

## **AUSTRALIAN AGRICULTURE MUST BECOME SUSTAINABLE**

**GeneEthics Network submission to:  
The agriculture and food policy reference group**

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### **Introduction**

**Not one major human activity in Australia – farming, fishing, food, energy, transport, communications, housing, or commerce, etc – now uses ecosystem resources sustainably.**

**This inquiry should, as its highest priority, investigate ways to enable Australian primary production to become sustainable. Sustainability can only be achieved through the research, development and establishment of sustainable systems.**

**High technology and industrial fixes have contributed greatly to much of the present environmental degradation and economic marginalisation of many Australian farming regions. To pour more scarce public resources into technologies – especially those reliant on oil dependent systems - is a tragic waste.**

**Globally, most societies (including Australia) are now oil dependent and petroleum is running out, so conventional agriculture is inherently unsustainable. Petroleum products will soon be too expensive or scarce to run farm machinery, to make agri-chemicals and synthetic fertilisers, and to distribute food and fibre to far flung markets, etc.**

**Our governments are betraying the future by pumping enormous amounts of public money into genetic engineering and other doomed technologies for food and farming (\$1.29 billion since 2003 into biotech, Truss 6/05). Unless this waste stops, it is increasingly unlikely that the nation can become sustainable.**

**We must change to sustainable systems and the sooner the better.**

### **Sustainability Principles**

**Life on Earth depends on regenerative ecological systems and processes that include: plants capturing the sun's energy, the purification of air and water, soil biomass which restores soil productivity, etc. To be sustainable, human societies must minimise their impacts on ecosystems by harvesting environmental income, not capital, and those societies which pillage their resource bases will sooner or later fail.**

**Ecosystem functions and processes are used unsustainably when societies:**

- mine and disperse materials faster than they are re-deposited into the Earth's crust (eg: soil, oil, coal and metals such as mercury and lead);
- create and disperse substances faster than they can be broken down by natural processes (eg: plastics) or that are not degraded by natural processes (eg: dioxins and PCBs); and
- deplete and degrade resources faster than they are replenished (eg: over-harvesting trees and fish) or isolate them from use (eg: paving over fertile land and causing soil erosion).

To create sustainable societies, human social and economic activities must use closed loop systems that modify nature minimally, to prevent increases in:

- substances extracted from the earth's crust, by substituting scarce minerals with more abundant ones, use all mined materials efficiently, and reduce fossil fuel dependence.
- substances produced by society, by substituting persistent, synthetic chemicals with more abundant or biodegradable ones, and efficiently use all materials produced by society.
- environmental degradation of all kinds, by taking resources only from well-managed ecosystems, and optimally use all resources, including land.
- meet human needs worldwide, by using all natural resources and systems efficiently, fairly and responsibly to meet the needs of all people, including future generations.

## **Conventional Agriculture is Unsustainable**

**There is no economy without ecology!**

**CSIRO Land and Water has for years warned that degradation processes are depleting Australian farm environments and resources at unsustainable rates. These processes must be arrested and reversed if our farms are to become ecologically and economically sustainable, to feed this and future generations. As a result of present and past practices such as deforestation, farm soils are saline, acidic or washed and blown away at irreplaceable rates. Synthetic chemical fertilisers and pesticides poison waterways and promote toxic algal blooms. Most farmers cannot survive without off-farm incomes or by so enlarging and intensifying their operations that their environmental footprint continues to increase out of control.**

**The national challenge to nurture and restore farm environments to sustainable use is a multi-billion dollar task of the highest national priority for all our governments. If we do not repair the environmental damage, CSIRO has pointed out that the nation may soon be unable to feed itself.**

**The Australian food industry now feeds 50-70 million people net (depending on the abundance of the harvest from year to year) including 20 million Australians. In 30-50 years time, they suggest, we may be net importers of food for our population of, say, 25 million people. We may be dependent on others to feed ourselves, but with global warming, oil depletion and burgeoning populations we cannot rely on others to reliably fill our bowls.**

**We absolutely disagree with the Australian Government's official position at Global Food Summits that 'no country should seek to be self-sufficient in food'. Australia is now practically self-sufficient in food and should have policies to remain so.**

## **GE Crops Also Mean Less Sustainable Farms**

**Genetically engineered (GE) crops would further intensify conventional farms and their environmental impacts, rather than making them more sustainable. GE proponents have not**

delivered on their promises of more nutritious foods, longer shelf life foods, non-browning fruits and vegetables, pharmaceutical producing crops, drought tolerant and salt tolerant varieties, etc. Moreover, shoppers do not want to buy or eat GE foods.

US farmers are so disillusioned with GE varieties that most farm organisations rejected GE wheat. As a result, last year Monsanto cancelled its GE wheat R&D program indefinitely.

Commercial GE soy, corn, canola and cotton contain just two new traits. The herbicide tolerance trait makes crop plants able to be over-sprayed with a weedicide that would otherwise kill them. This allows farmers to spray their fields less carefully, more often and at higher doses to kill weeds better, leaving more chemical residues in the environment and our food. The insect resistance trait – called Bt – enables the plants to produce a chemical toxin which kills caterpillars. But nature bounces back. Weeds and insects soon adapt to chemicals designed to kill them so these strategies are short term and unsustainable, leading to more synthetic chemical use.

Farm-scale GE canola trials in the UK found unacceptable impacts on ecological systems and that the persistent weed charlock, also prevalent in Australian cropping systems, can become herbicide tolerant through crossing with transgenic canola. Australia would be foolish to add GE weeds to its array of unmanageable plants which already cost the nation in excess of \$5 billion pa in control measures.

Claims that GE crops are needed to ‘feed the world’ are false. One and a half times the food needed to feed everyone adequately is now produced but the starving millions have no access or cannot afford to buy it. GE crops would make farmers in developing countries more indebted and dependent on outside inputs such as chemicals, which are now inherently unsustainable.

CSIRO Plant Industry claims that future GE crops may produce industrial and medical materials – plastics, fuels and vaccines. But keeping these materials out of our food supply would be impossible and diverting land from food production would make ‘feeding the world’ the total myth that it is.

## **The GE Threat To Biodiversity**

Environmental releases of genetically modified organisms may have unpredictable, unintended flow-on effects to ecosystems, including harm to beneficial insects and key species, as well as unintended effects on microbial soil organisms. These effects may not be immediately apparent and may be irreversible.

Genetic engineering specifically targets species integrity, using invasive, aggressive and unpredictable methods including the use of viral promoters to force genomes to uptake synthetic DNA, all of which may lead to new diseases and scrambled genomes.

Biodiversity is essentially the planet’s immune system. By breaking down barriers between species, damaging DNA and further facilitating the transfer of genetic material between hitherto unrelated species, genetic engineering may contribute to a general weakening of ecosystems.

## **Sustainable Organics: the Way to Go**

**Australia's scarce rural R&D resources should be invested in sustainable systems.**

**Organic farming is the best working model of sustainability, already minimising or eliminating unsustainable inputs and processes – for instance, fuels, synthetic chemicals and fertilisers, genetic engineering and food irradiation.**

**Organic production methods offer the best hope for achieving long term sustainability on Australian farms but more research and development resources are needed to refine the permanent sustainability of organics. Much farming is an environmental tragedy and we must begin supporting the differential flow of resources into the sustainable use of agricultural systems. Without sustainability, our national food security is at serious risk of being lost, permanently.**

**The organic industry is the fastest growing sector of Australian agriculture but the perception is that organic foods are too expensive. The truth is that conventional supermarket food is too cheap, returning so little to farmers in the cost/price squeeze that they cannot restore their environments. Community and government resources are needed to help farmers adopt sustainable organic methods.**

**Shoppers must also be recruited to support organic systems. Good public policy is needed to put the products of these systems within everyone's reach. Education and good information on labels – for instance country of origin labelling, full GE labelling, farm ID labelling – will build public confidence and trust.**