

INVESTIGATING COMPETITIVENESS OF CEREALS IN FOOD CHAIN AND PROCESSES

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Introduction

Cereals are the most important human nutrients already since as early as the time of the ancients. Their nutritional role is significant, due to their outstanding coloricity. On the basis of the FAO-data on cereals production, the paper shows both of the development of the total quantity produced in the past 45 years and its per thousand capita value. Additionally, in the essay it is also examined whether their consumption can be increased from health aspects, based on the recommendations issued recently by the World Health Organization (WHO). And finally, on the basis of the OECD (Organization for Economic Cooperation and Development) data, the study speaks about the subsidization of cereal crops and presents the expectable production data predicted by them. The aim is to state, whether cereals are competitive, i.e. their produced quantity may be increased under the conditions in question, namely from point of view of *nutrition, food chain, and cereals growing processes*.

Cereals in competition

The significance of cereals is of common knowledge, this is why it is not surprising, that globally, the share of dietary energy supplied by cereals appears to have remained relatively stable over time, representing about 50% of the dietary energy supply (WHO, 2003). Total amount of world-wide produced cereals – with the exception of smaller fluctuations – showed a continuous increase over the 45 years past, from 800 million tons to altogether 2000 milliard tons. Projected to per capita, however, this was no unequivocal growth at all. Moreover, from the mid-eighties on, consumption declined.

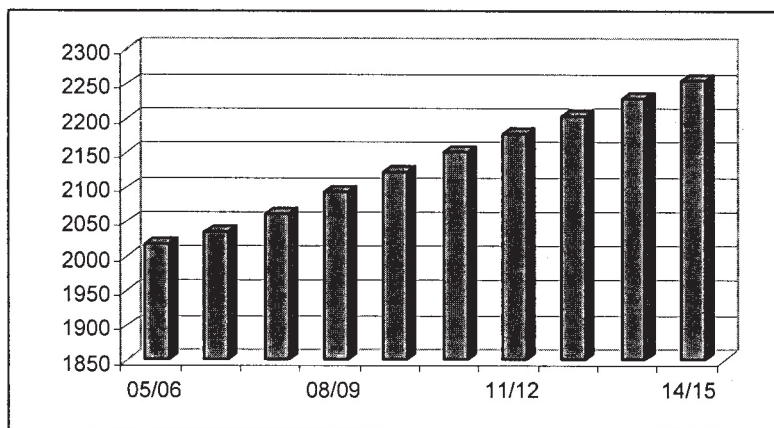
The Global Strategy on Diet, Physical Activity and Health is an important target, what it provides range of global policy options to address two of the major risks responsible for the heavy and growing burden of noncommunicable diseases: unhealthy *nutrition* and physical inactivity. In this document the member countries of the World Health Organization (WHO) have endorsed its global strategy on *nutrition*, physical activity and health. The strategy emphasises the need to limit the consumption of fats, sugar and salt, and to increase consumption of fruit, vegetables. (WHO, 2004) The strategy based on the report from a 2 year long joint WHO/FAO consultation (WHO, 2003) that reviewed the available scientific evidence on the relationship of diet, *nutrition* and physical activity to chronic diseases. The WHO recognised among other things that chronic diseases (cardiovascular diseases, several forms of cancer, diabetes, obesity, osteoporosis and dental disease) are no longer just rich country problems, but are increasingly occurring in the developing world as well.

Rurik (2003) proved on examination that in Hungary in relation to non-infectious diseases connected with *nutrition*, the irregular consumption of food has to be underlined. The insufficient consumption of milk and dairy products may have an unfavourable effect on the bone status. Deficient consumption of fruits, vegetables and cereals may play a role in the development of cardiovascular diseases and certain types of tumours according to the examination got through with elder people.

Srinivasan (2006) in their treatise using mathematical programming approach among OECD countries found that adherence to the WHO norms would involve a significant decrease in the consumption of vegetable oils (30%), dairy products (28%), sugar (24%), animal fats (30%) and meat (pig meat, 13.5%, mutton and goat 14.5%) and increase in fruits (25%) and vegetables (21%), but what is even the most important from point of view of the present study, it became clear, that *significant increase in the human consumption of cereals (31%)* is necessary.

If countries currently above the fat guidelines will be brought in line with the norms, products with relatively high fat content will naturally be substituted for by those with lower fat content. *Cereals*, as good providers of energy at low fat content, and already constituting significant portions of existing diets in the OECD countries, are obvious candidates to replace the declining dairy, oils and meat product demand described above.

Figure 1: World cereal consumption projections in million tonnes



Source: on the basis of OECD 2005, own compilation

Global wheat consumption alone is predicted to increase by 25 million tons. (Fig. 1) Maize, barley, rye, oats, millet and sorghum jointly contribute to another 4 million tons to bring the global increase in *cereal* demand predicted by the model to 31 million tons. (Srinivasan, et al. 2006) The growth rate in the demand for *cereals* is expected to rise again to 1.4% per year up to 2015, slowing to 1.2% per year thereafter according to WHO (2003). But research agenda for crop science in the 21st century will depend largely on whether the present conditions regarding the global food surplus continue, or whether a food scarcity recurs (Berzsenyi, 2003).

It is important to note one aspect that shows this increase to be illusory: changes in final demand for some products may also generate changes in intermediate demand for some other commodities in the *food chain*. For instance, the calculated decrease in meat consumption would result in a decrease in demand for animal feeds (mainly cereals). This effect is likely to be large because about half of world *cereal* production is consumed for non-food uses (FAO, 2005). Srinivasan et al. (2006) calculated that decline in feed demand for cereals is large and equal to 25 million, this decrease almost offsets the calculated increase in human consumption of cereal of 31 million tons.

This is where the concept of the sustainable development of agricultural production emerge. Bedő (2003) stated that only the comprehensive handling of ecological, economic and social challenges can produce a satisfactory answer to the questions involved in a long-term sustainable development. This paper now turns to an economic question.

Did occur some shift in the OECD countries as regard support and taxes in order to increase the consumption of *cereals*, taking into account the WHO *nutritional* strategies, and other considerations e.g. socials? This topic examined by the aid of the CSE data (Consumer Support Estimate) of the OECD data-base.

In case of *cereals* crops, with the exception of rice, consumer taxation through agricultural policies has decreased over the 18-year period considered, i.e. CSE has become less negative, so it cause a decrease in consumer prices of these cereals, that it is an additional incentive to the consumption of cereals, but further actions are required for the achievement of the WHO *nutritional* guidelines. For example Kőszegi and Kovács (2004) showed that on the market there is an increasing demand of organic crop production, may be that can be the new direction for economists to support.

Conclusion

The aim of this study was to investigate the produced quantity of *cereals*, the importance of cereals in *nutrition*, the cereals situations in *food chain*. Produced quantity of cereals continuously increased, the per capita amount decreased in the 20 years past. Considering health aspects on the basis of the WHO and other recommendation, the conclusion is, that the share of cereals may be increased in human *nutrition*. It should be taken into account, however, all possible effects of the norms prescribed by the WHO on the producers and their effects on the *food chain*, since on the other side, the reduction of non-food cereals production may be associated with the reduction of the consumption of foods of animal origin. It is predicted, however, by forecasts, that the produced amount of cereals will increase in the forthcoming period. After the nutritional question there is an economical question – according to the sustainable development of agricultural production it must be examine in different viewpoint – whether it is supported. Analysing consumer support of *cereals*, it became clear, that with the exception of rice, by means of tax reductions – which will appear also in prices – increase in consumption of cereals was promoted in the OECD member states and hereby the shift towards the WHO norms too as regards healthy *nutrition*. From this, the conclusion may be drawn, that cereals may be competitive in the future, since in interest of healthy *nutrition*, their position in the *food chain* and *processes*, consumption may be increased.

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