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# COMMITTEE ON COMMODITY PROBLEMS

## Seventieth Session

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## MEDIUM-TERM AGRICULTURAL OUTLOOK: TRENDS AND EMERGING ISSUES

### Executive Summary

This document presents projections for the major commodities and the likely market developments over the next decade. Crop prices will stabilize at levels that remain above the pre-2008 period. Cereals will remain at the core of human consumption, but food demand will continue to evolve in favour of proteins, fat and sugar. The changing structure of demand should promote stronger growth in livestock, fish and biofuel production compared to the crop sector. Developing countries will remain the engine of growth for global production and consumption of food products. The Americas will continue dominating global exports of most agricultural commodities, while Africa and Asia have increasing import needs.

### Suggested action by the Committee

The Committee is invited to take note of the projections and discuss its implications for the work of the Committee.

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## I. Introduction

1. Medium term projections of agricultural commodity markets are essential tools both for policy debate and resource planning. They represent a metric against which stakeholders can assess variations of key determinants of market developments, such as crop yields, shifts in consumption patterns or changes in domestic and trade policies. In this respect, FAO and OECD have engaged over the past ten years in a continuous and collaborative effort to produce such metrics. Its main findings, based on a combination of commodity expert judgements and a modelling exercise, are published annually in the *OECD-FAO Agricultural Outlook*. The information contained in the latest version, published in July 2014, forms the basis of this document.

## II. Starting situation and macroeconomic assumptions<sup>1</sup>

2. These medium term agricultural commodity projections start from a situation where nominal international prices of most crops are under downward pressure, largely in response to bumper crops in 2013/14. In contrast, livestock product prices are at historically high levels. Meat production rose only marginally in 2013, and dairy production fell sharply in the first half of 2013. World ethanol and biodiesel prices continued their declines from the historical high of 2011, in a context of ample supply for both ethanol and biodiesel.

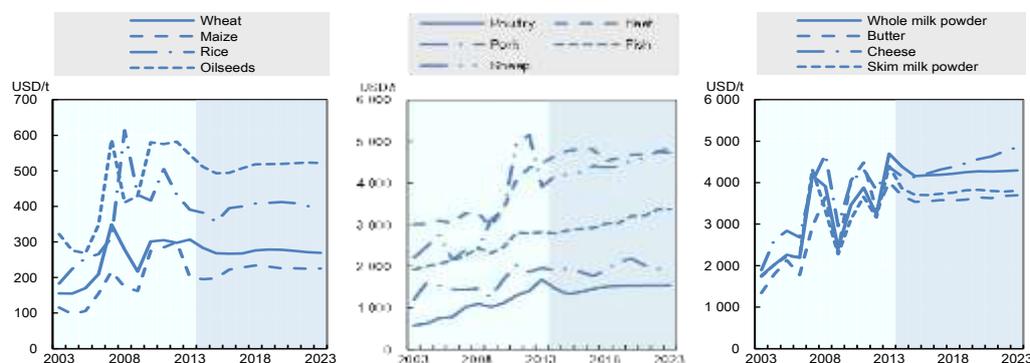
3. The macroeconomic situation underlying the projections assumes an average GDP growth of 2.2 percent per year for OECD countries, and slightly higher growth in developing countries. World population is expected to grow by 776 million over the next decade, equivalent to one percent *per annum*. Energy prices are estimated to increase, but their impact on inflation is expected to be limited. Crude oil price is assumed to reach USD 147 per barrel by 2023. A strong US dollar will affect the export competitiveness of numerous countries, while inflation pressures in developing countries are expected to ease.

## III. Projection highlights

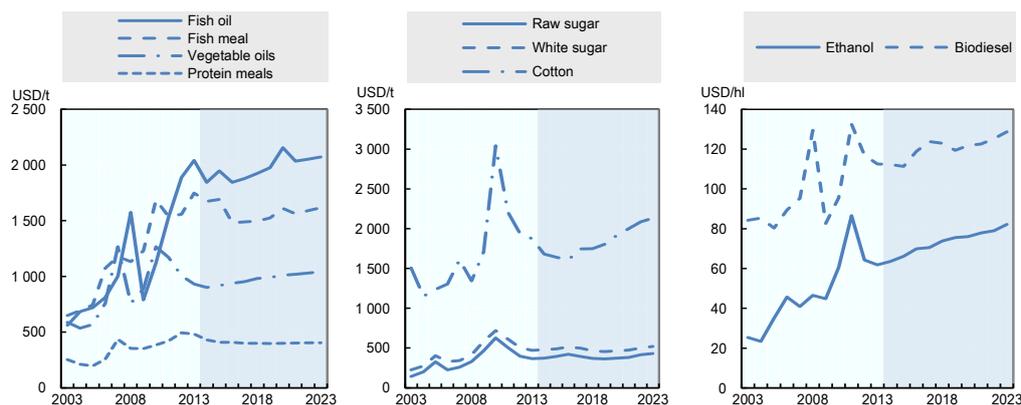
### A. Prices

4. The *Outlook's* price projections reflect, in essence, market fundamentals (Figure 1). They are predicated on the key assumptions of normal weather and production conditions, the absence of unforeseen market shocks, such as droughts and animal disease outbreaks, and no policy changes.

**Figure 1. Price trends in nominal terms for agricultural commodities to 2023**



<sup>1</sup> The macroeconomic assumptions used in the Agricultural Outlook are based on the OECD Economic Outlook (November 2013) and the International Monetary Fund's World Economic Outlook (October 2013).



Source: OECD and FAO Secretariats

5. International prices of wheat and coarse grains are projected to remain under downward pressure in the first half of the outlook period, due to ample supplies, before stabilizing at levels above the pre-20008 levels, but significantly below recent peaks. The expected stock-to-use ratio for cereals is foreseen to rise significantly, which should ease concerns about sudden price spikes and excessive price volatility.

6. The international reference price for rice (Viet Nam) eased in 2013, as a result of the large supplies accumulated earlier this decade. Large inventories, which were accumulated by main exporting countries through domestic support schemes, will keep the market in a surplus situation for several years and consequently weigh on international prices.

7. In the oilseed sector, a strong demand for food and fuel will cause the price of vegetable oil to increase, while the price of its by-product, protein meal, will remain low as result of ample supplies. Oilseed prices will remain flat in nominal terms, but below the very high levels of recent years in real terms.

8. Following what has now become a familiar cycle, world sugar prices are expected to experience a moderate upward trend, but overall, will stay far below their recent peaks. The nominal raw sugar price will oscillate around the USD 400/tonne mark.

9. Cotton prices, which are driven by macroeconomic developments, market policies, technological progress in the man-made fibre sector and preferences in textile demand, are expected to be lower than they were in the period 2011-13, in both real and nominal terms.

10. Ethanol prices are projected to increase slightly over the outlook period, partly due to strong crude oil prices and partly due to mandates. Combined with moderate cereal and sugar prices, the end result is a slight improvement of profitability in the sector, as the margin between feedstock and ethanol prices increase. Biodiesel prices are expected to follow the evolution of vegetable oil prices.

11. Beef and sheep meat prices will remain strong in real terms throughout the projections, ending above their current levels. By contrast, pork and poultry prices will initially fall, reflecting a decline in cereal and protein meal prices.

12. International milk and dairy product prices are expected to decline slightly over the next ten years, as production expands in the major dairy exporting countries from lower feed prices, increasing dairy herds and rising yields. The projected higher output should more than satisfy the sustained growth in demand, especially in developing countries. Butter prices will be flat in nominal terms, while cheese prices are expected to maintain their growth trend of the last years.

13. In the fisheries sector, higher prices, and higher production costs, are expected to prevail over the next decade. These stem from the combined effect of a strong demand for protein, high production

costs, limited growth of captured fisheries, and high prices of alternative protein sources like meat and dairy products.

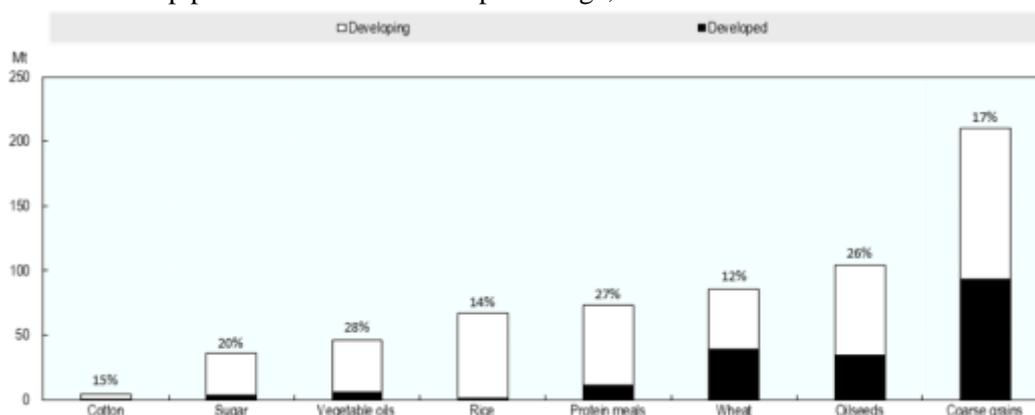
## B. Production

14. A deceleration of global agricultural production growth is expected through the outlook period mainly due to rising costs of production, including higher prices of energy and labour, and lower productivity growth. Environmental degradation, including soil erosion and water pollution, introduce additional limitations to output growth, particularly in regions where land availability for agricultural expansion is already exhausted.

15. The developing world is projected to remain the epicentre of agricultural growth, accounting for more than 75 percent of the added output over the next decade. By 2023, it will generate some 60 percent of the additional cereals produced globally (Figure 2), and 85 percent of the additional meats (Figure 3).

**Figure 2. Crop production rising mostly in developing countries**

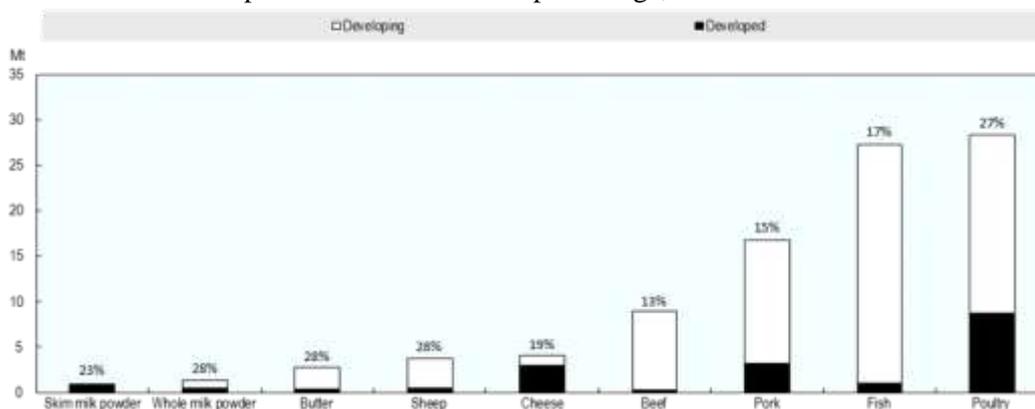
Additional crop production: volume and percentage, 2023 relative to 2011-2013



Source: OECD and FAO Secretariats

**Figure 3. Livestock production**

Additional livestock production: volume and percentage, 2023 relative to 2011-2013



Source: OECD and FAO Secretariats

16. In the meat sector, growth is led by poultry which will account for almost half of the additional total meats to be produced globally by 2023. Regarding dairy, production expands from declining feed costs in the major producing countries, and resumed growth in China. India is expected

to become the largest milk producer in the world, thereby overtaking the European Union's leading position and building considerable skimmed milk powder exports over the projection period.

17. Fish production will expand by 17 percent over the period 2014-2023, as a result of increased aquaculture, which is anticipated to surpass capture fisheries for human consumption in 2014. In 2023, 62 percent of the world's aquaculture production will take place in China.

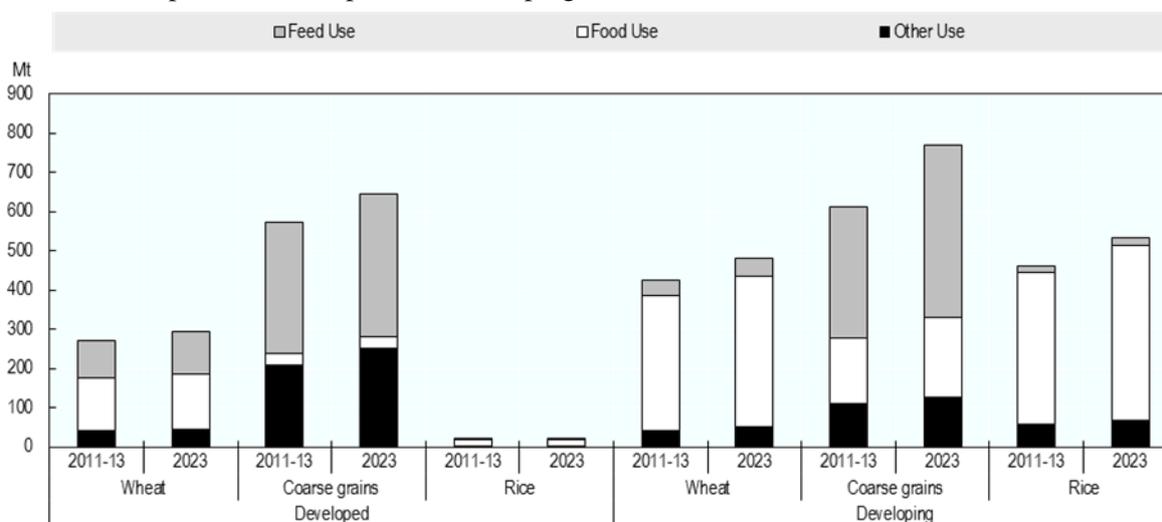
### C. Consumption

18. Demand for the major food commodities is expected to remain firm through the outlook period, but growth will be slower compared to the past decade due to saturated levels of per capita food consumption and declining population growth rates in the developed regions. The two main continents responsible for consumption growth are Asia and Africa. Rapidly growing Asian economies are expected to account for the greatest share of additional consumption, while high population growth in Africa will drive significant increases in total food consumption, despite per capita consumption remaining low, compared to the rest of the world.

19. Besides food, an intensification of alternative uses for agricultural products is underway, such as feed for livestock, biofuels and other industrial uses. While demand for livestock products responds mostly to market fundamentals, demand for industrial uses is largely driven by policy frameworks. For example, in many developed, and in an increasing number of developing countries, the use of agricultural products as feedstock for fuel production is regulated by government targets, or mandates, which were introduced to achieve higher levels of national energy security, lower levels of greenhouse gas emissions, or better income opportunities for farmers. The need to provide for alternative uses of agricultural commodities affect the composition of crops, with a declining share of traditional food-only crops, like wheat and rice, and in favour of multiple-use crops like coarse grains which can also generate feed and energy products.

**Figure 4. Growing diversity of crop use**

Cereal consumption in developed and developing countries



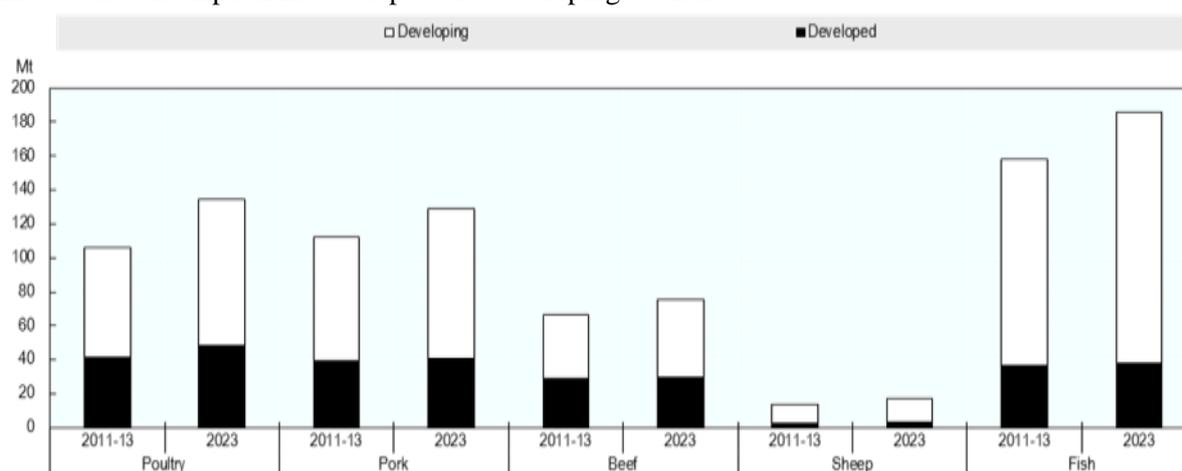
Source: OECD and FAO Secretariats

20. As far as food is concerned, rising incomes and the urbanisation of lifestyles, drive changes in diets. Food consumption patterns are typically shifting from being cereal-based to being more diversified and protein-rich. Additionally, more meals are consumed ready-made and away from home. Dietary and lifestyle changes have significant impacts on the generation and distribution of value within the food system, including a widening of the price spread from farm-to-fork.

21. Changes in diet composition are expected to continue, with dissimilarities depending on economic and cultural factors. Demand for meat and dairy products in developed countries will be relatively stagnant due to high levels of saturation. However, demand for livestock products will increase substantially in developing countries, due to population and especially income growth. Developing countries will consume more than 80 percent of the additional meat to be produced over the coming decade. Poultry is projected to account for half of the total growth, because it is the cheapest and most accessible type of meat. It is viewed as the healthiest meat choice and faces few cultural barriers.

**Figure 5. Most of the growth in meat and fish consumption will occur in developing countries**

Livestock consumption in developed and developing countries



Source: OECD and FAO Secretariats

22. The demand for dairy products will expand fast through the next decade, including fresh milk in developing countries and in the form of processed dairy products in developed countries. Fresh milk represents the bulk of dairy product consumption in developing countries, and its demand is projected to grow rapidly as a result of income growth and urbanization of lifestyles. Total consumption of dairy products, however, measured in milk-equivalent terms, will remain significantly higher in developed countries, mainly on the account of cheese, which is consumed ten times more than in developing countries. Fish consumption growth is projected to slow down through the outlook period, as higher prices should result in increased competition from other animal protein sources.

## D. Trade

23. Over the coming decade, trade is projected to expand at a slower pace relative to previous decades. Trade on grains and meat products, for example, is anticipated to grow in volume terms at half the rates of the last decade, by around 1.5 percent and 2.5 percent *per annum* respectively. Export patterns are expected to remain relatively unchanged, though an increasing gap between demand and supply in different regions, fuels trade growth. Expanding exportable surpluses are projected in the Americas, Oceania and emerging exporters in Eastern Europe and Central Asia, while Africa and Asia will import larger quantities of food commodities.

24. In Africa, rapidly growing population and shifts in diets, paired with a slow production response, will result in steadily rising food imports. Equally so, trade deficits are expected in Asia for most commodities covered by the *OECD-FAO Outlook* report, with the exception of rice, vegetable oils and fish. Asia's trade deficit is largely determined by China, which is projected to import increasing quantities of most commodities through the outlook period.

25. In oilseeds, Argentina, Brazil and the United States will remain the principal exporters, though Canada, Paraguay and Uruguay are expected to grow in importance. Ukraine is the only country outside the Americas exporting large quantities of oilseeds. Indonesia and Malaysia will continue to account for almost two-thirds of total vegetable oil exports during the coming decade, and Argentina will be the third largest exporter with a nine percent share.

26. In the sugar market, Brazil will remain the largest exporter in the world, with Thailand in second place. Australia is projected to become a growing sugar exporting country, contingent on the success of projected investments in sugarcane. China and Indonesia are, after the European Union (EU), the leading importers of sugar. The new EU sugar regime, which will abolish sugar and isoglucose import quotas in 2017, will result in lower EU imports as domestic sugar beet production is expected to expand.

27. Poultry is projected to account for 42 percent of total meat trade in 2023, followed by beef (31 percent) and pork (22 percent). North and South America will dominate poultry exports, whose main destinations are Africa, Asia and the Middle East. Through the coming decade, India is expected to continue exporting large and increasing quantities of low priced buffalo meat. For pork, the greatest share of additional import demand will come from Asia and Sub-Saharan Africa, while the bulk of exports will originate from North America and Europe. Countries in Asia, as an aggregate, will not only be the largest producers of pig meat, but also the largest importers. The Asian region will also import an increasing share of global sheep meat trade.

28. For dairy products, the bulk of export growth will originate in Australia, the European Union, New Zealand and the United States. The main destinations for skim milk powder (SMP) and whole milk powder (WMP) are developing countries, especially in Africa and Asia. WMP imports by China, which skyrocketed in recent years, are expected to slow down over the next decade. In the case of cheese, developed countries dominate exports, and will still dominate imports by the end of the projection though the developing countries are closing the gap.

29. Approximately 32 percent of world fishery production, including from aquaculture, is exported, of which two-thirds originates in developing countries. Developed countries import more than half of all internationally traded fish for human consumption.

#### **IV. Key messages by commodity**

30. Cereals: World prices of major grains will ease early in the outlook period, boosting world trade. Stocks are projected to rise with rice inventories in Asia reaching record high levels.

31. Oilseeds: The global share of cropland planted to oilseeds continues to increase albeit at a slower rate as sustained demand for vegetable oils pushes prices up.

32. Sugar: After weakening in late 2013, international sugar prices will recover, driven by strong global demand. Exports from Brazil, the world dominant sugar exporter, will be influenced by the ethanol market.

33. Meat: Firm import demand from Asia, as well as herd rebuilding in North America, support stronger meat prices, with beef prices rising to record levels. Poultry overtakes pork to become the most consumed meat product over the outlook period.

34. Dairy: Prices fall slightly from their current high levels due to sustained productivity gains in the major producing countries and resumed growth in China. India overtakes the EU to become the largest milk producer in the world, building considerable skimmed milk powder exports over the projection period.

35. Fisheries: The growth of aquaculture production will be concentrated in Asia. It remains one of the fastest-growing food sectors and surpasses capture fisheries for human consumption in 2014.

36. Biofuels: The consumption and production levels of biofuels are expected to increase by more than 50 percent, led by sugar-based ethanol and biodiesel. The ethanol price increases in line with crude oil price, while the biodiesel price follows more closely the path of the vegetable oil price.

37. Cotton: The expected release of accumulated global stocks will boost consumption on the back of lower prices, before prices recover by 2023.

### Focus on India

The *Outlook* focuses every year on carefully chosen emerging issues. In the year 2013, it explored the agricultural and food prospects facing the world's first populous country, China. This year it turns its attention to India, the world's second country with the largest rural population and the largest number of farmers; and home to one quarter of the world's total food insecure (214 million people in 2011-13).

In the last decade, India has made significant efforts to improve its food security through strong agricultural output growth. Investments into production technology and infrastructure, together with subsidies to encourage greater use of fertilisers, pesticides, seeds, water, electricity and credit, and also market support prices, have made these gains possible. These programmes continue to promote production growth, enabling Indian agriculture to expand per capita supplies considerably; although rising resource pressures reduce absolute growth rates over the next decade to 2.9 percent *p.a.*, down from the very robust growth of 4.6 percent *p.a.* registered in the decade 2004-2013.

In addition to these subsidies, a new National Food Security Act expects to deliver further significant gains in terms of food security. The Act is the largest Right to Food programme of its kind ever attempted, covering in excess of 800 million people, and providing some 55 Mt of cereals at offer prices that are at a 90 percent discount to retail prices. Its sheer size and complexity is so vast that its impact is difficult to quantify.

Based on the *Outlook* projections for food consumption for the major commodities, average calorie and protein intakes show a continuous rise to reach 2 830 kcal/day and 70 g/day by 2023, up from 2 450 kcal/day and 61 g/day, respectively, in the 2011-13 base period. These increases continue the trend that appears to have started around 2004-05. India is largely a vegetarian country, and yet consumption patterns will slowly diversify. Cereal consumption is still anticipated to grow. However, greater consumption of milk and milk products, pulses, fruits and vegetables will contribute to greater intake of food nutrients. Fish consumption, mainly from domestic aquaculture, remains an important source of protein, growing to 6.8 kg/person in 2023. Meat consumption is projected to increase as well, led primarily by poultry products, with average per capita consumption reaching 4.3 kg/person by 2023, significantly below the world average of 36 kg/person.

For a country as large and populous as India, changes in trade can be small in relation to the domestic market, but large in the context of international markets. Indeed, India is among the leading exporters of agricultural products, with a trade surplus that has grown from USD 3.6 billion in 2000, to an estimated USD 22.0 billion in 2013. Rice accounts for the bulk of exports, followed by cotton and fishery products. Exports of wheat and coarse grain vary, and have often reached high levels, and exports of protein meal are rising. Recently, India has become one of the top bovine meat exporters. India continues to be the largest importer of edible oils and pulses in the world, and alternates as a major sugar importer or exporter.

Key uncertainties lie in India's future macroeconomic performance, the sustainability of yield growth, and the longer-term viability of government programmes. Broad based income growth is the key to reducing poverty and food insecurity, and enables financing of programmes for agriculture and food.