Long-term food demand in Asia and implications for Australian agriculture

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Abstract

Food consumption in Asia is projected to increase significantly toward 2050, with consumption patterns shifting from traditional diets oriented around starchy staples to more varied diets with larger quantities of higher-value and higher-protein foods. Although food production in Asia is also expected to increase, it will not be able to meet the growth in Asian consumption of many food products. In Japan and the Republic of Korea, growth in food consumption is projected to be limited through to 2050 because of projected declining populations and modest future income growth. The most significant rise in food demand is expected to occur in China toward 2050. The rise in food consumption in China will be characterised by significantly higher demand by urban consumers for high-value foods such as dairy products, beef, sheep and goat meat, fruit and vegetables. For rural consumers in China, growth in consumption of high-value commodities is also projected, but the increases on average are expected to be smaller than from urban households. India is one of the largest consumers and producers of grain in Asia and has a self-sufficiency policy. By 2050, India is projected to become a significant net importer of fruit, vegetables and dairy products. For the ASEAN (Association of SE Asian Nations) member states as a whole, imports of wheat, beef and dairy products are projected to rise toward 2050. Vegetable and fruit consumption in the ASEAN region is projected to nearly double by 2050. Australia needs to remain competitive to meet the opportunities provided by greater Asian demand for food. Apart from the role governments will play in reducing market barriers, contributions from the private sector will also be important. Strong working relationships with supermarkets and hypermarkets in Asia will facilitate food exports.

This paper is about modelling long-term demand for food, carried out by the Australian Bureau of Agricultural and Resource Economics (ABARES). It gives modelling results for individual countries in the Asian regions to the year 2050, discusses the export potential for Australian agriculture; and outlines the challenges and opportunities ABARES sees for Australian agriculture.

It is expected that world income growth will continue, with especially strong growth in Asia, and that global population will also increase significantly toward 2050 (Figure 1). Therefore there will be very strong demand for food toward

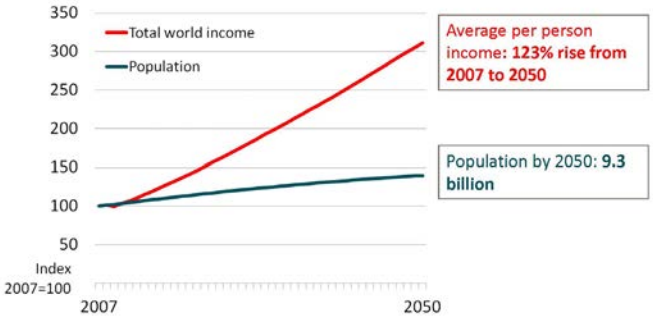

Figure 1. Average per person income and population are expected to rise to 2050.

2050, and we expect that the strongest growth will come from the Asian regions, especially in China.

Our modelling also assumes that agricultural production in Asia will increase significantly and will meet quite a large proportion of the expected growth in food demand in the region. If Asian agricultural producers can adopt the modern technologies used in Australia, the European Union or the United States to suit their own conditions, there will be significant scope for agricultural production to increase in Asia. However, our modelling results indicate that it will be difficult for domestic food production in Asia to satisfy all the food demand in Asia (Figure 2), so we project that food imports will also rise toward 2050. That will provide opportunities for Australian agriculture to increase its exports to the region.

Turning to individual countries, first we look at Japan and the Republic of Korea. It may not be surprising that we do not expect food consumption to grow very much in Japan and the Republic of Korea toward 2050 compared with actual consumption in 2007 (Figure 3). This is because per-person incomes in those countries have reached very high levels, so there is limited scope for switching from staple foods to more protein-based foods there. Secondly, populations in those countries are not expected to increase significantly, and could even decline toward 2050.

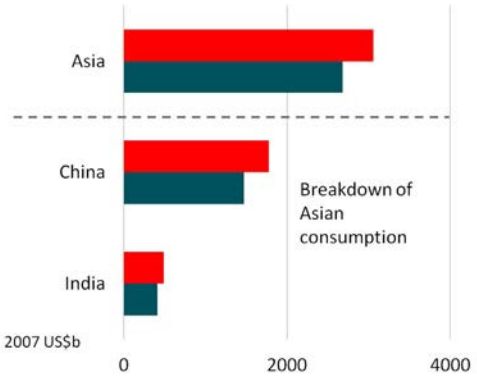

Figure 2. Value of food consumption and production in Asia by the year 2050 in billion 2007 US$. (Red/top bar in each pair = consumption. Blue/lower bar in each pair = production.)

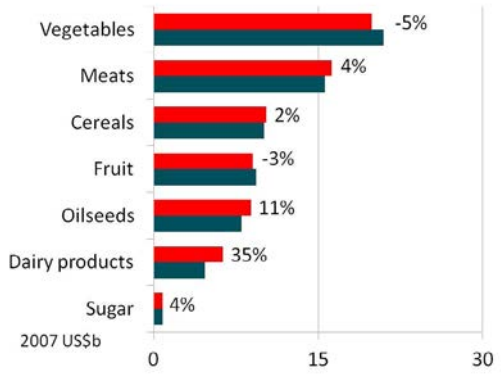

Figure 3. The value of food consumption in Japan and Korea in the year 2050 (red/top bar) is expected to remain relatively stable compared with 2007 (blue/lower bar) (in billion 2007 US$).

However, even though we do not expect food consumption in Japan and the Republic of Korea to rise, we nevertheless expect there will be strong competition for those markets toward 2050. This is because we consider those two markets are high-value markets; that is, if Australia exports to those markets we usually can get higher returns for our agricultural exports relative to other export markets. Therefore, competition in those two markets can be expected to be strong toward 2050 because other producers in the world will also want to increase their exports into those countries to get higher returns.

Next, we look at India. India has a food self-sufficiency policy, especially with respect to rice and wheat. We expect that most of the increased demand for food in India can be met by India's own domestic food production. But there is an interesting aspect here in terms of Indians' dietary habits. A big proportion of the Indian population is vegetarian, so we can expect demand for fruit and vegetables to increase significantly as income levels continue to rise there. Also vegetarians in India use dairy products to supplement their protein intake, so we expect that there will also be significant opportunities for dairy exports to India, given income growth toward 2050 (Figure 4).

We have modelled the expected consumption of dairy products in several Asian countries that will have to be met by imports (Figure 5). As mentioned already,

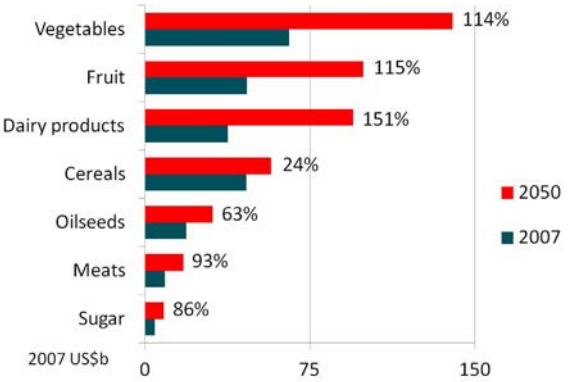

Figure 4. In India, the value of food consumption in 2050 (red/top bar) is expected to be generally or considerably greater than in 2007 (blue/lower bar) in billion 2007 US$.

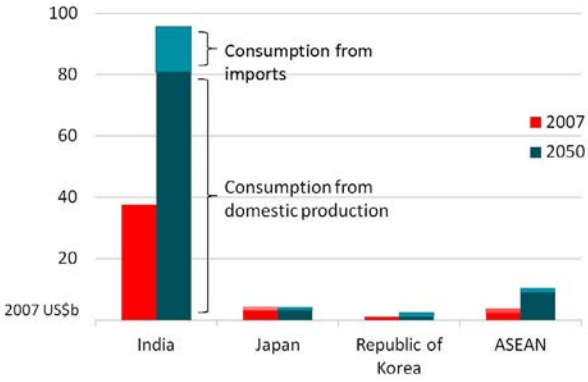

Figure 5. Prospects for dairy consumption and the value of imports in selected Asian countries in 2050 (right/blue bar) compared with 2007 (left/red bar) (billion 2007 US$).

there are considerable prospects for India, and some potential in ASEAN (Association of SE Asian Nations) countries, but opportunities for growth in import demand from Japan and the Republic of Korea are expected to be small for dairy products.

ASEAN countries are expected to increase their demand for meat products – beef, sheep meat and so on – and there should be potential there for Australian exports (Figure 6). There will be opportunities for higher wheat or cereals exports to the region because there is very little wheat production in the ASEAN region. There may also be opportunities for exporters of vegetables and fruit. The catch is that the ASEAN countries produce large amounts of vegetables and fruit themselves, with significant regional trade and some exports. If Australian producers are to increase exports of fruit and vegetables to the region they will need to be high-quality high-value products, aiming for the niche market of the high-end consumers.

It is from China that we expect the largest increase in food demand, and one of the reasons for that is continuing urbanisation. We have modelled changes in the urban population in China toward 2050 (Figure 7a). Urbanisation is helping to change people's dietary habits: they will be eating more protein-based products such as meat and dairy products, and will reduce their consumption of grains

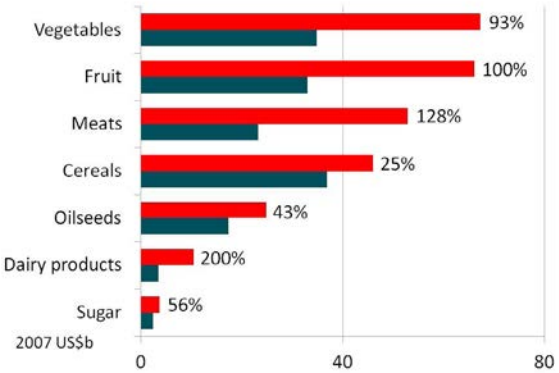

Figure 6. Prospects for growth in the value of food consumption in ASEAN nations (billion 2007 US$) comparing 2050 (red/top bar) and 2007 (blue/lower bar).

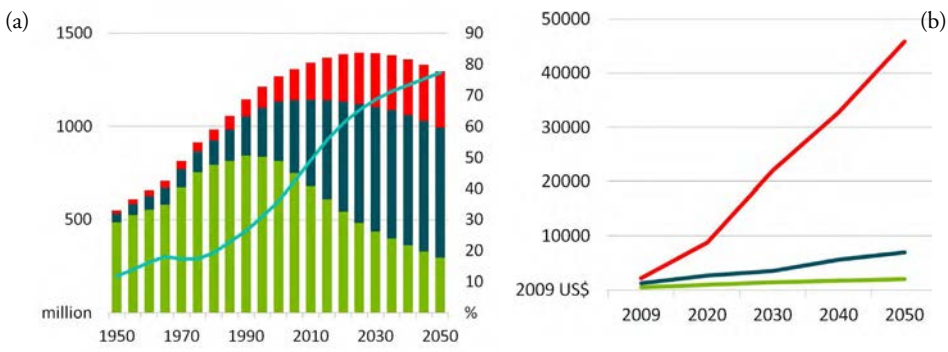

Figure 7. (a) Urban populations in China are expected to grow strongly (in millions or %), changing the proportions of the population in urban high-income (red/top), urban middle-income (blue/middle) and rural sectors (green/lower).
(b) Urban and rural incomes per person in China, 2009–2050, in 2009 US$: urban high-income group (red/top), urban middle-income group (blue/middle) and rural income (green/lower).

such as rice, and perhaps also other staple foods such as sweet potatoes and some other low-value foods.

ABARES has also projected income changes in the three population groups: that is, the urban high-income and middle-income groups and the rural population in China. Based on our modelling, we expect the urban high-income group will have a very significant income growth toward 2050 (Figure 7b). That should be the target group for Australian high-value products exported to China.

We expect both urban income groups in China to be consuming more in 2050 than in 2009 (Figure 8a) in real value terms. The modelling suggests significant increases in beef consumption, dairy consumption, sheep meat, and maybe sugar, among urban consumers, which certainly presents openings for Australian agricultural exports. When we include the rural population's consumption we find that it is still roughly the same picture for beef, dairy products, sheep meat and goat meat: the percentage increases will be large (Figure 8b).

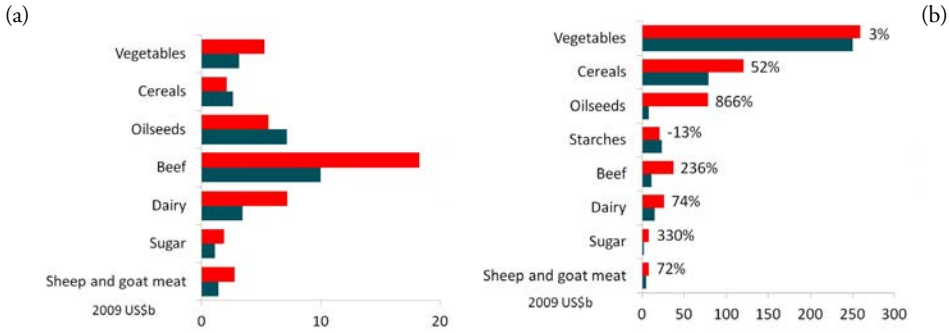

Figure 8. (a) Projected rises in the value of China's food consumption (in billion 2009 US$) between 2009 and 2050 in the urban high-income (red/top bar) and middle-income (blue/lower bar) populations; and (b) increases in the value of China's total food consumption (in billion 2009 US$), in 2050 (red/top bar) and in 2009 (blue/lower bar).

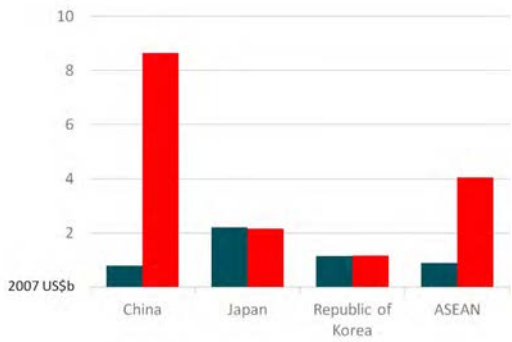

Figure 9. The value of Asian imports of beef is expected to rise by the year 2050 (red/right bar) compared with 2007 (blue/left bar) (billion 2007 US$).

For vegetables and fruit there will be relatively limited increases in consumption because there has always been high intake of those food groups in China. But the increase in demand for protein-based products will spill over into demand for feed grains and oilseed products for feed (Figure 8).

Using beef as an example, we can compare China with some other Asian countries, and again we find that especially for beef we can expect significant market opportunities (Figure 9).

Opportunities and challenges

Based on the modelling results we can examine the opportunities and challenges for Australia. They can be summarised in three points.

First, there will be market opportunities in Asia, but there will also be competition. It is very simple: if Asia is the place where agricultural exporters can make a dollar, then our competitors in the United States, the European Union and Latin America will all want to sell their products there. So it will be very important for Australian primary producers and exporters to maintain their competitiveness. In 2011, the value of Australia's agricultural exports was not ranked very high (Figure 10). There are many other producers exporting significant amounts of agricultural products into other parts of the world.

The second point is that it will be important to remove trade barriers to help food to flow to where it is needed. That has been happening: for example, there

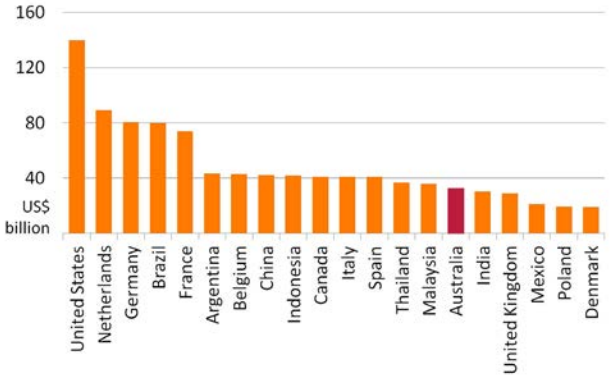

Figure 10. Values of agricultural exports in 2011 by major exporting countries, including Australia (darker bar), in billion US$.

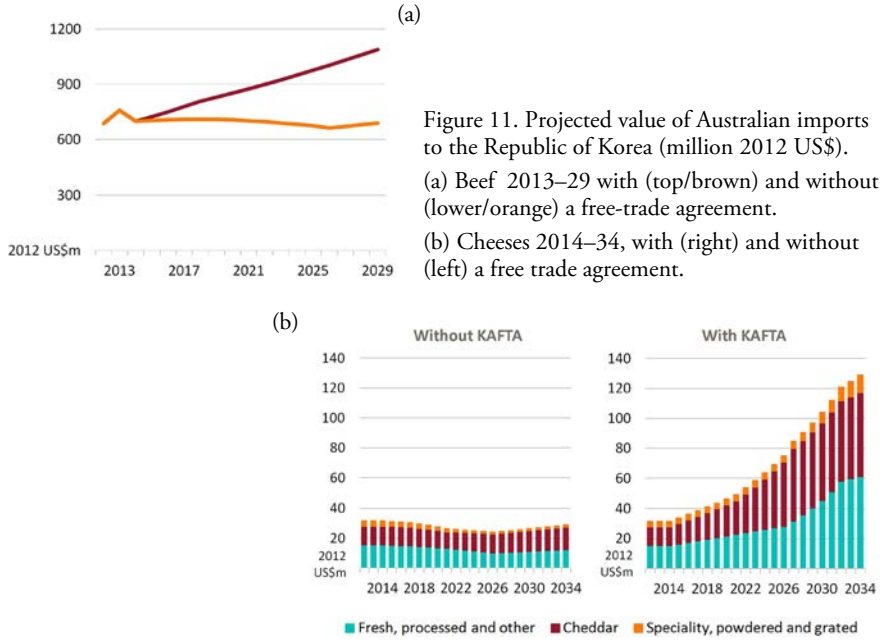

Figure 11. Projected value of Australian imports to the Republic of Korea (million 2012 US$).
(a) Beef 2013–29 with (top/brown) and without (lower/orange) a free-trade agreement.
(b) Cheeses 2014–34, with (right) and without (left) a free trade agreement.

are free trade agreement deals with the Republic of Korea and Japan, and the government is negotiating with China for another free trade agreement.

ABARES has done some studies to examine the likely impact for our beef exports under the newly negotiated free trade agreement with the Republic of Korea (Figure 11a). We expect that with the free trade agreement our beef exports will be significantly higher to the Republic of Korea toward 2030, compared with no such free trade agreement. The United States had already achieved a free trade agreement with Korea with consequent tariff reduction, and Australia is matching that now. Without a free trade agreement our exporters will be disadvantaged because we will have to pay a higher tariff.

The free trade agreement with the Republic of Korea applies also to Australia's dairy products. We expect there will be significant increases in our dairy exports, specifically of cheese, under the free trade agreement (Figure 11b). The European Union and the United States have also achieved free trade agreements with the Republic of Korea.

It is very important for Australia to be able to strike good free trade agreements with major trading partners in Asia so that our producers and exporters can take advantage of the expected increases in food demand from those regions.

The third opportunity and challenge relates to business communities. They will have to be able to incorporate the changing Asian food consumption into their planning. As one example, we can expect supermarkets in Asia to become more dominant and important for getting food directly to the consumer. We need to build good working relationships with the supermarket chains in Asia. It will be very important for Australian producers and exporters to ship our food products into Asia – to locations where they are needed.

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