Food for thought about climate change

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Climate change is impacting on food production, with drought and high temperatures in eastern Europe and Australia reducing world wheat production by more than 30 million tonnes this year.

The consumption of wheat has exceeded production in 8 out of the last 10 years and we have reached a crisis point where there is only 9 weeks of food left in the world wheat larder. The price of wheat has tripled over the last two years!

We may have reached 'Peak Food', a point where the world does not have the capacity to increase the supply of food fast enough to keep up with demand. Farmers will still increase production, but with the world demand for food set to double over the next 20 years, a massive 5% increase in food production is needed each year.

Climate change is a big hurdle for agriculture. Global warming should increase wheat production in places like Russia and Eastern Europe, but not if the weather changes like it did this summer, when a realignment of the jetstream over the Atlantic and blocking high pressure systems dumped a lot of rain on England, while eastern Europe suffered drought.

Back in July, some parts of England had 120 mm of rain in one day. Twenty millimetres is normal rainfall, but researchers have now linked 120 mm falls to Climate Change. Eastern Europe can experience high temperatures in summer, but record highs of 46 degrees Celsius is Climate Change!

Extra land is being brought into production in the USA and Europe from land set aside during periods of overproduction in the past. But most of this land is being used to grow rapeseed or corn for biofuels.

The growth of the biofuels industry has not just been due to government subsidies. Ethanol production in the USA would have exploded without the tax concessions of 13 cents per litre. Corn has been too cheap relative to oil. The price of corn has doubled over the last 15 months, but it is still cheaper to make motor vehicle fuel from corn than from oil! While this is the case, more ethanol plants will be built in the USA and other parts of the world.

Peak Oil and *Peak Food* are inextricably linked and as oil prices go up, so food prices need to go up to compete with the conversion of grain into fuel. Food prices also need to go up to stimulate increased production.

The tide has turned from the point where farmers have comfortably kept supply ahead of demand. Consumers have had the benefit of grain sold for less than the cost of production, while the USA government and the European Union have been subsidising farmers to keep them in business. Farmers no longer need support and the billions of dollars not needed for farm subsidies could be used to help reduce the cost of food to people around the world who will struggle to afford it.

Research dollars are also needed to look seriously at increasing food production and ways to manage climate change. Plant breeding is needed to make crops more heat and drought tolerant and to resist the impact of pests and diseases. World hunger is a greater risk to human health than using carefully managed genetic modification to speed up the plant breeding process.

Agriculture as we know it is likely to change with efficient industries like fish and poultry increasing more than beef or lamb. Water for irrigation will be used more for fruit and vegetables, than for grain and cotton. Eventually the world will say we need to utilise the land and water resources of northern Australia and a huge amount of food is likely to be produced there in 50 years time.

Australian agriculture still has room for improvement. The average yield of grain crops is only a little over half the optimum. Better water use efficiency will increase yields but is also needed to offset the lower rainfall being experienced as a result of climate change.

An emerging problem in this country is a shortage of skills to boost agricultural production. Enrolments in agricultural studies at Universities and colleges have slumped over the last 10 years. There will be a shortage of trained people in the near future at a time when the world will need a major boost to food production.