

## TRENDS IN MEAT INDUSTRY – PRODUCTION, CONSUMPTION AND TRADE

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**Abstract.** This paper describes and assesses the current status of meat production and major trends in such a production. There has been an increase trend in meat consumption per person in most of the countries even also it is a luxury for most population in the world. The world meat production and consumption has been increased especially by the increasing live standards in developing countries. It is expected that the productivity in livestock will determine global meat trade. Some developed countries have comparative advantages by productivity by the reason of economics of scale. In this paper, it is aimed to describe the world meat production, consumption and trade trends.

**Key words:** meat industry, meat consumption, meat trade

### INTRODUCTION

Meat is one of the stable foods especially in developed countries. The consumption of meat has been increased with increases in income level of people and has been consumed more by substituting other foods such as bread and low cost foods. However, the consumption of meat per capita in developed countries is twice more than world average level. World livestock production has been changed by productivity increase in farms, economics of scale, demand increase. These changes caused also by growing population, rising income and growing urbanization and demand for meat and meat product in developing countries. Some developed countries have been reached high productivity levels in livestock and have had comparative advantage in global meat trade. Developing countries have been worked to change their livestock production methods, however they have been increased their productivity level, but also it is still low when it is compared with developed countries.

## METHODOLOGY

In this paper, it is aimed to show the trends of meat production, consumption and trade. There are several statistics about meat industry. These statistics collected from Food Agriculture Organization of United Nations. These statistics have been connected, thus there have been a possibility to see trends for longer period. The literature about meat industry has been used to support in the explanations of meat industry trends. Firstly, it is aimed to explain the trend in production, and then consumption and trade of meat.

## MEAT PRODUCTION TREND

The production of meat has been doubled in last quarter century. This production increased both supply and demand conditions. The level of income increase-especially in developing countries has been caused demand side of increase in meat production. Lowering cost of meat production by scale of economics has been an important factor in the production increase.

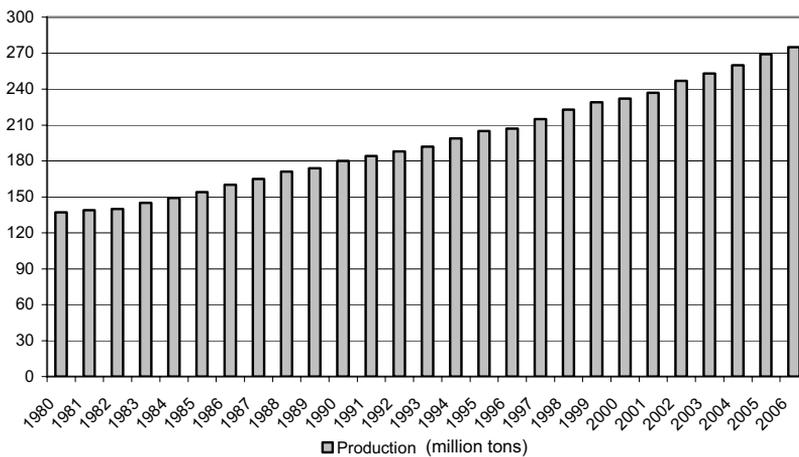


Fig. 1. World Meat Production (million tons)

Rys. 1. Światowa produkcja mięsa (mln ton)

Source: FAO.

Źródło: FAO.

Intensification of livestock production is taking place with regard to the use of most of the production inputs. In particular, the intensity of feed use has greatly increased over recent decades. While a growing number of people in the developing world are moving up the food chain, enjoying a richer and more diverse diet, so too are livestock; traditional fibrous and energy-rich feed stuffs are in relative decline, and protein-rich feeds together with sophisticated additives that enhance feed conversion are on the rise [Steinfeld, Wassenaar, Jutzi 2006].

Livestock production takes place under very diverse conditions in the different developing countries. However, the direction of change, even if gradual, is towards more

intensive production with less dependence on open range feeding which imposes excessive burdens on the environment, and with improved and balanced feeding practices and improved breeds. The improved practices enable more of the feed to go production rather to inefficient maintenance. This has led to progresses in feed conversion efficiency [Sere, Steinfeld 1995].

Figures 2a and 2b show different kinds of meats production and trade. Pig meat has important share in world meat production, but poultry has more volume in global meat trade. However, poultry production and trade fluctuate recently because of bird flue and speculative about such disease. Speculations in a type of meat have changed the direction of consumption to other types of meats.

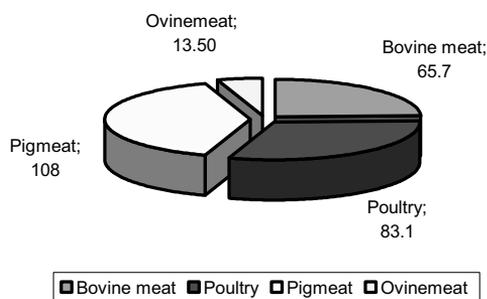


Fig. 2a. World different meat production (million tons) 2006

Rys. 2a. Rodzaje mięsa w światowej produkcji

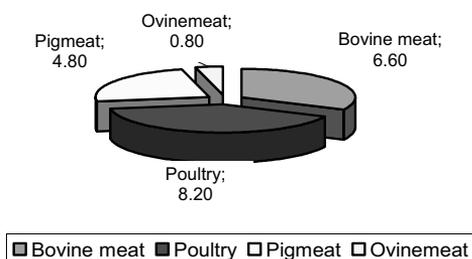


Fig. 2b. World different meat trade (million tons) 2006

Rys. 2b. Rodzaje mięsa w handlu światowym

Source: FAO.

Źródło: FAO.

## MEAT CONSUMPTION TREND

Meat markets are generally characterized by only limited interventions which promote meat consumption, such as retail price controls, and policies which support livestock marketing. Typically interventions consist of the establishment of regulatory mechanisms to enhance food safety and quality. For example, animal health concerns have led many countries to implement animal traceability systems [FAO 2004].

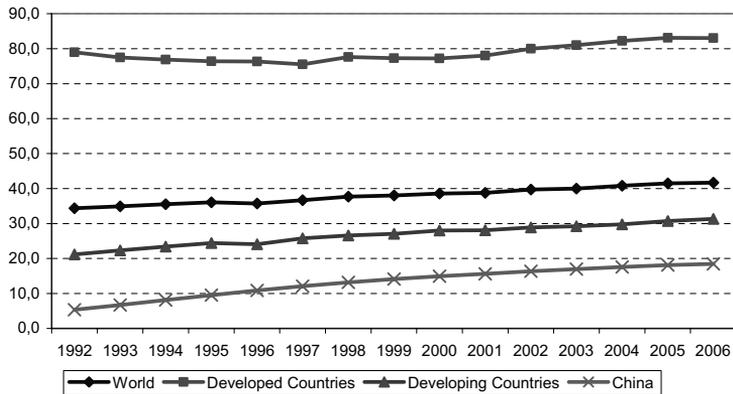


Fig. 3. The meat consumption per person (kg/per year)

Rys. 3. Spożycie mięsa w przeliczeniu na osobę (kg/rok)

Source: FAO.

Źródło: FAO.

The Figure 3 shows the consumption of meats trends in the world, developing countries, developed countries and also China. The consumption of meat per person has been increased in the world, especially in the developing countries faster. There have been not so important per person consumption in the developed countries. The effective meat consumption increase has been seen realized in China. There can be seen a positive relation between income and meat consumption. Especially, China who has one of the most growth rates last 2 decades, has also one of the fastest meat consumption in the world. The consumption of meat has been increased by increasing income levels of developing world. In the regional increase in meat consumption, Gill [1999] indicated that the rate of growth in meat consumption has been much greater in parts of Asia than in other regions of the developing world or in the developed world. By 2004 FAO data, China is the biggest meat producers in the world. However, China is one of the biggest meat importer even though being the biggest producer in the world as it is seen on Table 1.

## MEAT TRADE TREND

The world meat trade has increased to 52 billion USD by FAO data. This trend is expected to upward by liberalization in international trade by World Trade Organization, and also increasing trend in developing countries' level of income. The developed countries have important part of meat import. However, the meat export is done mostly the countries who has advantages of economics of scale by using large farms.

As it seen on the Table 1, most of the world meat trade has been realized by developed countries as it has been usual in other others sectors. The income level is effective on meat import however, lower cost and productivity is effective on meat export.

Forces driving the growth in world meat trade since the mid-1980's are still at work in shaping trade patterns. Since 1985, global meat trade has advanced because of significant reductions in trade barriers, notably the relaxation of barriers by Japan and South Korea,

Table 1. Main meat importers and exporters (production tons in 2004)  
 Tabela 1. Główni importerzy i eksporterzy mięsa (w tonach)

Import		Export	
Japan	7 738 662	Brazil	5 529 670
United States (USA)	5 057 272	Australia	4 720 695
Italy	4 107 977	United States (USA)	4 607 231
United Kingdom	3 967 281	Netherlands	4 425 069
Germany	3 940 672	Denmark	3 831 200
France	3 256 762	Germany	3 568 219
China	2 184 123	Canada	3 344 123
Russian Federation	2 134 756	France	3 321 070
Mexico	1 974 744	New Zealand	3 024 718
Netherlands	1 750 219	Belgium	2 807 873

Source: FAO.

Źródło: FAO.

regional trade agreements among the countries of North America (NAFTA) and South America (MERCOSUR), and the opening of new markets for poultry in Russia and China [USDA 2000].

The various flows of the international meat trade are complex, with many more countries of the world participating in some way, often as both importer and exporter. Methods of cutting and keeping the meat in good condition have become more sophisticated allowing a very high quality product to be traded and a large proportion of meat is now boned before export [Spencer 2003].

As it is seen on the table, meat trade has been realized mostly by developed countries. It is not only import side, but also there is developed countries has important place in meat export. Cost of meat is an important point to have a larger share in world's meat export. Labor costs in the farming, slaughtering, processing, and distribution phases are an important part of the total costs of providing meat to consumers [Dyck, Nelson 2003]. However the labor cost average is more in developed countries. But these countries has more place in world meat market. However, economics of scale can lower the cost of production. It can be said that capital intensive production has become more effective than labor intensive production in meat production.

There are some reasons which effect world meat markets. Morgan [2001] indicate these factors, such as rising incomes/urbanization, changing consumer preferences for types of meat, vertical integration/concentration of output units, and WTO provisions on market access and export subsidies, influence markets. There are also non-tariff barriers in international meat trade, especially those arising from food safety issues. Food safety concerns have always been a prominent factor in meat production and international trade. Sanitary arguments are often used as protectionism. More recently, the influence of other factors is increasing. One of them is the progress of biotechnology, which has met with resistance from consumers, particularly in Europe, where it has led to such measures as the hormone ban. There is also growing public concern about animal welfare and the environmental impact of meat production. [International Policy Council 1998]. Greater transparency of national food safety requirements would facilitate efforts to harmonize national standards to improve trade relations.

Global trade in meat commodities is expected to increase. The increase in demand, in addition to declining levels of protection and export subsidies (“dumping”) under the World Trade Agreement, may open new opportunities for developing countries, but it also puts increasing demands on their animal health and food safety standards. It is being increasingly realized that domestic demand is not sufficient as an engine of growth for rural areas, and that exports are essential for robust rural income growth. Opening export markets for livestock products could be such a growth engine for the rural poor [Haan and others 2001; However, Upton 2001] indicate that animal welfare has been raised as an issue for discussion within WTO. Like environmental issues this is probably best dealt with domestically, but with voluntary international agreements, labeling-schemes and support where appropriate. national controls on animal transport may affect trade. Although intellectual property rights in genetic material may affect trade, no record has been found of disputes regarding ownership of animal genetic resources.

The surplus and deficit of meat production in the countries has impact the world meat market. Tables 2a and 2b show the countries which have the most deficit and surpluses in international meat trade.

Table 2a. Meat production deficits  
(in thousand ton)

Tabela 2a. Niedobory produkcji mięsa  
(w tys. ton)

Japan	-2538
Russian Federation	-2446
United Kingdom	-1511
Mexico	-1171
Italy	-1148
China	-629

Table 2b. Meat production surpluses  
(in thousand ton)

Tabela 2b. Nadwyżki produkcji mięsa  
(w tys. ton)

Brazil	3175
United States (USA)	2786
Australia	1659
Denmark	1508
Netherlands	1170
Canada	1082

Source: FAO.

Źródło: FAO.

Table 2a shows that the countries which have the most meat deficit between production and consumption. Japan and Russian Federation are important meat importers. These countries's meat trade policy is able to effect their trade partners. The countries have used some barrier for other countries to enter their domestic market, such as quotas, methods of cutting and keeping the meat in good condition.

The Table 2b shows the countries which have the biggest meat surplus. Brazil and United States are main meat exporters. The production cost of meat and advantage of large farms because of scale of economics has important place in these countries export. Thus, these countries are large meat exporters.

As the size of the processing plant increases, meat processing costs drop, and as meat firms are consolidated into larger businesses the costs of marketing, research and development, and management can be spread over larger production complexes and the per-unit cost lowered. Economies of scale require sufficiently large markets to absorb the processed meat. Denmark's pork industry, relatively large compared with its population, depends on export markets in the EU, Japan, the U.S., and elsewhere. Though Australia's population is relatively small, beef plants can achieve economies of scale with sufficient export outlets [USDA 2000].

## CONCLUSIONS

Meat production and consumption has been increased as a whole in the world. These production and consumption increased mostly in developing countries. The developed countries reached available meat consumption by reaching high income level before. Thus, the average meat consumption here has not been change so much, as it changed in the rest of world. There has been an positive correlation between meat consumption and income level, thus when the level of income increase in developing countries, it is expected that the meat consumption will increase in these countries too. In addition, it is expected that global meat production will increase with reductions in trade barriers in meat and meat products. However, there are potential risks about animal diseases worldwide, thus world meat trade can be effective by potential animal diseases.

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## KIERUNKI ZMIAN W PRZEMYSŁE MIĘSNYM – PRODUKCJA, KONSUMPCJA, HANDEL

**Streszczenie.** W artykule poddano charakterystyce i ocenie poziom produkcji mięsa w świecie, a także trendy w rozmiarach tego rodzaju produkcji. Zauważono rosnący trend w produkcji mięsa w przeliczeniu na głowę mieszkańca w większości analizowanych krajów, mimo tego dla większości ludności jest to ciągle artykuł luksusowy. Obserwuje się wzrost produkcji i konsumpcji mięsa w większości krajów rozwijających się wraz ze wzrostem poziomu życia ich mieszkańców. Przewiduje się, że wzrost wydajności produkcji wpłynie na globalny rynek mięsa. Niektóre kraje rozwinięte mają względną ekonomiczną przewagę z powodu korzyści ekonomiki skali. W artykule charakteryzuje się globalne trendy w produkcji mięsa, w konsumpcji i handlu.

**Słowa kluczowe:** przemysł mięsny, konsumpcja mięsa, produkcja, handel

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