

Your ref:
Our ref: BL - 2011 Review of the Gene Technology Act

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**2011 REVIEW OF THE GENE TECHNOLOGY ACT - SUBMISSION TO
THE GENE TECHNOLOGY MINISTERIAL COUNCIL**

I am making this submission in my capacity as citizen and a consumer as well as a lawyer and Permaculture designer who is concerned about:

- (a) the health and safety of the Australian consumers;
- (b) the health of our precious top soil that ensures a sustainable agriculture¹;
- (c) the economic viability for Australian farmers;
- (d) the biodiversity in Australia's agriculture;
- (e) the missing clear legislation that deals with GM contamination, liability and compensation as well as potential patent claims brought against farmers whose fields have been contaminated by GM crops;
- (f) the lack of an honest public debate about the issues with GM crops.

In contrast, this is Monsanto's position:

“Monsanto should not have to vouchsafe the safety of biotech foods, our interest is selling as much of it as possible. Assuring its safety is the FDA's job.”²

Phill Angell, Monsanto's Director of Corporate Communications, 1998

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¹ With “sustainable”, I am referring to “sustainable” within the proper meaning of the word, not a type of agriculture, such as biotech agriculture, that is not sustainable due to its chemical fertilizer and pesticide input.

² See Michael Pollan's article “*Playing God in the Garden*”, New York Times, 25 October 1998.

A. PROPER INDEPENDENT SCIENTIFIC RESEARCH, RISK BENEFIT ANALYSIS AND PUBLIC DEBATE NEEDED

This submission mainly relates to GM organisms that can procreate (such as GM crops), not GMOs in general.

There appears to be a general lack of understanding amongst the general population (including some consumers, farmers and politicians) of what GM crops and foods are.

The writer is also unsure whether a proper risk benefit analysis has ever been undertaken in Australia whether the substantial potential risks associated with GMs do not outweigh the limited and short term benefits of GM food crops compared to ordinary food crops.³

Rather than investing energies and Government moneys into GM, which one prominent scientist calls "*the biggest human experiment in the history of mankind*", a more lateral, out of the box, approach appears to be necessary. It would be more beneficial if the Government invested in research and education of more sophisticated alternatives such as Permaculture that works with nature rather than against nature.

GM science seems to be so focussed on trying to squeeze a square peg into a round hole (with any means and with extraordinary amounts of investment into R & D) that some of the GM scientists and regulators appear to have become⁴ completely oblivious to the fact that there may be other, simpler and less expensive, solutions out there, offered by the most sophisticated system: Nature. Genetic engineering is only a tiny part of biological science, but all our focus appears to be on it. Why spend millions of dollars in R & D into putting nutritional genes into one type of plant (such as cassava in Africa) or pest resistant genes into one type of plant (bananas in Africa) and completely overlook the fact that certain plants, such as cassava and bananas, are simply not suitable for certain conditions and should be replaced by a variety of other crop species that do work in that specific climate and provide the population with the desired nutrients. **Natural agricultural biodiversity is the key** to these problems. However, the continued use of GMOs, used in combination with pesticides, threatens this exact treasure given to us by Nature and further developed and protected by seed savers for thousands of years.

³ Limiting myself in this footnote to the issues of crop increase/decrease and pesticide increase/decrease, some studies appear to show that there is a crop increase and decrease in use of pesticides for the first three years of GM application but that after approximately three years, GMs have a negative outcome compared to conventional crop.

⁴ or *choose* to become oblivious in the case of "seed" companies that have another motive - profits from the sale of their original and primary product: highly toxic pesticides formerly used in war fare, such as Agent Orange used by Monsanto's predecessor company that has left American soldiers and the Vietnamese victims disabled to this day -- without the receipt of proper compensation.

Over 75% of the planet's crop diversity was lost during the twentieth century because of the type of agriculture that GM promotes - monocultures.⁵

The "Svalbard Global Seed Vault" or "Doomsday Vault" that houses samples of 526,000 unique crop varieties (as at May 2010)⁶, was set up as an insurance against loss of biodiversity, including agricultural crop diversity. The Doomsday Vault should be proof enough of the importance that the international community is giving to crop diversity. The Doomsday Vault website⁷ gives one of the main reasons for the existence of the Doomsday Vault as:

"The world's seed collections are vulnerable to a wide range of threats - civil strife, war, natural catastrophes, and, more routinely but no less damagingly, poor management, lack of adequate funding, and equipment failures. Unique varieties of our most important crops are lost whenever any such disaster strikes".

An example of a natural catastrophe would be a flood that leads to contamination of a heirloom crop with a GM crop.

An example of poor management would be a truck driver transporting GM canola seeds and the tarp on the truck breaking, causing the canola seed to contaminate a heirloom type of canola crop.⁸

The Doomsday Vault stores the world's most important and valuable seeds. It stores a wide variety of heirloom seeds from all over the world.

Does the Doomsday Vault store GM seeds?

⁵ Pimbert, Towards Food Sovereignty, 2008.

⁶ <http://www.croptrust.org/main/arcticseedvault.php?itemid=211>

⁷ <http://www.croptrust.org/main/arcticseedvault.php?itemid=211>

⁸ This appears to have happened to Mr Percy Schmeiser who nevertheless was held to have infringed Monsanto's patent when Monsanto's seeds contaminated his crops - despite Mr Scheiser having no desire whatsoever to loose the canola varieties that he had developed over 50 years to an off the shelf GM variety that is used worldwide, not taking into account that India's climate and soil structure is completely different to Canada's.

No, it does not.⁹

What does the answer say about GM seeds? What does this say about the importance given to GM seeds by the people in charge of the Doomsday Vault? What does it say about the value given to GM seeds? What does it say about the value given to Heirloom (non GM) Seeds?

A proper public debate as well as independent scientific research (not funded by the biotech companies seeking licensing of their products) is necessary in Australia about all issues raised by GM crops and foods, such as:

- health effects of specific crops on test animals, animals, humans, plants, soil structure;
- whether GM crops and foods have any benefits compared to conventional products and would therefore justify the risk taken by their admission in Australia,
- loss of biodiversity through contamination (past examples);
- importance of biodiversity in agriculture;
- lack of proper insurance and liability system in Australia in case of contamination and the consequences;
- use of highly toxic chemicals in combination with GM crops;
- past scandals, such as the Starlink contamination of foods scandal in the US;
- farmers being sued for patent infringement despite the farmers' land being contaminated by GM seeds through floods, wind and spillage from trucks
- lack of proper labeling;
- false promises by the biotech industry;
- whether the Australian public wants GM foods at all.

There should be a public discussion about the issues raised by the 2004 documentary "The Future of Food" which can be watched online at no cost.¹⁰

There exist numerous peer-reviewed studies that indicate potential health risks associated with GM foods.¹¹

⁹ http://www.croptrust.org/documents/web/Svalbard%20and%20Trust%20QandA_Oct08.pdf

¹⁰ <http://www.thefutureoffood.com/onlinevideo.html> There will be a public screening, followed by a Panel Discussion, on Sunday, 3 July 11, 6 pm, at the Chapel by the Sea, 95 Roscoe Street, Bondi Beach. If you would like to attend or get more information, please RSVP to whatisthefutureoffood@gmail.com or to the writer's email.

¹¹ See page 13 of the Submission by Greenpeace to the Community Affairs Program dated 15 February 2010 at http://www.aph.gov.au/Senate/committee/clac_cte/labelling_gmm/submissions.htm

Submission 1: Before the Gene Technology Act is amended and further licenses are granted, independent scientific research should be undertaken, taking into account concerns raised by scientists such as Emeritus Professor Don Huber from Perdue University, Indiana, that suggest that a bacterial pathogen found in GM fields could be the cause of a recent widespread crop failure and miscarriages in livestock.¹² There is no reason not to put any further licensing on hold as well as withdraw any relevant licenses of GM crops until the Australian Government has funded and undertaken an independent scientific study dealing with any potential health concerns raised.

B. EMERGING TRENDS AND INTERNATIONAL DEVELOPMENTS IN BIOTECHNOLOGY AND ITS REGULATION

A distinction needs to be made between GMOs in food production and GMOs in drug production.

Biotechnology may have its benefits in medicine. However, biotechnology has no place in agriculture and food production.

The main difference between medicine and agriculture is that a prescribed pill is unable to procreate and contaminate other pills whereas crops have seeds, the origin of all life. These seeds are carried in the wind, in floods and by bees over vast distances. Bees from only one hive for example are known to forage in areas the size of around 40 square kilometers.

The question posed by the Terms of Reference is too narrow to come up with a satisfactory answer. I have extended the question to “Has biotech agriculture proven successful at all? What are the emerging trends and international developments in global agricultural practices?”

¹² <http://www.abc.net.au/rural/content/2011/s3245624.htm>

B.1 BIOTECH INDUSTRIAL FARMING

There appears to be a strong resistance to GM foods of a large part of the educated general public.

A large part of the Australian general public appears to have minimal knowledge about GM foods and therefore has no view on the pros or cons of GM.

Only a handful of multinationals appear to be pressuring governments into allowing GM crops. The multinationals have succeeded in the US and Canada. However, in Europe, where there is a real public discussion about GM crops with strong governments, most countries do not allow the production nor importation of GM crops and food. For Australia to join the example of the United States and thereby to restrict their export market for their produce makes no commercial sense.

The most obvious problem with the Gene Technology Act (“**the Act**”) is that it does not provide a mechanism that deals with GM contamination of non GM crops.

The best known GM canola contamination case is *Monsanto v Percy Schmeiser*.¹³

For the reader that may not be familiar with what is happening in terms of GM contamination in Australia (GM contamination of Steve Marsh’s farm that resulted in Steve Marsh losing his “certified organic” status¹⁴), just play the following song (“Round em up” by Hussy Hicks) to tune into the topic.

http://www.youtube.com/watch?v=a1m1vCeyxWY&feature=player_embedded

A basic agricultural ethic that farmers have followed for centuries is that a farmer that owns something that is potentially damaging to his or her neighbour, such as cattle, has a responsibility to ensure to fence the cattle in. It is not the neighbour’s responsibility to fence the cattle out. The same should apply to GM crop.

¹³ See Percy Schmeiser’s moving talk at <http://www.youtube.com/watch?v=7ii9ARL4EGg> about the saga he had to endure when he was sued by Monsanto for patent infringement.

¹⁴ <http://stevemarshbenefitfund.com.au/>

It is unreasonable to expect that an organic or conventional non GM farmer has to come up with measures to ensure that he or she can keep GM out of their fields. A Swiss study recently concluded that trying to keep GMOs from contaminating traditional crops could cost up to a fifth of the total production cost.¹⁵

Most countries in the European Union have taken away the important message that GM crop cannot be contained and therefore do not allow the commercial growth of GM crops.

In addition, Germany has put legislation in place that, unlike Australia's Gene Technology Act in its current form, provides a system that does give the entities that are supposed to be protected by the Act (people and environment) at least some limited protection by setting up a strict liability regime in combination with compulsory insurance for anyone dealing with GMs.

Submission 2: To provide at least some limited protection to the public and the environment from GM crops and foods, the Act would have to provide for:

- (a) a **strict liability** for anyone dealing with agricultural GMOs, such as manufacturers, importers, transporters and GM farmers;
- (b) a strict liability regime that ensures that liability cannot be contractually excluded;
- (c) a strict liability regime that ensures that a GM vendor has an obligation to ensure that purchasing farmers use it in such a way that no contamination can occur of non GM crop; and
- (d) a **compulsory insurance scheme** for anyone dealing with agricultural GMOs,
- (e) **standing** of the public and environmental organizations to apply for a review of a decision by the OGTR to provide a license to a biotech company with regard to GM crops and foods. Standing is essential to achieve the object of the Act - to protect the public health and the environment rather than to protect the bottom line of biotech companies by ensuring as swift and streamlined licensing procedure as possible at the expense of independent scientific Government research (with no funding from the industry or industry related bodies).

A strict liability regime with compulsory insurance should be regarded as an absolute minimum standard of legislation in an area where legislation (the Act) was put in place relying on:

- promises from GM proponents that co-existence of GM and traditional crops are possible when the reality is that co-existence is impossible; and
- non scientific studies undertaken by the industry rather than Government funded independent studies on the safety of GM crops and food.

¹⁵ Report by the Swiss national agricultural research organization, Agroscope, and Zurich's Federal Institute of Technology (ETH). See <http://worldradio.ch/wrs/news/wrsnews/shielding-crops-from-gmos-proves-costly.shtml?24646>. Switzerland has a 2013 moratorium in place for GMOs.

However, the writer's view is that the Government should reconsider their decision to make GM food production commercially available at all in Australia. GM foods have proven to be of no added long term benefit, but rather appear to most likely be harmful to human health¹⁶ despite Monsanto's "commitment" in its marketing publication "Sustainability and Corporate Responsibility Report 2010", to safe the world. "Commitment" for the future is a mere goal¹⁷, not a progress indicator. What is necessary is a list of past success stories that last for more than three years to ensure that these success stories will continue in the future. There appear to be no success stories, only "commitments".

Submission 3: The Act should make a distinction between GMOs that can procreate (such as GM crops, plants and animals) and GMOs that cannot procreate (such as prescription drugs).

Submission 4: The Gene Technology Act should make the public release or planting of GMOs with the capacity to procreate, whether commercial or non commercial, illegal, with the practical result that no GM seeds, crops or other plants can be grown or sold in Australia. The main argument for this is the fact that no co-existence is possible between GM and non GM crops and contamination is inevitable.

Submission 5: The public release or planting of GM Terminator Technology¹⁸ whether commercial or non commercial, illegal.

Submission 6: The majority of the Act should only apply to GMOs that do not procreate, such as prescription drugs.

¹⁶ I am wondering: If a BT toxin in GM potatos poisons a bug, why would it not poison a human being? Common sense tells me not to eat potatos with a toxin that kill a bug as much as I know that it's no good eating rat poison. If common sense is no longer used today, one would think that at least independent, non industry funded, scientific studies should be undertaken before these products are set loose on the public.

¹⁷ and sometimes wishful thinking

¹⁸ designed to make seeds that cannot would ordinarily procreate but cannot procreate because it has been genetically engineered to not allow it to procreate.

B.2 ECO-FRIENDLY FARMING: WORLDWIDE PARADIGM SHIFT FROM INDUSTRIAL TO ECO-FRIENDLY FARMING

The general recognition that GMOs have no real benefit and the recognition of the problems arising from monocultural practices started in the Green Revolution (soil degradation and desertification) has led to a global shift from monocultures, including biotech/GM farming, to sustainable or eco-friendly farming such as Permaculture and other eco-friendly types of farming.

Even the UN is now calling for “eco-friendly farming”¹⁹. Here a little extract of its May 2011 publication “*Save and Grow - A policymaker’s guide to the sustainable intensification of smallholder crop production*”²⁰:

“A gathering storm

It is now recognized that those enormous gains in agricultural production and productivity [from monoculture industrial agriculture in the Green Revolution] were often accompanied by negative effects on agriculture’s natural resource base, so serious that they jeopardize its productive potential in the future. “Negative externalities” of intensification include land degradation, salinization of irrigated areas, over-extraction of groundwater, the buildup of pest resistance and the erosion of biodiversity. Agriculture has also damaged the wider environment through, for example, deforestation, the emission of greenhouse gases and nitrate pollution of water bodies.

...

Another paradigm shift

Given the current and burgeoning future challenges to our food supply and to the environment, sustainable intensification of agricultural production is emerging as a major priority for policymakers and international development partners. Sustainable intensification has been defined as producing more

¹⁹ APP, 13 June 2011, <http://www.news.com.au/breaking-news/un-calls-for-eco-friendly-farming/story-e6frku0-1226074555705>

²⁰ http://www.fao.org/ag/save-and-grow/index_en.html

from the same area of land while reducing negative environmental impacts and increasing contributions to natural capital and the flow of environmental services.

Sustainable crop production intensification (or SCPI) is FAO's first strategic objective. In order to achieve that objective, FAO has endorsed the "ecosystem approach" in agricultural management. Essentially, the ecosystem approach uses inputs, such as land, water, seed and fertilizer, to complement the natural processes that support plant growth, including pollination, natural predation for pest control, and the action of soil biota that allows plants to access nutrients.

There is now widespread awareness that an ecosystem approach must underpin intensification of crop production. A major study of the future of food and farming up to 2050 has called for substantial changes throughout the world's food system, including sustainable intensification to simultaneously raise yields, increase efficiency in the use of inputs and reduce the negative environmental effects of food production. The International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD) also called for a shift from current farming practices to sustainable agriculture systems capable of providing both significant productivity increases and enhanced ecosystem services.

Assessments in developing countries have shown how farm practices that conserve resources improve the supply of environmental services and increase productivity. A review of agricultural development projects in 57 low-income countries found that more efficient use of water, reduced use of pesticides and improvements in soil health had led to average crop yield increases of 79 percent. Another study concluded that agricultural systems that conserve ecosystem services by using practices such as conservation tillage, crop diversification, legume intensification and biological pest control, perform as well as intensive, high-input systems."

C. INTERFACE BETWEEN THE ACT AND OTHER SYSTEMS

At present, numerous different government entities administer a number of legislative instruments that deal with GMOs in some form or other. Amongst them are:

- OGTR administers the Gene Technology Act; deals with GMOs;
- APVMA - re chemical products containing GM or pesticides that are used in combination with GMs, such as Roundup;
- TGA - use of GM products;
- FSANZ - labelling laws for GM products;
- DAFF - import and export of GM goods; and
- IP Australia - patenting of pesticides and GMs.

It seems important that there exists some regular dialogue between the different entities, in particular when any of the legislation administered by them is being reviewed and amended.

Submission 7: When any of the legislation is reviewed, public submissions of related legislative reviews should be taken into account. In this case of the review of the Gene Technology Act, the following submissions should be taken into account:

- the submissions by Gene Ethics, MADGE Australia Inc and Greenpeace Australia/ Pacific regarding the Food Standards Amendment (Truth in Labelling—Genetically Modified Material) Bill 2010²¹; and
- the submissions by Dr Luigi Palombi and Gene Ethics regarding the Patent Amendment (Human Genes and Biological Materials) Bill 2010²².

It is essential that all of these administrative bodies be independent from any funding from the GM or pesticide industry. Licensing fees should not be used by any of these entities to operate. Government funding must be given to these entities irrespective of the amount of licensing fees each entity brings in. Licensing fees should be irrelevant when it comes to performance assessment of these bodies.

At present, the writer can detect a bias by these Government bodies towards any kind of pesticides and GMOs. The unexamined assumption appears to be (when looking at their websites) that biotech and pesticide use is progress - when this appears to be no

²¹ http://www.aph.gov.au/Senate/committee/clac_ctte/labelling_gmm/submissions.htm

²² http://www.aph.gov.au/Senate/committee/legcon_ctte/patent_amendment/submissions.htm

longer the case. It appears generally understood that the “Green Revolution” (which appears to be a bit of a misnomer) is over.

Legislation should be put in place that ensures that a proper discussion takes place between GM proponents and opponents. They should be represented at least 50/50 in any advisory bodies to government entities.

The Government should budget properly for these bodies and allow them to be independent from the multinationals who produce the many pesticides that are no longer allowed in most countries due to their scientifically proven harm. Why for example is Atrazine, only one of many chemicals that is no longer allowed in Europe, still in wide use in Australian agriculture? Atrazine is manufactured by the Swiss company Syngenta. Ironically, I understand that Switzerland does not allow the use of Atrazine. It’s not good enough for Switzerland, but it’s good enough for Australia?

Submission 8: The administrative bodies listed above should be independently funded by the Government (not rely on income from licensing) and should consist of GM and pesticide proponents as well as opponents (50/50). A “GMO and Pesticide Committee” could be set up that consists of 2 representatives from each body (with a 50/50 representation) whose job it is to monitor overseas developments, such as:

- reports that indicate that certain pesticides and GMOs may be harmful; and
- the banning of certain pesticides and GMOs in certain other countries;

and to make suggestions for the banning of specific GMOs and pesticides.

My submissions are dedicated to the farmer who put together the very sad movie clip “Save the Locust” on www.savethelocust.com²³, to Percy Schmeiser and to Steve Marsh in the hope that it will make difference so that other farmers need not endure what these three farmers had (and are yet) to go through.

Thank you.

Yours sincerely

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²³ How much of the sprayed crop ended up getting lost by floods and not by locusts?