



Presentation Gordon Conway

Interconnected crises

The world is facing a range of crises. Sir Gordon Conway, Chief Scientific Adviser of DFID, showed in his presentation how these crises are handled and also how they are increasingly interconnected. "The problem is that we only half understand them and we know only half how to manage them."

In a way these crises are like an English cottage loaf, with a small bit at the top and a larger part at the bottom. Indeed, we focus almost solely on the immediate crisis at the top, while we tend to forget the underlying crisis.

An example of the interconnection that exists can be found in the most recent food price increase. Oil and food prices went up, while grain stocks shrank and biofuel demand grew rapidly. In addition, the price of fertiliser increased five-fold because sulphur - a basic ingredient of fertiliser - is also essential for steel production. The overall result is another 100-150 million people suffering from chronic hunger.

The underlying chronic crisis is getting worse for a variety of reasons. These include a growing world population, a rise in per capita income and a growing demand for the production of livestock and biofuels. All in the face of increasing water and land shortages, and a slowing down of agricultural production increases.

Climate uncertainty

A common belief is that we actually have far more land and water at our disposal than we currently use, but this is simply not the case. In Africa and Brazil there could be some room for expansion, but this is not acceptable for the sake of preserving the rainforest and other ecosystems that are vital for its contribution to the biodiversity in the world.



As a result of changes in temperature and rainfall, production is predicted to fall by approximately twenty percent globally – but this will not occur in a uniform manner and the impact will vary greatly in different regions. Drought in Africa is expected to increase with rising temperatures, but much else remains unknown. Indeed, it is uncertain what the effect on the Sahel will be, whether the water levels of the Nile will increase or decrease and whether monsoons in India will intensify or not.

Second Green Revolution

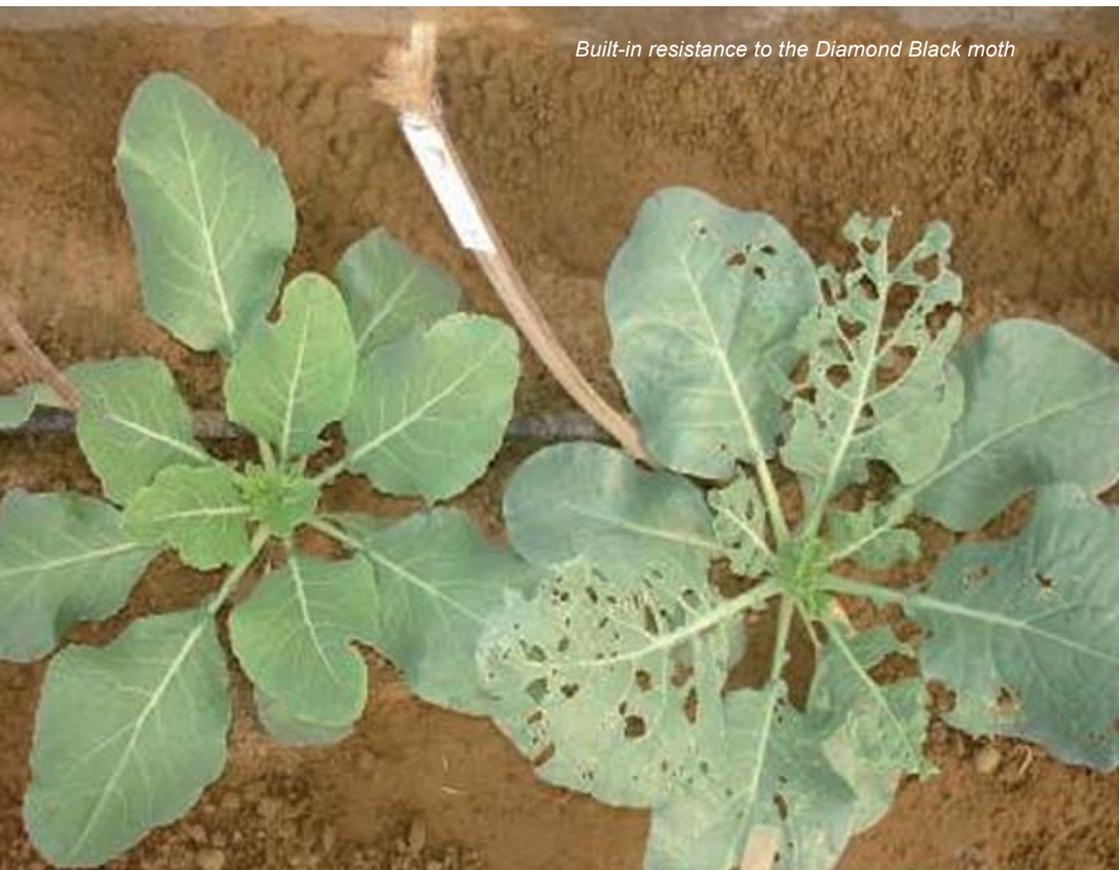
In Africa, cereal production remains stagnant at one ton per hectare, whereas the average in Europe is eight to nine tons a hectare. China has succeeded in raising its average cereal yield from one to six ton/ha. The underlying message is that we need to raise more public money for R&D, essential to boosting agriculture in the developing world. In essence, we need a second Green Revolution. The original Green Revolution generated new technologies for farmers and created an abundance of food, helping to curb hunger in Asia. Unfortunately, hunger in Africa is still on the rise. A second agricultural transformation that would increase productivity while being equitable, sustainable and environmentally friendly is essential. We have a variety of methods at our disposal to achieve yield increases. We can continue to increase biophysical inputs – leading to high costs of fertilizers, pesticides and water – or we can use more ecological methods which are more skill and labour intensive. We also have the seed itself, which can be enhanced by using new technologies, to build in sustainability and ecology. This can result in, for instance, increased nutrient uptake and nutritive value, higher drought tolerance or better tolerance to pests and diseases. Mr. Conway

believes in this last possibility, but underlines the necessity to deal with controversies that the use of biotechnology generates.

Increased resilience

For any method we adopt, the context is vital. Technology on its own is not sufficient, and must therefore be embedded in a specific time and place. In Africa, it is essential that we apply “layered interventions”, consisting of different elements that may vary from place to place. Above all we need to aim for resilience. It is not the crisis itself, but the ability to respond to it that makes the difference. As there will be more crises in the future, the challenge becomes how to place food production and consumption in the context of resilient livelihoods.

In a way these crises are like an English cottage loaf, with a small bit at the top and a larger part at the bottom. We focus almost solely at the immediate crisis at the top. The chronic crisis we tend to forget.



Built-in resistance to the Diamond Black moth