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## **ASSISTANCE TO AGRICULTURE IN COUNTRIES OF A DIFFERENT DEVELOPMENT LEVEL AND TRENDS IN WORLD TRADE WITH AGRICULTURAL PRODUCTS**

*WSPARCIE DLA ROLNICTWA W KRAJACH O RÓŻNYM POZIOMIE ROZWOJU  
A TRENDY W HANDLU ŚWIATOWYM ARTYKUŁAMI ROLNYMI<sup>1</sup>*

**Key words:** assistance to agriculture, world trade with agricultural products, agricultural trade liberalization

*Słowa kluczowe:* wsparcie dla rolnictwa, handel światowy artykułami rolnymi, liberalizacja handlu rolnego

**Abstract.** The main aim of this paper is to overview the trends in assistance to agriculture both in developed and developing countries and to compare them with trends in food products trade to verify the hypothesis assuming that although the level of price distorting assistance to agriculture in high-income countries in last three decades has been decreasing, agricultural markets in these economies are not becoming more open for the food products from the developing countries. The empirical analysis is based on the World Bank database on estimates of distortions to agricultural incentives and on the World Integrated Trade Solution (WITS) software. Research results suggest that despite numerous policy reforms both in developed and developing countries, there is still a high rate of assistance to agriculture, especially in high-income economies. Although most of them lowered the price support for food products, it has been partly replaced by assistance decoupled from production. At the same time, some developing countries continue their anti-agricultural bias, but most of them ceased taxing the agricultural sector. What is more, share of developing economies in global food trade is increasing, this trend, however, results mainly from increasing intra-trade between developing economies and not from the liberalization of food markets in developed countries.

### **Introduction**

The agricultural sector and trade with agricultural products are subject to strong governmental interference in numerous countries, however the character of such policies is different in countries of a different development level. Developed countries generally support agricultural producers, protect domestic markets and subsidize export, while developing countries often tax their agricultural sector (see fig. 1 and 2). This situation contributes to growth problems and poverty accumulation in developing countries. On the other hand, in developed countries support goes mainly to large producers, while the income of smaller farmers does not substantially improve. This phenomenon is well described in academic literature [Anderson et al. 2013, Swinnen et al. 2000, Olper 2001, Poczta-Wajda 2013]. During the past three decades, however, some developed countries, as well as developing ones, began reducing their trade distorting policies. Many authors, however, doubt the effectiveness of these reforms [Tangermann 2004, Diakosavvas 2004]. For example in the US the total level of domestic support was rising (from 60 billion US\$ in 1995 to 115 billion US\$ in 2009) because more emphasis was put on national food aid (almost 79 billion of US\$ in the year 2009). At the same time domestic support in the EU declined from 116 billion US\$ to 81 billion US\$ [Koo, Kennedy 2006, WTO 2011]. Hence, the question is whether these actions helped the developing countries to increase their food export to developed economies.

This paper assumes the following research hypothesis: although the level of price distorting assistance to agriculture in high-income countries has been decreasing over the last three decades, agricultural markets in these economies are not becoming more open to food products from devel-

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oping countries. Hence the main aim of this paper is to overview the evolution of price distorting policies in developed and developing countries and to compare the trends in level of assistance to agriculture with trends in the food product trade.

### Material and research methods

In the first phase of the research trends in the level of assistance to agriculture both in developed and developing countries have been analyzed. This empirical analysis was based on the World Bank database on estimates of distortions to agricultural incentives 1955-2007, updated in June 2013 [Anderson, Valenzuela 2008, Anderson, Nelgen 2013]. The original version of this database included data from 75 countries with a different level of development, whose total share in the world's population, farmer's number, agricultural and total GDP accounts for around 90-96% of the world's total. The basic support estimate NRA (nominal rate of assistance) has been estimated for commodities that together account for 70% of the value of agricultural production. The NRA for a single product indicates by how many percent an agricultural producer's income is higher (or lower) from the one he would obtain in the absence of any interference from the state. The NRA for the sector is calculated as a weighted average, where the weights are based on the value of production measured in world prices. If the NRA is positive, it means that the country supports the agricultural sector, while a negative value indicates the rate of taxation.

The second phase of the research included analysis of global food trade trends. Trade data was based on World Integrated Trade Solution (WITS), which is software providing access to the international merchandise trade, tariff and non-tariff measures data. Finally, in order to verify assumed hypothesis, trends in level of assistance to agriculture with trends in the food product trade have been compared.

### Research results

In the second half of 20<sup>th</sup> century the average level of price distorting assistance to agriculture in developed countries (HIC<sup>2</sup> + ECA<sup>3</sup>) rose dynamically (Fig. 1). By the early 1980s the difference

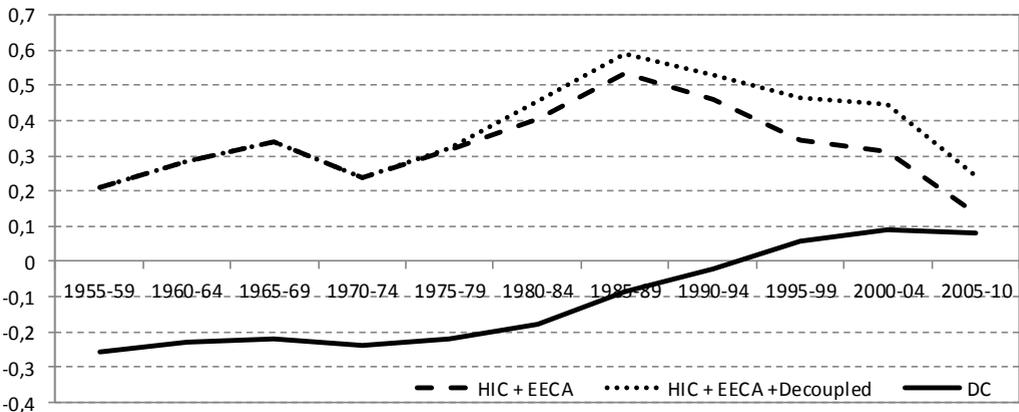


Figure 1. Nominal Rates of Assistance to Agriculture (NRA) in High-income and Eastern Europe and Central Asia Countries (HIC+EECA) and in Developing Countries (DC), 1955-2010 [%; weighted averages]

Rysunek 1. Wskaźnik nominalnego wsparcia dla rolnictwa (NRA) w krajach rozwiniętych i krajach Europy Wschodniej i Azji Centralnej (HIC+EECA) oraz w krajach rozwijających się (DC), 1955-2010 [%; średnia ważona]

Source/Źródło: [Anderson 2009, Anderson, Nelgen 2013, Anderson, Valenzuela 2008]

<sup>2</sup> High-income countries (HIC) aggregate includes: Australia, Austria, Belgium and Luxemburg, Canada, Cyprus, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Malta, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, UK, USA.

<sup>3</sup> Eastern Europe and Central Asia (EECA) aggregate includes: Bulgaria, Czech Republic, Estonia, Hungary, Israel, Kazakhstan, Latvia, Lithuania, Poland, Romania, Russia, Slovakia, Slovenia, Turkey, Ukraine.

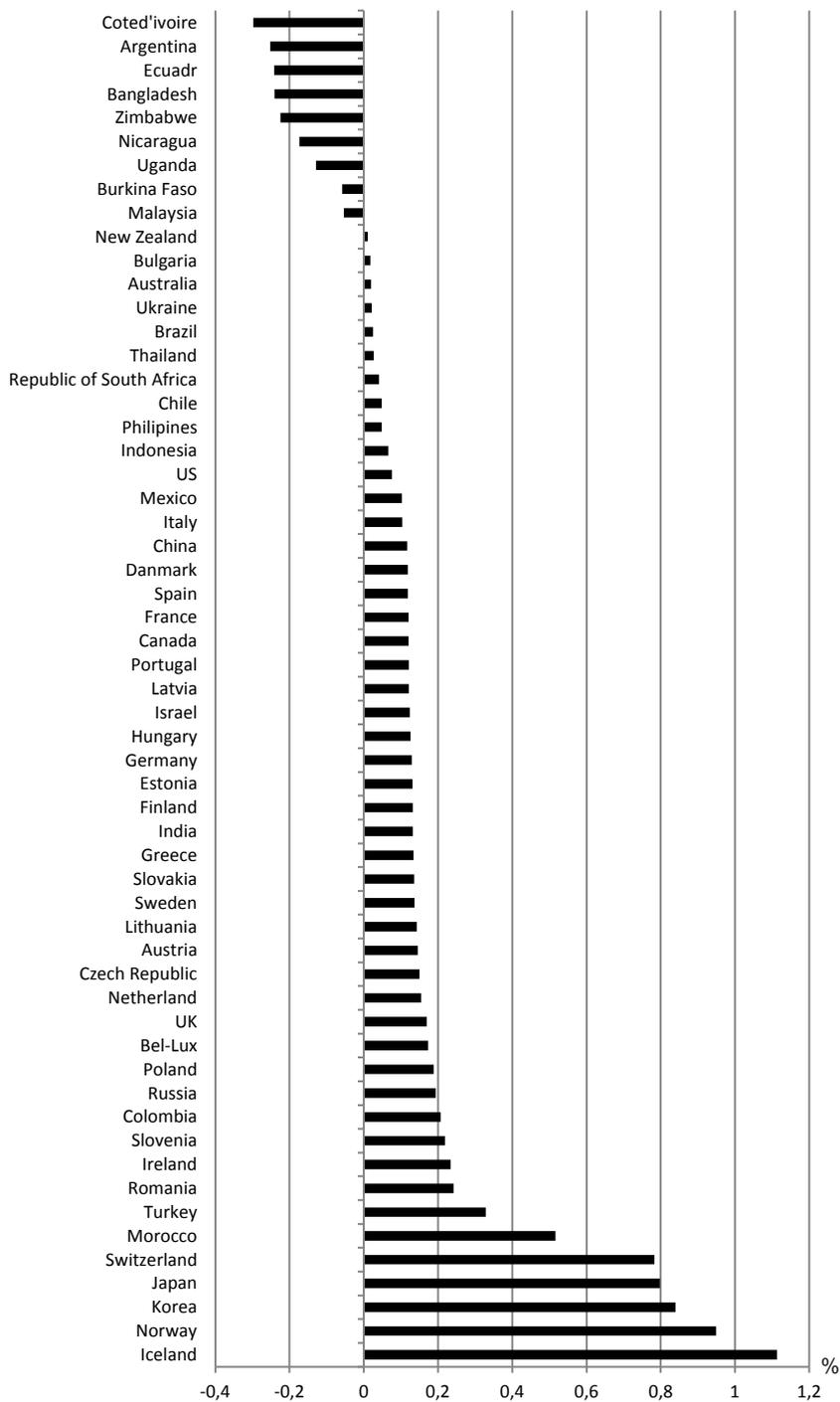


Figure 2. Nominal Rates of Assistance to Agriculture (NRA) in Chosen Countries, 2005-2010  
 Rysunek 2. Wskaźnik nominalnego wsparcia dla rolnictwa (NRA) w wybranych krajach, 2005-2010  
 Source: see fig. 1  
 Źródło: jak na rys. 1

between domestic prices and international market prices was more than 80% for Japan and around 40% for the EC [Anderson 2010]. However, between 1985-89 and 2005-2010 the average NRA for developing economies fell from 53% to 14% (or 24% after including decoupled payments), which suggests that developed countries have become less trade-distorting.

On the other hand, in the second half of 20<sup>th</sup> century many developing countries initially adopted an import-substituting industrialization strategy and even imposed direct taxes on their export of agricultural products. Average level of NRA for developing economies between 1955-1959 and 1990-1994 was negative, however, rising from – 25% in 1955-1959, exceeding 0 in 1990-1994 and become stable at around the 10% level in 2005-2010, since some developing countries began subsidizing their agriculture. One of the main contributors to this change is China [Huang 2009].

That progress has not been uniform across countries and regions and the cross-country dispersion of NRA is still significant (Fig. 2). Among the developing countries, economies of Asia, including Korea, China and India, have experienced fastest shift from negative to highly positive NRA. The average NRA for those countries amounted in 2005-2010 more than 10%. However there are also countries (like Zimbabwe and Argentina), which have gone back-wards and increased their anti-agricultural bias [Anderson 2010]. Examples from the EU prove that agricultural price distorting protection can be reduced if accompanied by direct forms of income support (average NRA in period 2005-2007 amounted 18%, however after including decoupled payments it was higher by 20 p.p.). Still, among the countries with the highest NRAs predominate developed countries with very high income per capita (Norway, Japan, Switzerland).

Trends in NRAs suggest that the share of developing countries in global food trade should improve. Although developed economies still have the greater proportion of global food exports (Fig. 3), the share of developing countries in global food exports rose in the last 20 years (from 23% in 1990 to 43% in 2012), while the share of developed economies fell (from 72% in 1990 to 56% in 2012). One should, however, notice that the share of developing countries' food exports to high-income economies in their total food export is declining and this trend seems to have strengthened in the last 20 years (Fig. 3).

Additionally, the share of developed countries in global food import is declining (from 80% in 1990 to 63% in 2012), while the share of developing countries is rising (from 15% in 1990 to 34% in 2012) (Fig. 4). This suggests that developing economies are getting a bigger share in global food trade because their intra-trade is growing and not because the food markets of developed countries are becoming more open for the agricultural products from developing countries.

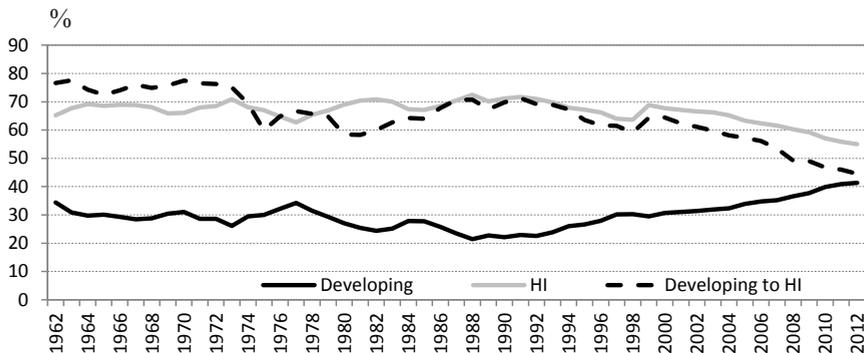


Figure 3. Developing Countries' and High-income (HI) Countries Share in Global Food Exports, and Share of Developing Countries Food Export to High-income Countries in Their Total Food Exports, 1962-2012  
 Rysunek 3. Udział krajów rozwijających się i rozwiniętych (HI) w światowym eksporcie rolnym oraz udział eksportu rolnego z krajów rozwijających się do rozwiniętych w ich całkowitym eksporcie rolnym, 1962-2012  
 Source/Źródło: [wits.worldbank.org]

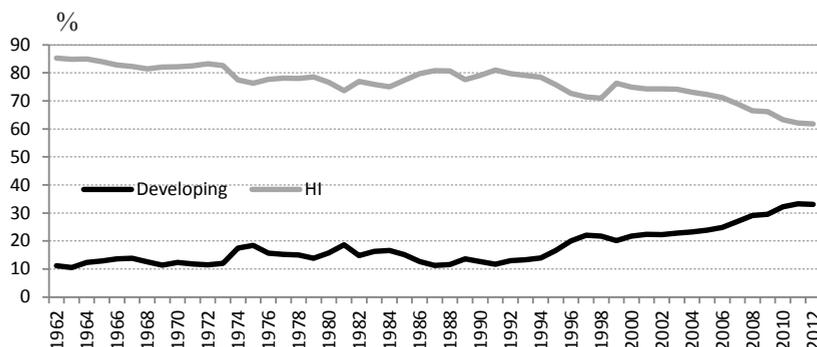


Figure 4. Developing Countries' and High-income (HI) Countries Share in Global Food Imports, 1962-2012  
 Rysunek 4. Udział krajów rozwijających się i rozwiniętych (HI) w światowym imporcie rolnym, 1962-2012  
 Source: see fig. 3

Źródło: jak na rys. 3

The above data and figures suggest that there is still a high rate of assistance to agriculture, especially in high-income economies. Although most of them lowered the price support for food products, it has been partly replaced by assistance decoupled from production (Fig. 1). At the same time, some developing countries continue their anti-agricultural bias, although most of them ceased taxing the agricultural sector. These are the reasons, why developing countries still have a limited access to food market in developed countries. If these trends, however, continue and if there is no agricultural protection growth in developing countries, then in the next two or three decades all food price distortions should be removed, which may result in improving the situation of developing countries on global food markets. On the other hand, long lasting difficulties with reaching any compromise within the WTO Doha Round and very strong agricultural protection lobbies put further liberalization of agricultural trade in question.

## Conclusions

This paper analyzed the trends in assistance to agriculture both in developed and developing countries and compared them with trends in food products trade. The empirical research has led to the following conclusions:

1. Changes in the level of NRA proves that although distortions facing developing countries are now much weaker than 30 years ago, agricultural support in developed countries remains high. There is also a high dispersion between the countries' NRAs.
2. The share of developing economies in the global food trade is increasing. This trend, however, results mainly from increasing intra-trade between developing economies and not from the liberalization of food markets in developed countries, because share of developing countries' food exports to high-income economies in their total food export is declining and so is the share of developed countries in global food import.

The above conclusions allowed to verified assumed hypothesis that although the level of price distorting assistance to agriculture in high-income countries has been decreasing over the last three decades, agricultural markets in these economies are not becoming more open to food products from developing countries. This means that there is still a potential to gain through the international relocation of agricultural production between countries. The WTO has still a significant role to play, however if this organization fails in further liberalization of trade with agricultural product, regional agreements might help to strengthen this process. Positive trends on world food markets, both in developed, as well as in developing countries, might however be inhibited by political forces demanding greater support for agriculture.

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### Streszczenie

Celem pracy było przedstawienie trendów w poziomie wsparcia dla rolnictwa w krajach rozwiniętych i rozwijających się oraz porównanie ich z trendami w światowym handlu artykułami żywnościowymi. Postawiono hipotezę, że pomimo spadku wsparcia zniekształcającego ceny dla rolnictwa w krajach rozwiniętych w ostatnich trzech dekadach, rynki rolne w tych krajach nie stały się bardziej otwarte na produkty rolne z krajów rozwijających się. W badaniach wykorzystano wskaźniki wsparcia rolnictwa pochodzące z bazy danych Banku Światowego oraz dane handlowe pochodzące z bazy WITS. Z przeprowadzonej analizy wynika, że pomimo zmniejszenia ograniczeń handlowych, z jakimi spotykają kraje rozwijające się poziom wsparcia rolnictwa w krajach rozwiniętych był nadal wysoki. Dlatego wzrost udziału krajów rozwijających się w handlu światowym był wynikiem intensywniejszej wymiany pomiędzy tymi krajami, a nie efektem liberalizacji rynków produktów rolnych w krajach rozwiniętych.

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