

2020 agriculture will require tradeoffs

At a recent Farming Conference I attended in Ireland, the need to double world agricultural production over the next 12 years was detailed as necessary due to increasing population growth, rising living standards and biofuels.

World population will increase by one billion people over the next 12 years, but just as important for food demand is the increase in income of more than one billion people in Asia who currently have an income of less than \$2 per day. A doubling of this income will increase demand for food, particularly dairy products, vegetables and beef. Biofuels will consume around 100 million tonnes of grains and oilseeds worldwide, by the end of 2008, a figure which could more than double by 2020.

Agriculture will expand and become more productive in response to these extraordinary demands, but to achieve such gains in productivity, there will need to be some tradeoffs and changes in thinking about food production and the environment.

According to Professor Thompson, Chair in Agricultural Policy at Illinois University, extra production will require more than conventional breeding to achieve the massive improvements required. There are people who believe genetically modified plants present risks to human health, but they offer, not only a chance to accelerate growth in food production, but to produce crops which require less inputs in the form of pesticides. This has major environmental benefits and will also increase crop yields in developing countries, where damage to crops from pest and diseases is considerable.

Food production will also increase by developing plants which are more productive in heat and drought conditions, or which can tolerate adverse soil conditions, such as salinity or high aluminium.

Lord Haskins, former policy adviser to the UK government, also agrees with the need to resolve concerns about biotechnology in order to feed the world in the future. He suggests many people have an inconsistent approach in thinking about biotechnology, where they embrace its use in medicine, but reject the idea of developing new plants in agriculture. He says that not using these new practices in plant breeding will endanger food supplies in developing countries, a far greater risk than properly tested products present to human health.

A second trade-off in the pursuit of meeting the future food needs of the world will be the need to use additional land and water resources. Australia has the potential to substantially increase its current food production by developing some of the land and water in the tropical north, which is currently underutilised by grazing with beef cattle.

There is a need to do this responsibly and to ensure sustainable farming systems are put in place. Some will argue against the use of these areas, but there are already large national parks and nature reserves in the Gulf Country and the Northern Territory for people to experience 'wilderness' if they venture north. These conservation reserves should be expanded, and then farmers should be allowed to move forward with the careful development of other areas.

In twenty years time, when agriculture needs to produce twice what it does now, world opinion is likely to say it is unacceptable that such huge areas of land are left undeveloped in Northern Australia. Using irrigation, this land can grow crops year round and produce around five times the food or energy per hectare of the average farm in Australia. There are large areas with more than 1000mm of annual rainfall, where storing runoff from farmed land during summer provides most of the water required for irrigation in winter, without drawing heavily on rivers or underground water supplies.

Another significant consequence of the growing demand for food and energy will be higher food prices. However, in many countries the price for food has been below the cost of production, hence the need for government support. Agriculture needs higher prices to expand production, and for it to compete with other demands on land use.

The price of grain has already risen in response to the increased demand from the biofuels industry around the world. Contrary to popular thinking, this is not all due to government subsidies. Ethanol in USA and Brazil would have occurred without government support, because the price of grain and sugar has been too cheap relative to the price of oil.

Ethanol plants would have been built in the USA without the 13 cents per litre tax concessions from the US Government. The concessions to blenders of fuel encouraged the industry to get off the ground faster and now mean the ethanol plants can afford to pay more for corn before the process of producing ethanol becomes unprofitable. But ethanol is not currently being produced at a cost to US taxpayers. In 2006, the US Government saved more money on payments to corn growers than it spent on ethanol subsidies.

While grain prices have almost doubled and meat prices will rise in the next year or two as a result of biofuels, this should not result in such a large rise in the retail price of food. The farmer receives around 20 cents for the wheat in a loaf of bread and \$2 per kilo for beef and if this amount was to double, then food prices need only to go up by 10-20%.