

THE ECONOMIC REVIEW OF SOY AS A SUSTAINABILITY FACTOR

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ABSTRACT

The expansion of soybean production is significantly influenced by Hungarian wheat and maize. Hungarian farmers remain reluctant to abandon wheat and maize, despite a price ratio heavily weighted in favor of soy. Considering their reluctance heretofore, it may come as a surprise that this is finally about to change due to high fuel and fertilizer prices. Higher prices for fertilizer proportionally increase the prices of grains, oilseeds, and protein crops and have even wider consequences as well. A World Bank analysis suggests that food prices are at such a dangerous level that they may begin to endanger political and social stability. Regionally, Hungarian soybean processing can replace imported products and do so at a lower price. This lower price would be created thanks to cheaper local labour and resources, such as those of the Serbian soy chain. The soy processors' geographical proximity, tradition, and experience in Vojvodina can serve the emerging Hungarian industry well. Efficient market interest can yet be achieved in Hungarian soy processing!

Keywords: soybean, soybean production, soybean processing

INTRODUCTION

Today the situation of soy bean production considered differently in the world. One opinion is that instead of developed cultivated land can not be increase further, can be grown cereals(wheat, maize) with success, expanding these exports we create the soybean import foreign currency coverage. The other opinion states that it is a real possibility and need to increase the cultivated area, that the main crops area has not changed noticeable (Varga, 1994). In the meantime the change of economic conditions rises but the possibility of a third option: the use of soybean for food. The raw material-producing forms and food processing factories are being forced efficiency increasing and accordingly modernization (Nagy, 2002).

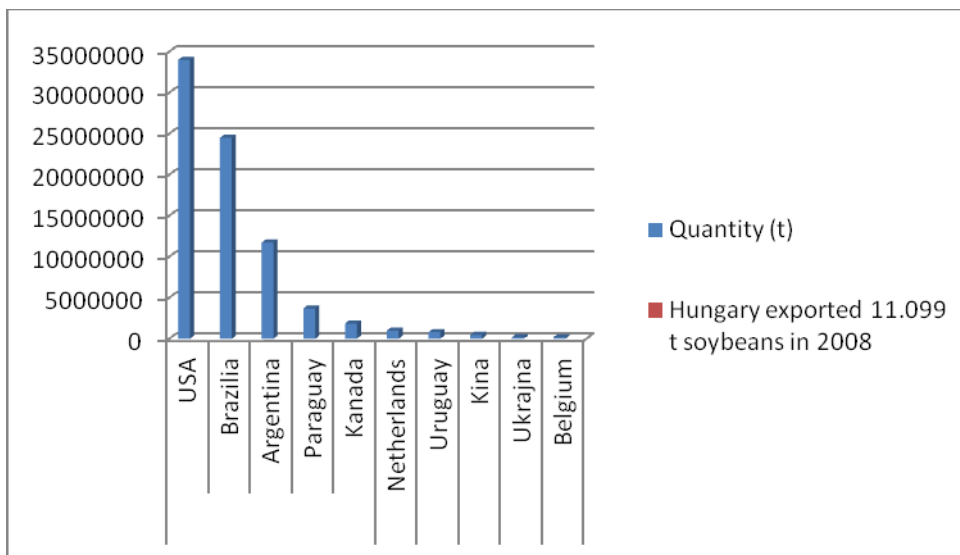
Our aim therefore was that base on the latest research results outlining the states of soybean production in Hungary and the formed opportunities in the processing and consumption in context of sustainability.

SOYBEAN PRODUCTION, PROCESSING AND CONSUMPTION TRENDS

Thousand of years ago China began to grow soybeans, and from there came to other Far East countries, then at the II. World War spread all over the world. Today China counts the largest importer in the world while in the exports the USA is on the first place (34 million tons), and Brasil (14.5 million tons) implies (Figure 1 and Figure 2).

Figure 1

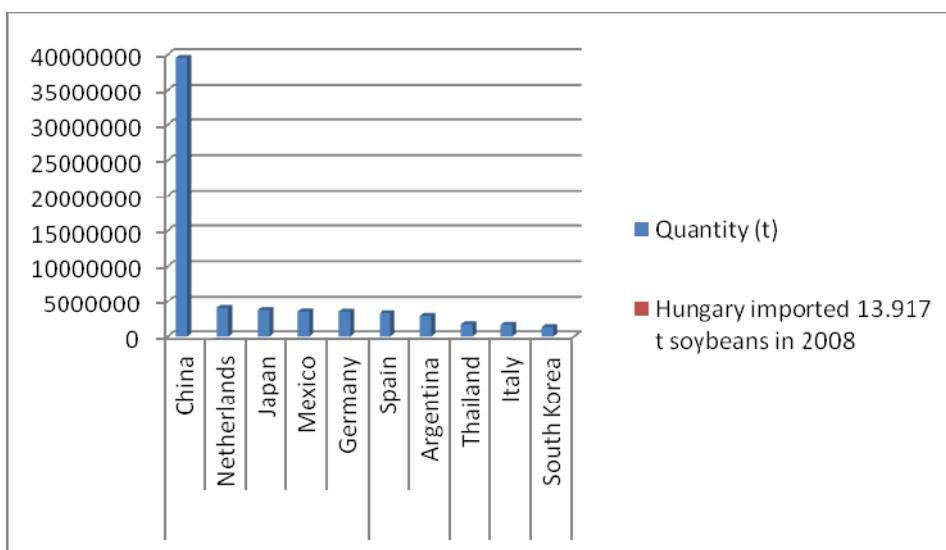
Countries who exported the most soybeans in 2008



Source: Blue Seed Kft., 2011

Figure 2

Countries who imported the most soybeans in 2008



Source: Blue Seed Kft., 2011

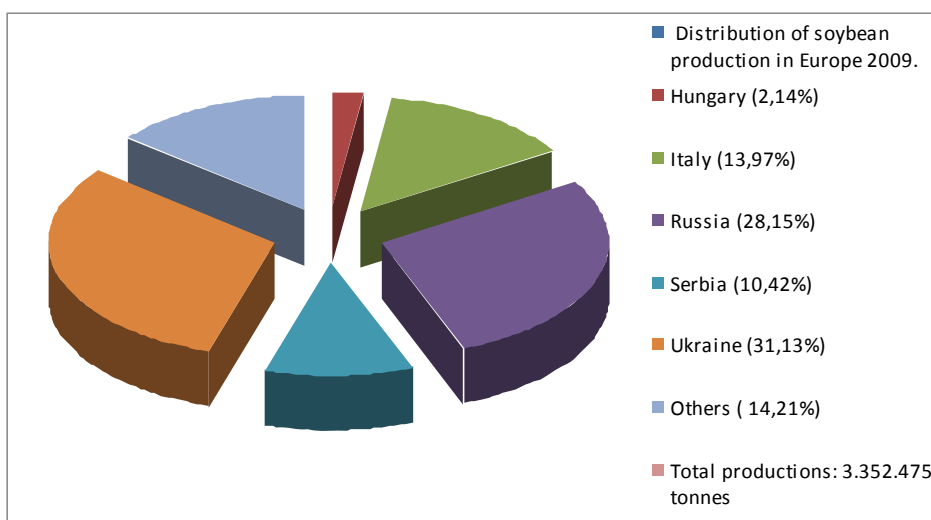
The relative weight of our Continent, the European Union in the global trade of soybean has been steadily declining.

In recent years the imports of soybean (about 14 million tons per season) represented 16.8% of the international produce sales, while the Union was the largest and most important costumer with 32.8% a decade earlier (Potori, 2011).

See the extruded soybean meal exporting countries Argentina is at the top. In European countries, the Netherlands excels in the design, the country with 4 million tons of soybeans and more than 5 million tons of soybean meal imports cover the 4.5 million tons of exports. It is obvious that the soybean and meal in international trade represents major interest, which benefits also use next to the home of tulips Germany and Slovenia. The Europe's soybean production was 3.35 million tons in 2009. The largest producer was Ukraine and Russia, from the EU countries Italy. Serbia's participation was 10.42%, Hungary's was only 2.14% (Figure 3).

Figure 3

Distribution of soybean production in Europe in 2009



Source: *Blue Seed Kft.*, 2011

In the EU-27 in 2010/2011 the protein crop acreage increased by 3%, thus slightly more than 1 million hectares. The EU soybean import was around 30 million tons. In relation to protein crop production of European Union it became apparent that would be recommended to increase the rate of protein plants although this is still significantly hinders. Need for these plants are especially from livestock. Another problem is that there is no uniform practice in the EU's support for protein crops. According to some position the market and not the state (the EU) should ramp-up production. If there is no demand in the EU for production of protein crops, the production ramp-up makes no sense. In relation of the European Production attention deserve on the sustainability criteria's, however, such products (eg. soy, canola) are also shown, which are not

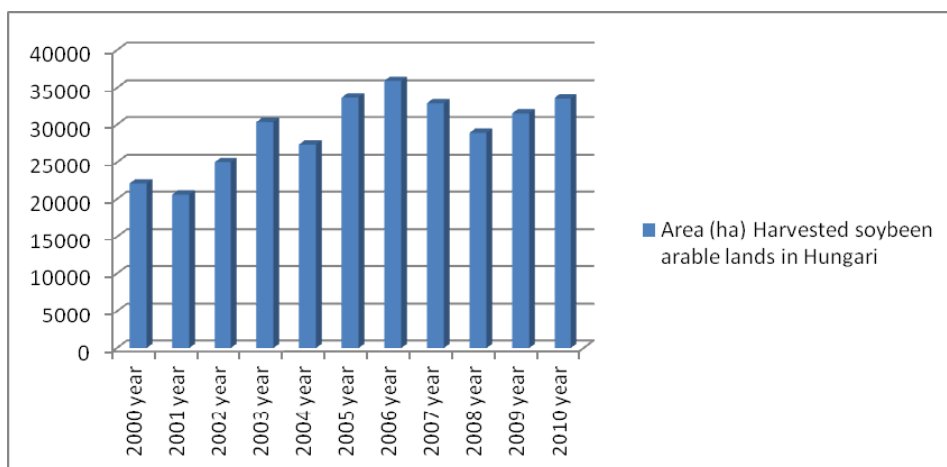
appropriate for the system of production in the strict EU criteria, for EU producers and it is a cause of disadvantage in competition (www.agrarkamara.hu, 2010). The ramp-up of European Union protein plant production held a discussion and was established that it would be desirable to increase the proportion of protein plants in order both the rotation and the conservation of biodiversity. But this is hampered by number of external factors. The demand for protein crops primarily depend on livestock, encouraged with production grant, but this so far the only Member State not associated with a significant expansion of production. In any case, the date suggest a reconsideration of imported soy feed, where near the current economic interests also calculates in long-term with the impact of economic decisions.

THE MAIN PARAMETERS OF SOYBEAN PRODUCTION IN HUNGARY

A soybean production areas in the previous 10 years, with minor fluctuations, but shows an increasing tendency (*Figure 4*). The largest production in the South-Transdanubian county of Baranya, which is primarily Bóly Co. integrators, research-development activity is due. The soil and climatic conditions of Somogy and Tolna counties are also suitable for production, since the yields in these counties exceeded the national 2 270 kg/ha.

Figure 4

Harvested soybean arable lands in Hungary 2000-2010



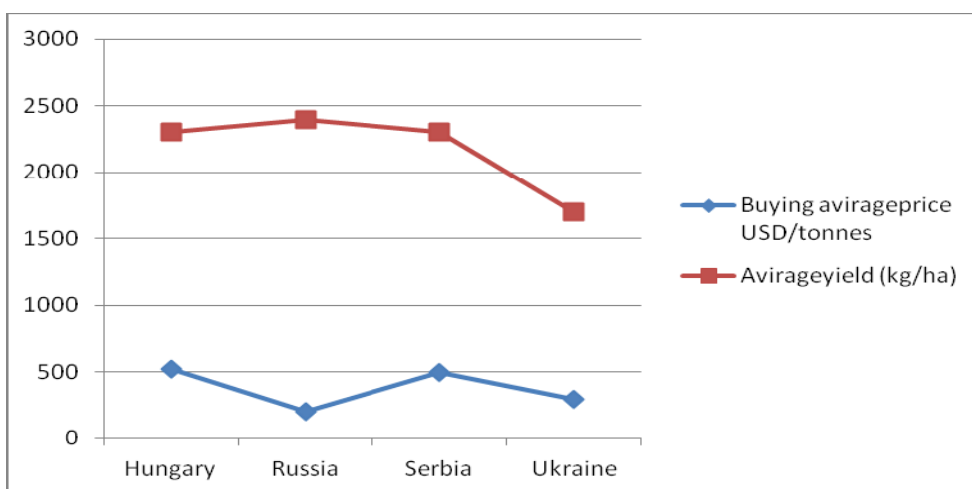
Source: *Blue Seed Kft.*, 2011

Characteristically, the soybeans can be grown successfully in areas where maize is plenty produced and therefore can buy more soybeans than the same land could produce (*Potori*, 2011). The economic calculations however are necessary to enumerate soybean and corn production costs, calculating relevant benefits of soy, taking into account the profitability impact of monoculture production damage. The

production of soy and soy products markets (animal feed-soya food ratio) depends on the economic calculations that determine the place of the soy products in the national economy and its role in agriculture. Soy purchase average price and yield evolution in Hungary of the 2000-2010 (Figure 5) shows that the cultivation primarily influences the actual purchase price, which is adapted to the prevailing world market price, or less than 200 USD/t and for 400-500 USD/t price level. This claim is supported by the supplied data in the main parameters of the European soya cultivation.

Figure 5

Buying price and average yield trends in Europe in 2008



Source: Blue Seed Kft., 2011

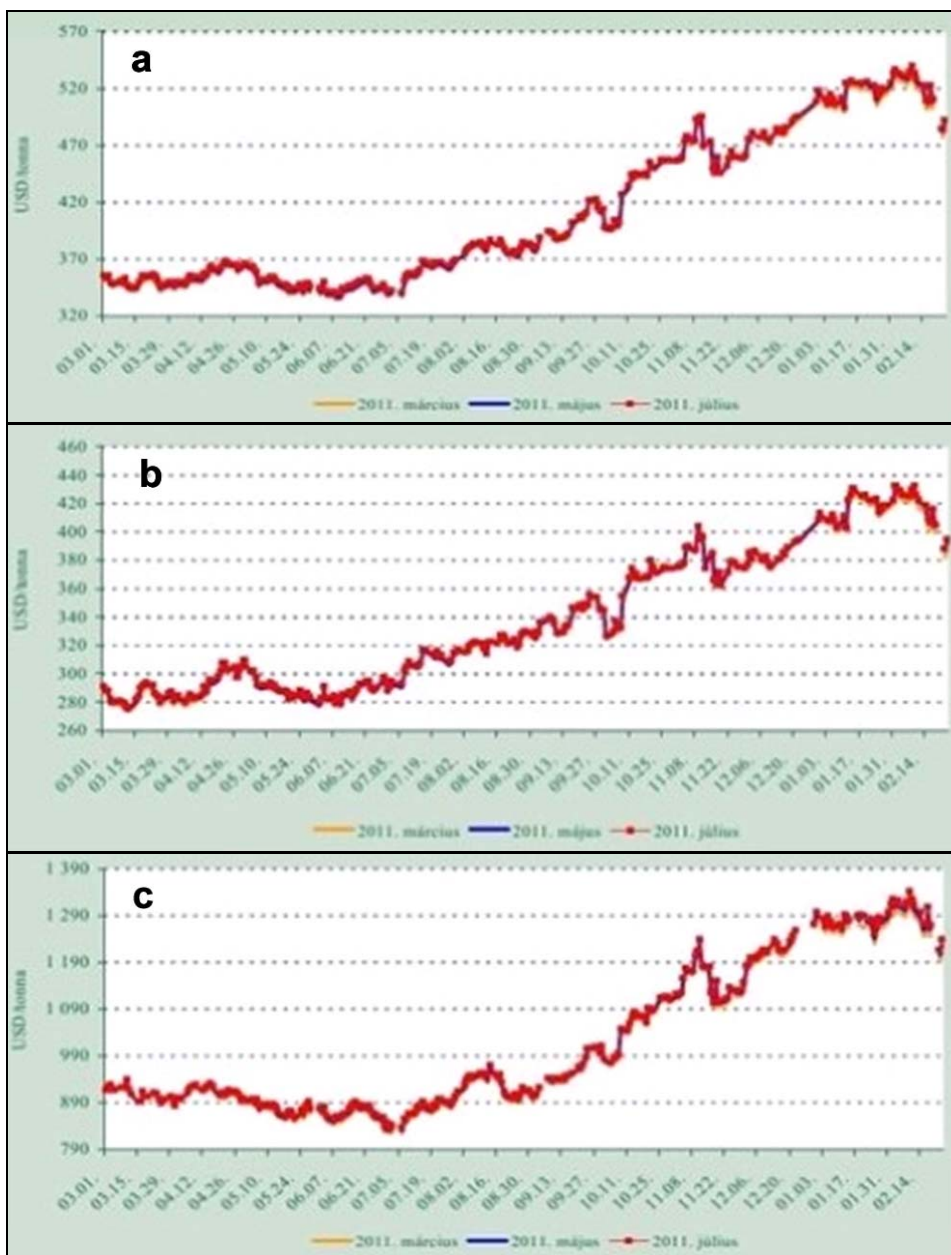
Established in summary, that imported soybean already does not harm the balance position of cultivation; only if it's more uneconomical than domestic production (Varga, 2011) satisfying the protein needs the domestic aspects depend on the economic results of calculations.

**THE ECONOMIC EVALUATION OF SOY
IN THE LIGHT OF SUSTAINABILITY**

Soybean production, processing and analysis of consumer trends, we examined their ability to resist the whole soybean verticum the external and internal shocks in the raw material for soy products. The hectic price changes are not necessarily leading to crisis, but that could be affected by the unstable financial environment, which may limit the development of healthy soy verticum. On the Figure 6 we can see the price of soybean, soybean meal (flour), soya oil in the Chicago commodity tax shows much higher trend with the 43-51% price rises, than the Figure 7 and Figure 8 canola and sunflower seed on the Budapest Stock Exchange compared to 35-40%.

Figure 6

The soybeans (a), the soy flour (b) and the soybean oil (c) quotes at different time on the Chicago commodity exchanges



Source: *Agrárgazdasági Kutató Intézet (AKI)*, 2011

Figure 7

Rapeseeds quotes in term on the Budapest Stock Exchange



Source: Agrárgazdasági Kutató Intézet (AKI), 2011

Figure 8

Sunflower seeds quotes in term on the Budapest Stock Exchange



Source: Agrárgazdasági Kutató Intézet (AKI), 2011

From all this it can be concluded that the price of soybean meal as a protein source in animal nutrition in a significant cost increase over the coming period compared to the canola and sunflower meal. This situation is somewhat shaded by a decreasing number of animals expected to be a pig and a hen farming.

In opinion of The Hungarian Chamber so agriculture, in EU will be 29% shortage of eggs, because on the Union's internal market irregularly held their hen and their eggs cannot be sold. This hinders the egg consumption and consumers will orientate

for the cheaper, alternative sources of protein, which represent a change to increase consumption of plant protein. In Hungary, the 2012th January 1, nearly a million chickens holding because impossible and the eggs what they produce will be unable to market within the EU under the current rules and ideas. Projected that, with the decrease of animal number the imported soybean for feed decrease. At the same time exhibit the chance emergence of plant protein in the diet, including the non-GM soy protein. We known that soybean prices at a higher price than 50-60 USD can be obtained, which can position the Hungarian soybean growers or groups of investors may appear who find interest in soy-food processing (*www.worldwatch.org*, 2010). The expansion of soy however is a significant influence on the Hungarian wheat and corn prices. The Hungarian agriculture persisted even while the wheat and maize production, which was a much better price parity in favor of soybeans. The high grain prices are not favorable for the growth of the soybean crop area. However, you may come as a surprise change of attitude in order to high fertilizer and fuel prices. The fertilizer prices follow the grain, oilseeds and protein crops, price increases, it can even exceed it. The expected rise in fuel is also a lot of surprises in store for the farmers, if for no other reason than the prolonged crisis in Libya.

MARKET POSITION OF SOY FOODS IN HUNGARY

To introduce soy foods for our everyday is not mean to leave food of animal origin. Soy foods like substitute product (vegetarianism and lactose intolerance) is a major success, however who has incorporated into the everyday with the consumption of meat and dairy, health improvement and better-being reported. In Hungary the consumer can choose mostly from a wide pallet of soy food in healthy food stores, drug stores and are likely to be targeted space there, because eating attitudes and customs so require. The different sized chain stores next to the milk products is soy milk with different flavoring and it is the demand for it, while next to the meat panels there is no potential range of soy products. Not to mention the division of salty and sweet snacks, where you cannot find a specifically „soy snack“.

The use of soy-food support that essential vitamins, micro elements, rich in fiber population, a high protein content (32-52%), which contains the easily metabolizable and human consumption of 20 essential amino acids not dispensable. Soy protein does not contain purine bases, which are the disease in blood pressure; presence essential fatty acid content of the ancient science of nutrition is recognized.

In Hungary, the majority of consumers are underestimates the soy foods, the majority opinion in damning them because of the beliefs, while the organic food stores, drug stores, supermarket chains, web stores, prices refer to high-quality food. Long-term goal of our research is to resolve this anomaly, consumer attitudes and understanding of the basis for the development of marketing strategy.

CONCLUSIONS

It follows that developed during long years of practice, that the cultivation of soybeans to the market conditions, regulatory and market-aligned. The farmers

prefer growing maize for feeding, which can keep the price of soy protein feedstuffs imports. Produce soybean for food however only worth if we can produced high-value-added end product.

In soy verticum we can speak about equity deficit, there is also missing a research and development, innovation and good marketing job. The topic should deal with the scientific research to give practical guidance to operators in the soybean verticum and encourage investors.

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