

Overview of the FAPRI-ISU 2011 World Agricultural Outlook

Macroeconomic Environment

- Affected by U.S. housing and financial market stress, recovery in the North American region begins in 2010, and GDP grows in the U.S., Canada, and Mexico by 2.74%, 2.50%, and 3.98%, respectively, over the rest of the projection period. Price inflation is expected to remain moderate during the outlook period, at 1.8% per year in the U.S., 2.0% in Canada, and 3.3% in Mexico.
- Asian economies withstood the crisis and lead the world economic recovery with aggressive stimulus policies, resumed capital inflow, and industrial growth momentum. China, Vietnam, and India post solid growth of 7.8%, 6.7%, and 6.6%, respectively. After the slowdown, Japan and Taiwan return to modest growth of 1.1% and 3.9%. Inflation remains low in most of Asia.
- After recovery, annual growth in Argentina and Brazil is projected to average 3.6% and 4.4%, respectively. Price inflation is expected to be significant in Argentina and Venezuela. It is modest elsewhere in the region.
- Growth in the original member states of the European Union is at 1.7%. New member states from Eastern European countries and the Baltics raise the aggregate European Union growth rate to 1.9%. After depreciating 6.7% in 2009, currencies of most EU members experience real appreciation against the U.S. dollar over the rest of the decade.
- The U.S. dollar strengthened relative to many currencies including those in the developed world in 2009. In the coming decade, the U.S. dollar resumes its real depreciation against several currencies of developed and developing countries.

Policy Assumptions

- Bioenergy mandates in a number of countries continue to be key drivers in the current outlook. In the U.S., the RFS and other provisions of the EISA of 2007 are implemented, with the exception of the cellulosic ethanol RFS. In addition, the FCEA of 2008 in the U.S. and the current provisions of the CAP in the EU are included in this baseline. The commitments of contracting countries in the URAA of 1995 are extended to 2025.

Food and Feed Grains

Wheat

- The world wheat price increases to \$270.44 in 2011/12 as a result of increased demand in world markets. It reaches \$260.37 in 2025/26.
- Net trade grows at an annual average rate of 2.51%, reaching 136.66 mmt in 2025/26.
- The U.S. market share of wheat declines to 15.4% in 2025/26 because of strong competition from other exporting countries. China and India are net exporters of wheat.

- Net wheat imports by Asian countries increase by 1.19 mmt over the next 15 years. African countries increase their net imports by 13.46 mmt over the next 15 years. Net exports of American countries reach only 28.41 mmt in 2025/26.

Corn

- The world corn price drops to \$183.17 in 2011/12. It increases to \$197.26 in 2012/13 and continues to increase throughout the projection period but then falls slightly, ending at \$191.35 in 2025/26.
- With an increase in consumption, the stocks-to-use ratio continues to decline over the projection period, ending at 13.74% in 2025/26.
- Corn trade is projected to increase over the projection period, reaching 129.05 mmt in 2025/26. The U.S market share drops in 2010/11 and 2011/12 because of lower U.S exports, but it increases over the rest of the projection period with declines in Brazil and Argentina's market shares. China becomes a net importer of corn in 2016/17. Net imports reach 6.41 mmt in 2025/26.

Sorghum

- The world sorghum price declines in 2011/12 because of higher production. It reaches \$249.67 in 2025/26.
- World sorghum net trade grows over the projection period, reaching 10.76 mmt by 2025/26 with growth in demand.
- Japanese net imports of sorghum are stable and reach 1.59 mmt in 2025/26. Mexico's net imports decline slightly in 2011/12 and reach 3.15 mmt in 2025/26. The U.S. market share declines slightly in 2011/12, to 61.02%, and increases to 72.83% in 2025/26.

Barley

- The world barley price reaches \$198.49 in 2025/26. Net trade reaches 28.06 mmt in 2025/26.
- EU net exports of barley decline in 2011/12 because of lower carry-over stocks. Net exports of barley reach only 2.77 mmt in 2025/26. Australian net exports decrease in 2011/12 and end at 3.56 mmt in 2025/26. Canadian barley exports decline in 2011/12 due to lower carryover stocks and end at 3.04 mmt in 2025/26. Ukrainian and Russian barley net exports reach 8.35 mmt and 6.99 mmt, respectively.

Oilseeds

Soybeans

- World oilseed prices increase sharply in 2010/11 as production of soybeans, rapeseed, and sunflower declined year on year while demand keeps rising. A slight expansion in the area planted in response to this season's high prices and yield recovery are expected to result in lower prices for 2011/12. Strong demand, mostly for vegetable oils, sustains the prices of these oilseeds at high levels.

- Soybean production declined by 3.5 mmt in 2010/11, to 257 mmt, from the record crop of 2009/10. The decline is mostly due to drops in production from the three largest producers (Argentina, Brazil, and the U.S.). Production then expands by 23%, reaching 315 mmt by the end of the outlook as a result of higher area and yields.
- Brazil is expected to overtake the U.S. as the largest exporter of soybeans by 2020/21. Production in Brazil expands by 31% over the outlook. The U.S. share of total exports declines from 46% to 36% by 2025/26.
- China consolidates and expands its position as the world's largest importer and consumer of soybeans. By 2025/26, China's consumption reaches 31% of global production. In terms of trade, the country accounts for 70% of the world's imports by the end of the period.

Soybean Meal

- The price of soybean meal rises slightly in 2010/11 despite a 7.4% increase in supply, as the livestock sector continues its expansion, sustaining demand. However, crush is increasingly driven by the demand for vegetable oil, which pressures soybean meal prices downward.
- World soybean meal consumption expands 25% over the outlook period. China surpassed the EU as the world's largest consumer of soybean meal in 2009/10, and the difference keeps widening over the outlook period. By 2025, China consumes over 67 mmt of soybean meal, or about 31% of global use. U.S. consumption, which reaches 35 mmt, is also expected to surpass that of the EU by the end of the outlook period.
- Argentina and, to a lesser extent, Brazil continue to dominate the soybean meal export market, together accounting for 80% of net exports by 2025/26. Argentina's share of the export market increases from 52% to 62% by the end of the outlook. On the other hand, Brazilian net exports decline over the period as domestic demand growth from the livestock sector outpaces the supply expansion. A similar situation is observed for the U.S., whose net exports decline by 1.6% per year over the outlook.

Soybean Oil

- Driven by strong demand for food and industrial uses, the price of soybean oil increases strongly in 2010/11 and continues to grow for most of the period. The supply expansion of edible oils cannot keep up. As a result, and given that the demand growth in vegetable oils outpaces that of meals, vegetable oils finance a higher share of the crush value.
- The demand for soybean oil increases by 12.3 mmt by 2025/26, a growth of 1.7% per year. This growth is driven by both expanding food and industrial use. Because of their rising incomes, China and India present the highest growth in demand, which is mostly for food use. Argentina's use grows by 16% on top of the recent strong expansion, driven by strong biodiesel demand.
- Continuing the trend that started with its biodiesel blending mandate, Brazil's exports of soybean oil decline throughout the outlook, finishing at only 584 tmt by 2025/26.

Rapeseed and Products

- The 5.4% decline in production in 2010/11, driven by declines in both area and yields, results in sharply higher prices over the previous season. Usage can only be sustained by a strong reduction in ending stocks. Production resumes its upward trend in 2011/12 and

reaches 75 mmt (a 29% increase from the 2010/11 season) by the end of the projection. The crush, expanded to satisfy the demand for vegetable oils, exerts downward pressure on the market for meals. Prices of oilseed and meal decline in 2011/12 as supplies of oilseeds are expected to recover. The sustained demand for oils results in a price path that increases throughout the projection.

- World trade follows the same pattern as production, with net exports increasing by 31% by 2025. China and the EU combined account for 86% of the expansion in net imports. On the supply side, Canada provides 60% of the growth in net exports, maintaining its market share at about 65%. Ukraine continues to consolidate its position as the second-largest exporter.
- Rapeseed remains by far the largest oilseed crop in the EU. While sustained expansion in area and yields results in a 29% expansion in production by 2025/26, this is not enough to meet the growth in crush demand. Thus, net imports increase throughout the projection period.

Sunflower and Products

- Despite a 2.7% increase in the area harvested, sunflower production in 2010/11 declines by 2.5% because of lower yields. Stocks must be tapped in order to meet the demand, derived from the expanded use of sunflower products, vegetable oil in particular. This leads to a sharp increase in the price of sunflower and its products in 2010/11. An expansion in sunflower supply relieves some of the pressure the following season, resulting in lower prices for all the products in this complex.
- World trade follows the same pattern as production. Net exports decline by 13% in 2010/11 but then show slow but sustained growth, reaching 1.3 mmt by 2025/26. The trade markets for the products in this complex are larger than the market for the seed, each exceeding 3.5 mmt by 2025/26.
- Ukraine maintains its dominant position as the largest net exporter of sunflower and its products. By 2025/26, the country holds a 76% and 66% share of the net export markets for sunflower meal and sunflower oil, respectively.

Palm and Products

- World production of palm oil increased by 7.8% in 2010/11. However, this growth is not enough to prevent a price increase, consistent with the movement in the prices of the other edible oils. Palm oil remains the world's lowest-cost, most abundant, and most traded vegetable oil.
- Indonesia and Malaysia are the major exporters, while China, India, and the EU dominate the demand side of the market. Increasing incomes in China and India result in higher consumption of vegetable oils, including palm oil, which translates into growing import demand. Net imports of China and India grow by 78% and 54%, respectively, over the outlook.
- Indonesia is expected to expand its leadership as the world's largest producer and exporter over the outlook period. Strong prices encourage production and net exports to grow by 59% and 65%, respectively, by 2025/26. The biodiesel industry currently accounts for about 1.9% of the palm oil consumed domestically in Indonesia. This proportion is expected to increase to 15.5% by 2025/26.

Peanuts and Products

- As with the other oilseeds, the price of peanuts and peanut oil increases in 2010/11. Growth in demand keeps outpacing the supply, resulting in sustained high prices for peanuts and peanut oil. On the other hand, the demand for peanut meal grows at a relatively slower pace, resulting in price declines.
- Global production of peanuts increases by 12% over the outlook, mostly because of increasing yields as area remains stable. For the U.S., both production and use of peanuts grow at a similar rate, leaving their trade position about the same for the outlook period. A similar situation is observed for India, where both production and usage increase by about 30% by 2025/26. China continues its long-term pattern of reducing area utilized for peanut production.
- Trade of peanuts and products remains relatively stable over the outlook. Argentina and China remain the largest net exporters of peanuts. The EU is the leading importer. Trade in products is expected to remain low relative to that of the seed. By 2025/26 only 1% to 2% of the produced quantities of peanut meal and oil are traded internationally.

Sugar

- World sugar prices continue to climb, increasing by almost 6% in 2010/11 to 26¢ per pound after a dramatic increase of 51.3% in 2009/10 because of production shortfalls. Sugar prices remain high throughout the projection period but begin to decline in 2020/21, reaching 23.2¢ per pound by 2025/26. Both world sugar production and consumption increase in 2010/11, by 6.7% and 4%, respectively, and are projected to increase by 27.2% and 28.2%, respectively, by 2025/26.
- In the major sugar-exporting countries, Brazil's net exports increase by only 1.4 mmt in 2010/11 compared with 2.9 mmt in 2009/10 and 2.3 mmt in 2008/09. Thailand's net exports fall by 1.2 mmt in 2010/11 because of lower production and increased consumption, while Australia and Guatemala see a small increase in their net exports in the same year. By 2025/26, sugar net exports are projected to increase for all major exporters, by 52% for Brazil, 9.5% for Australia, 22.4% for Thailand, and 28.3% for Guatemala.
- Net imports increase in most of the major sugar-importing countries, namely, the EU, Russia, Pakistan, and Indonesia, in 2010/11. The EU's net imports increase by almost 2 mmt in 2010/11, from 213 mmt in 2009/10. However, net imports decline in the U.S. by 17.4% in 2010/11. Net imports also decrease in India, from 4.1 mmt in 2009/10 to 0.98 mmt in 2010/11 because of its recovery in sugar production. Over the projection period, net imports are projected to increase for all major importers except Russia and Japan, where net imports decline by 14.4% and 11.4%, respectively. India follows its historical pattern of switching from net importer to net exporter and back to net importer by the end of the projection period.

Biofuels

Ethanol

- After declining by 5.3% in 2009, the world ethanol price increased by 32% in 2010, to \$2.18 per gallon, partly because of a 24.2% decline in Brazilian ethanol exports. The ethanol price drops in 2011 before starting to increase over the first part of the projection period. The ethanol price declines in the last four years of the projection period, reaching \$2.5 per gallon by 2025.
- The major importer of ethanol, the U.S., switched to a net exporter of ethanol in 2010, with net exports of 224 million gallons compared with net imports of 173.3 million gallons in 2009 and 420.6 million gallons in 2008. The U.S. switches back to a net importer in 2011. With increasing demand to meet the Renewable Fuel Standard mandates, net imports increase over the projection period, reaching 3.3 billion gallons by 2025. U.S. ethanol production is projected to increase from 13.1 billion gallons in 2010 to 15.6 billion gallons in 2025.
- For the major ethanol exporter, Brazil, net exports declined for the third year in a row, from 1 billion gallons in 2008 to 908 million gallons in 2009 and to 687.5 million gallons in 2010. Ethanol production increased in Brazil by 5.6%, to 7.2 billion gallons, while ethanol consumption increased by 8.6%, to 6.6 billion gallons, in 2010. Over the projection period, both production and consumption are expected to increase, to 17.8 billion gallons and 13 billion gallons, respectively.

Biodiesel

- The world price of biodiesel (Central Europe FOB) increases to \$4.77 per gallon in 2011, driven by higher petroleum prices, the demand expansion by growing domestic mandates in several countries (Brazil, Argentina, the EU, and the U.S.), and higher vegetable oil prices. These factors support the price throughout the outlook period, with the price reaching \$5.97 per gallon by 2025.
- EU production increases by 4.7% in 2011 because of higher prices and decreased supplies available from overseas as Argentina and Brazil have their own domestic consumption mandates. Countervailing duties imposed on biodiesel from U.S. origin also limit the quantities that can be imported from this source. Production reaches 4.15 billion gallons by 2025.
- Consumption of biodiesel in the U.S. increases in 2011 as a result of implementation of the Renewable Fuel Standard. While production also increases, it is not enough to meet domestic needs. Therefore, the U.S. is expected to reverse its trade position and become a small net importer in 2011. Production increases throughout the outlook, but the country remains a net importer until the last few years of the period, when it exports marginal quantities.

World Meat

- Driven by income growth, per capita meat consumption increases by 9.4 kg over the baseline, reaching a level of 62.74 kg per person per year by 2025. Pork consumption still has the highest share in the consumption basket, followed by poultry consumption. Over

the projection period, pork consumption grows the fastest among the three meats at 1.44% annually.

- Meat demand increases world meat trade by 43.84% (7.64 mmt) over the projection period, with net trade reaching 25.09 mmt in 2025. Rising meat demand fuels a 28.09% increase in world meat production over the projection period (69.07 mmt), with production reaching 315 mmt in 2025.
- Recovery in the global economy pushes livestock and poultry prices relatively higher over the projection period. The beef price increases throughout the projection period, reaching \$114.85/cwt in 2025. The pork price ranges from \$55.29/cwt in 2010 to \$66.47 per cwt in 2025. The poultry price strengthens over the projection period, growing by 1.63% annually and reaching a record high of \$103.83/cwt in 2025.

Beef

- World beef trade recovers and continues to grow by an average rate of 3.71%, ending at 7.86 mmt in 2025. Responding to the recovery in trade and the growth of the world price, beef production increases at an annual rate of 1.77% (16.61 mmt) over the projection period, reaching 78.99 mmt in 2025.
- U.S. beef exports to Japan are still age-verified. Further demand recovery drives growth in the longer run. Net imports reach 934 tmt in 2025. The economic crisis results in lower disposable family income in Mexico, leading to slow recovery in beef consumption and imports in the short run; imports reach 645 tmt in 2025. Russia's beef imports were down about 40% in 2009. The continuing decline in beef production and an economic rebound result in increasing imports in Russia. Levels remain at around 1.16 mmt over the projection period. Faster consumption growth fuels rising imports in China, South Korea, Egypt, and the Philippines.
- Australia gains 1.15 percentage points of market share. Depreciating currency, productivity improvements, and aggressive market promotion allow Brazil to capture the leading beef exporter position and further expand its market share by 7.05 points. Argentina loses 5.42 points of market share as its policy favors domestic use over exports. Canada loses 3.2 percentage points of market share in beef trade, while India and New Zealand gains 0.48 and 0.50 points, respectively. China becomes a net importer over the projection period.

Pork

- Pork trade grows sharply in the short run but is flat in the medium term before it picks up again. Annual growth is 1.00% over the projection period (715 tmt), with trade reaching 5.49 mmt in 2025. Pork production increases over the projection period at a rate of 1.99% (30.88 mmt), reaching 134.25 mmt in 2025.
- Japan's net imports recover and grow at 1.13% annually, reaching 1.28 mmt in 2025. Economic growth reduced China's net exports, and the country became a net importer in 2008. Net imports expand to 569 tmt in 2025. Russia's pork imports remain above the quota even as the pork import quota encourages domestic production. Imports begin to decline in 2013, ending at 642 tmt in 2025. Mexico's growing population and disposable income cause consumption to grow faster than production, raising imports by 7.5% annually; imports reach 1.06 mmt in 2025.

- The EU loses market share but then gains it back, ending at the same starting market share. Canada's market share decreases by 2.45 percentage points, while the U.S. gains 5.48 percentage points. Brazil's market share declines in the first half of the projection period by 2.33 percentage points. Slower recovery in the second half of the period at 1.16 percentage points is not enough to return it to its starting share.

Poultry

- Despite a lower TRQ in Russia, its broiler trade recovers and grows at a rate of 3.61% annually. Total broiler trade increases by 4.12 mmt, reaching 11.73 mmt in 2025. Total broiler production increases by 1.79% (21.58 mmt), reaching 101.76 mmt in 2025.
- Japan's net imports grow 0.82% over the rest of the projection period. Economic growth in South Korea, Indonesia, and the Philippines raises imports of poultry products in these countries. Broiler imports in Mexico increase by 11.76% annually, reaching 1.42 mmt in 2025. Russia's domestic production is encouraged by the existing quota (771 mmt), which is binding over the baseline. China becomes a net importer of broiler in 2011, with net imports reaching 185 tmt in 2025. Taiwan's broiler imports grow at 1.55% annually, reaching 132 tmt in 2025. The cost of production in Saudi Arabia fuels import growth of 3.26%, with imports reaching 923 tmt in 2025.
- The U.S. increases its market share slightly, by 0.66 of a percentage point. After losing 59.4% of its exports because of AI, Thailand regains 1.22 points of market share in the projection period. Productivity improvements, product innovation, and a shift to higher-valued products enable Thailand to overcome SPS concerns and its higher cost of production. Brazil loses 3.98 points of market share.

Dairy

Milk

- Dairy prices declined significantly in 2009 as a result of the economic recession. Dairy prices increased in 2010 as the economy recovered, and prices continue to increase over the projection period. Economic growth and population growth favor higher dairy demand, which puts upward pressure on dairy prices in the long run.
- Strong demand and growing incomes boost world milk production. Over the projection period, world milk production increases 32.47%. While the EU and the U.S. are still the major milk producing countries, high production growth is seen in Asia, especially in China and India, as well as in Argentina and Brazil.
- Growth in milk production facilitates higher dairy product production. Total butter production increases 48.07% over the baseline, with India accounting for 88% of the growth. Total cheese production grows 36.32%, with the U.S. and the EU together accounting for about 53.15%. NFD and WMP production increase 50.63% and 36.98%, respectively.

Butter

- New Zealand is the biggest butter exporter in the world, followed by the EU and Australia. Together they supply 79.86% of total butter trade at the end of the baseline. As New Zealand and Australian butter exports rise, EU net exports stagnate.

- Russia, a leading importer in the world butter market, gradually increases its butter imports. It accounts for about 14.35% of total world butter imports at the end of the baseline. Driven by economic growth and westernized diets, steady growth occurs in Asia, especially in China. Egypt increases its imports by 5.80% annually, while Mexico's butter imports remain stable to slightly increasing.

Cheese

- As major players in world markets, Australia and New Zealand steadily expand their dairy production over the baseline. Australian and New Zealand cheese production increase 5.32% and 5.54% annually, respectively. Stimulated by strong import demand, especially from Asia, Australian and New Zealand NFD and WMP production increase 3.92% and 1.16% annually, respectively, over the projection period.
- World cheese trade expands 109.33% over the projection period. The EU, New Zealand, and Australia supply 60% of total world trade. As Australia and New Zealand increase their exports, the EU's exports are stable to slightly increasing because of strong domestic demand. Argentina, Brazil, and Ukraine become increasingly important players in international cheese markets, together accounting for 16.29% of total exports by 2025.
- Russia and Japan are the leading cheese importers and account for 24.91% of total world imports on average. Sustained by economic and population growth, cheese imports of other Asian countries (China, Indonesia, Malaysia, Philippines, South Korea, Thailand, and Vietnam) increase by 1.93% to 5.12% annually.
- Stable growth occurs in per capita cheese consumption in most countries. High cheese consumption occurs mostly in countries with substantial domestic production, such as the EU, the U.S., Australia, New Zealand, and Argentina. Japanese and Russian per capita cheese consumption levels grow 2.01% and 1.95%, respectively, annually.

Powder

- Australia, New Zealand, the EU, and the U.S. captured over 90% of the NFD export market in 2009. Their combined market share declines slightly over the baseline to 77.87%, as there is an increase in NFD exports from other countries, such as India, Ukraine, and Brazil. Asian countries, Algeria, and Mexico are major importers and increase their imports steadily over the projection period.
- WMP trade grows 7.54% over the baseline. While EU WMP exports decrease by 66.58%, Australia, New Zealand, and Argentina expand their exports, respectively, by 12.10%, 13.23%, and 42.91%. Brazil, as an emerging exporter, significantly increases its exports over the baseline. Major importers Algeria, Venezuela, and Asian countries steadily increase their WMP imports.
- Southeast Asia (Indonesia, Malaysia, Philippines, Thailand, and Vietnam) keeps its NFD imports strong, accounting for about 35.50% of total world NFD imports. China and Japan together account for about 10.91% of the NFD import market by the end of the baseline. Southeast Asian WMP imports rise 2.90% to 8.82% annually throughout the baseline. Chinese WMP exports are negatively affected by the milk scandal for the next couple of years. Over the long run, as domestic WMP production expands and as consumers substitute more fluid milk for reconstituted milk powder, Chinese WMP imports continue to decline.

Carbon

- Global emissions from agricultural production rise by 13.6% over the projection period. Notable countries with above-average greenhouse gas growth are Argentina (17%), Brazil (14%), and Mexico (18%). Those increases are mainly due to an increase in crop area and the associated emissions from agricultural soil management.
- The increase in per capita meat demand leads to an increase in emissions from livestock products (especially enteric fermentation) but is still less than the emissions from cropland. Emissions in the United States increase moderately, by 2%.
- The expansion in crop area as well as the rise in meat demand and the resulting expansion in livestock put pressure on global forests and grasslands. The change in land area in those categories as well as the emissions reported are indicative and based on the needs of agriculture. The Forest Resource Assessment conducted by the Food and Agriculture Organization of the United Nations observed significant variations in carbon emissions and deforestation rates over time. Total cropland in the United States and China will rise by 1% and 2%, respectively. The emissions associated with land-use change in those regions will be low because idle cropland is still available. In addition, if China continues its afforestation policy, most of the idle land will be used for forestry.
- Argentina, Australia, and Brazil continue to experience growth of cropland ranging between 10% and 12% over the projection period, with significant adverse effects on carbon emission from deforestation.

Fertilizer

- World fertilizer use in 2011/12 is projected to be 179 mmt, composed of 104 mmt of nitrogen (N) fertilizers, 42 mmt of phosphorous (P), and 33 mmt of potassium (K). This increase of 2.29% relative to the 2010/11 crop season reflects the expansion of the world's agricultural frontier by 1.60% and also the more intensive use of fertilizers at the world level in most commodities (with the exception of soybeans, sorghum, sunflower, and sugarcane). All commodities except soybeans experience an increase in fertilizer consumption from 2010/11 to 2011/12. While world soybean area increases, it is offset by a decrease in the per hectare N and K application rates. On the other hand, commodities such as sorghum, sunflower, and sugarcane, whose fertilizer application rates also decrease, observe higher fertilizer consumption because of a more-than-proportional increase in their crop area.
- China, India, the U.S., and the EU-27 countries account for more than two-thirds (65%) of the world's fertilizer consumption in agriculture. China, the world's top consuming country, followed by the U.S., is characterized not only by large crop areas but also by an intensive use of fertilizers, which is comparable to (and even higher than in the cases of wheat, sunflower seed, peanuts, cotton, sugarcane, and sugar beet) those of the U.S. and EU-27 countries. India, on the other hand, is the third-largest consumer given its larger crop areas but with its more moderate fertilizer application rates. China's fertilizer use increases by 1.37% in 2011/12, driven by higher fertilizer application rates for most commodities; however, the lower areas for most crops are not enough to drag down total

fertilizer consumption. Fertilizer use in India marginally increases, by 0.8%, as a result of a generalized extensification (except in the case of wheat) and more intensive use of fertilizer per hectare (except for cereals). Fertilizer use in the U.S. increases by 2.93%, dominated by higher use of fertilizers in corn, wheat, and sorghum because of expanded area and fertilizer application rates.

- The majority of the commodities (wheat being the exception) show a sustained increase in their demand for fertilizers over the projection period (from 2011 to 2025). In the cases of corn, barley, peanuts, palm kernel, cotton, and sugar beet, this is driven by an increase in both the crop area and the fertilizer application rates. However, for soybeans and sugarcane, while the world area increases, the fertilization rates at the world level decrease because of a shift of crop area toward countries with relatively lower application rates per hectare (in the case of soybeans), or because of a more rapid increase in the cropping areas of those countries with relatively lower application rates per hectare (in the case of sugarcane).