Background paper for the
Competitive Commercial Agriculture in Sub–Saharan Africa (CCAA) Study

Soybean
International Commodity Profile

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Soybean: International Commodity Profile [1]

1 Introduction

Over the last 20-30 years, consistent improvements in average yield levels and reductions in production costs have steadily improved the competitive position of soybeans among arable crops. Among oilcrops, soybean covers a leading role at the global scale: today, soybeans account for about 35% of total harvested area devoted to annual and perennial oilcrops. The crop's share in global oilseed output is estimated at over 50 %.

Soybean cultivation is highly concentrated geographically, with only four countries - USA, Brazil, Argentina and China - accounting for almost 90 % of world output. Asia - excluding China - and Africa, the two regions where most of the food insecure countries are located, together account for only 5 % of production. Among countries classified as undernourished, only India and Bolivia are significant producers of soybeans.

Soybean is a high value and profitable crop. The economic viability of soy production is determined by the commercial utilization of both its sub-products, meal and oil, which, respectively, account for about two thirds and one third of the crop's economic value. Soyoil and meal are consumed worldwide as food and animal feedstuff respectively.

Soymeal accounts for over 60 % of world meal production (vegetable and animal meal) and occupies a prominent position among protein feedstuffs used for the production of feed concentrates. Soybean oil is the second most important vegetable oil (after palm oil); it accounts for 25 % of global vegetable/animal oils and fats consumption. The widespread use of soybean oil in particular as edible oil is due to its plentiful and dependable supplies, its competitive price, and its neutral flavour and stability in both unhydrogenated and partially hydrogenated form. Moreover, the rapid rise in the demand for compound feed - und thus soya meal - has contributed considerably to the rise in soyoil production. Oil palm is a major competitor with soybean oil. Although the palm produces far more oil per unit area than soybean, soybean's role is expected to be secure because soya meal is in huge demand and oil is a very lucrative by-product. It is also true that oil palm is generally grown in different ecologies than soybean, so there is a certain amount of geographical complementarity.

A particular feature of the soybean economy is that considerable value addition occurs at the downstream stages of the production and processing chain. On-farm storage of soybean plays a minor role and small-scale processing and marketing at local level is only relevant in those - statistically less important - regions where soybeans are directly consumed as food. At the global level, the bulk of soybean output is stored and shipped in bulk to large-scale industrial units for further processing into oil and meal. Down-stream transformation and subsequent (export oriented) marketing of the end-products are separate economic activities that generate considerable value outside the agricultural sector *per se*, explaining the economic importance of soybean for the global food and feed industry.

In the major producing countries and particularly in Brazil, Argentina, Paraguay and the USA soybean contributes significantly to the total value added by the agricultural sector. In these countries, soybeans and its sub-products also occupy an important position in total export earnings. Among smaller producers only India and Bolivia earn significant income from the exportation of soybean and derived products.

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[1] Prepared by P. Thoenes, Trade and Markets Division, Food and Agriculture Organization of the United Nations. Statistical assistance was provided by Marco Milo.

At the farm household level, the bulk of the world's soybean production comes from medium to large-size farms that are characterized by capital intensive production methods and a high level of mechanization. In addition to producers in North America, this also applies to the average soybean farm in South America. The situation is different, however, in Asia (China, India, Indonesia, Japan, PDR of Korea, Thailand, Vietnam) and in Africa (Uganda, Nigeria), where soybean tends to be produced - sometimes predominantly - on a smaller scale, involving labour intensive cultivation methods. In these regions, the contribution of soybeans to the food security of small rural households tends to be relatively more significant, albeit its overall importance remains low due to the crop's limited role in total cultivated area.

2 Market Structure

2.1 Production pattern and related issues

Soybean (Glycine max L. Merr) has been grown as a commercial crop primarily in temperate ecologies for thousands of years, first in northern Asia and in more recent decades in North America and countries of the Southern Cone of Latin America. Agronomic advances have led to dramatic growth in the supply and utilization of soybeans worldwide since the Second World War. Best crop yields are obtained between latitudes 30 and 45 degrees on either side of the Equator. Today, the share of soybean in global oilseed production averages around 55 %, and over the last ten years world soybean production has expanded at a rate of over 5 % per year on average (see figures in Appendix table 1). The USA, Brazil and Argentina account for a combined 82 % of global output; they are followed, at considerable distance, by China, India and Paraguay, which, together, account for another 13 percent of world production. Among these countries, production has expanded fastest in Argentina and Brazil; in the USA, China and India growth has been considerably slower. The list of soybean growing countries includes several other, smaller producers; countries where production has expanded at an above average rate include Bolivia, Uruguay, the Republic of South Africa, Uganda, Romania, the Ukraine, the Russian Federation and Vietnam.

Biotechnology

Soybean is one of the crops where recent advances in biotechnology applications have been particularly important. Consequently, commercial production of genetically modified soybeans has risen sharply in recent years, with important repercussions for production, consumption and trade. In the world's three largest producing countries, the USA, Brazil and Argentina, about 70-90 % of soybean produced consists of GM varieties. On the consumption side, the advent of GM soybeans and other food crops has created considerable debate following consumer concerns about the safety of GM products. Although production and marketing of GM products are increasingly regulated by national policies to guarantee biodiversity, biosafety and, in particular, food safety, policies tend to differ considerably between countries, with important implications for trade, notably the development of distinct processing and marketing chains for GM and non-GM soybeans and products (see also below section on policies).

Sustainability concerns

In recent years, concern has grown about expansive mono-crop soybean in fragile ecologies such as the savannahs of Brazil. Some of these problems are being addressed by changes in production practices of farmers with technical support from research institutions. One of the biggest improvements is the rapid farmer adoption of zero tillage technologies in both North and South America. Today, Brazilian farmers are world leaders in the adoption of no-till in response to environmental concerns and also because it improves their income. Conservation agriculture based on zero-tillage technologies is being promoted for small as well as largeholder farmers in many production systems and ecologies. Another improvement is crop rotations including maize, rice, wheat and in some cases the incorporation of under-sown pasture and other cover-crops to ensure soils are

protected from erosive forces. Overall, extensive soybean cultivation and the expansion of agricultural frontiers continue to create concern; they entail rising environmental costs and can generate social conflicts between producers and local communities. Today, improved policies on responsible and socially viable use of forest margins and the adoption of good agricultural and forestry practices have been introduced or are under consideration in several countries, for example in Brazil. Furthermore, the private industry together with social society groups has launched a global multistakeholder initiative with the goal to promote environmentally sustainable, socially equitable and economically viable production, processing and trading of soy.

Suitability of soybean for tropic and subtropic regions

The remarkable success of the soybean in temperate zones is well known, but there is also a good potential role for the crop in many cropping systems of the tropics and subtropics, where farms tend to be smaller and less mechanized. Smallholder participation in development is a major concern with regard to soybean expansion and utilization as it contributes to sustainable development. The driving forces for growth of smallholder based soybean production include (i) potential increases in farm family income to help lift farmers out of poverty, and (ii) in relation to sustainability, the need for an easy-to-grow, leguminous rotation crop. Farmers need to rotate crops to break disease and pest cycles and to maintain soil fertility, and the rotation crops need to be profitable. There are other options for rotation crops, but soybean can be a good choice especially when other legumes are subject to heavy insect and disease pressures and where there is a clear market link from the grower to the industry. In this respect, soybean is one of the few choices where major expansion in production area appears feasible due to further rising demand in the vegetable oil and feed sub-sectors.

Soybean cultivation in tropical areas faces a number of constraints which, however, can be overcome. The initial problem that most commercial high-yielding varieties from temperate ecologies flower too early under the short day-length conditions of the tropics has already been overcome through breeding programmes such as those in Brazil, India, Thailand, Nigeria, etc. Another constraint - the effective symbiosis with rhizobium for nitrogen fixation - has also been largely overcome. The issue of poor seed longevity of soybean stored between growing seasons in humid tropical zones remains problematic. For this reason, soybean is often excluded as a crop option in humid ecologies unless sophisticated seed processing is available. In some cases this seed viability problem is being managed by transporting seed at the time of planting from dry areas, where seed keeps well. Varieties can be developed with improved seed longevity but sustained efforts are required. Like for other crops, pest and disease control in soybean can be problematic, requiring IPM approaches to reduce costs and environmental problems.

Access to local markets appears to be the main constraint in many developing countries in the tropics and sub-tropics where local soybean production could improve farmer incomes and the sustainability of the production system. Often soybean is imported into countries by the local vegetable oil and feed industries and as a consequence no demand for the crop is felt in the farming community. Where good market links from processors to local farmers have been made, as in Nigeria and especially in India, the farmers generally respond and the crop finds a good home in diverse cereal and root crop based production systems. Farmer incomes improve and the production systems become more sustainable. The rate of smallholder-based soybean production increase in India is one of the most remarkable stories in recent agricultural history. Many farm communities where the crop has found a niche have had substantive improvements in income and quality of life. Soybean can be a valuable alternative crop for many small-holder producers.

Production policies

The levels of support provided to the oilseed sector depend *inter alia* on the development of market prices and, in recent years, relatively firm prices in the oilseed complex have resulted in lower domestic support payments, e.g. in the USA. Among developed countries, over the years there has also been a gradual shift away from traditional market price support for individual crops towards non-

commodity specific and cross-sector policies aiming at income stabilization (e.g. in the EU). As soybeans and its products are also an important export commodity for several developing countries, a number of them provide support to their soybean industries. In Brazil, small soybean farmers regularly enjoy access to subsidized credit and, on occasion, the sector as a whole has received assistance in the form of a temporary price support scheme. Minimum support prices for soybeans are regularly used in India and Pakistan, and in Japan soybeans are included in the public income stabilization and crop insurance programmes. In Mexico, soybeans are included in the government's programme of income support payments. Measures to stimulate the growth of the soybean sector are in place in several countries, including Bulgaria, China, Colombia, Indonesia, Nigeria, Romania, the Russian Federation, Serbia and Uzbekistan. In some countries, assistance to soybean growers and processors is also provided through measures that regulate domestic marketing (e.g. in India and Ecuador).

2.2 Consumption - soya oil and meal

Soybean oil and soya meal account for about 25 and 65 % of, respectively, global consumption of oils/fats and meals/cakes. While soybeans are produced in a limited number of countries only, they are widely traded and the respective oil and meal is available in almost every country in the world (see figures in Appendix tables 2-3). World soybean oil and meal consumption have grown steadily (at 5-6 % per year on average during the last 15 years) thanks to rising demand especially in developing countries where consumption is spurred by economic growth and expanding population.

Soya oil

Globally, annual per caput soya oil consumption is estimated around at 3 kg. However, when disaggregated, consumption levels differ widely, with average consumption levels in industrialized countries almost three times that observed in developing nations. Also the share of soybean oil in total vegetable oil consumption or total oils/fats intake varies considerably between regions and countries, depending on numerous factors such as the availability of locally produced oils, consumer habits and preferences, local and international market prices and national trade policies. Overall, during the last two decades, two oils, soyoil and palm oil, have strengthened their position vis-à-vis all other oils and fats, with palm oil recording the fastest growth rates. The two oils are close substitutes and both products are widely traded - at comparable price levels - on the global market.

Regarding vegetables oils/fats in general, available statistics indicate that consumption tends do increase faster in poor countries than in middle- and high-income countries, and some national studies seem to confirm that extra income enhances fat intake of the poor more than that of the rich. Consequently, in the long term (i.e. by the year 2030), FAO anticipates oilcrop products to account for as much as 45 out of every 100 extra kcal added to average diets in developing countries, which implies a continuation and intensification of recent trends. Relatively high income elasticities of demand explain why there is considerable scope for increasing average per caput consumption of vegetable oils in developing countries. Soyoil, together with palm oil, is well placed to play a central role in this expansion.

For a detailed discussion of specific nutritional and health aspects regarding soybean oil as well as soya food consumption please see Annex I.

Biofuel

In recent years, following the rise in mineral oil prices, soybean oil has received increased attention from both policy makers and private investors as feedstock for energy generation either through direct burning as fuel or as raw material for bio-diesel production or in various intermediary forms.

Soybean oil is one among several feedstock used for biofuel production. The so-called 'first-generation' biofuels are based on vegetable oils, grains, roots and tubers. Currently, global biofuel

consumption is dominated by bioethanol which is derived primarily from sugarcane, maize and other starchy crops. Biodiesel using vegetable oils as feedstock comes only second. The different types of biofuel compete with each other at the national and international level - based on production and marketing costs and, more importantly, government policies - especially national support programmes to promote biofuel consumption.

Today the most widely used feedstock for biodiesel production is rapeseed oil, followed by sunflower oil. Lower priced soy oil and palm oil range at the bottom end. This order is mainly determined by the level of public support granted to the various vegetable oils in the countries concerned. Currently, the USA is the only country where significant amounts of soybean oil are regularly used for biodiesel production on a commercial scale. However, based on production costs and current support schemes currently applied in the USA, the bulk of the country's biofuel consists of maize-based ethanol. As a result, short term prospects are for maize plantings to expand - driven by rising biofuel demand - at the expense of soybean cultivation.

Soybeans are also being considered as biofuel feedstock in several other producing countries. Overall, accurate estimates on future national and global demand for soybeans from the biofuel industry will only become available once agricultural markets have adjusted to this new source of demand and when long-term bioenergy policies have been defined more clearly in the various countries. Finally, it is important to mention the growing interest in so-called 'second generation' biofuels, which, in the longer term, may cause demand for soybeans and other biofuel feedstock used at present to fall again.

Soya meal

Also soya meal is widely consumed and has penetrated markets in most regions - thanks to the progressive expansion of intensive livestock production methods (which are based on the use of high protein compound feed) not only in developed countries but also in parts of the developing world, e.g. broiler production in Asia. Although traditionally over 50 % of global utilization occurs in developed countries, annual consumption growth in developing countries by far exceeds the expansion recorded in developed countries, mainly reflecting changes in consumer habits triggered by income growth. However, it needs to be emphasized that in the diet of low-income and chronically food insecure populations meat consumption generally continues to occupy a secondary role as most of the protein consumed tends to come from vegetable origin.

Consumption policies

In a number of countries consumers of soybean oil enjoy protection through regulated retail prices, while in others the marketing of soybean oil is subject to regulations for reasons of consumer health protection. Labelling requirements to educate consumers about the nature, origin and ingredients of soya oil (as well as other oils) have become increasingly important. The presence of GMOs in soybean products is of particular relevance in this regard.

2.3 Trade in soybeans and derived products

In general, oilseeds and their products are intensively traded commodities - and soybean is no exception in this regard. Globally, close to 30 % of oilseeds produced enter trade and in the case of oils the share exceeds 40 % (compared to less than 20 % for the majority of other grains).

During the last decade, global trade in soybeans, soyoil and soymeal has expanded by an average 6-7 % per year (see figures in Appendix tables 4-6). Within the soy complex, beans account for about half of the total value of trade. The shares of soymeal and soyoil amount to 35 and 15 % respectively, while that of soya foods is negligible. Soyoil occupies a key position in global vegetable oil trade both in volume and value terms. However, over the years, palm oil has become a major competitor, and the

two oils directly compete for market share, based on their relative price. Soymeal, on the other hand, as a high value ingredient for compound feed, occupies a leading position in global feedstuffs trade.

The widespread consumption of soyoil and soymeal rests on the exportation of soybeans and their products by a few major producing countries to a large number of importing countries. The key producing countries export a combination of beans and their two subproducts, depending on the requirements of the market and domestic policies. A main feature of the export market is its high level of concentration, with five countries (two developed and three developing) accounting for over 95 % of the market. The main competitors are USA, Brazil and Argentina.

A large number of countries import soybeans and/or products for domestic consumption and, in some cases, for re-exportation purposes. Depending on domestic demand, which is also determined by the structure of the local processing industry, countries import either the primary product (soybeans) or directly soyoil and/or soymeal. In recent years, importing countries started shifting from the importation of soyoil or meal to purchases of beans in an effort to promote processing - and thus value addition - at the domestic level.

Among buyers of soybeans and products, three countries stand out: China and India as relatively new but major players, and the EU as a traditional buyer. Over 60 % of total soybean shipments are destined to China and the EU. With regard to soy oil, China and India together account for almost 40 % of world imports. And regarding soya meal, the EU alone purchases close to 50 % of meal traded. Among smaller buyers the following have reported above average import growth rates: Thailand, Turkey, Islamic Republic of Iran, Morocco, Egypt and Colombia for soybeans; Indonesia, Japan, Mexico, Vietnam, Peru, Chile and Algeria for soymeal; and Morocco, Algeria, Republic of Korea, Peru, Egypt, Republic of South Africa and Chile for soyoil.

Overall, over the last 10-15 years, developing country imports of soybeans and derived products have roughly tripled in volume terms. This group of countries contributed to about three quarter of the expansion in global trade, reaching market shares of over 50 % and 70 % for, respectively, soymeal and soyoil in recent years. The extraordinary growth experienced by global trade in soybeans and products has thus been driven by economic expansion in developing countries, with Africa and in particular Asia playing a central role. Among developing countries, the contribution of imported soybean products to the rising average intake of dietary energy and protein has been of utmost importance. Typically, imports have expanded where domestic demand has expanded faster than production. As a result, the contribution of net imports to domestic consumption has risen in numerous developing countries in recent years, in some cases involving big upward leaps in import volumes, with corresponding surges in import bills. Outstanding examples include China and India. In the former, roughly one third of domestically consumed soymeal originates from imported soybeans, while in the latter almost 40 % of domestic vegetable oil supply is covered by imports.

Global market concentration and its implications

Over the last decades, the global soybean economy has undergone important changes under the influence of technological innovations, national and international policy measures and gradual shifts in demand. In the process, South and North America established themselves as the world's leading producers and suppliers of soybeans, aided by a rich natural and financial resource base, the swift introduction of new technologies and production incentives coming from government support programmes and other national policies.

This process has resulted in today's global soybean economy being characterized by a high level of concentration and specialization throughout the commodity chain. The type of technological advances introduced in soybean cultivation and processing have been such that economies of scale have become a key determinant for the industry's structure at the national and global level. High investment costs involved in soybean cultivation, storage, crushing and marketing have fostered both, vertical integration within the sector as well as horizontal operations across commodity sectors and countries.

As a result, today's global soybean economy tends to be shaped by a relatively small number of countries and international business conglomerates that control a highly competitive and mature market. Strong price competition, high levels of market concentration and further private sector consolidation are expected to continue and possibly intensify in the coming years, driven by increased pressure from competing commodities (e.g. palm oil) and the prospect of further technical innovations, particularly in the area of biotechnology.

The above described structure of the industry seems to explain why small countries/producers in Asia or Africa are facing considerable difficulties in taking up commercial production of soybeans. In these countries, which normally have easy access to imported soy or palm oil, price competition is increasingly felt down to the level of rural markets, thus lowering farmers' production incentives. This situation also undermines private sector investment into research and development of locally adapted soybean varieties. These disincentive effects are compounded by the recent tendency of governments to scale down direct production support and related protection measures, which, in the case of oilcrop products, seems to lead to increased integration into international markets and rising levels of import dependence.

Therefore, although technically feasible and generally desirable from an agronomic, income generation and nutritional point of view, the prospects for a widespread introduction or significant expansion of soybean cultivation in low-income, food-insecure countries in Asia or Africa remain uncertain (notwithstanding some positive exceptions like India and Nigeria[2]). For most countries, diversification into other commodity sectors that offer better market opportunities at the local, regional or international level may be more remunerative than moving into soybean cultivation, where, in addition to facing highly competitive international markets, producers would need to overcome a technology gap.

The situation described above also has national food security implications, which are discussed in Annex II.

Trade policies

In some countries, notably developed ones, public production support and market protection continue to favour economically less efficient production of oilseeds, thereby distorting trade in the global oilseed economy. However, compared to other arable crops and commodity sectors, the oilseed economy (including the soybean industry) features among the less supported sectors - globally and among developed countries in particular.

Policies to regulate trade in oilseeds (including soybean and its products) have undergone gradual liberalization over the last 10-15 years under the influence of multilateral trade negotiations. The sector has benefited from increased transparency and progressive reductions in import tariffs for soybeans and its products. However, some countries have resorted to non-tariff measures to control imports, partly as a complement to production policies where less intensive use is made of price guarantee schemes, government procurement and other forms of direct market intervention. The use of tariffs and import control measures to protect domestic producers tends to intensify when market prices are low and vice versa. Relatively firm prices in the soy complex in recent years appear to have reduced recourse to import control measures.

Import measures: In general, developed countries are either natural exporters or non-producing consumers of oilseeds and therefore their tariffs have traditionally been low. In developing countries, by contrast, the WTO-bound tariffs tend to be high but are rarely applied, leaving room for protective

[2] Measures to encourage soybean production are of interest when implemented in the context of policies to diversify cereal and root crop based production systems. The nitrogen fixed by soybean enhances the productivity of other crops in the system, and India and Nigeria are examples where soybean has been promoted in this context.

measures. Several developing countries follow a dual objective in their import policies: assurance of sufficient supply of affordable vegetable oil and protection of domestic farmers and processors. As a result, tariff rates and other trade control measures are frequently adjusted to react to consumer or producer needs. In the last few years, border protection has been phased out in a number of countries (e.g. Japan) while in others tariff rate quotas have been introduced (e.g. Republic of Korea). However, high import tariffs remain in place in a number of countries (e.g. India, Turkey) - either to protect the domestic (and export oriented) industry or to encourage domestic production in cases where a significant share of domestic consumption is imported. Furthermore, tariff escalation remains widely used in the sector to encourage the importation of primary product imports (i.e. beans as opposed to oils and meals) and their processing in the importing country so as to increase domestic value addition. Examples include Pakistan and India. In China, following a reduction in tariffs, the importation of soybeans was initially restricted by non-tariff measures, but since then most trade restrictions have been lifted. Generally, technical measures focusing in particular on GMO and food safety issues are playing an increasingly important role. Both developed and developing nations have become concerned with these aspects and are introducing regulations to prevent imports of sub-standard goods, to test GMO content and to allow full product traceability.

Export measures: Export policies are less widely used in global trade in soybeans and products. Some traditional exporters of soybeans and products employ policies taxing exports to assure domestic availabilities, raise tax revenues or control inflation (e.g. Argentina), while others promote their products to increase shipments (e.g. United States). In Argentina, export taxes are set in such a way that the exportation of oils and meals is favoured over that of beans. In most other countries, including Brazil, governments do not regulate the exportation of soybeans and its products. In general, exporters are concerned that importing countries resort to non-tariff measures to limit imports in the wake of WTO commitments to reduce tariffs and phase out direct production support.

2.4 International Prices

North Western European ports, in particular Rotterdam, are the dominant import destination used to quote international prices of soybeans, soya meal and soyoil. The development of spot prices for nearest forward shipments of soybeans, soya meal and soy oil is illustrated in the statistical appendix, both in nominal and real terms (see table 7 and figure 1). Over the last two decades, international prices for soybeans and products have experienced marked up/downward swings caused by a variety of factors. Overall, a downward trend can be detected, mainly resulting from a gradual rise in yields and a marked decrease in the costs of production for soybean and derived products (as well as for competing crops, in particular oil palm).

Futures markets are important for the trade in particular of soya beans. The production and processing of beans are seasonal activities, requiring elevators and processors to acquire stocks that may be held in inventory for long periods of time. The futures market, by indicating the differences in the prices prevailing for spot and future sales, enables inventory holders to calculate the approximate return they will obtain by holding stocks. The Chicago Board of Trade is widely considered as the world's most important futures market for soybeans and products.

3 Market Situation and Outlook

For the oilseed complex as a whole, the prospects emerging from the latest FAO-OECD projections exercise covering the 2006-2015 decade are summarized below.

- world oilseed, oilmeal and oil markets are expected to continue expanding during the projection period, though at a slower pace than during the previous decade;

- main factors driving this development are (i) improvements in productivity, (ii) continuing rise in area planted to oilseeds, (iii) rising demand for oils and meals as population and incomes grow, especially in developing countries, and (iv) below average supply and demand growth in developed countries;
- compared to other basic food crops (rice, wheat, coarse grains), trade in oilseeds, meals and oils is projected to continue expanding at a faster pace; also the portion of global oilseed, meal and oil production that enters trade remains well above that recorded for other basic food crops;
- regarding prices, the projections lead to the expectation of a moderate long-term rise in nominal prices for oilseeds and vegetable oils, while oilmeal prices are projected to stagnate at the relatively low level recorded around the year 2000. In real terms, this translates into a progressive slight weakening of prices for oilseeds and oils, and a more pronounced fall for meal prices;
- the bulk of the projected expansion in global demand for vegetable oils and meals is expected to occur in developing countries, although in terms of per caput consumption these countries are anticipated to remain well behind the group of the developed countries.

With specific reference to soybeans and their products, tentative calculations provide the following outlook (see figures in Appendix table 8).

Soybeans

Global soybean production is projected to expand around 23 % over the next decade, growing on average, about 2.5 % per year, compared to 5 % during the past decade. Behind the slowdown are a marked decrease in the yearly expansion of area planted to soybeans in Argentina and Brazil and a stagnation of planted area in the USA. Yield improvements are expected to be modest in developed countries and more pronounced among developing country producers, as the latter will have increased access to advanced genetic engineering techniques. Global soybean production is anticipated to continue to be dominated by producers in the Americas. The share of the USA share is anticipated to decrease to the benefit of South American producers, which are expected to drive overall growth in world oilseed production. In China and India, soybean production should continue to grow by less than one percent per year. With regard to exports, close to 95 % of the anticipated growth in global oilseed shipments are expected to consist of soybean exports from South America, notably Brazil, Argentina and Paraguay, where export volumes are expected to rise 6-8 % yearly on average. The three countries together should account for 70 % of all soybeans shipped in 2015 (compared to about 55 % today). By contrast, shipments of soybeans from the USA are anticipated to stagnate around current levels. Global soybean imports are anticipated to expand by 3 % annually during the next decade (half the rate recorded in the past), with much of the expansion continuing to occur in developing countries in Asia, in particular China. China's soybean imports are estimated to rise by 5 % annually, or 75 % in total. At this rate, in 2015, the country's share in global soybean purchases should exceed 50 % and the degree of China's reliance on foreign suppliers will have increased further.

Soya oil

Rising population and income growth are expected to stimulate global consumption of vegetable oil, propelling soybean oil consumption in 2015 to increase by 25 % compared to today's level. The implied annual growth rate of 2.6 % compares to a rate of 6 % during the last decade - a trend that *inter alia* is explained by the expected firmness in the prices for vegetable oils. Most of the projected expansion in global demand is expected to originate in developing countries, particularly in Asia. The ranking of the key consuming countries is estimated to remain unchanged, as are their shares in global consumption. The sharp expansion observed in the last decade in China and India is anticipated to experience a slow down. Global trade in soybean oil is projected to expand by about 20 % over the next ten years, growing, on average, about 2 % per year (compared to 5 % during the past decade). Factors contributing to this slow-down include the following: (i) the anticipated price firmness on world markets, (ii) markedly reduced growth in import demand by the two leading importers, India and China, and (iii) considerably slower growth in shipments of the two major exporters, Argentina

and Brazil. Compared to the main competing oil, palm oil, the weight of soybean oil in global vegetable oil trade is anticipated to fall further. While India's annual growth in import demand is expected to fall to 3-4 %, there should be virtually no growth in China where a higher portion of domestic demand is expected to be covered by soybean (rather than soy oil) imports. Regarding soyoil exports, Argentina and Brazil are expected to continue accounting for, respectively 52 and 26 % of the market. Export availabilities in the USA and the EU are estimated to fall.

Soya meal

A world increase in livestock production (driven by income and population growth that raises demand for meat products) is estimated to result in a 27 % rise in global soya meal consumption between 2006 and 2015 – barring further outbreaks of animal diseases, which would depress growth. Most of the expansion is expected to occur in developing countries and, by 2015 more than half of the world's soymeal consumption is estimated to take place in that group of countries (which implies that developed countries are going to lose their dominant role). Projected annual growth rates of 1-2 % for the EU and the USA compare to rates of 5 % in the case of China and Brazil. Global trade in soymeals is anticipated to expand by less than 2 % annually (compared to 6 % in the past ten years). As to imports, the EU will remain by far the largest buyer, accounting for almost half of global purchases. The slow down in the annual expansion of imports is expected to occur in all important buying countries. On the export side, Argentina, Brazil and the USA will continue to provide, together, close to 90 % of all soymeal shipments. Argentina's market share is anticipated to grow at the expense of the other two countries.

Annex I - Nutritional and health aspects

Yielding the second most consumed vegetable oil world-wide, soybeans are important for human nutrition, in particular in developing countries. The contribution of oils and fats to human diets is best estimated by measuring their contribution to overall available dietary energy supplies (DES) expressed in calories. While total oils/fats in the diet (from all sources and in whatever form) account for about 24% of DES globally, the percentage figure is 21 for developing countries and 33 for developed nations. Among developing nations, this percentage appears to be consistently below the group average in countries with a high prevalence of hunger. furthermore, when the contribution of soyoil to total caloric intake from oils and fats is measured, the following picture emerges: globally, soyoil occupies and important position in the diet; its role tends to be more important in developed than in developing countries, though variations at the regional and sub-regional level appear to be considerable.

The nutritional value and health benefits associated with the consumption of soyfoods on one hand and soy oil on the other are discussed in detail below, with particular attention paid to the situation of developing countries.

Soy-foods

The consumption of soy-based foods derived from the whole fresh bean has a long tradition in numerous Far Eastern countries (Taiwan and other parts of China, Japan, Indonesia, DPR Korea, Rep. of Korea, India, Thailand, Vietnam) as well as in specific pockets of Africa (notably Nigeria and Uganda). Traditional soyfoods - such as miso, tofu, tempeh, soya sauce etc. - are derived either directly from the whole fresh bean or after processing of the bean into soymilk and are consumed either in fermented or non-fermented form. In the recent past, the range of soyfoods has expanded to include (i) fresh beans and sprouts, (ii) dairy substitutes such as soy milk, cheese etc., (iii) grain products such as soybread, pasta and flour, (iv) meat substitutes, and (v) soy spreads and pastes. Although, in recent years, soyfoods have been introduced in many more countries in the developed and developing world, the share of domestic soybean supplies intended for direct consumption (as opposed to crushing) remains below 10% at the global level, an average figure that masks strong differences between main geographical regions.

Soy-foods are considered to be nutritious and healthy based on their nutrient composition which includes protein, fat, carbohydrates, dietary fibers as well as minerals and phytoestrogenes (or isoflavones). With regard to the latter, recent scientific studies associate the consumption of phytoestrogen-rich diets – e.g. Asian diets rich in soybeans - with a lower risk of the so-called "western" diseases, i.e. coronary heart diseases, osteoporosis, hormone-dependent forms of cancer and menopausal symptoms. The health-benefits of isoflavones contained in soyfoods have been explained by their structural resemblance to endogenous oestrogen, showing oestrogenic and anti-oestrogenic properties as well as anti-oxidative, anti-proliferative and anti-angiogenic properties which are non-hormonally dependent.

Based on the above and considering the economic and technical limitations prevailing in tropical developing countries, the direct consumption of soybeans as a nutritious food that is economically accessible for large parts of the population appears to be appealing. However, the observed slow spreading of soyfoods outside the traditional areas of consumption seems to suggest that a relatively low level of consumer acceptability of these products stands in the way of a significant expansion in consumption.

Soy oil

Soybean oil is intensively consumed vegetable oil worldwide. Although it is also used as cooking oil in private households its main use is that of key fat ingredient in industrial food manufacturing, where, together with palm oil, it represents the most commonly used fat.

The role of oils and fats in human nutrition - and specific health aspects associated with their presence in the diet - deserve particular attention. Of particular interest is their potential contribution to the prevention of diseases. In general, the incidence of chronic, non-communicable diseases (NCDs) is growing rapidly. In developing countries, these diseases exist alongside hunger and undernutrition and are becoming increasingly important. Reportedly, one major determinant of this growing health burden is the so-called 'nutrition transition' observed in many developing countries, that is rapid socio-economic, demographic and technological changes in society that induce a shift in habitual dietary consumption. Nutrition transition affects vegetable oil consumption in developing countries, in that urban as well as rural populations are undergoing a gradual shift away from traditional, locally produced oils and fats towards other, readily available and attractively priced vegetable oils, notably imported soy oil and palm oil.

In this context, an evaluation of consumption trends against broad population nutrient intake goals is of interest. With regard to ranges proposed for the total intake of oils/fats, available data suggest that, on average, total fats intake is within recommended ranges in developing countries but has exceeded the upper limits in developed countries. A number of developing countries, notably in Sub-Saharan Africa and South Asia, are expected to remain below the recommended lower limits. However, a growing number of developing nations are anticipated to reach and then exceed the recommended upper limits. And many mid-income developing countries and most developed nations will rapidly exceed the recommended upper consumption limits, often by a considerable margin, leading to malnutrition and potentially raising the exposure of populations to health risks. The observed rise in soy and palm oil consumption may thus be associated with benefits as well as disadvantages and risks depending on the country and population group concerned.

Nutrition goals also refer to the desirable fatty acid composition in the diet. Each oil/fat is characterized by a particular fatty acid pattern, and maximum and minimum levels have been proposed regarding the presence of individual fatty acid groups in diets. Reportedly, diets with potentially negative health implications are those where saturated fatty acids and/or trans fatty acids are in excess of certain desirable levels, while diets including oils/fats rich in mono or poly-unsaturated fatty acids tend to be considered as more healthy.

Research on the proportion various fatty acids have in the diet of individual countries and population groups (depending on the oils and fats consumed) would be important. However, the assessment of consumption trends by population groups or countries requires detailed information on the pattern of oils/fats consumption, based on representative individual and household consumption surveys in both urban and rural environments. At the present time, such information is not available, and thus no further conclusions can be drawn.

In summary, it is important to recognize, in many developing countries, the coexistence of conditions which predispose them to the "double burden" of undernutrition on the one side and partly diet-related diseases on the other - a circumstance that further complicates the assessment of the role of an individual foodstuff like soy oil in the food security context. While soyoil can be expected to maintain its leading position in global consumption of oils and fats, nutritional considerations are likely to play an increasing role in the future.

In the longer term, dietary recommendations relating to the intake of oils and fats are likely to influence consumption behaviour, initially in developed countries but gradually also in developing countries. As a result, crop production and trade patterns as well as food processing, distribution and marketing could be affected. However, such dietary adjustment processes are going to take place

concurrently with several other changes, notably trade liberalization, globalization of food production, processing and distribution, urbanisation, technological progress etc., making it difficult to identify the causes underlying change.

New trends in demand are carefully studied by the oils and fats industry - a highly specialized and competitive sector that, due to high costs associated with changes in the production chain, is particularly susceptible to changing market conditions. The industry is already making efforts to adjust to possible health related shifts in demand. For instance, investments into technologies that allow altering the fatty acid composition of individual vegetable oils via genetic modification of the underlying crop have increased. Also, the manufacture of vegetable oil blends that combine the nutritional characteristics of individual oils in an optimal manner is gaining importance as is research on the beneficial health properties of nutrients contained in specific vegetable oils and oilcrops. And, over the next years, attention for oils other than soy oil could increase, thereby contributing to progressive changes in the competitive position of the various oils.

Annex II - Food security aspects

The reliable global supply of competitively priced soyoil and meal, together with the on-going liberalization of agricultural trade has led imports of many low-income, food insecure developing countries to grow steadily, thereby contributing to stable and normally rising levels of per caput consumption. In general, the fact that this development tends to increase the dependence on imports is not in conflict with strategies aimed at improving national food security.[3] However, the question whether or not the described path does represent an optimal solution can only be answered on a country-specific basis, using a cross-commodity perspective that takes into account a country's overall production pattern, total food balance, net trade position, balance of payments and national policy goals - to name the main factors.

While the above general observations hold for the average food insecure country importing soybeans or soybean products, some qualifications need to be made, especially with reference to the particular structure of the world market for soybeans and derived products. The high level of concentration observed in global soybean production and exportation can lead to instabilities in the market that are potentially detrimental for both exporters and importers, and thus producers and consumers. Producers and exporters in major soybean supplying countries are susceptible to external shocks that fall outside the direct control of the industry. Major destabilizing factors include unusual weather conditions and biotic stresses, which, through their direct impact on production, can lead to increased price volatility on world markets, which, in turn, tend to negatively affect consumers in importing countries. Furthermore, markets can be strongly affected by macro-economic policies: for instance, sudden changes in the exchange rate can easily alter the competitive position of exporters or the trade opportunities of importing countries. Finally, markets can be destabilized by sudden shifts in demand, for example as a result of food safety scares, as witnessed in recent years by the soymeal market through its link with the livestock industry.

Given the increasingly liberalized trade policy environment, small or food insecure countries tend to find it particularly difficult to absorb the negative effects emanating from market instability. On the other hand, in the case of soybean products, their high level of substitutability can be considered as a mitigating factor. In fact, in the event of market shortages, both soybean meal and, above all, soybean oil can be replaced with comparable products available on either international or domestic markets.

One additional aspect appears to be relevant with regard to food security. In the current market and policy environment, utilization of and investment into indigenous or traditionally established oil-bearing seed or treecrops tends to be neglected in many developing countries. A wide range of such crops exist in most developing countries, including resource poor, chronically food-insecure countries, and there is widespread evidence that these resources are currently under-exploited. Typically, the crops in question are well adapted to local soil and climatic conditions, well integrated into the prevailing farming systems and also known to local populations that are used to include them in their diets. The contribution of such oils to the food security of especially rural populations could be significant - either through direct consumption and through income generation where products can be marketed. However, experience from several countries suggests that the ready availability on the

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[3] Across agricultural commodities and on a global scale, available analyses suggest that engaging in agricultural trade generally tends to be associated with less hunger, not more. Statistics show that, on average, at a national level, the proportions of undernourished people tend to be lower where agricultural trade is large in proportion to agricultural production. Furthermore, countries where more than 15% of the population goes hungry import less than 10% of their food, compared to more than 25% in more food secure countries. These findings seem to suggest that the relative isolation from international trade is more a measure of vulnerability than of self-sufficiency.

market of attractively priced imported oils tends to gradually displace alternative, locally produced oils. Making appropriate use of the nutritional and economic potential of these crops appears to be highly desirable. Without need to modify a country's food and trade policies, specifically targeted support measures could help to attract private investment into some of these high potential, traditional oilcrops.

STATISTICAL APPENDIX

Table 1 : Soybean production - world and main producing countries, 1996 - 2005

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
					(... '000 tonnes ...)					
World	*131998*	*157032*	*160022*	*158125*	*174570*	*184249*	*196243*	*184903*	*216146*	*218685*
United States of America	64780	73176	74598	72225	75060	78681	75007	66788	85023	83363
Brazil	26160	31370	30765	32345	38432	42552	52020	50090	53053	55300
Argentina	11000	19800	20800	21200	27400	30300	34819	32000	39700	40600
China	13220	14728	15152	14251	15410	15407	16507	15394	17404	16350
India	5209	5150	5300	5160	5010	5350	4300	6800	5800	7380
Paraguay	2771	2856	3053	2980	3511	3300	4205	4120	4050	3700
Canada	2170	2738	2737	2766	2700	1635	2336	2268	3048	3161
Bolivia	1038	1071	1070	974	1198	1245	1680	1518	1690	1550
EU(25)	1127	1497	1627	1277	1203	1310	900	693	783	903
Indonesia	1517	1357	1382	1383	1020	827	672	672	724	808
Russian Federation	282	280	297	335	349	350	423	393	550	587
Uruguay	13	19	19	10	30	70	183	430	480	540
Nigeria	322	361	410	429	436	437	449	465	456	465
Ukraine	15	18	36	45	64	74	125	245	264	611
Korea D P Rep	400	360	340	340	350	350	360	360	360	360
Uganda	87	84	92	101	120	144	166	337	280	280
South Africa	120	201	175	149	210	218	137	214	273	390
Thailand	359	338	321	319	312	270	250	270	275	270
Romania	113	121	201	169	70	66	105	190	298	300
Japan	145	158	187	235	291	280	270	232	165	226
Viet Nam	114	113	147	147	149	176	201	201	201	201
Korea Rep	160	156	140	116	113	118	105	110	139	183
Mexico	56	185	150	124	102	122	87	125	133	159
Croatia	36	39	77	116	65	92	129	129	129	129
Myanmar	62	75	85	99	110	115	115	115	115	115
Iran Islamic Rep	66	142	138	80	142	130	114	114	114	115

Source: FAO (EST)

Table 2 : Soy oil consumption - world and main consuming countries, 1996 - 2005

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
					(... '000 tonnes ...)					
World	*19959*	*22802*	*24608*	*25378*	*27395*	*29794*	*30038*	*30771*	*33475*	*34391*
China	955	2773	2893	3316	3698	4143	5286	7098	8038	8201
United States of America	6685	6621	7000	7078	7147	7529	7273	7266	7617	7581
Brazil	2768	2509	2916	2823	2988	3031	3126	3204	3255	3093
EU(25)	2304	2340	2192	2021	2360	2602	2532	2336	2455	3083
India	896	1061	1494	1791	2159	2378	2156	1812	2685	2947
Mexico	645	734	775	822	889	988	1018	853	856	858
Japan	893	880	880	885	871	916	928	843	824	820
Iran Islamic Rep	288	623	765	520	645	771	860	776	730	728
Korea Rep	323	296	356	389	415	465	481	453	479	481
Taiwan province of China	445	493	464	462	437	479	492	435	463	479
Morocco	175	186	268	297	339	383	337	376	412	434
Canada	256	232	188	235	284	349	404	309	300	241
Egypt	68	145	225	313	343	380	279	272	267	293
Turkey	189	216	237	257	214	322	255	198	289	329
Venezuela	259	214	259	243	192	219	226	275	261	258
Peru	160	175	117	106	207	244	240	234	265	278
Bangladesh	251	336	515	496	432	386	363	317	240	215
Thailand	126	132	181	196	219	258	245	247	264	246
Colombia	147	177	174	215	228	253	229	222	224	242
Iraq	37	38	83	79	68	190	210	220	210	210
South Africa	70	101	73	117	102	155	156	184	210	230
Chile	102	97	71	84	100	158	187	195	203	205
Algeria	13	136	15	17	40	90	44	51	257	266
Tunisia	87	157	157	155	164	180	181	166	182	184
Russian Federation	86	138	322	288	392	614	262	158	181	151
Dominican Rep	94	96	110	103	113	130	130	130	130	130

Source: FAO (EST)

Table 3 : Soy meal consumption - world and main consuming countries, 1996 - 2005

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
					(... '000 tonnes ...)					
World	*94643*	*100145*	*111782*	*111996*	*120193*	*132567*	*134480*	*134557*	*146249*	*150149*
EU(25)	26165	27967	31262	30030	32153	35480	35747	34853	35124	34855
United States of America	26954	26373	29082	28015	28788	30387	29235	27894	30765	30817
China	8683	11229	11930	13979	16524	17078	19340	21563	26383	29104
Brazil	4711	4922	6951	5433	6146	7016	7681	8641	8857	8339
Japan	4758	4710	4834	4440	4572	5069	5191	4841	4984	4990
Mexico	2695	2940	3153	3449	3680	4126	4010	3929	4025	4395
Thailand	1410	1516	1929	2444	2540	3038	3186	3020	3142	3237
Korea Rep	2066	1888	2161	2248	2533	2519	2700	2508	2488	2578
Canada	1569	1627	1750	1777	2212	2331	2216	2055	2097	2061
Taiwan province of China	1987	1987	1806	1909	1863	1955	1949	1781	1952	1986
Indonesia	706	921	932	1179	1364	1564	1600	1664	1814	1864
India	1049	981	764	936	1163	1297	1666	1317	1929	1744
Philippines	710	1085	1140	1348	1268	1359	1418	1479	1532	1609
Argentina	346	401	653	792	559	1276	979	1060	1430	1616
Malaysia	956	820	978	885	1072	980	933	984	1187	1375
Turkey	516	477	836	843	811	950	987	956	1242	1304
Egypt	704	790	965	1053	1137	1166	1138	1175	1025	1175
Viet Nam	154	136	293	482	560	592	1156	1136	1026	1076
Iran Islamic Rep	746	750	987	552	890	1011	956	1023	903	1088
Colombia	644	694	683	603	590	806	757	826	867	887
South Africa	442	509	484	638	592	669	568	771	745	804
Chile	317	381	439	454	523	597	625	704	786	816
Venezuela	634	662	675	739	753	540	594	748	758	783
Peru	267	381	449	473	477	579	675	647	750	857
Russian Federation	305	292	561	255	259	557	604	623	777	681
Saudi Arabia	544	528	570	549	587	569	530	600	630	660

Source: FAO (EST)

Table 4 : Soybean trade - world and main trading countries, 1996 - 2005

Exports

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
					(... '000 tonnes ...)					
World	*36169*	*39121*	*39539*	*45558*	*52976*	*53526*	*61447*	*56005*	*64530*	*64424*
United States of America	24418	23828	23890	26621	26505	29204	28756	24501	29550	25880
Brazil	8425	8759	8932	11100	15469	15004	19380	20417	20137	25900
Argentina	484	2842	3059	4126	7156	5950	9050	6687	9517	7050
Paraguay	1686	2290	1996	1934	2553	2266	2807	2380	3015	2450
Canada	437	738	814	901	752	430	619	887	1010	1300
Uruguay	1	6	6	6	11	62	199	416	427	680
China	195	168	188	220	210	303	265	310	290	390
Bolivia	219	227	177	241	50	20	90	100	200	180
Ukraine	1	5	5	5	5	5	6	61	36	300
South Africa	2	35	7	14	22	15	3	5	60	70
Romania	7	7	98	30	11	2	2	5	100	20
Viet Nam	63	40	43	47	20	30	30	30	30	30
Ecuador	1	0	18	39	45	70	65	45	15	25
Malaysia	16	13	71	42	17	30	40	30	20	20
Cameroon	0	0	0	0	15	32	20	23	23	23
EU(25)	26	20	83	31	16	35	37	25	10	10

Imports

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
					(... '000 tonnes ...)					
World	*36257*	*39445*	*39862*	*46702*	*53220*	*54092*	*61971*	*55728*	*64351*	*64426*
China	2274	2944	3858	10096	13244	10386	20417	17932	25802	28160
EU(25)	15494	16907	15982	14829	17448	18369	16294	15344	15392	14021
Japan	5043	4870	4807	4907	4767	5023	5087	4688	4295	4050
Mexico	2983	3389	3801	4107	4309	4480	4184	3821	3742	3810
Taiwan province of China	2632	2387	2214	2318	2331	2578	2351	2218	2256	2360
Thailand	524	734	934	1113	1295	1494	1863	1399	1516	1480
Korea Rep	1622	1340	1400	1606	1450	1434	1516	1368	1240	1200
Indonesia	534	695	1183	1415	1261	962	1423	1059	1185	1190
Turkey	226	275	353	361	372	620	696	634	1066	905
Iran Islamic Rep	26	53	351	415	453	545	400	600	700	750
Malaysia	461	469	555	546	659	725	593	564	581	550
Morocco	159	168	199	180	202	303	430	440	520	580
Israel	521	468	607	531	604	749	545	602	530	400
Argentina	80	1169	275	218	320	251	383	450	630	400
Canada	255	126	295	434	421	982	679	594	375	370
Norway	281	336	331	340	435	403	403	450	403	450
Colombia	242	147	209	311	399	610	537	425	400	420
Egypt	155	115	125	240	239	436	321	320	400	480
Philippines	138	144	263	376	299	260	286	315	350	340
Costa Rica	157	176	218	222	230	218	230	270	300	330
Syrian Arab Rep	14	53	77	30	121	106	180	200	240	250
Chile	30	44	76	67	101	160	150	180	190	210
United States of America	257	169	108	136	113	81	100	170	174	131
Untd Arab Em	0	0	0	0	0	60	94	100	180	180
Bolivia	37	32	102	186	307	253	200	150	120	140
Cuba	1	7	12	10	18	104	94	120	120	120

Source: FAO (EST)

Table 5 : Soy meal trade - world and main trading countries, 1996 - 2005

Exports

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
					(... '000 tonnes ...)					
World	*30487*	*32658*	*35030*	*34731*	*36212*	*41423*	*43051*	*45866*	*47453*	*51515*
Argentina	8684	9705	13156	13137	13363	16444	18005	19156	20760	24150
Brazil	10927	9788	10347	9897	10842	11862	13961	14761	14242	12500
United States of America	6345	8470	6520	6690	6950	6811	5533	4690	6659	7316
India	2156	2787	2953	2648	2318	2414	1378	3406	1937	3760
Bolivia	454	453	579	747	858	800	1200	950	1000	1080
Paraguay	518	430	403	395	510	685	750	760	630	650
China	23	15	7	29	107	1051	795	632	634	340
EU(25)	843	400	419	326	292	354	358	426	511	632
Untd Arab Emirates	0	2	73	87	58	200	180	200	270	270
Syrian Arab Rep	15	95	75	70	186	190	190	190	160	160
Canada	112	108	76	110	86	104	138	62	96	84
Philippines	0	0	50	20	20	1	60	60	50	70
Colombia	1	0	12	23	39	50	64	95	40	40
Iran Islamic Rep	0	0	0	0	33	43	33	100	10	35
Russian Federation	1	0	0	167	171	1	20	21	30	70
Malaysia	5	13	27	33	21	44	30	20	80	20
Jordan	6	7	25	87	82	55	53	35	30	30
Croatia	18	13	14	14	20	30	30	30	30	30
Romania	2	1	1	1	4	11	10	20	26	30
Turkey	4	6	2	5	7	11	30	19	28	28
Lebanon	2	4	4	6	30	30	20	20	20	20

Imports

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
					(... '000 tonnes ...)					
World	*29472*	*32679*	*35113*	*34778*	*36532*	*42287*	*42091*	*45838*	*47251*	*51047*
EU(25)	13417	14553	17771	17411	17772	20600	21357	23032	23037	23622
Indonesia	902	704	830	1135	1465	1415	1634	1664	1848	1940
Thailand	1059	956	1187	1468	1369	1715	1662	1633	1772	1950
Korea Rep	818	881	1095	1050	1411	1499	1497	1307	1462	1690
Japan	773	823	963	760	609	1000	1073	1191	1496	1700
Philippines	820	1001	901	1000	1051	1154	1203	1306	1377	1420
Canada	698	755	808	825	903	1136	1073	1072	1177	1280
Viet Nam	143	115	270	453	501	526	1080	1060	950	950
Mexico	81	202	158	260	315	405	410	748	900	1150
Egypt	596	620	844	918	909	918	830	971	600	800
Malaysia	621	509	577	629	557	484	447	500	700	1000
Venezuela	365	499	507	581	532	586	515	698	730	745
Peru	246	335	390	468	400	492	545	615	716	800
Saudi Arabia	462	546	507	552	541	530	500	600	650	650
Chile	253	368	400	366	446	450	475	502	613	685
South Africa	331	403	426	341	496	500	430	500	540	600
Algeria	225	283	282	291	285	280	310	490	550	550
Colombia	403	491	535	421	303	310	420	460	550	550
Turkey	391	350	521	539	456	451	495	467	500	570
Iran Islamic Rep	674	653	586	168	465	469	499	623	275	487
Syrian Arab Rep	107	204	196	220	236	320	320	400	450	450
Dominican Rp	247	262	283	318	369	320	360	372	372	372
Russian Federation	150	134	260	200	209	272	298	344	401	310
China	3069	4066	1397	634	96	21	10	20	70	869
Ecuador	115	177	162	153	196	224	230	260	280	400
Tunisia	193	193	220	232	237	235	220	280	320	320

Source: FAO (EST)

Table 6 : Soy oil trade - world and main trading countries, 1996 - 2005

Exports

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
					(... '000 tonnes ...)					
World	*6653*	*7421*	*7658*	*6706*	*7196*	*8860*	*9150*	*9028*	*9583*	*10010*
Argentina	2019	2128	3125	2887	3137	3726	4001	4367	4864	5680
Brazil	1297	1184	1452	1126	1500	1825	2343	2718	2414	2450
United States of America	924	1433	1076	626	636	1143	1026	424	601	522
EU(25)	875	910	996	969	901	899	700	538	512	305
Bolivia	78	90	110	123	160	187	216	214	230	197
Paraguay	100	91	99	91	80	125	189	140	200	120
Iran Islamic Rep	38	149	229	180	180	180	160	130	120	110
Malaysia	110	184	152	196	150	194	101	90	100	100
India	0	4	4	7	12	11	6	22	130	100
China	485	320	49	48	40	55	50	50	50	100
Thailand	6	13	18	30	46	38	48	58	55	52
Untd Arab Em	6	15	25	46	21	24	35	50	54	54
Singapore	39	30	36	31	26	33	33	33	33	33
China,H.Kong	523	731	108	100	100	233	62	37	20	24

Imports

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
					(... '000 tonnes ...)					
World	*5525*	*6856*	*7368*	*6898*	*7233*	*8822*	*9177*	*8970*	*9572*	*10002*
China	1144	1500	935	557	200	547	1716	2799	1728	1600
India	84	254	841	912	1362	1523	1328	780	2021	1850
Iran Islamic Rep	408	688	933	656	729	900	958	740	744	642
EU(25)	118	63	41	42	56	25	44	78	191	770
Morocco	188	124	215	279	300	350	330	308	336	360
Venezuela	193	191	230	202	170	219	217	301	240	260
Bangladesh	279	253	504	496	434	480	393	321	253	208
Peru	122	174	124	107	169	230	225	222	240	260
Korea Rep	49	59	128	120	166	186	207	213	244	260
Iraq	25	49	67	87	67	190	210	190	220	210
Egypt	38	162	184	299	321	392	360	201	163	250
Algeria	47	102	46	15	15	90	59	24	278	300
South Africa	50	39	59	79	67	133	130	135	200	225
Tunisia	122	152	143	138	164	194	190	178	166	168
Chile	92	84	74	71	81	131	166	143	161	170
Colombia	110	122	124	157	176	136	145	153	148	169
Turkey	162	166	166	159	119	246	118	89	123	191
Dominican Rp	93	102	106	95	108	126	130	120	140	140
Mexico	90	104	112	108	83	173	180	85	162	125
Malaysia	71	146	124	145	137	133	78	90	83	80
China,H.Kong	591	767	195	196	271	311	129	88	74	85
Canada	61	27	12	23	55	88	125	97	73	70
Ecuador	66	65	46	75	69	58	76	70	80	85
Senegal	65	96	95	92	62	73	106	65	88	82
Cuba	38	51	33	24	43	49	80	60	75	75
Japan	3	2	4	1	3	2	12	18	15	70

Source: FAO (EST)

Table 7 : Nominal international prices for soybean, soya oil, soya meal (1983-2005)

	soybean [1]	*soya meal* [2]	*soya oil* [3]
	(... US$ per tonne ...)		
1983	301	221	722
1984	223	155	625
1985	211	183	377
1986	209	190	324
1987	282	254	443
1988	292	263	435
1989	247	204	438
1990	241	198	454
1991	237	203	437
1992	246	207	453
1993	259	202	580
1994	248	184	642
1995	304	257	575
1996	307	278	536
1997	259	197	633
1998	225	149	483
1999	208	180	356
2000	200	188	336
2001	203	175	412
2002	267	191	534
2003	323	257	633
2004	277	212	545
2005	261	202	570

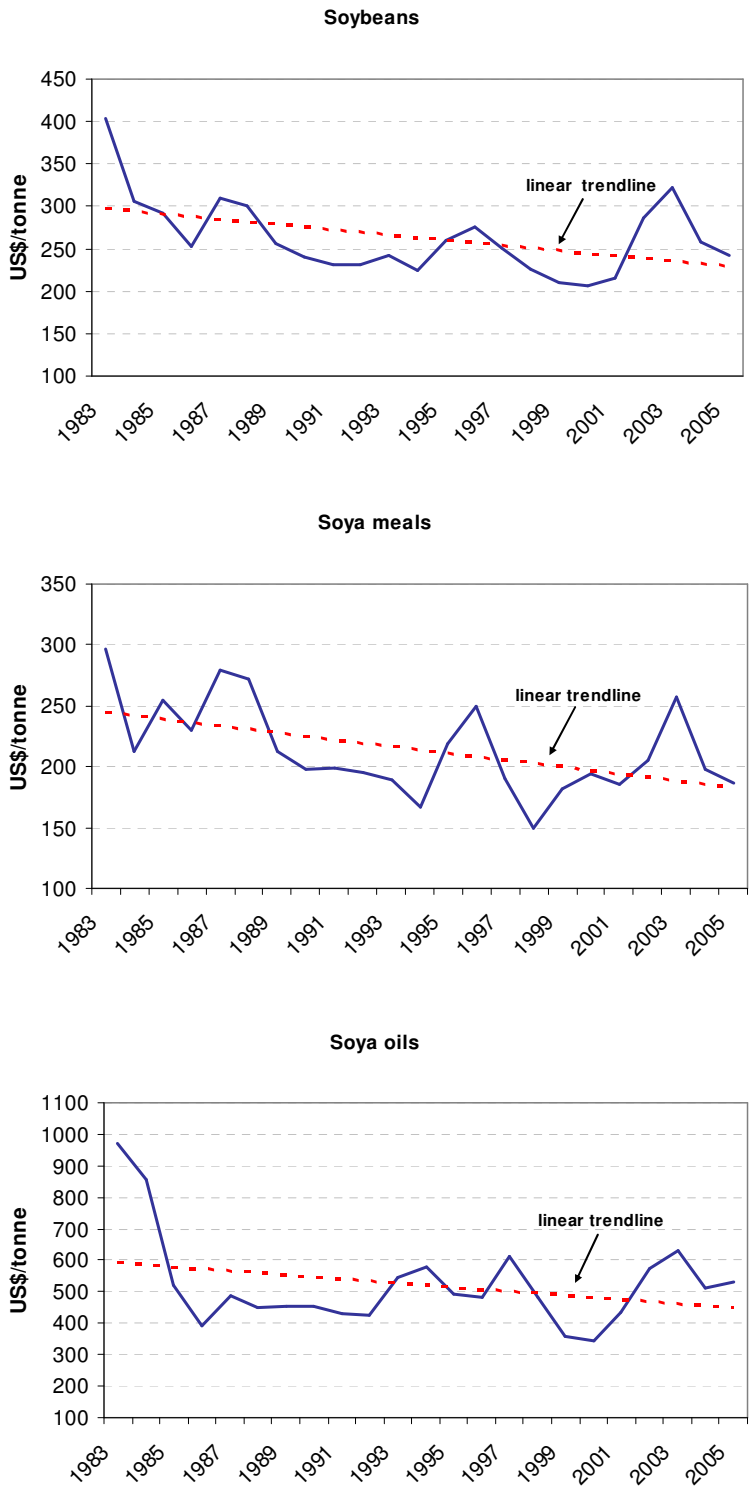
[1] U.S., cif Rotterdam

[2] Argentina pellets, 44/45%, Argentina, CIF Rotterdam

[3] Dutch, FOB ex-mill

Source : derived from Oil World

Figure 1 : Real international prices for soybean, soya oil, soya meal (1983-2005)[1]



[1] deflated by Manufactures Unit Value Index (1990 = 100)

Table 8 : Soybeans and products - medium term market outlook for selected countries, 2007 - 2015

soybeans production

	2007	2008	2009	2010	2011	2012	2013	2014	2015
					(...'000... tonnes)				
World	220293	226773	232525	238870	243790	250625	257430	263242	269170
United States of America	82415	83213	83481	83704	83994	84301	84590	84753	84974
Brazil	56334	58502	62345	66100	68438	71338	74739	77847	81162
Argentina	43687	45307	46733	48185	49466	50993	52438	53795	55298
China	16791	17193	17575	17982	18344	18673	19045	19317	19540
India	6657	6851	6993	7192	7324	7513	7657	7831	7998
Paraguay	4597	4824	5119	5400	5678	5973	6258	6539	6839
Canada	2691	2779	2755	2864	2964	3120	3230	3271	3339
EU(25)	896	959	972	990	1000	1060	1115	1152	1173
Indonesia	830	842	847	852	862	872	879	883	887

soybeans exports

	2007	2008	2009	2010	2011	2012	2013	2014	2015
					(...'000... tonnes)				
World	62191	62697	64954	67847	70227	72429	74714	76953	79712
Brazil	21440	22670	25571	28373	30063	32148	34643	36889	39317
United States of America	31499	30490	29374	28771	28720	27743	26698	26034	25446
Argentina	7466	8114	9057	9890	10436	11060	11727	12412	13227
Paraguay	3011	3175	3404	3613	3815	4031	4231	4425	4635
Canada	1001	889	844	866	923	986	1013	1007	1026
Uruguay	598	620	653	689	727	769	808	845	885

soybeans imports

	2007	2008	2009	2010	2011	2012	2013	2014	2015
					(...'000... tonnes)				
World	74951	75497	77917	81017	83569	85930	88382	90784	93743
China	32790	33878	35519	37758	39455	41994	44504	46869	49432
EU(25)	17019	16166	16508	16941	17672	17370	17072	16945	17253
Japan	4704	4681	4633	4568	4490	4400	4311	4219	4123
Mexico	4085	4087	4139	4288	4354	4485	4646	4762	4867
Thailand	1663	1681	1700	1719	1736	1753	1771	1790	1810
Korea Rep	663	674	685	696	707	719	731	743	755
Indonesia	1347	1369	1393	1419	1442	1463	1485	1508	1533
Turkey	1230	1267	1289	1308	1325	1338	1355	1376	1395
Iran Islamic Rep	781	799	816	833	850	867	886	904	922

soy oil consumption

	2007	2008	2009	2010	2011	2012	2013	2014	2015
					(...'000... tonnes)				
World	35158	36019	36928	37905	38904	39963	41077	42159	43230
China	8754	8987	9362	9695	10016	10314	10600	10850	11063
United States of America	8362	8524	8656	8844	9023	9223	9469	9702	9950
Brazil	3450	3565	3632	3710	3819	3929	4050	4179	4313
EU(25)	2649	2685	2716	2765	2822	2879	2941	3004	3071
India	2797	2870	2937	3028	3118	3221	3326	3434	3545
Mexico	773	785	800	823	846	870	899	932	965
Japan	774	774	769	763	758	752	745	739	733
Iran Islamic Rep	750	767	786	815	839	873	909	932	950
Korea Rep	477	482	487	495	503	511	521	530	540

soy oil exports

	2007	2008	2009	2010	2011	2012	2013	2014	2015
					(...'000... tonnes)				
World	10780	10983	11229	11465	11706	11954	12198	12434	12652
Argentina	6011	6150	6250	6332	6423	6502	6562	6603	6634
Brazil	3145	3130	3179	3287	3330	3356	3386	3416	3436
United States of America	786	737	767	698	620	606	611	605	560
EU(25)	393	336	312	268	256	224	163	80	1
Paraguay	169	175	184	192	202	211	222	232	243
Iran Islamic Rep	146	150	153	158	162	167	171	176	181

Table 8 - cont'd

soy oil imports

	2007	2008	2009	2010	2011	2012	2013	2014	2015
				(... '000 tonnes ...)					
World	*9653*	*9855*	*10101*	*10336*	*10576*	*10823*	*11067*	*11303*	*11520*
India	1723	1766	1807	1870	1934	2010	2090	2172	2256
China	2300	2320	2407	2433	2468	2461	2426	2381	2312
EU(25)	251	248	246	244	241	239	237	235	233
Iran Islamic Rep	727	743	762	790	812	846	881	903	921
Algeria	189	192	195	199	203	206	210	214	218
Korea Rep	253	259	262	266	272	277	283	289	297
Egypt	249	261	272	285	297	311	325	340	355

soy meal consumption

	2007	2008	2009	2010	2011	2012	2013	2014	2015
				(... '000 tonnes ...)					
World	*156178*	*160108*	*164004*	*168382*	*172633*	*177269*	*182406*	*187202*	*191849*
EU(25)	36990	37637	38305	39355	39992	40673	41570	42358	43149
United States of America	32232	32734	33243	33630	33739	33974	34361	34594	34771
China	30284	31479	32616	33764	35633	37424	39177	40997	42831
Brazil	10852	11490	12088	12665	13408	14095	14684	15263	15861
Japan	5007	4926	4839	4718	4574	4417	4288	4167	4023
Mexico	3275	3389	3500	3602	3704	3811	3943	4064	4166
Thailand	2605	2643	2687	2714	2730	2758	2793	2818	2840
Korea Rep	1225	1256	1283	1303	1320	1345	1373	1395	1416
Canada	2882	2981	3066	3124	3247	3328	3396	3520	3602

soy meal exports

	2007	2008	2009	2010	2011	2012	2013	2014	2015
				(... '000 tonnes ...)					
World	*55193*	*56328*	*57265*	*58995*	*59117*	*60228*	*61820*	*62894*	*64184*
Argentina	27017	27776	28387	29184	30081	30770	31500	32252	32985
Brazil	17124	16936	16916	17089	16966	16885	16956	17056	17118
United States of America	5478	5870	6021	5863	5860	6219	6695	7104	7502
India	2324	2363	2372	2360	2405	2385	2328	2311	2290
Paraguay	773	816	863	902	946	990	1037	1089	1143
EU(25)	591	591	591	591	591	591	591	591	591

soy meal imports

	2007	***2008***	***2009***	***2010***	***2011***	***2012***	***2013***	***2014***	***2015***
				(... '000 tonnes ...)					
World	*51902*	*53035*	*53970*	*55697*	*55818*	*56926*	*58515*	*59587*	*60874*
EU(25)	25056	25572	26069	26903	26987	27251	27802	28284	28760
Thailand	1814	1839	1870	1885	1889	1904	1925	1938	1947
Indonesia	1975	2031	2072	2109	2143	2188	2239	2279	2316
Japan	1341	1246	1181	1096	995	889	824	769	690
Korea Rep	781	803	821	833	843	859	878	890	903
Philippines	1551	1582	1610	1630	1649	1675	1701	1720	1740
Canada	1440	1473	1561	1620	1667	1721	1732	1707	1717
Mexico	201	302	361	350	382	384	394	428	367
Malaysia	916	942	963	977	988	1007	1029	1044	1059
Viet Nam	976	1004	1011	1022	1034	1048	1070	1079	1084

Source: FAO (EST) based on OECD/FAO Outlook 2006