduce the customs barriers is equal to striving for full liberalisation of the agricultural market and subjecting European countries, including the EMA, to world market requirements[14].

Impact of globalisation on food security

Globalisation, impacting agriculture, has significantly changed the approach to food security. From the European Union Member States point of view this may mean a reduction in their agricultural production, i.e. "self-supply" and replacing it with external supply. This situation, however, will lead to an increase in the EU Member States' dependence on external food supplies, and therefore it will affect the EU food security, at the same time, failing to fully use its own production potential. This will also affect the perception of food security not only in an economic, but also in a physical sense.

Both the physical and economic security and quality guaranteeing consumer health are the basic conditions necessary to ensure food security[15].

The most complex and controversial issue is the matter of sources of food. The question is where the food to supply consumers should come from and what should be the share of domestic and imported production therein.

The approach to food security in the European Union in conditions of globalisation of agriculture will determine in what ways the Common Agricultural Policy will influence the agriculture. The European Union countries are key exporters of agri-food products in the world. The value of world export of agri-food products

[14] In 2008, the value of assistance to agricultural producers in the OECD countries was estimated at USD 265 billion. It can be stated that this was the cost these countries incurred in order to protect their agriculture in only one year from the competition of the world agricultural prices (Agricultural Policies... 2009).

[15] More information on this topic in (Bezpieczeństwo żywności... 2009; Małysz J. 1990).

in 2004 amounted to USD 786 billion, which accounted for 8.8% of the total world export. After five years, in 2009, its value increased to USD 1,169 billion, which already accounted for 9.6%[16]. Export of agri-food products in the European Union in 2004 amounted to USD 345 billion, which was 44% of world export, and in 2009 to USD 495 million (42%).

From the point of view of food security of the population living in the European Union Member States, in our opinion, food production in the EU should be at the level of at least 80% of the demand of the EU population, i.e. at the level of the current EU internal export.

We believe that solving the global food problem can progress not by eliminating from the market some part of agricultural producers, to which leads microeconomic globalisation of agriculture, but by giving the world population more economic access to food. Thus, the problem does not lie so much in the oversupply of food on the world market, but in insufficient demand for food. Amartya Kumar Sen sees the presented problem in a similar way. According to him, the solution of the problem of hunger and poverty may be primarily an increase in real income of the population, which will allow for an increase in demand (Kumar Sen A. 1981).

Therefore, the problem of food security is not only a technological, but also a political one. Its first aspect can be solved by market and the second one only by political globalisation and in the situation of its absenteeism – only groupings of economic integration.

In summary, it is difficult to be convinced that globalisation improves the world's food security. Security – understood as an access to food for every human. It is often stated (e.g. in the reports of the World Bank), that developing countries benefit from globalisation to the greatest extent, as it is possible to produce cheap agricultural products there. However, it is more certain that opening of markets for agricultural products from the poorest countries would mean capturing the revenues of their export by intermediaries and international corporations and an increase in consumer prices in these countries as a result of increased export of food.

Future of the European Model of Agriculture

Globalisation leads not only to "reducing" the importance of distance and increased flows of people, goods, funds and information. Globalisation is a multifaceted phenomenon also generating specific challenges. That could be called global challenges. Challenges that globalisation already today addresses towards the agriculture and the entire agri-business, include in particular:

– increasing barriers to food supply, and as a result – keeping a high level of the starving world's population in periods of relatively stable economic development and its growth in times of crisis (for example, in 2008-2009);

[16] In 2006-2008, the share of agri-food products in the value of world exports ranged from 8.0 to 8.5% (WTO 2007-2010).

– increasing uncertainty as to whether the market mechanism would be a sufficient instrument to provide food for a growing population, and how regional and national agricultural policies will ensure efficient use of agricultural land;
– protecting agricultural land and its production potential against attempts of its non-agricultural use.

The EMA also faces these challenges. What is more, its status and condition become more and more a function of globalisation itself. Globalisation, which – as much suggests – will lead to a gradual degeneration of this model by further liberalisation of trade, emigration of food production from Europe following changes in the marginal cost of agricultural production, and, finally, failure of internal decision-making mechanisms of the EU itself. This raises the question of how the CAP will be able to meet global challenges, including the protection of the EMA.

In general, the future of the EMA is determined by two groups of factors. These include:

1) Measures under the Common Agricultural Policy:
   • "protective" (budget subsidies, market mechanisms),
   • restrictive (quotas and limiting production in the current decade also even eliminating production – sugar, wine), high technological and environmental regimes;
2) Processes of globalisation of the world economy:
   • increasing demand for food,
   • increasing global trade in food as a result of progressive liberalisation in the exchange of goods (growing importance of non-European regions),
   • growing importance of non-farm agribusiness entities (transnational corporations),
   • increasing importance of agricultural products in non-agricultural production (biofuels),
   • slow and steady growth of GM plants and animals.

Factors resulting from the process of globalisation of agriculture and agribusiness can be regarded as a kind of external determinants of the future position of the EMA, and factors derived from the Common Agricultural Policy as internal determinants. The former primarily debilitate the status of the EMA and lead to its gradual dismantling; internal factors, determined by the CAP are ambivalent – they can act as both a strengthening as well as a destabilising factor for the EMA. The evolution of the CAP in recent years proved it. Some of these changes in the CAP resulted in a series of measures leading to a reduction in the EU agricultural productivity, limitation of production, marginalisation of entire sectors (e.g. sugar), support to extensive production, paying farmers for the so-called readiness to produce, etc., which remained there and have an impact on the condition of the entire groups of farms in the EU Member States, and thus on the condition of the EMA.

The EMA can be strengthened by **the CAP protective measures**. They are primarily associated with such mechanisms as market-based instruments, subsidies

for farms and for restricting access to the EU market for the agricultural and food production from other regions of the world. However, there are less and less measures of this type, mainly under pressure from the WTO, transnational corporations or such countries as the U.S., Australia and New Zealand. The EU submission in this regard is often difficult to explain, because all of the above groups of participants of the world market are guided in this respect by their own national or corporate interest. An example of this is the United States, which, on the one hand, argue for the liberalisation of global trade in food; on the other, subsidise their agriculture on the scale rarely seen in the world. This is illustrated by an increase in the global rate of agricultural support – TSE (Total Estimate Support), from USD 68 billion in 1995 that is in the year when the U.S. was one of the main proponents of liberalisation of agricultural trade to USD 125 billion in 2009[17]. In turn, the behaviour of countries, such as Australia or New Zealand, is easy to understand when we realise that without agricultural commodity exchange, agriculture in these countries would practically cease to exist. The export of food and agricultural commodities in New Zealand in 2009 equalled (!) the value of the country's agricultural production at producer prices. In the case of Australia, it was 55% of the value of agricultural production.

The expectations of transnational corporations towards liberalisation of food trade are even easier to explain. Taking this into consideration, one may be surprised by the EU agricultural policy of the last 10-20 years, which was in fact leading to a permanent, systematic limiting of agricultural production potential of its Member States, and thus to weakening of the EU farms. Therefore, there appears a question whether today there may be an evolution of this approach towards guarding and strengthening of the EU agriculture and the EMA. Whether there will be an agreement for such a move from the strongest Member States (the United Kingdom, Germany and France), and whether agriculture and agribusiness will be considered an attractive area of intervention for Community policies.

The second group of the CAP activities are instruments connected with **certain restrictions on production, high regimes and technological and environmental requirements**. This is an extremely sensitive area, because the EU, on the one hand, implemented and pursued a policy of limiting production and, on the other, a policy of imposing on the agriculture additional responsibilities for the environmental protection and the animal welfare. Obligations imposed on these solutions are important from the point of view of long-term interest of societies and ecosystems. The problem is that this approach is not taken into account by many countries of the world. In this situation, the EU agriculture is faced with having to pay additional costs ("environmental"), acting, at the same time, under production quotas and having to compete on the global market. The result is easy to predict: the gradual pushing out of the EU agriculture from the global market and giving up the EMA.

On the other hand, there is a whole range of phenomena and processes resulting from the globalisation itself, which affect the EMA's position. The first of

[17] OECD data.

them is the **increase in the demand for food**. Globalisation leads to an increased flow not only of goods and people, but also of income, consumption patterns, habits and tastes. This, in effect, increases the demand for food, including food from other climate zones. This creates a true opportunity for the EMA and the EU farms to export their food, but the problem is that the food is expensive and therefore uncompetitive on the global market. Expensive – including other factors, exactly due to the above-mentioned quotas and high production regimes.

However, the growing demand stimulates **growth in trade** in the global system. Reduced transportation costs, especially gradual reduction in tariff and non-tariff barriers and the desire to minimise the cost of producing food by TNCs brought a new, determined impetus to the global trade of food products (Kowalczyk S. 2010). As a result, in 2000 the agricultural export already amounted to USD 552.3 billion, when in 1990 it was only USD 414.7 billion, meaning an increase by over one third[18]. There was a significant acceleration in the first decade of the twenty-first century. In 2009, the world's agricultural exports reached the level more than 2-fold higher than nine years earlier.

Last two decades (since 1990), also brought changes in the share of individual regions in the structure of the world trade in food. The EU remains the largest food exporter in the world, but its share is decreasing. This applies mainly to the share of its export outside the EU (to the so-called third countries) – almost 11% at the beginning of this century, dropped to little over 9% in 2009. This means that the EU countries are a major supplier of food, but primarily for its own citizens. Only one quarter of the total agricultural export goes to the countries outside the EU. It is a volume lower than the U.S. agricultural export.

The share in agri-food export of other regions increased, especially in the case of South American countries. For example, the share of Brazil's agricultural export, in 1990 amounting to 2.4% rose to 2.8% in 2000, and to 5.3% in 2009. In the same period, the share of Argentina's export was, respectively, 1.8%, 2.2% and 2.8%, China's – 2.4%, 3.0% and 3.6%; and Mexico's – 0.8%, 1.6% and 1.5%. In total, the share of only these four countries increased from 7.4% in 1990 to 13.2% currently (2009), which means that they became, in fact, the largest food exporters in the world. This implies a gradual marginalisation of the role of EMA on the global arena and from the beginning of the first decade of the twenty-first century its descent to a position of a regional player. This should be treated as a significant warning signal for the CAP in recent years, especially after 2000. This is a signal confirming the opinions of the marginalisation of the EU and the EMA as a world (global) food producer.

Among the factors weakening the market position of the EMA, there is also an **increase in the importance of non-farm agribusiness units**, mainly transnational corporations in processing industry and trade. This is a consequence of growing concentration of agribusiness. The scale of the agribusiness concentration, however, is different in every part of the system. By far the largest one is

[18] According to the WTO classification, products considered as agricultural products are food and commodities of agricultural origin.

in trade, comparable one is in the processing of food and supplying of agriculture and the lowest one in agriculture. This leads to a classical subsumption of weaker links (such as agriculture) to a stronger one (trade and processing). The consequence is a takeover of the surplus value produced in the subsumed unit by the superior ones and transferring the cost to these entities. Generally, this results in weakening of farms (mainly the smaller ones, so typical of the EU agriculture) due to market liberalisation and in the absence of intervention.

Another phenomenon of the modern stage of development is **the growth in the role of agricultural products in non-agricultural production** such as biofuels. It is associated with looking for sources of supply of raw materials for such production. These raw materials are standardised, usually characterised by a low input of labour and produced at a large scale. Such conditions are best met by the largest farms in the South and North America, Australia and part of Africa. The result is high competition for land as a factor of production, mainly with smaller farms. Subsidising biofuel production leads to a situation in which typical agricultural farms without financial support usually lose their competition for this factor. Therefore, without public support, also in the European and the EU conditions, there will be transfer of land to production of agricultural raw materials intended for production of biofuels, pharmaceuticals and cosmetics. In general, these are financially more "attractive" than milk or apple production. In order to achieve such a goal the EMA is unnecessary as it is too complicated and it tries to fulfil too many objectives. It will, therefore, be naturally marginalised as a form of production in the European agriculture. Large units will emerge in its place. They will be based on monoculture production under outwork system of the transnational corporations.

The phenomenon described above is closely related to a slow and steady **growth in importance of GM plants and animals**. In this case, the organisation of farms is also based on an outwork system with the company granting licences for the cultivation of GM crops or GM livestock as well as the whole package of services and additional resources. This increases the farms' dependence on biotech companies and concerns, leading to a gradual evolution of the structure and nature of farms. Evolution in this case will be from the EMA to plantation agriculture with monocultures based on the outwork system with the agriculture offering only labour and land. This is a model with no place for public services, environmental protection or animal welfare.

Final remarks

The above-described phenomena accompanying globalisation create a real threat to the EMA. This model is not able to resist their consequences, including pressures to minimise land use costs, environmental costs and, finally, labour costs. Thus naturally, globalisation leads to creation of conditions that in principal do not fit into this type of agriculture. Therefore, it will inevitably seek to dismantle it. This raises the question whether to protect the EMA as a production model, but also a model with certain additional functions and values. It is

these additional features that can be a decisive factor in the decision making process concerning the future of the EMA. However, without support, primarily from the European Union's policies, including the CAP, this model – in fact, created by the EU policy for agriculture – will not survive.

Concerns about the future of the EMA on a global scale are reported by many organisations, people and institutions, including the EU. As an example the European Economic and Social Committee can be named. In its opinion on the future of the CAP, adopted at the 461st plenary session on 18 March 2010 it was stated: *"The EU is gradually moving away from the European agricultural model, with an observable trend towards more industrialised farming. Production patterns are emerging that signal a growing 'Americanisation' of European agriculture"*[19].

And further on: *"One hallmark of the European agricultural model is a conscious decision to accept lower productivity – which naturally puts farmers at a competitive disadvantage. Yet, that is precisely what is wanted both at a political level and by society at large. The reason for that is that the European public has a different perception from that espoused by some non-Europeans of the use of GMOs, hormones and growth stimulants and of moves to tackle salmonella or keep the countryside intact. However, such internationally high expectations of the production side clearly involve costs that cannot simply be shunted onto farmers alone"* (Dziennik Urzędowy UE 2010).

Significant is the final conclusion of the EESC: *"The European agricultural model is, therefore, now more than ever under threat from current developments and for that reason needs to be supported and promoted by a strong CAP"* (Dziennik Urządowy UE 2010).

Similarly, radical in assessing future opportunities of the EMA is the opinion of the agricultural organisation COPA-COGECA. It states: *"The European model of agriculture is increasingly questioned in a global world, where different visions of agriculture that are in direct competition with the European one are practiced"* (Memorandum COPA... 2006). The CAP after 2013 will have an extremely important impact on the future of the EMA. It is vital to what extent it will act as a "shield" and how restrictive it will be in relation to the EMA. However, crucial – as it seems – may be the results of the WTO negotiations of the longest lasting Doha Round (already 10 years)[20].

In summary, the vast majority of the presented processes leads to the conclusion that the European Model of Agriculture cannot survive in an era of globalising economy. This is an economy dominated by openness, liberalism and pervasive flows of capital, commodities and information, unless the EU countries make

[19] Opinion of the European Economic and Social Committee on the "Reform of the common agricultural policy in 2013" (2010/C 354/06). The opinion was adopted by a vote of: 163 – for, 5 – abstained, 0 – against (Dziennik Urzędowy UE 2010).

[20] A detailed analysis in geographical perspective of the impact of liberalisation of trade in agri-food products, both for manufacturers and consumers, was conducted by A. Czyżewski and A. Poczta-Wajda (2011). In addition, a similar simulation of the effects can be found in the report by UKIE (Skutki liberalizacji... 2006).

consistent, common and significant effort towards its protection. However, there arises a question, whether they will be capable of doing it and whether the EMA will be considered not only a production system, but also a set of relevant values, including social, environmental and cultural ones that are worth protecting. The future will bring the answer to these questions. However, it must be kept in mind that there are indications that globalisation and its consequences – without specific political and economic actions – can lead to degeneration of the EMA and as a result to its rejection or failure.

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