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Why Genetic Engineering will not feed the worlds poor

Those who are concerned with Genetic Engineering are being accused of denying the worlds poor the right to feed themselves. Dr Pinstrup-Anderson and Dr. C Prakash are the latest world experts to visit Australia earlier this year espousing this view. Their reasoning assumes that world hunger is due to a lack of yield, attack by disease or an adverse weather event. They advocate the use of GE as a major tool in the fight to alleviate hunger. This attitude is symptomatic of a classic approach to treat the symptoms rather than the causes of hunger.

In more than 70% of developing countries where hunger is prevalent, the exporting of commodity-based cash crops takes place, in most cases to provide animal feed for cattle in Europe. In these developing countries underlying inequities exist to deprive people, especially women of economic opportunity and security. If the native population cannot afford to buy food, the owners of land and capital orient their production to more lucrative export markets. In addition cash received from exports is routinely used to pay interest on loans, many of them from the World Bank and the International Monetary Fund. These loans are often conditional on economic reform, free trade agendas and contracts to buy technological assistance at great expenses from countries in the west like the US and the UK. Immediate and unconditional debt relief would do much to alleviate the social and political pressures in many developing countries that contribute to poverty, hunger and injustice.

In addition lack of access to land is a major cause of hunger. Large landholdings are the most inefficient with a World Bank study estimating that in North-East Brazil an 80% increase in yield will result from a redistribution of farmland into smaller holdings. The millions of tenant farmers in developing countries have little incentive to improve land through crop rotations and fallow periods therefore undermining future production. Comprehensive land reform giving tenured land to small farmers could be the greatest single factor in improving food security in the developing world.

Another underlying cause is the Green Revolution. The use of high yielding hybrid seeds, water-soluble nitrogen based fertilisers, pesticides, antibiotics and growth hormones brought about short term increased yields. The uptake of this approach caused people to abandon their indigenous, unique and diverse agricultural systems. Now we are witness to the ecological damage, loss of soil fertility caused by this

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approach and the dietary consequences of a loss of diverse diets causing many diseases including iron deficiency induced blindness. Yields are falling and contribute further to hunger and poverty prompting thousands of farmers in India to commit suicide each year in response to the increasing debt owed to companies providing hybrid seeds and chemicals.

To contrast the approach of industrial agriculture are the systems based approaches of organic multifunctional agriculture. Also called Bio-Intensive and Agroecology this approach is gaining rapid momentum in developing countries and is also termed the Brown Revolution. The Brown Revolution has as its basis the health of soils to build humus and soil biota. With startling results the work of Miguel Altieri and others have shown spectacular increases in yields beyond the best the Green Revolution can deliver, for example some 45,000 farmers in Guatemala and Honduras have used regenerative technologies to triple maize yields to some 2-2.5 tons/ha and diversify their upland farms. This has led to local economic growth that has in turn encouraged re-migration back from the cities.

Genetic Engineering has little to do with the underlying causes of hunger and may make things worse through increasing dependence on technological inputs. More than two thirds of the canola seed used in Canada is owned by one seed company. Brewster Kneen a vocal opponent in Nth America believes the attitude of Biotech companies is to “Get the stuff out fast, get it on the shelf, then say it’s too late to do anything about segregating it.” This attitude is already causing concern in developing countries with food and seed aid from the US testing positive to GE and many programs of testing and plantings taking place in countries like India. It is not surprising to see some in developing countries embracing GE, especially agricultural scientists with Western post-graduate education and academic affiliations linked to corporate and political interests.

GE is a complex and expensive technology. We do not know the long-term consequences for soil health, the wider ecology and public health. As sure as the sun will rise tomorrow, there will be a predictable failure rate (higher at first) with attempts to genetically engineer plants and animals that is in relation to the statistical failure rate of other technologies such as nuclear power and pharmaceuticals. Failures of GE in developing countries may impact more than in developed countries where we can more likely afford the cost of cleanups and product recalls.

Western rejection of FE is partly based on fear, but also because of fundamental concerns based on observation of past mistakes and failed promises with regard to agricultural technology feeding the world. The challenge for us all is to tackle the social and political solutions to world hunger and not be distracted by emotive claims such as those made by Prakash, Pinstrup-Anderson and many in the biotech industry.

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The BFA are the largest certification organisation for organic farmers in Australia