

Agricultural Trade International Ag Baseline Projections

Ronald G. Trostle¹

With strong world economic growth, global agricultural trade is projected to rise throughout the baseline. Agricultural trade will remain very competitive, reflecting expanding production in a number of foreign countries.

The growing economies of developing countries provide a foundation for gains in demand for agricultural products and increases in trade. Broad-based economic growth and increasing urbanization lead to diet diversification in most developing regions, generating increased demand for livestock products and feeds, as well as for fruits, vegetables, and processed products. Developing-country import demand is further reinforced by population growth rates that remain nearly double the growth rates of developed countries.

International trade in animal products, however, remains heavily dependent on demand from developed countries and from market access achieved under existing global trade agreements. Trade is also affected by disease-related concerns such as bovine spongiform encephalopathy (BSE), avian influenza (AI), and foot-and-mouth disease (FMD). Strong policy support for domestically produced meat is expected to motivate growth in feed grain trade, especially to those regions where limited land availability or agroclimatic conditions preclude expanding domestic crop production, such as North Africa, the Middle East, and East and Southeast Asia.

Strong competition is expected in international commodity markets, not only from traditional exporters such as Argentina, Australia, and Canada, but also from countries that are making significant investments in their agricultural sectors, including Brazil, Russia, Ukraine, and Kazakhstan.

Rapid expansion of ethanol and biodiesel production in some countries is projected to have a significant impact on global demand for corn and vegetable oils and on world price relationships. The continued expansion of oilseed crushing capacity in a number of countries is expected to augment the demand for oilseeds more than for protein meals and vegetable oils.

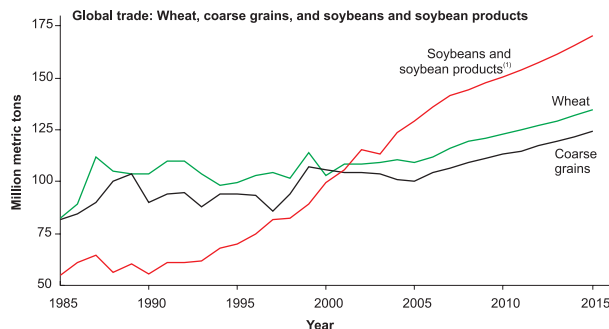
Baseline trade projections to 2015 are founded on assumptions concerning trends in foreign area, yields, and use, and on the assumption that countries comply with existing bilateral and multilateral agreements affecting agriculture and agricultural trade. The baseline incorporates the effects of trade agreements and domestic policy reforms in place or signed by November 2005.

Domestic agricultural and trade policies in individual foreign countries are assumed to continue to evolve along their current paths, based on the consensus judgment of USDA's regional and commodity analysts. In particular, economic and trade reforms underway in many developing

¹ Economic Research Service, coordenador deste estudo; e-mail: rtristle@ers.usda.gov.

Texto publicado em USDA - ERS. Briefing Rooms. Agricultural Baseline Projections to 2015, n. OCE 2006-1, February 2006. Disponível em: <<http://www.ers.usda.gov/publications/oce061/oce20061f.pdf>>.

countries are assumed to continue. Similarly, the development and use of agricultural technology and changes in consumer preferences are assumed to continue evolving based on past performance and analysts' judgments regarding future developments.



⁽¹⁾ Soybeans and soybean meal in soybean-equivalent units. Source: USDA-ERS (2006).

Rising unabated since the early 1990s, global trade in soybeans and soybean products has surpassed wheat—the traditional leader in agricultural commodity trade—and total coarse grains (corn, barley, sorghum, and other). Continued strong growth in global demand for vegetable oil and protein meal is expected to maintain soybean and soybean-product trade well above wheat and coarse grains trade throughout the next decade.

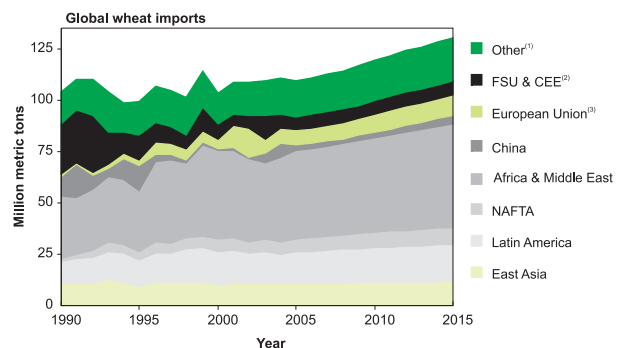
- These three major commodity groupings—wheat, coarse grains, and oilseeds (including soybeans)—compete with each other and with other crops for increasingly limited temperate cropland. However, previously uncropped land in tropical regions of Brazil and Indonesia is being converted to soybean and palm oil production.

- Virtually no growth in overall global wheat and coarse grain trade occurred in the 1990s, largely reflecting reductions in imports by the former Soviet Union (FSU) and Central and Eastern Europe (CEE). In the coming decade, overall gains in global grain trade come from a broad range of countries, particularly from developing countries in Africa and the Middle East.

- In the projections, total area planted to all crops changes little in most countries other than

Brazil, Argentina, and Indonesia. Growth in global production is derived mostly from rising yields. The growth rate in crop yields has slowed somewhat during the last several decades and is projected to continue to do so.

- Slower growth in aggregate crop production is offset by slower growth in world population. Nonetheless, population is a significant factor driving overall growth in demand for agricultural products. Additionally, rising per capita income in many countries generates growth in demand for vegetable oils and livestock and horticultural products.



⁽¹⁾ Predominantly South and Southeast Asia.

⁽²⁾ Former Soviet Union and Other Europe; prior to 1999, includes Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia.

⁽³⁾ EU-25 excludes intra-trade after 2002, EU-15 intra-trade before 2003, Slovenia before 1992.

Source: USDA-ERS (2006).

Growth in wheat imports is concentrated in those developing countries where robust growth in income and population underpins increases in demand. Important growth markets include Sub-Saharan Africa, Brazil, Mexico, and Egypt. World wheat trade (including flour) expands by 20 million tons (18 percent) between 2006 and 2015 to more than 130 million tons.

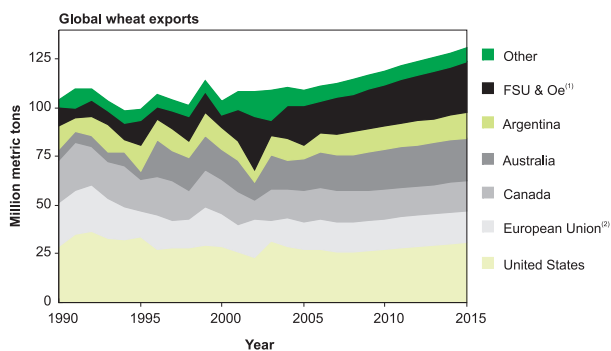
- Egypt maintains its position as the world's largest importing country, as imports climb slowly to nearly 9 million tons. Imports by Brazil, another large importer, are projected to surpass 7 million tons. Brazil's climate does not favor wheat, and in some key wheat-producing states, winter corn is expected to have better returns than wheat.

- Imports by developing countries in Sub-Saharan Africa, North Africa, and the Middle East rise 7 million tons and account for nearly 40 percent of world wheat trade. In most developing

countries, little change in per capita wheat consumption is expected but imports expand modestly because of population growth and limited potential to expand production. Nigeria has emerged as a major wheat importer.

- Changing consumption patterns will boost the wheat imports of some major developing countries. In Indonesia, diversification of diets and strong economic growth are projected to increase per capita wheat consumption. Mexican consumers are projected to continue substituting wheat for corn in their diets.

- Stocks of low-quality wheat are large at the beginning of the projection period. Low prices for this feed-quality wheat during the next couple of years, and lower wheat-to-corn price ratios during most of the projection period, enable wheat to compete effectively with corn for feed use in a number of countries. South Korea, for example, is projected to substitute 1 million tons of feed wheat for corn annually by 2015.



⁽¹⁾ Former Soviet Union and Other Europe; prior to 1999, includes Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia.

⁽²⁾ EU-25 excludes intra-trade after 2002, EU-15 intra-trade before 2003, Slovenia before 1992.

Source: USDA-ERS (2006).

The top five wheat exporting nations (the United States, Australia, the European Union (EU), Canada, and Argentina) account for about 75 percent of world trade from 2006 through 2015. This is down from the average of 85 percent during the latter part of the 1990s, mostly due to increased exports from the Black Sea area. U.S. wheat exports are projected to account for about 23 percent of global wheat trade, down from 25 percent in recent years.

- Shares of the world wheat market held by Canada, the EU, and the United States decline slightly, offsetting increases by Australia, Argentina, Ukraine, and Kazakhstan.

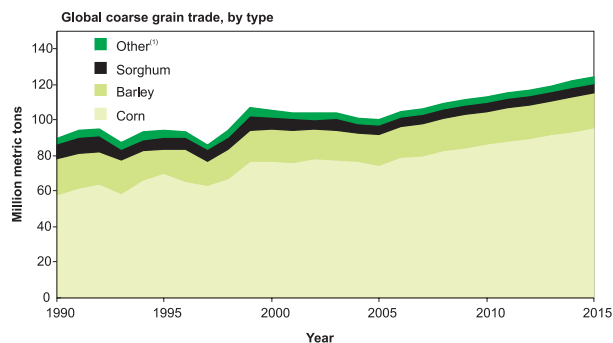
- In Canada, increased demand for barley and oilseeds is expected to cause wheat area to decline, which causes Canadian exports to trend slowly downward.

- The EU lowered the set-aside rate from 10 percent to 5 percent in 2004 in response to the drought-reduced 2002 crop and low stock levels. These projections assume that the set-aside rate reverts back to 10 percent for the duration of the projections.

- Russia, Ukraine, and Kazakhstan have become significant wheat exporters in recent years. Low costs of production and investment in their agricultural sectors have enabled their world market share to climb to 14 percent in recent years. Exports from Ukraine and Kazakhstan are projected to continue gaining market share, more than offsetting a slight decline in the share held by Russia. However, because of the region's weather extremes, high year-to-year volatility in production and trade can be expected.

- Exports by Turkey, China, and other minor exporters trend slowly downward during the projection period.

- Although India has exported some wheat in recent years, exports are expected to cease as stocks are drawn down.



⁽¹⁾ Includes rye, oats, millet and mixed grains.

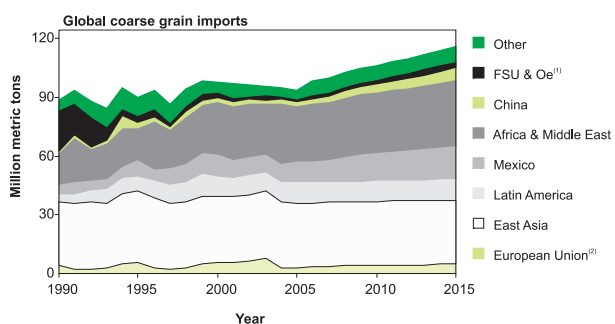
Source: USDA-ERS (2006).

Growth in trade of coarse grains is strongly linked to expansion of livestock activities in regions unable to meet their own forage and feed needs. Key growth markets include Mexico, North Africa and the Middle East, China, and Southeast Asia.

- Corn is the dominant feed grain traded in international markets. Corn accounts for an average of 76 percent of all coarse grain trade through the projection period, followed by barley (16 percent), and sorghum (5 percent).

- The commercialization of livestock feeding has been a driving force behind the growing dominance of corn in international feedgrain markets as well as the gains in global protein meal markets. Hogs and ruminants, such as cattle and sheep, are capable of digesting a broad range of feedstuffs, making demand relatively price-sensitive across alternate feed sources. However, as pork and poultry production become increasingly commercialized, higher quality feeds are used.

- World coarse grain trade is projected to increase about 2 percent a year, with corn accounting for a growing share. Mexico's composition of imports accounts for most of the shift. Following the 2002 and 2003 drop in U.S. sorghum production and exportable supplies, Mexico's imports of kibbled corn (processed corn that is tariff free) rose sharply, reaching a record 2.6 million tons (whole-corn equivalent) in 2004/05. Under the North America Free Trade Agreement (NAFTA), Mexico's over-quota tariff on U.S. and Canadian corn is eliminated by 2008. As Mexico's over-quota tariff on corn imports is further reduced, Mexico's grain imports continue shifting from sorghum to corn. After 2008/09, kibbled corn imports are entirely replaced by whole-grain corn. Mexico's corn imports continue to rise through the rest of the projections, while sorghum imports resume growth after 2011/12.



(1) Former Soviet Union and Other Europe; prior to 1999, includes Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia.

(2) EU-25 excludes intra-trade after 2002, EU-15 intra-trade before 2003, Slovenia before 1992.

Source: USDA-ERS (2006).

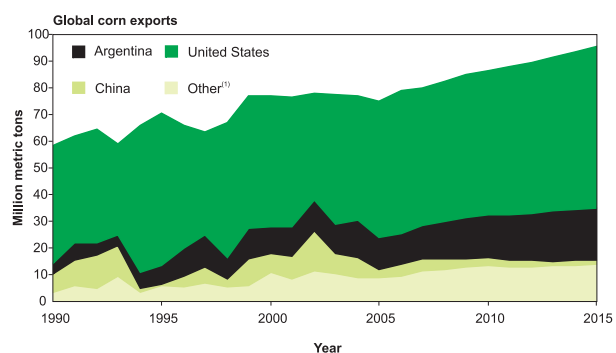
World coarse grain trade expands about 19 million tons (18 percent) from 2006 to 2015. About two-thirds of global coarse grain supplies are used as animal feed. Industrial uses, such as starch, ethanol, and malt production, are relatively small but growing. Food use of coarse grains, concentrated in parts of Latin America, Africa, and Asia, has generally declined over time as consumers tend to shift consumption toward wheat, rice, and other foods as their incomes rise.

- Steady longrun growth in the livestock sectors of developing countries in Asia, Latin America, North Africa, and the Middle East is projected to account for most of the growth in world imports during the next decade.

- Mexico's corn imports are projected to rise from 7.3 million tons in 2006 to more than 13 million tons in 2015. Imports will be stimulated by rising poultry production and a steady reduction in Mexico's over-quota tariff on corn imports from the United States to zero by January 1, 2008. Some corn imports will substitute for imports of sorghum, which already have tariff-free status.

- North Africa and the Middle East experience continued growth in import demand for grain and protein meals through 2015, as rising populations and increasing incomes sustain strong demand growth for domestically produced animal products.

- Increasing meat imports will limit coarse grain imports in Japan, South Korea, and Taiwan. By 2015, low-priced feed wheat is projected to replace about 1 million tons of South Korean corn imports.



(1) Republic of South Africa, Brazil, EU, former Soviet Union and others.

Source: USDA-ERS (2006).

- The EU's imports of corn from other Eastern European countries, particularly Romania and Bulgaria, are expected to increase as the latter countries prepare for accession to the EU.

The United States dominates world trade in coarse grains, particularly corn. However, increasing use of corn for U.S. ethanol production is assumed to limit export growth. The U.S. corn sector faces increased competition from exports by non-EU Eastern Europe, Argentina, and Brazil. Still, the U.S. share of world corn trade is projected to grow from 60 percent in recent years to 63 percent by 2015 as few countries have similar capability to respond to rising international demand for corn.

- Argentina, with a small domestic market, remains the world's second largest corn exporter. As Argentina's economy expands, investments and planted area gradually return to corn production over the baseline, with exports projected to rise from 11 million to 16 million tons. Argentina and other South American countries increase corn exports to Chile to support its expanding pork exports to South Korea.

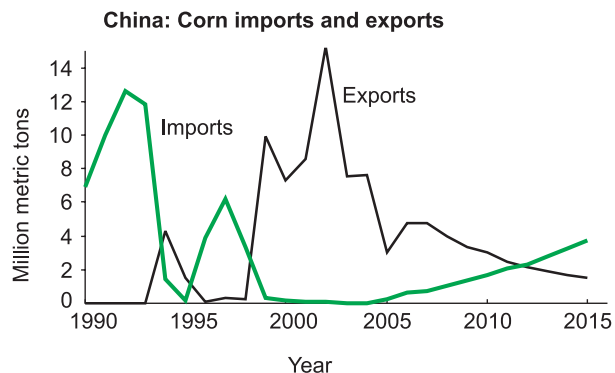
- The Republic of South Africa continues exporting about 2 million tons of corn to its neighboring countries. Uncertainties associated with its land reform program are assumed to limit increases in production.

- Corn exports from non-EU Eastern European countries, primarily Romania and Bulgaria, rise to nearly 3 million tons by 2015. Favorable resource endowments, increasing economic openness, greater investment in their agricultural sectors, and preparation for joining the European Union are behind the projected gains in production and trade.

- Brazil's corn exports nearly double during the next decade, rising to 4.5 million tons, in response to higher corn-to-soybean price ratios. Brazil targets niche market demand for nongenetically modified grain. However, strong growth in domestic demand from its livestock sector limits more rapid expansion.

- China's corn exports decline in the baseline, reflecting strengthening domestic

demand driven by its expanding livestock sector. It is assumed that Chinese policy will tend to favor importing soybeans rather than corn.



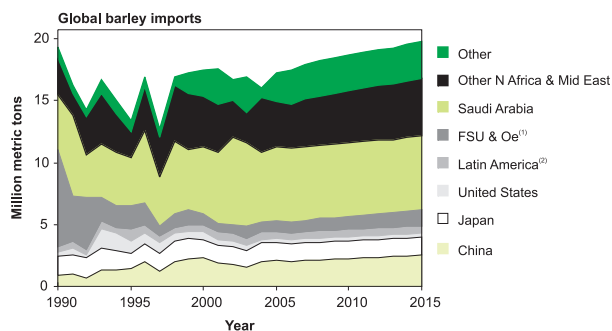
Source: USDA-ERS (2006).

As more U.S. corn is used to produce ethanol, China is assumed to increase its corn production, slowing its decline in exports and its increase in imports. Nonetheless, China is projected to become a net corn importer in 2012/13 as demand for livestock feed overtakes China's internal supplies of corn. China continues to export corn throughout the projection period, although in declining amounts, due to regional supply and demand differences. Northern China runs a corn surplus, while southern China has a corn deficit.

- Corn is the favored crop in northeast China. Proximity to South Korea and other Asian markets provides a nearby source of demand, while various government measures-including waiver of certain transportation construction taxes, and a rebate of the value-added tax on exported corn-keep corn exports competitively priced in international markets. High ocean-freight rates raise the delivered cost of U.S. corn to Asian markets, another factor that keeps Chinese corn competitive. Shipments of corn from northeast China to the country's southern markets are limited by China's high internal transportation costs.

- China experienced a large buildup of corn stocks in the mid- to late 1990s due to a combination of favorable weather and local self-sufficiency policies that boosted grain production to record levels. In the last 6 years, China's corn consumption exceeded production, and stocks

have declined sharply. Because a continued drop in stocks is unsustainable, China is projected to increase imports and reduce exports, and to eventually become a net corn importer, as livestock feeding continues to increase in response to income growth and rising meat demand.



⁽¹⁾ Former Soviet Union and Other Europe; prior to 1999, includes Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia.

⁽²⁾ Includes Mexico.

Source: USDA-ERS (2006).

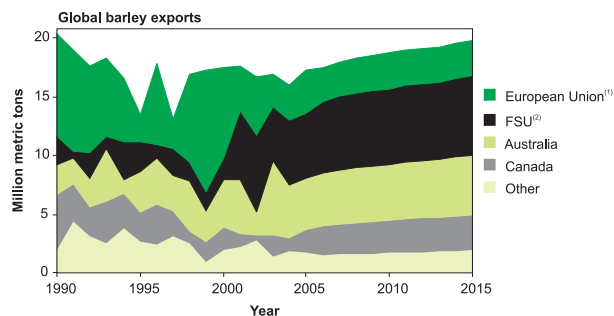
Global barley trade expands throughout the baseline, driven by rising demand for both malting and feed barley.

- Feed barley imports by North African and Middle Eastern countries-where barley is preferred as a feed for large populations of camels, goats, and sheep-grow steadily through the period. In the mid-1990s, corn overtook barley as the principal coarse grain imported by these countries, due mainly to rising poultry production. This pattern is expected to continue through the projection period. However, the North Africa and Middle East region is expected to remain the world's largest barley importing area.

- Saudi Arabia-the world's foremost barley importer-accounts for over 30 percent of world barley trade through the baseline. Saudi Arabia's barley imports are used primarily as feed for camels, goats, and sheep.

- International demand for malting barley is boosted by strong growth in beer demand in many developing countries, notably China-the world's largest malting barley importer. China's beer demand is rising steadily due to growth in incomes and population. China's breweries use rice and other grains, as well as malting barley,

which limits the growth in imports of malting barley. Expansion in China's brewing capacity is being aided by foreign investment in the industry. Australia and Canada are China's main sources of malting barley imports.



⁽¹⁾ EU-25 excludes intra-trade after 2002, EU-15 intra-trade before 2003, Slovenia before 1992.

⁽²⁾ Former Soviet Union.

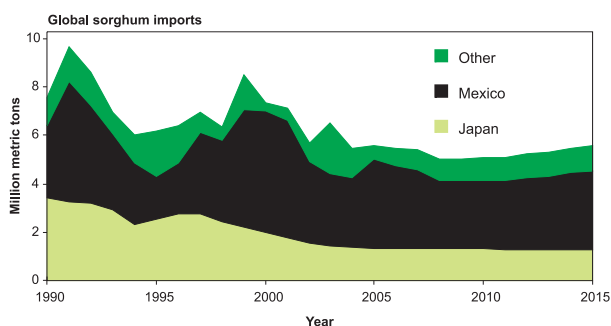
Source: USDA-ERS (2006).

Historically, global barley exports have originated primarily from the EU, Australia, and Canada. However, Ukraine and, to a lesser extent, Russia, have emerged as important competitors in international feed barley markets and remain so throughout the baseline period.

- Barley production is expected to increase in the EU-25 as a result of Common Agricultural Policy (CAP) reform and EU enlargement. The abolition of EU intervention for rye, combined with higher barley prices in the acceding countries, will stimulate the allocation of more area to barley production. Within the enlarged EU-25, barley trade will rise. However, EU-25 exports to non-EU countries are projected to hover around 3 million tons over the projection period (16 percent of world trade).

- The FSU remains a major barley exporter throughout the baseline as exports exceed 5 million tons. Together, the FSU and EU-25 account for about 50 percent of world barley trade throughout the baseline.

- Malting barley is a different variety and quality than feed barley and commands a substantial price premium over feed barley. This premium is expected to influence planting decisions in Canada and Australia and, in both countries, malting barley's share of total barley area rises in the latter half of the projection period.



Source: USDA-ERS (2006).

World sorghum trade, which averaged nearly 7 million tons during the last decade, declines to just above 5 million tons by the middle of the projection period before rising through the remainder of the baseline. This trade pattern is driven almost entirely by Mexico.

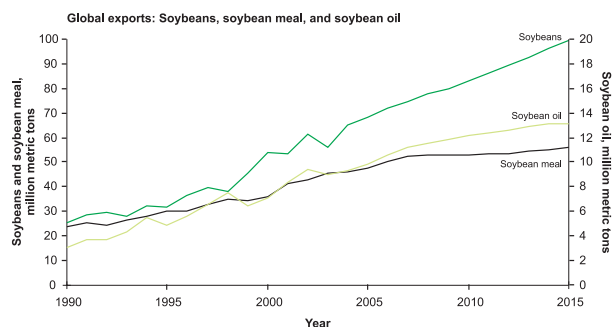
- Mexico is the world's leading sorghum importer, although its imports fell in 2002 and 2003 due to reduced U.S. production and exportable supplies. Since then, Mexico's sorghum imports have recovered somewhat. However, sorghum's share of Mexico's total coarse grain imports declined as imports of duty-free kibbled corn increased rapidly. Whole-grain corn imports also are rising as Mexico's over-quota tariff on U.S. and Canadian corn is reduced to zero by 2008. In the projections, Mexico's sorghum imports increase slightly in the later years, but remain around 3 million tons. Even at this reduced import level, Mexico is expected to account for more than 55 percent of world imports.

- Japan imports a fairly constant volume of sorghum (1.3 million tons) throughout the period to maintain diversity and stability in its feed grain supplies.

- The United States is the largest exporter of sorghum, accounting for about 80 percent of world trade in recent years. During the projection period, the U.S. share declines slightly as its sorghum exports to Mexico account for a smaller share of world trade.

- The primary sorghum markets for Argentina, the world's second largest exporter, are Japan, Chile, and Europe. In Argentina, prices and profitability favor planting other crops, particularly soybeans and corn, so sorghum exports only rise slightly during the projection period.

- Brazil has begun to export small quantities of sorghum and the volume is projected to rise during the projection period. Because of special soil characteristics in the Campos Cerrado region of Brazil, sorghum is increasingly planted between crops of soybeans or cotton to protect soils from the negative effects of solar radiation.



Source: USDA-ERS (2006).

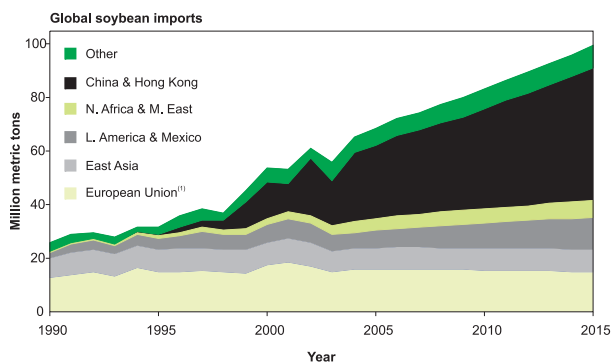
Strong income and population growth in developing countries generates increasing demand for vegetable oils for food consumption and for protein meals used in livestock production. World soybean trade grows at an average annual rate of 3.6 percent through the projection period, compared with rates of 2.8 and 2.2 percent for soybean oil and soybean meal.

- Many countries with limited opportunity to expand oilseed production continue investment in oilseed crushing capacity, such as China and some countries in North Africa, the Middle East, and South Asia. As a result, import demand for soybeans grows faster than for either soybean meal or soybean oil throughout the baseline. However, strong competition in international protein meal markets is expected to pressure crushing margins and shift some of the import demand for oilseeds to cheaper meals. The steady competitive pressure of new oilseed crushing capacity is expected to result in some inefficient crushers going out of business.

- China's expansion of domestic crushing capacity instead of importing protein meal and vegetable oil significantly influences the composition of world trade by raising international import demand for soybeans and other oilseeds rather than for soybean products.

- Brazil's rapidly increasing soybean area enables it to gain a larger share of world soybean and soybean meal exports, despite increasing domestic feed use. Its share of world exports of soybeans plus the soybean equivalent of soymeal exports rises from about 32 percent in recent years to 45 percent by 2015.

- The expansion in Argentine soybean area slows as incentives to grow corn and sunflower seed improve and conversion of new farmland approaches its practical limits.



⁽¹⁾ EU-25 excludes intra-trade after 2002, EU-15 intra-trade before 2003, Slovenia before 1992.

Source: USDA-ERS (2006).

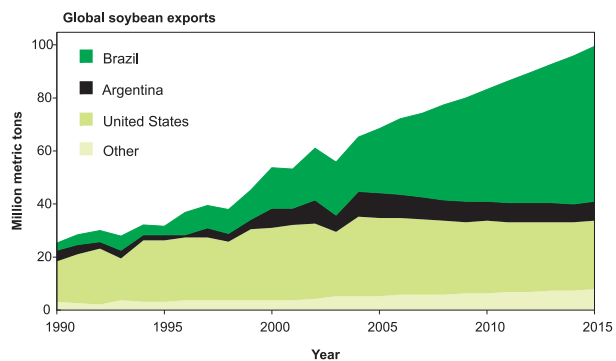
- The EU has been the world's leading importer of soybean meal, and until 2002, of soybeans. However, increases in grain and rapeseed meal feeding are expected to continue to slow the growth in EU soybean and soybean meal imports. Increased barley production due to 2003 CAP reforms, greater supplies of coarse grains from acceding countries, and more rapeseed meal available as a result of the biofuels initiative, combine to slow the growth of soybean meal consumption. These factors are only partially offset by an increase in the dairy quota that would increase soybean meal feeding.

- China will face policy decisions regarding tradeoffs in producing or importing corn and soybeans. The baseline projections assume that Chinese policies will tend toward maintaining domestic corn production and importing soybeans. Thus, China accounts for over 70 percent of the world's 27-million-ton growth in soybean imports over the next 10 years. Significant investments in oilseed crushing infrastructure by China drive

strong gains in soybean imports as China seeks to capture the value added from processing oilseeds into protein meal and vegetable oil.

- East Asia's trade outlook is dominated by a continuing shift from importing feedstuffs to importing meat and other livestock products. As a result, the growth in this region's import demand for protein meal and oilseeds slows over the baseline. This process occurs most noticeably in Japan.

- As Argentina seeks to operate its expanding crushing facilities at full capacity, it is projected to increase its soybean imports from Brazil and other South American countries to nearly 3 million tons a year by the end of the period.



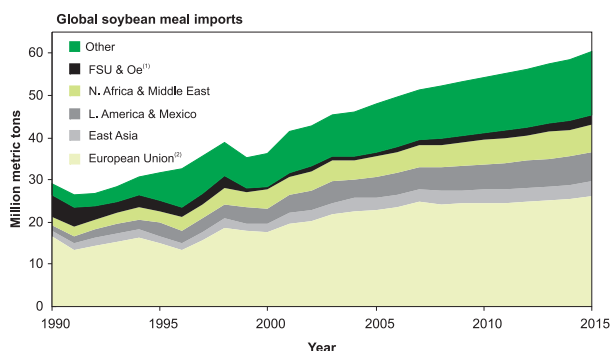
Source: USDA-ERS (2006).

- The three leading soybean exporters—the United States, Brazil, and Argentina—account for more than 90 percent of world trade throughout the baseline.

- With continuing area gains, Brazil maintains its position as the world's leading exporter of soybeans and soybean products. Although combating soybean rust disease increases production costs, soybeans remain more profitable than other crops in most areas of Brazil. It has been assumed that some land in southern Brazil will shift from oilseed to corn production during the middle of the projection period in response to higher corn prices and more limited competition from U.S. corn exports. Still, with expanded soybean plantings in the Central West, the growth rate for Brazil's soybean planted area is projected to average nearly 4 percent a year, reaching about 30 million hectares by 2015.

- In the United States, projected declines in soybean acreage and increased domestic crush limit exportable supplies.

- Argentina's export tax structure favors domestic crushing of whole seeds and exporting the products. To more fully utilize its large and expanding crushing capacity, while diverting some land to corn production and exports, it is assumed that Argentina will import some soybeans from Brazil, Paraguay, Uruguay, and Bolivia. Argentina's soybean exports hold steady at about 7 million tons.



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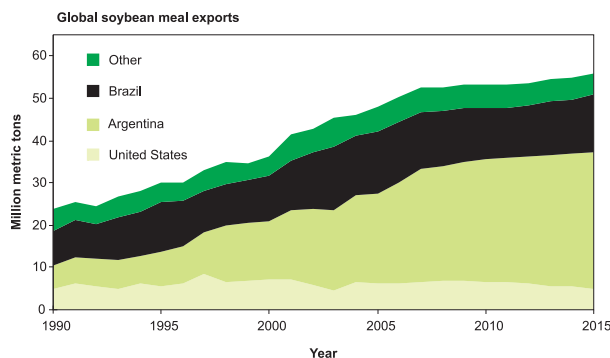
Source: USDA-ERS (2006).

- Despite increased domestic feeding of grains, the EU remains the world's principal destination for soybean meal throughout the projection period. Lower import prices for meal relative to soybeans pressure crush margins, curtailing soybean imports in favor of soybean products.

- The North Africa and Middle East region becomes a larger importer of soybean meal in the projections as the demand for livestock feed boosts import demand in a number of countries.

- Latin America, Southeast Asia, and the former Soviet Union remain important growth markets for soybean meal, provided avian influenza can be controlled.

- Mexico's strong growth in demand for protein feed and vegetable oils is projected to continue. The crushing industry is also expected to continue expansion. This will boost soybean imports but slow the growth in soybean meal imports.



Source: USDA-ERS (2006).

- Argentina, Brazil, and the United States remain the three major exporters in international protein meal markets.

- Argentina, the world's largest exporter, increases its share of soybean meal exports from less than 45 percent in recent years to more than 53 percent in the latter portion of the projection period. The export shares of Brazil, the United States, and other exporters fall. Argentina maintains high utilization of its growing crushing capacity and continues to expand soybean meal exports by importing soybeans from Brazil and other South American countries.

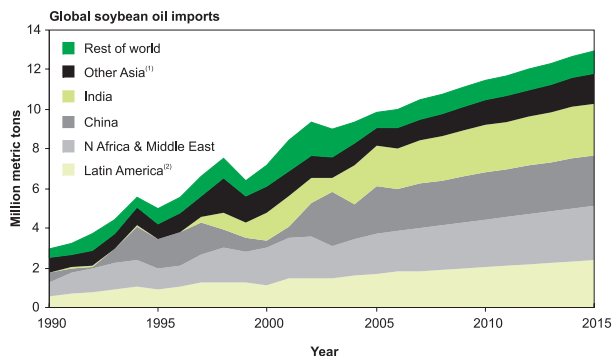
- In Brazil, strong growth in domestic meal consumption due to rapid expansion of the poultry and pork sectors limits increases in soybean meal exports. Also, domestic soybean crushing capacity is not expected to grow as fast as soybean meal consumption

- Significant expansion in domestic crushing in China and large imports of oilseeds in the baseline result in Chinese soybean meal exports rising to more than 1 million tons annually by the end of the projections. China's exports, along with small increases in exports from South America, keep international protein meal markets very competitive.

- The EU continues to be a small but steady exporter of soybean meal to Russia and other East European countries. India remains an exporter, although export volume declines as domestic use, especially for poultry feed, rapidly expands.

- Import demand for soybean oil rises in nearly all countries and regions. Although India

and China remain the world's largest importers, income and population growth in the North Africa and Middle East region and in Latin America (particularly Central America and the Caribbean) drive more rapid gains in soybean oil imports.



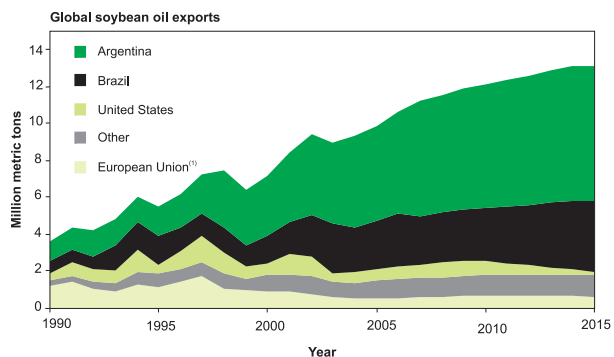
⁽¹⁾ Asia less India and China.

⁽²⁾ Includes Mexico.

Source: USDA-ERS (2006).

- In India, lower tariffs on soybean oil (held in check by World Trade Organization (WTO) tariff-binding commitments) compared with tariffs for other vegetable oils support continued large imports of soybean oil. Other factors that contribute to India becoming the world's largest soybean oil importer include burgeoning domestic demand for vegetable oils and limitations on domestic production of oilseeds. Low yields, associated with erratic rainfed growing conditions and low input use, inhibit growth of oilseed production in India.

- In China, growing demand for high-quality vegetable oils outpaces domestic oil production and fuels a small expansion in soybean oil imports. Land-use competition from other crops constrains area planted to vegetable oil crops in China.



⁽¹⁾ Europe Union-25 excludes intra-trade after 2002, EU-15 intra-trade before 2003. Slovenia before 2005.

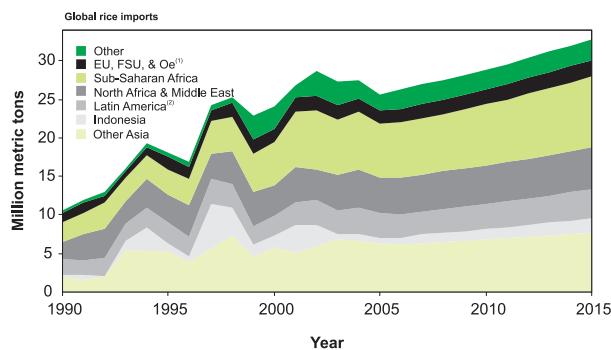
Source: USDA-ERS (2006).

A strong emphasis on exporting soybean products pushes Argentina's and Brazil's combined share of world soybean oil exports from less than 80 percent in recent years to about 85 percent by the end of the baseline.

- Argentina is the leading exporter of soybean oil, reflecting the country's large crush capacity, its small domestic market for soybean oil, and an export tax structure that favors the exports of products rather than soybeans. Increases in crush and soybean oil exports are supported by gains in Argentine soybean production due to extensive double-cropping, further adjustments to crop-pasture rotations, and the addition of marginal lands in the northwest part of the country. Argentina also increases soybean imports from other South American countries in order to more fully utilize its crushing capacity.

- Brazil's expansion of soybean production into new areas of cultivation enables it to increase both its volume of soybean oil exports and its share of world trade.

- The European Union and the United States remain the world's next largest soybean oil exporters throughout the baseline, although their export volumes and shares of world trade continue a downward trend. In the EU, exportable supplies of vegetable oils are limited by the growth in biodiesel.



⁽¹⁾ European Union, former Soviet Union and Other Europe.

⁽²⁾ Includes Mexico.

Source: USDA-ERS (2006).

Global rice trade is projected to grow 2.5 percent per year from 2006 through 2015. By 2015, global rice trade is projected to reach nearly 33 million tons, nearly 15 percent above the record set in 2002.

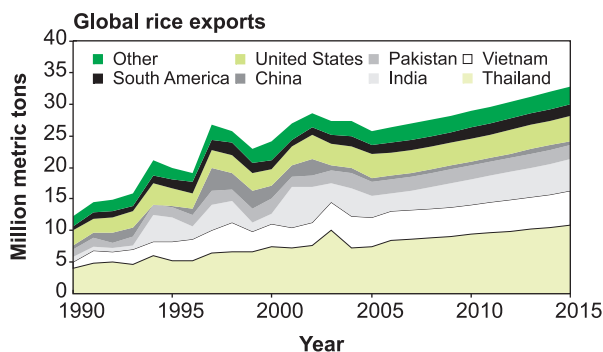
- Long-grain varieties account for around three-fourths of global rice trade and are expected to account for the bulk of trade growth over the next decade. Long-grain rice is imported by a broad spectrum of countries in South and Southeast Asia, much of the Middle East, nearly all of Sub-Saharan Africa, and most of Latin America. Indonesia, Nigeria, Iran, Iraq, the Philippines, and Saudi Arabia are typically the top long-grain import markets.

- Medium- and short-grain rice account for 10-12 percent of global trade, with Japan, South Korea, Taiwan, Turkey, and Jordan the major importers. Expansion in medium-grain rice trade is projected to be much smaller than for long grain. Among the Northeast Asian buyers, only South Korea is projected to increase purchases over the next decade. All rice imports by Japan, South Korea, and Taiwan are the result of commitments under the WTO.

- Aromatic rice, primarily basmati and jasmine, makes up most of the rest of global rice trade. Aromatics typically sell at a substantial price premium over long- and medium-grain varieties. Aromatics are imported mostly for high-income consumers.

- Indonesia and Bangladesh, two of the world's leading rice-importing countries, will experience rising food demand due to growing populations. However, land constraints and already high cropping intensities indicate little opportunity for either country to significantly expand production. Thus, their imports are projected to increase over the next decade and account for 22 percent of the increase in rice trade.

- Sub-Saharan Africa and the Middle East are also major destinations for internationally traded rice. In both regions, strong demand growth is driven by rapidly expanding populations. But opportunities to expand production are limited due to constraints such as agroclimatic conditions in the Middle East and infrastructure deficiencies in Sub-Saharan Africa. Sub-Saharan Africa accounts for 30 percent of the increase in world rice trade during the projection period.



Source: USDA-ERS (2006).

Asia remains the largest rice-exporting region throughout the projection period.

- Thailand and Vietnam, the world's largest rice-exporting countries, account for nearly half of all rice exports in the baseline. Both countries produce and export primarily long-grain rice. Rising production, mostly due to higher yields, and declining per capita consumption, drive the expansion in exports from both countries.

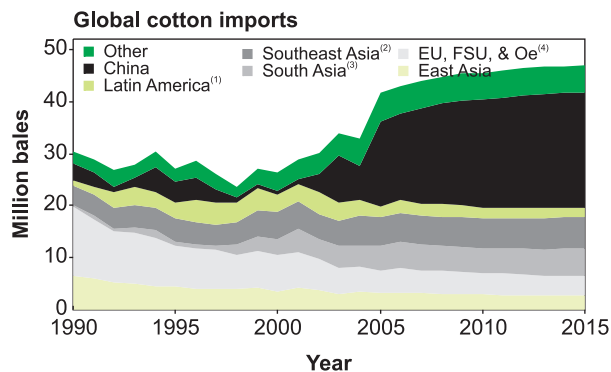
- The United States is projected to remain the world's third-largest rice-exporting country during the first half of the baseline. Rising domestic demand and a slower growth rate in yields constrains the expansion of U.S. rice exports.

- Midway through the baseline, India becomes the third largest rice exporter. India has been a major exporter since the mid-1990s, although export levels have been rather volatile, primarily due to fluctuating production and stock levels. Exports are projected to increase over the next decade as high internal prices stimulate production and exportable supplies. India exports both low-quality, long-grain rice and smaller quantities of high-quality basmati rice.

- In recent years, Pakistan has replaced China as the world's fifth-leading exporter. This is due primarily to declining exports from China rather than an increase in Pakistan's exports. Pakistan has little ability to expand rice area, and its agricultural sector is confronting a growing water shortage. Rice exports are stable at around 2.2 million tons. Pakistan exports both high-quality basmati and low-quality, long-grain rice.

- Rice exports from China have declined from over 2 million tons in most years during the

half-decade ending in 2003 to less than 0.9 million tons during the last few years. Production growth is projected to be very slight during the next decade as higher yields are nearly offset by stagnant-to-declining area planted to rice. Consumption growth is negligible as declining per capita rice consumption offsets rising population. China exports high-quality, medium/short-grain rice to Northeast Asian markets and low-quality, long-grain rice to Sub-Saharan Africa and some lower income Asian markets.



⁽¹⁾ Includes Mexico.

⁽²⁾ Malaysia, Philippines, Thailand and Vietnam.

⁽³⁾ Bangladesh, India and Pakistan.

⁽⁴⁾ European Union, former Soviet Union and Other Europe.

Source: USDA-ERS (2006).

Completion of the Multi-Fiber Arrangement (MFA) phaseout at the end of calendar year 2004 eliminated the quotas that governed much of the world's trade in textiles and apparel for more than 30 years. These restrictions were removed per WTO commitments by the United States, the EU, and Canada, and their removal has been a major influence on world trade patterns in cotton, textiles, and apparel. For apparel production, labor costs are decisive in determining the location of production. As a result, textile production and raw cotton consumption will increase in countries where labor costs are low. High-cost labor markets in Europe and East Asia continue to reduce their cotton imports through the baseline.

- The textile industries in China, India, and Pakistan are the major beneficiaries of the MFA's elimination.

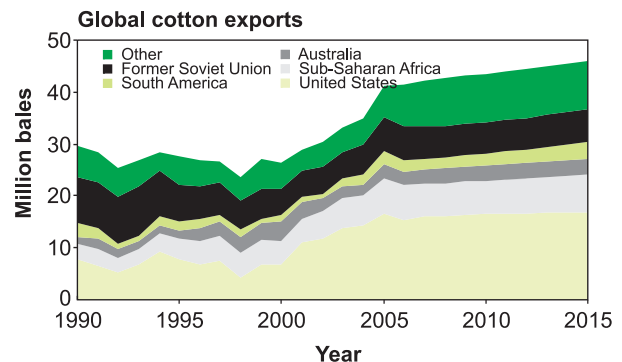
- China has been importing record amounts of cotton following the depletion of government

stocks in 2003/04. Its cotton imports are expected to grow more slowly than the rapid increase since 2001. However, during the next decade, the increase in cotton imports by China is projected to more than offset the decline in imports by other countries, and China accounts for 46 percent of world imports by 2015.

- India's textile industry has been accelerating in recent years, but cotton use is not expected to grow as rapidly as in China, despite India's growing textile exports. India's export orientation and pace of income growth have generally lagged China's, limiting its growth in cotton consumption.

- In recent years, Turkey's textile industry has benefited from favorable trade access to the EU, its major export market for textiles and apparel. However, the end of the MFA quotas will now give lower cost competitors the same favorable access to EU markets. Turkey's cotton imports are projected to decline slowly over the next 10 years.

- The EU, Japan, Taiwan, and South Korea all steadily reduce their cotton imports as textile trade reforms and/or higher wages in these countries drive textile production to lower wage countries.



Source: USDA-ERS (2006).

Globalization is expected to continue to move raw cotton production to countries where resource endowments and technology result in the lowest production costs. Land is a key input factor. Traditional producers with large land bases suitable for cotton production are expected to benefit from post-MFA trade patterns. Such

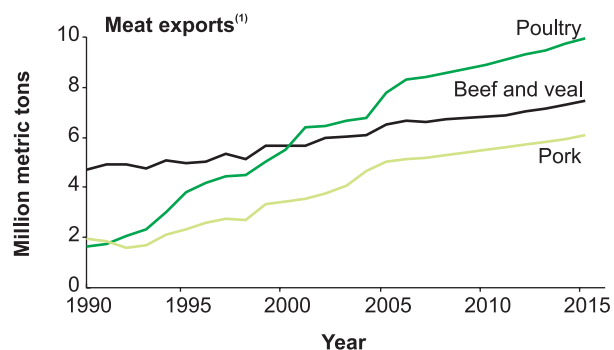
producer/exporter regions include the United States, Sub-Saharan Africa, Australia, and Brazil.

- The United States continues as the world's leading cotton exporter throughout the baseline period, with annual exports remaining around 16 million bales. Exports dip to 15.5 million bales in 2006/07, but grow to almost 17 million bales by 2015/16.

- The Central Asian countries of the former Soviet Union have been the principal competitors of the United States in world raw cotton markets for the last decade. However, government policies in Central Asia promoting investment in textiles have increasingly resulted in exports of textile products rather than exports of raw cotton.

- Sub-Saharan Africa has overtaken Central Asia as the principal competitor. Its cotton exports have risen in large part due to economic reforms. A large correction in the foreign exchange value of the currency of the major cotton exporting countries of West Africa in 1994 led to nearly a decade of growth in West Africa's cotton production. As West Africa's production gains began to lag at the end of the 1990s, several southern African countries began increasing their cotton production, aided by reforms such as ending marketing board monopolies. Continued increases in output are expected as producers take advantage of more export-oriented government policies.

- Improved Indian cotton crop yields, in part due to the adoption of genetically modified cotton, have raised India's output in recent years, increasing exportable supplies. This is expected to continue in the early part of the projection period.



⁽¹⁾ Major exporters.
Source: USDA-ERS (2006).

Increased market access achieved under global trade agreements was behind much of the gains in animal product trade over the past decade. During the baseline, per capita income growth in a broad number of importing countries is the driving force behind rising global meat demand. However, animal diseases remain a dampening force in world meat trade.

- BSE in Canada and the United States has resulted in changes in Canada's beef and live cattle exports to the United States. In 2004 and 2005, Canadian beef exports recovered all of the decline following its 2003 BSE case. Canadian exports to the United States of live cattle under 30 months of age are assumed to continue. Canadian beef exports, after an initial decline associated with the increase in live cattle exports, are projected to remain flat over the baseline period.

- EU enlargement results in greater shipments between the EU-15 and the acceding 10 countries and restrained trade of meat outside the EU-25. EU beef exports remain well below the annual WTO export-subsidy limit of 817,000 tons, as a stronger euro limits their competitiveness and policy changes lower beef production and the need to remove beef from the domestic market.

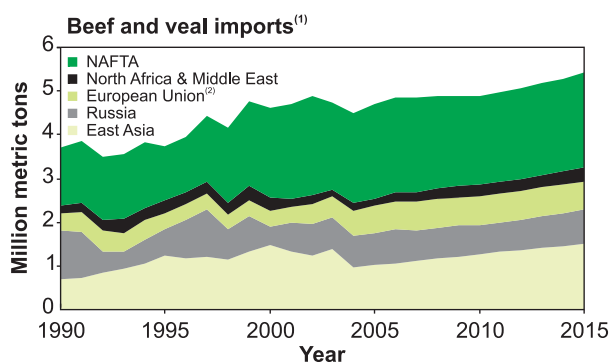
- Argentine exports rose sharply during the last 2 years. However, export taxes and other recent policy changes have made Argentina's exports less competitive. Beef exports are projected to decline throughout the baseline, but remain above their pre-2004 levels.

- The baseline assumes that Brazil does not gain nationwide FMD-free status. However, exports from Brazil's expanding pork sector are expected to be competitive in Russia and other price-sensitive markets, and in non-FMD-free markets.

- U.S. poultry exports face strong competition from other countries. Brazilian poultry production and exports rise rapidly, bolstered by low production costs and very competitive prices in international markets.

- Because of avian influenza, Thailand's exports of chilled and frozen poultry meat have been banned by importers. However, Thailand's exports of fully cooked poultry products have

expanded rapidly and partially offset the loss of uncooked poultry exports.



⁽¹⁾Select importers.

⁽²⁾EU-25 excludes intra-trade after 2002, EU-15 intra-trade before 2003, Slovenia before 1992.

Source: USDA-ERS (2006).

Traditionally, beef trade occurred largely between developed countries. However, Brazil and India have become large exporters of lower quality beef that is imported by lower income countries and countries with less stringent import restrictions concerning FMD. The baseline assumes gradual recovery of U.S. and Canadian exports to Japan and South Korea.

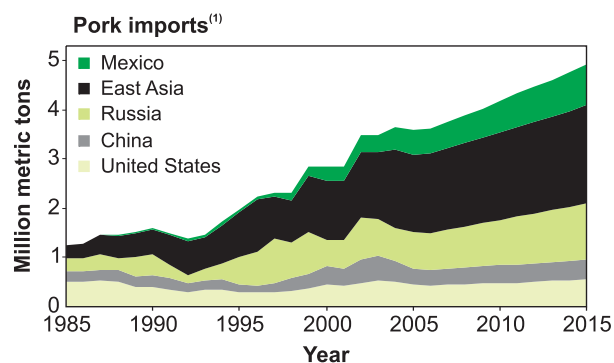
- Higher income countries, such as Japan and South Korea, increase beef imports, reflecting domestic cattle sectors that are constrained by land availability. These imports are primarily of higher quality beef. U.S. beef exports to these countries are projected to rebuild. Overall imports by Japan and South Korea rise to levels attained prior to the U.S. BSE case in 2003, but the United States loses market share because of the increased presence of Australia and New Zealand in these markets.

- U.S. beef imports, primarily of grass-fed ground beef and other processed products from Australia and New Zealand, decline slightly through the period. However, rising Asian imports of beef from Australia and New Zealand enable these exporters to maintain their trade levels.

- Robust import growth of U.S. higher quality beef is projected for Mexico.

- The baseline assumes that Russia's tariff rate-quota (TRQ) for beef, first imposed in 2003, remains in effect until 2009. In the longer run, the growth in Russia's beef imports resumes as rising

consumer demand outpaces gains in domestic production. Russia remains a large market for EU-subsidized beef exports as well as Brazilian beef.



⁽¹⁾Select importers.

Source: USDA-ERS (2006).

- Mexican pork imports increase nearly 400,000 tons between 2006 and 2015, making Mexico the fastest growing pork importer. Increases in income and population are the primary drivers of Mexico's increasing demand for pork products.

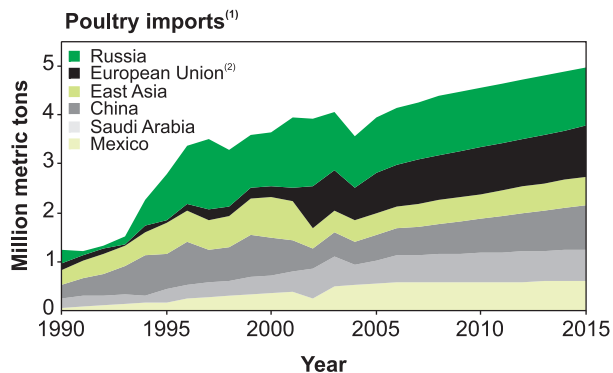
- Higher income countries of East Asia, such as Japan, Hong Kong, and South Korea, increase pork imports as their domestic hog sectors are constrained by environmental issues and imported feed costs. In South Korea and Japan, consumer concerns about BSE boost pork consumption and imports.

- As with beef, the baseline assumes that the TRQ that Russia imposed for pork in 2003 remains in effect until 2009. Although the TRQ initially lowers pork imports, Russia remains a major destination for competitively priced pork exports from the EU and Brazil as demand growth continues to exceed Russian meat producers' ability to respond.

- China's pork production and exports continue to rise rapidly. Although its imports also rise, China's net pork exports rise slightly during the projection period.

- Russia is expected to remain the world's largest poultry importer, with gains in consumer income fueling increased demand for poultry products. Even with rapid gains in production,

Russia's domestic output is expected to lag gains in domestic demand.



⁽¹⁾ Selected importers.

⁽²⁾ EU-25 excludes intra-trade after 2002, EU-15 intra-trade before 2003, Slovenia before 1992.

Source: USDA-ERS (2006).

- Russia's TRQ on poultry imports is assumed to remain in effect through 2009. Over this period, the low-tariff quota expands slowly and the over-quota tariff rate is gradually lowered. During the quota period, imports from the United States are given the largest share of the quota, averaging approximately 75 percent of the total.

- In Mexico, the world's second largest importer, strong economic growth raises per capita poultry consumption. Domestic poultry production rises rapidly but lags increasing consumer demand.

- Poultry consumption growth in China is met largely by expanding domestic production, but imports are also projected to grow.

- Exports from Thailand and China will be limited to fully cooked products for most of the projection period because of avian influenza. Most of these exports are likely to be higher value boneless products. For Thailand, exports of cooked chicken products replace some, but not all, of the decline in its frozen poultry exports.

- Poultry imports into Saudi Arabia continue to rise throughout the baseline. However, consumer preference for freshly killed birds also keeps domestic production growing.

- Rising consumer incomes in many developing countries is expected to provide growing markets for lower valued poultry products.