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Comments on DAFF's Agricultural Competitiveness Issues Paper

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Background

Gene Ethics is a not for profit, public interest advocacy and campaign network with over 6,000 constituents, formed in 1988. We envisage a safer, more equitable and more sustainable GM-free society that feeds, houses and clothes all its people well, in perpetuity.

We want the precautionary principle, scientific evidence and the law rigorously applied to all proposed uses of genetic manipulation (GM) technologies and their products. Gene Ethics generates and distributes accurate information and analysis on the ethical, environmental, social and economic impacts of GM. Our education programs critically assess GM for the public, policy-makers and regulators.

Government Priorities Wrong

It is very disappointing that this is not an 'options' paper. The government and the authors have already set the directions in which they will continue to drive Australian agriculture. So the issues paper merely invites comment on the means for achieving its pre-determined goals of maximizing bulk commodity production for export without value-adding in Australia.

Free market ideology leads away from food security, not towards it. A billion people are now starving or malnourished world-wide while another billion are obese and diabetic. Producing and selling tradable food commodities to the highest bidders in speculative and glutted markets just speeds their flow from the starving South to the obese North, for feedlot animals and biofuels. In this simple equation, the rest of our diverse food supply and its producers are irrelevant. That is not acceptable.

The government's ideology, that no country should seek to be self-sufficient in food (enunciated in its paper to the World Food Summit 1996), is leading the nation towards a situation where we will be unable to feed ourselves, leaving Australians at the mercy of global suppliers and their bottom lines.

Maximising profits for speculators through trade, not feeding people, is the motive. But when oil becomes prohibitively expensive then runs out as it soon will, the so-called 'free' trade on which we increasingly depend for our sustenance will collapse.

Australia claims to want to 'feed the world' so our limited R&D and productive resources should be invested in creating food sovereignty and security for our region of the world. Locally grown, clean, green food as the basis for nutritious, healthy diets for everyone, everywhere, is an achievable goal that DAFF and the government should adopt.

Sustainability, security and sovereignty should be our national priorities and goals. Increased yield, efficiency and productivity are only means to these ends. The discussion document has lost sight of where we are going by focusing instead on the road they insist we will take. Gene Ethics and many of our constituents participated in developing the People's Food Plan and support the Australian Food Sovereignty Alliance comments to this inquiry.

See the special food issue of the Monthly Review http://monthlyreview.org/2009/07 An Overview of the Food and Agriculture Crisis Brian Tokar and Fred Magdoff 2009, Volume 61, Issue 03 (July-August) for example, as an account of the crisis in the global food supply and possible solutions. We recall that: "In 2008 people woke up to a tsunami of hunger sweeping

the world. Although the prospect of rising hunger has loomed on the horizon for years, the present crisis seemed to come out of the blue without warning. Food riots spread through many countries in the global South as people tried to obtain a portion of what appeared to be a rapidly shrinking supply of food, and many governments were destabilized."
Australia was fortunate to be spared the full brunt of that global phenomenon, on this occasion, but only the short-sighted cannot envisage that it will not affect us if we continue with agricultural business as usual.

The Commonwealth Department of Agriculture, Fisheries and Forestry website says its:

> "role is to develop and implement policies and programs that ensure Australia's agricultural, fisheries, food and forestry industries remain **competitive, profitable and sustainable**. Our policies and programs:
>
> - encourage and support sustainable natural resource use and management
> - protect the health and safety of plant and animal industries
> - enable industries to adapt to compete in a fast-changing international and economic environment.
> - help improve market access and market performance for the agricultural and food sector
> - encourage and assist industries to adopt new technology and practices, and
> - assist primary producers and the food industry to develop business and marketing skills, and to be financially self-reliant."

That sounds all very fine but as currently conceived and constructed Australia's agricultural, fisheries, food and forestry industries are not **competitive, profitable or sustainable. G**overnment policies are driving our agricultural industries in the opposite direction. For instance, its quest to drive down incomes for rural workers does not help family farmers to stay on the land, and denies our land managers the resources essential to making rural communities and livelihoods ecologically and economically sustainable.

Even in its own stated terms, DAFF's agenda is a tragic failure. Not one major human activity in Australia – farming, fishing, food, energy, transport, communications, housing, or commerce, etc – now uses ecosystem resources sustainably. As its highest priority, the White Paper should investigate ways to enable Australian primary production to become sustainable from multiple points of view – ecological, economic, social – for this and future generations.

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 agro-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 manipulation and other doomed technologies for food and farming (e.g. $1.29

billion into biotech, Truss 6/05). Unless this waste stops, it is increasingly unlikely that the nation can become a fairer and more just society that respects our dependence on rural communities and farmers. We must change to sustainable systems and the sooner the better.

Change Course

DAFF's core business should be to ensure that this and future generations of all Australians have ready access to the affordable means to feed, house and clothe ourselves adequately. This will involve recruiting and empowering the next generation of small to medium sized farmers producing primarily for local markets. This may be achieved by bringing a new wave of people skilled in rural activities to these shores, as we did in the 1950s and '60s.

But the issues paper makes no mention of topics critical to the achievement of affordable food sovereignty and security, shelter and clothing for all Australians. For instance, the term "feed" is not used to reference feeding Australians, housing is not mentioned at all, and the only reference to clothing is in Barnaby Joyce's Foreword, which says:

> "We can produce the food and fibre for the emerging middle class of our near neighbours who will express their new wealth in the clothes they wear and the food they eat."

This overblown rhetoric is cogently challenged in: "Visions of Asian food bowl just a political catchphrase" which reports: "Australia will never be the food bowl of Asia, despite Prime Minister Tony Abbott sparking renewed hype about the country's agriculture sector after signing free-trade agreements with Japan and South Korea this week. ... Australia's food bowl expectations are "misguided", NAB's chief economist Alan Oster says. He and food processors doubt Australia could ever be an Asian food bowl."
http://www.smh.com.au/federal-politics/political-news/visions-of-asian-food-bowl-just-a-political-catchphrase-20140411-36iix.html#ixzz2z6nPcuki

Australia now produces enough food for 60 million people in our best years while the Asian population is 4.3 billion people! We may continue to supply a small corner of that market but investing most of our scarce national effort and resources in capturing a sizeable share, while neglecting the needs of Australia's present and future populations, is irresponsible and foolhardy.

There is no necessity for the market, trade and corporate-driven vision of the future of agriculture to dominate the White Paper. The necessity is to ensure people are well fed, through affordable access to secure and sovereign supplies of fresh and minimally processed, local fruit, vegetables and protein. The White Paper loses sight of this in its quest for constant growth in the volume, not necessarily the quality or suitability, of tradable food commodities.

In our view the following complacent statement in the issues paper seriously under-states the threats to Australian food security and sovereignty for many Australians: "Australia is a net exporter of food … Australian incomes are relatively high by global standards, enabling most families to purchase the food they need, with spending on food and beverages only accounting for approximately 12 per cent of household expenditure (Australian Bureau of

Statistics 2013a). Despite this, social disadvantage and remoteness lead to some pockets of food insecurity. While rising food production will contribute to secure access, food security for these groups is a focus of social policy."

But in its social policies, the government's failure to prioritise its own population's basic needs is just unacceptable. The government must not assume in its vision for agriculture that all is well in the Australian community. For example, Anglicare's national survey found a large number of families chronically food insecure and unable to reliably provide meals for their children and themselves. http://www.anglicare.asn.au/site/sotf12_notenoughtoeat.php

Food waste is not mentioned in the paper but more than 30% of all food produced is wasted somewhere along the supply chain from the seed to the spoon. While the paper cries out for increased productivity, stemming the tide of food waste could render irrelevant the obsession with increased production that will further drive down prices and profits to family farmers. If governments made the rescue and redeployment of food resources a top priority, successful reduction of the tide of waste would immediately ease the pressure for ever more production.

The paper also sees **co-operation and collaboration** as only an issue between state and federal governments, instead of our whole society. These are the foundations on which Australian farming was built, not the barren and corrupt ideology of competition and efficiency at all cost which has so obviously failed to deliver on its promises.

The **participation and partnerships** that could empower our communities to mobilize the social capital needed to improve life for all of us do not even rate one mention. This White Paper's processes include so-called 'public consultations' but they are a sham.

The paper promises: "extensive consultation with business, non-government experts and the community." But its only other references to consultation are: "with the agriculture sector by establishing an industry advisory council that will meet with the Minister for Agriculture at least twice a year. The industry advisory council for the agriculture sector, chaired by the Minister for Agriculture and a respected industry leader, will play a key part in providing advice to assist the development of the White Paper." The council members are:

- Luke Bowen, Executive Director, Northern Territory Cattleman's Association, NT
- Eliza Brown, CEO/Director, Peter R. Brown Family Vineyards, VIC
- Rob de Fegely, Chairman, Cloudy Bay Sustainable Forestry, NSW
- Lenore Johnstone, grazier, Ilfracombe, QLD
- Hamish McLaren, woolgrower, Nerstane Merino Stud, NSW
- David Moon, vegetables/horticulture and Managing Director, Moonrocks, QLD
- Stuart Richey, Managing Director, Richey Fishing, TAS
- Kevin Sorgiovanni, horticulture, wine and dairy and Director, Harvey Fresh, WA
- Dean Wormald, graingrower and Director, Mallee Sustainable Farming, SA
- Susan Bower, Head of Agribusiness, Australian Financial Services, Westpac.

This panel without any **support or extension processes** leaves the vast majority of producers who feed Australians, voiceless. The small and declining memberships of state farmer organisations should also be cause for concern but the issues paper ignores this. The NFF and state farm groups have haemorrhaged members so they now primarily represent the interests of large agribusinesses, many of which are foreign owned and have no interest in

Australia beyond making profits for their overseas shareholders.

As a result of their disempowerment and loss of confidence in so-called farm leaders, the majority of farmers and rural communities lack the means of policy participation, and effective and coherent advocacy. This needs to be remedied.

The issues paper ignores other pressing issues for rural people: the need for localization, to maintain rural communities in population and resource decline; dependence of rural producers on off-farm income to support and subsidise their on-farm activities; the burden of unrelieved debt; high rates of despair and suicide; value adding that can support local processing and job creation; improved communications in remote locations; planning for the future, only referenced here to infrastructure; community building; creating competitive advantage and premium niche markets are not mentioned; soil regeneration and fertility are ignored; a need to reduce dependence on diminishing and limited inputs should be a central theme. Ownership and control of the means of primary production, from seed to spoon, appears to be of little interest or concern yet the concentration of ownership of the food supply is increasing in intensity. For instance: https://www.msu.edu/~howardp/seedindustry.html shows concentration of ownership of the global seed supply. **S**ales of top ten agrochemical firms in 2012 are here: http://news.agropages.com/News/NewsDetail---10138.htm

Australian governments are focused on markets while closing down the facilities for local skills development, and promoting temporary migrant labour schemes that drive down wages. This purports to be so that Australia can compete in the globalised market without protection or subsidy. But this has so marginalised Australian horticulture, market gardening and local food processing that they at risk of disappearing altogether. Australia's own food supply is at extreme risk of collapse and our population of even greater food insecurity in the future. The response, that more, higher technologies are needed to replace labour so we can retain international competitiveness is irrational and against the public interest. All farmers are already stretched to the limit of their capacity to manage and nurture the resources for which they hold responsibility.

A Different Vision

Australian agriculture should be focused on quality rather than quantity and committed to local value-adding to food commodities as much as possible. The live export trade in animals is not only cruel but foregoes the benefits that would accrue from local processing.

Before it was defunded and disbanded, CSIRO's Land and Water Division confirmed two hundred years of Euro-centred farming has caused massive soil loss, salination, water pollution, species extinctions and desertification. Our ecosystems are being depleted at a rate far beyond replacement. For example, each kilo of grain fed to feedlot beef and battery chickens costs up to five kilos of topsoil, washed or blown away. We must reform the ways we are fed, clothed and housed.

Chemical/industrial agriculture has produced rural poverty and dispossession in Australia, while hundreds of millions of Third World people suffer chronic starvation, landlessness, unemployment and urban slums. An excellent account of this disastrous history is explained in, The Food Wars by Walden Bello, Verso, London, 2009.

To meet the challenges of climate change, depletion of oil and phosphate reserves, and scarcer water and arable land, we must transition from high input industrial farming to diverse and sustainable agro-ecological farming systems. The 5 year, World Bank initiated, United Nation's IAASTD report explains how low-input agro-ecology, similar to integrated organic systems, could feed every-one well. GM crops have nothing useful to contribute. See: http://www.unep.org/dewa/Assessments/Ecosystems/IAASTD/tabid/105853/Default.aspx

La Via Campesina and the food sovereignty movement world-wide should also be heeded if Australia. See: http://viacampesina.org/en/ Farmer led innovation needs support, including: Regenerative agriculture; Natural Sequence Farming; Keyline – water management and conservation; Joel Salatin's Polyface farm model; Permaculture; community gardens; peri-urban agriculture; and much more.

The paper asserts: "In 2011–12 farmers managed around 53 per cent (405 million hectares) of Australia's landmass (ABS 2013f), reflecting the importance of their stewardship in maintaining our natural resource base." So farmers should be fairly rewarded by the whole society for also maintaining and enhancing the ecology of those environments. The economy is fundamentally dependent on environmental goods and services and passing them on undepleted and in good order to future generations is essential work for the nation.

Organic production systems could feed all Australians well and we advocate Australia going organic.

Genetic Manipulation

Australian governments must reality checked their investments in and commitment to genetic manipulation R&D. Our governments partner with companies that pushed mechanisation, synthetic chemicals and crop monocultures for the past fifty years, to achieve monopoly control of the food supply. Every GM organism, kg of chemical and machine creates a flow of royalties and profits to head office overseas, impoverishing Australians.

Former CSIRO Chair and University of Melbourne Professor Adrienne Clarke (now ABCA patron) lamented that foreign seed, chemical and food processing giants have already patented most genes of commercial interest used in genetic manipulation.

Two main choices for agricultural production are now offered - the Gene Revolution to prop up chemical and oil dependent industrial farming or Sustainable Ecological Farming Systems. Genetic engineering would try to entrench the industrial agriculture model, through greater corporate control, just when The World Watch Institute is warning that the amount and quality of food it can produce is in long-term decline. In contrast, organics promise truly fresh, clean, green production, more employment and local food security.

Australian governments, committed to selective 'free' trade and global markets, back the factory farming model and genetic engineering. Billions of taxpayer dollars have been pumped into engineering plants, animals and microbes that suit our degraded environments, to grow bulk commodities for trade.

The Issues Paper makes several assertions about the **potential** of GM crops and foods but there is scant evidence to support any of these claims. They parallel the false promises that

the GM industry makes to sustain its failing enterprise. The White Paper says:

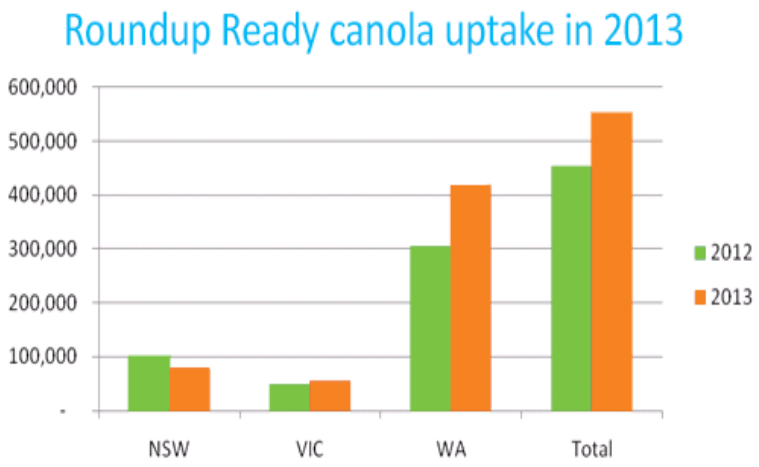
> "Agricultural biotechnologies, such as genetically modified crops, have the **potential** to transform agricultural productivity by **delivering increased yields** and **lowering input costs."**

These are baseless claims about goals the GM industry and government have worked hard on for over 20 years but have not realised. They take much needed research resources away from sustainable farming and food production systems based on healthy soils.

Official NSW data at http://tinyurl.com/kf46eqf and other publicly available evidence on canola yields, production and profits shows: 1. average GM and non-GM canola yields were very similar from 2008-2012. 2. GM canola has no yield advantage over top non-GM varieties 3. the percentage of GM canola in the entire canola crop in Vic & NSW has declined since 2010 to about 5%.

This is unsurprising. In 2010, a Birchip Cropping Group (BCG) analysis found GM canola in Western Victoria was $150/hectare less profitable than non-GM varieties as GM growers paid GM seed royalties, were required to use branded Roundup weed-killer, and had extra segregation and transport costs to the few silos accepting GM. (Australian Farm Journal, April 1, 2012, Pp. 20&21) They could not save seed and the price for their crop was discounted.

Monsanto claims to have sold 550 tonnes (550,000 kg) of GM canola seed nationally in 2013. This graph confirms the relative decline in canola seed sales, and fewer hectares planted, in NSW and Victoria. As WA started growing commercial GM canola in 2010, two years after the Eastern states, it remains to be seen if WA production will also decline as commercial reality and profitability set in.



The productivity of GM farming in the US is also falling behind the EU's non-GM systems. Researchers at the University of Canterbury (UC) New Zealand confirm that the GM strategy used in North American staple crop production limits yields and increases pesticide use, compared to non-GM farming in Western Europe.

Prof. Jack Heinemann's team analysed data on agricultural productivity in North America and Western Europe over the last 50 years. Western Europe and North America are very similar

in types of crops grown, latitude, mechanisation and farmer education. The findings were published in the peer-reviewed International Journal of Agricultural Sustainability. Download the paper here: http://dx.doi.org/10.1080/14735903.2013.806408 Read further commentary on the findings here: http://www.globalresearch.ca/us-genetically-engineered-agriculture-is-outclassed-by-europes-non-gm-approach/5341518

In Australia, strong demand for GM-free canola has sustained premiums of up to $70/tonne since 2007. (Table from Farm Weekly, May 1, 2014 – CAG1 = GM; CAN1 = non-GM)

CBH 2013-2014 CASH PRICES AND POOL EQUITIES

Commodity	Geraldton	Kwinana	Albany	Esperance	EPR 13/14 season
CAG1	$450	$460	$460	$460	$522
CAN1	$520	$530	$530	$530	$532
APW2	$313	$296	$294	$290	$305
BAU1	$235	$270	$265	$260	$290
BFD1	$235	$250	$245	$245	$252
LUP1	$324	$339	$324	$289	$365

All prices are quoted exclusive of GST. Cash prices are on a Free In Store basis and pool equities are on a Free On Board basis. For current prices, visit the CBH Online Contract Writer via LoadNet® login at www.cbh.com.au

Monsanto is subsidizing GM growers by capping the discount for GM canola at $10/tonne in some places but farmers are still worse off by growing the GM crop.

> "They can also improve environmental outcomes by reducing the need for inputs such as herbicides and water," says the issues paper.

This is another groundless assertion, not supported by any credible data from the extensive history of commercial use with cotton since 1996 and canola since 2008.

Claimed agronomic benefits of over-spraying the Roundup tolerant crop with the herbicide is fast disappearing as many additional weed varieties also acquire Roundup tolerance. Roundup (glyphosate) tolerant weedy wild radish has now been identified for the first time in Western Australia. Weed killer tolerant GM canola is not harmed by Roundup so repeated spraying is encouraged, creating selection pressure for chemical tolerant weeds. Radish, wild turnip and canola are closely related and can cross. When Roundup fails, other toxics will be sprayed http://www.abc.net.au/news/2014-02-26/glyphosate-resistant-radish/5283466

> "Looking to the future, GM crops could better equip cropping systems to withstand drought, frost and other climate challenges."

Again, there is a paucity of evidence for this claim and it is purely speculative. For instance, consider Monsanto's 2014 R&D pipeline http://www.monsanto.com/products/pages/research-development-pipeline.aspx It offers no new GM options of likely relevance for Australia.

Table 7.3 from the Corish Report 2006 (Appendix 1) also claimed to show potential for GM technology. But still no Australian GM crop R&D (except for cotton and canola) is beyond the preliminary phases of discovery and proof of concept. The field trials claiming potential in 2005, to justify continued R&D funding, have lapsed. There is a paucity of progress with any GM innovations, despite substantial investments of grower levies and taxpayer funds. See: "Australia's crops and pastures in a changing climate - can biotechnology help?" Glover, J, et al, Bureau of Rural Sciences, 2005.

The climate is changing, abiotic stresses are increasing and our arable lands are becoming less fertile and more degraded. So a timely and appropriate response is urgently needed to transition out of the dominant model of agro-industrial production which is unsustainable and poorly adapted to changing ecological circumstances. Continuing to prop up a doomed system with hope of GM innovations and other breakthroughs is a waste of scarce resources.

Agro-ecological systems show far more promise of having the resilience to cope with the new stresses according to the United Nation's IAASTD report. The blueprint is already written but Australian governments ignore it because a paradigm shift would be needed: http://www.unep.org/dewa/assessments/ecosystems/iaastd/tabid/105853/default.aspx

We recommend that the IAASTD report becomes the focus for serious assessment and planning for Australia's agricultural future.

> "Biotechnology **may also** enable agricultural systems to be adapted to produce pharmaceuticals and products with industrial applications, **potentially** expanding the markets in which farmers can operate," says the issues paper.

In the case of poppies for morphine production in Tasmania, poppy trial licenses DIR 007/2001 and DIR 018/2002 were surrendered around 2004 and these programs appear to have been discontinued. GM omega 3 canola has been much touted but no trials are licensed here: http://www.ogtr.gov.au/internet/ogtr/publishing.nsf/content/ir-1 Without any field trials there could be no prospect of commercial release in the foreseeable future.

There is no clear evidence that potential GM innovations are even technically possible.

A scientific consensus appears to be emerging that complexity will confine genetically manipulated crops to a few single gene traits such as the existing herbicide tolerance, Bt insect toxins and virus resistance characteristics. Cisgenics, RNAi, and synthetic biology that aims to build completely novel organisms from scratch, are still highly speculative and already major health and environmental issues have been identified.

The following commentaries on single vs multigenic traits suggest that GM existing GM techniques will be unable to deliver on most of their grandiose promises of more complex traits and higher productivity, and on other traits such as nitrogen fixation in grains, drought and salt tolerance, longer shelf life, 'healthier', more nutritious and biofortified foods.

"GM technologies are generally only suitable for the single gene traits, not complex multigenic ones." Richard Richards, Chief Research Scientist Plant Industry at CSIRO http://theconversation.edu.au/top-five-myths-about-genetic-modification-2664

“… the dramatic breeding and selection advances (that mapping the beef genome sequence) promised have been difficult to achieve because hundreds, even thousands, of interacting genes control important production traits like growth rate, feed efficiency and meat quality - not the handful that researchers had originally believed.” Dr Heather Burrow, CEO Beef CRC, Weekly Times, Beef CRC chopped, 11/9/11

The Australian Bureau of Resource Sciences also says: “… canopy temperature depression (CTD) has been shown to be positively correlated with yield in both warm and temperate environments. … As CTD is a complex, multi-genic trait, it is unlikely that transgenic technologies could be easily used to introduce the responsible genetic elements into breeding lines; however, molecular markers could be developed for this trait.” Australia's crops and pastures in a changing climate - can biotechnology help? Julie Glover, Hilary Johnson, Jacqueline Lizzio, Varsha Wesley, Paul Hattersley and Catherine Knight, Bureau of Rural Sciences, 2008

While improved understanding and data on gene functioning may facilitate marker-assisted breeding, there is scant evidence that GM techniques are capable of more complex transformations. It is therefore appropriate to question GM's performance to date and the wisdom of further expenditures of scarce public R&D funds on what is already a flawed and failed enterprise.

There have been few robust checks and balances, or mechanisms for critical review, of the official commitment to GM technology. So its successes and failures have not yet been robustly evaluated. Government should urgently remedy this.

The White Paper goes on to assert:

> “Given the **potential** benefits of biotechnology to the agriculture sector, a regulatory regime in which consumers have confidence will be part of ensuring the benefits of biotechnology to the agriculture sector are fully realised.”

The potential benefits of GM techniques are not a given as we have amply shown. Some will argue that ‘biotechnology’ is broader than just GM but then ignore the possibility that soil enhancement systems such as biodynamic processes and treatments deserve official support because they could make a big contribution to the future sustainability of Australian primary production.

A major loss of trust was sustained by the failure of Food Standard 1.5.2 to require the labeling of all foods made using genetic manipulation techniques. The International Social Science Survey (Kelley, J, ANU) first asked in 1994 if Australians wanted GM food products labeled. 89% said they did, even though there were at that stage no GM products in the Australian food supply with the possible exception of the cheese setting agent chymosin. In the numerous surveys since then, that Swinburne University, The Australian Government and others have conducted, over 90% of Australians have consistently said they want all foods made using GM techniques labeled, without exception.

Of around 50 approved GM canola, corn, cotton, lucerne, potato, rice, soybean and sugarbeet events that FSANZ has approved under Food Standard 1.5.2 just Food derived from high lysine corn line LY038 requires any label at all, and even that is provisional.

http://www.comlaw.gov.au/Details/F2014C00036/Download

The Standard also exempts all GM vegetable oils, starches and sugars on the spurious ground that all DNA and protein is removed in refining processes. Even if this were true (which it is not) the exemption ignores, for example, cold pressed oils. It also ignores the allergic reaction that can be elicited by refined nut oils that also purport to contain zero DNA and protein.

Meat, milk and eggs from animals fed GM feed are also exempt from labeling, though an estimated 500,000 tonnes of imported GM corn and soy go into Australian animal feed each year, and that animal feed is also not labeled. It also appears possible, on the basis of baby food tests which Greenpeace commissioned, that the allowable 1% threshold for adventitious GM presence without labeling may be used to mask routine GM contamination as no state governments test for the presence of GM in the food supply as they are empowered to do.

The Swinburne National Technology and Society Monitor 2012 found:

> "Comfort with GM Plants and Animals for Food
> On average, Australians were more comfortable with genetically modified plants for food (average rating = 4.2) than with genetically modified animals for food (average rating = 2.9), **but the degree of comfort for both is relatively low.**
> Thirty-two percent of the sample reported some comfort with genetically modified plants for food (rating above the midpoint of 5 on the scale), while 17% reported some level of comfort with genetically modified animals for food.
> Fifty percent of respondents were not comfortable (rating below the midpoint of 5 on the scale) with genetically modified plants for food, while the majority of respondents (68%) were not comfortable with genetically modified animals for food. Respondents who reported discomfort most often reported they were not at all comfortable with GM food (plants = 18%; animals = 29%).
> A further 18% of respondents reported being unsure of their degree of comfort with genetically modified plants for food (either rating the mid-point 5, or nominating 'unsure'), while 15% reported being unsure about genetically modified animals for food.
> Men were significantly more comfortable with GM plants and animals for food than women were." http://www.swinburne.edu.au/lss/spru/spru-monitor.html

The White paper further claims:

> "Australia has a strong regulatory framework to manage any risks to human health and safety and the environment from GM organisms and GM foods …"

But the credibility, integrity and rigour of the FSANZ and OGTR regulatory systems are compromised in many ways. For instance, Our regulators should apply the Precautionary Principle as defined in the Convention on Biological Diversity (CBD) and many international, national and state laws, which puts the onus of proof for the safety and efficacy of innovations proposed for commercialisation onto their owners, before they go to market. That is where the onus belongs, not on the public, public interest advocates or regulators to demonstrate harm.

As a member of the CBD, Australia should sign and ratify the Cartagena Biosafety Protocol, rather than slavishly following the USA which is not even a CBD member. The Protocol seeks

to empower its 167 members to ensure the safe international transfer, handling and use of Living Modified Organisms (aka GMOs). As an importer and exporter of GMOs, Australia has a responsibility to join.

The OGTR has also said it would accept and assess an application for a GMO containing Gene Use Restriction (Terminator – sterile seed) technology. Yet Terminator is the subject of a global ban agreed to by the states parties to the CBD and Protocol.

FSANZ assessments rely almost exclusively on unpublished and non-peer-reviewed toxicology data and papers produced by the applicants themselves, uses a case-by-case, science-based approach which does not apply the rigorous rules and methodologies of science, and uses the industry-conceived concept 'substantial equivalence' to conclude that GM foods are as safe as their conventional counterparts. If the concept is to be used, FSANZ should set objective benchmarks and standards in advance by which to judge if a GM food and its non-GM comparator are 'substantially equivalent'. Then the public could see why FSANZ concludes that the event conforms with their assessment.

Although FSANZ does not officially assess or consider the results of animal feeding studies – ostensibly basing its assessments on toxicological studies from the applicants – it gratuitously criticises and rebuts such peer-reviewed and published work from skilled and reputable scientists. Its critiques provide few references to other works in the relevant fields or reasons for the unilateral rebuttals. This defensive, anti-scientific approach is not confidence-building. http://www.foodstandards.gov.au/code/proposals/Documents/P296-DairyPPPS-FAR-Attach2.doc

The credibility of regulatory regimes around the world is also failing because they are now seeking to backslide on the 'Low Level' Presence of unapproved GM events in food supply chains, as some countries reject grain shipments contaminated with unapproved GM events. For instance, "China in November began rejecting U.S. corn containing Viptera, known as MIR162, after previously accepting the grain. The variety, which has been cleared by the United States and other importers, has been awaiting approval by Beijing for four years. Rejections of MIR162 corn have cost the U.S. agriculture industry up to $2.9 billion, according to an estimate from the National Grain and Feed Association."
http://uk.reuters.com/article/2014/04/28/syngenta-corn-wait-idUKL2N0NK1RT20140428

It is unacceptable that the 'Joint Statement on Innovative Agricultural Production Technologies, particularly Plant Biotechnologies', to which Australia is a signatory, seeks to excuse and forgive the presence of unauthorised GM events in the human food chain. This strategy is set to fail and will also lose export markets is we persist with its agenda to undermine the Cartagena Protocol provisions http://www.daff.gov.au/agriculture-food/biotechnology/joint-statement-innovative-agricultural-production-technologies

It is against Australia's national and public interest to align itself with other major grain trading countries that are so over-committed to GM crops that their weak regulatory and coexistence regimes cannot prevent GM contamination of global supply chains, with approved and unapproved varieties

We recommend that Australia seriously consider making all its agricultural production GM-free again.

> "... but there continue to be limitations imposed by some states and territories on growing GM crops within their jurisdictions. These limitations have the **potential** to constrain the ability of farmers to adopt the latest available technologies to improve their productivity."

There is no published evidence from commercial experience (as opposed to small scale National Variety Trials, which are just an approximation of commercial performance) that shows GM canola or cotton more highly productive than good conventional varieties. If the GM industry wants to enhance its credibility, it will allow independent monitoring and publication of information about the location, scale, scope and performance of its GM canola and cotton varieties.

Section 21 of the Commonwealth Gene Technology Act 2000 gives state governments the power to establish GM and GM-free Zones for marketing reasons. All the canola growing states exercised these powers in 2003 when Monsanto and Bayer were granted unlimited, unrestricted and unconditional licences for the commercial sale of their herbicide tolerant GM canola seed varieties.

Though three states unilaterally ended their GM-free Zone status (WA, 2010; NSW & Vic 2008) by allowing GM canola to be grown without the agreement of the other states or their citizens, Tasmania and South Australia have remained GM-free Zones since declaring them in 2003. This reflects the commercial reality of their primary industries and the sentiment of their communities. Herbicide tolerant GM canola offers no market advantages but threatens the overall marketing of the primary products from those states. Tasmania has already spent more than a decade cleaning up GM canola contamination from field trials conducted in the 1990s. http://dpipwe.tas.gov.au/biosecurity-quarantine/product-integrity/gene-technology/former-gm-canola-trial-sites-audit-reports

We fully support the Tasmanian and South Australian GM-free Zones, as they are enhancements, not limitations. An increasing number of markets will not accept genetically manipulated products.

Strong Japanese demand at premium prices for GM-free produce from Kangaroo Island and Tasmania are ignored in the official vision of a high tech future. Neither the high-fibre barley nor salt-resistant wheat being researched by the Australian Centre for Plant Functional Genomics in Adelaide, have near-term prospects of commercialization. Even if field trials were a success, it remains to be seen if they surmount practical, performance and regulatory hurdles. Numerous publicly-funded Australian GM research projects that cost billions of dollars have already failed: e.g. weevil resistant peas, non-browning fruits and vegetables, longer shelf life foods, and feral animal biocontrol. There are no GM silver bullets as the burgeoning insect and weed resistance to existing herbicide tolerance and Bt insect toxin traits amply show.

A just-published Friends of the Earth International report – Who benefits from GM crops, 2014 shows that GM crops and their global acceptance are dramatically declining: http://www.foei.org/en/what-we-do/food-sovereignty/latest-news/who-benefits-from-gm-crops-2014 In summary the report's findings are:

- Over 90 per cent of GM crops are grown in just six countries: USA 40%; Argentina 14%; Brazil 23%; India & Canada 6% each; China 2%; 21 others including Australia 8.3%.
- Industry figures show the claimed increase in GM acreage in 2013 was in those six countries.
- This is not a global industry as 160 countries and 60 dependent territories remain GM-free.
- Less than one per cent of the world's farmers grow any GM crops.
- The number of countries cultivating GM crops is in decline, with Poland and Egypt the latest countries to suspend GM crop production. Bavaria has just declared the 62nd GM-free Crop Zone in Europe.
- Mexico, Kenya, Egypt and Poland recently suspended cultivation of some GM crops.
- Ninety nine per cent of commercial GM crops resist pesticides or make their own insect toxins, resulting in increased pesticide use overall.
- The USA, Argentina and Brazil have upward trends in chemical pesticide use as a result of their long use of GM crops.
- In Africa, only South Africa, Burkina Faso and Sudan grow any GM at all but GM industry lobbying may open up the continent to GM crops, closing down other more appropriate and sustainable options.

The GM-free states, Tasmania and South Australia, are also complying with the views of voters, citizens and all political parties. http://www.abc.net.au/news/2013-11-07/gm-crops-ban-fruit-fly-research-sterile-males-qflies/5075206

For example, 1,075 respondents nationally were surveyed on the question: "Do you approve or disapprove of permitting genetically modified crops to be grown in Australia?" 50% disapprove, 32% approve and 19% don't know. http://essentialvision.com.au/approval-of-gm-crops

A poll in The Land online in March 2014 asked "What do you think of GM crops?" elicited the following answers from 1097 respondents:

Farmers need gene technology	(14.9%)
OK with clear product labelling	(5.1%)
OK with one govt body to oversee the industry	(2.7%)
GM science needs more testing	(21%)
Ban it altogether	(56.3%)

Viewed at 9.30pm on 7/3/14 at http://www.theland.com.au/polls/

Farm Weekly, 6/3/14 also reported that: "most farmers rejected GM in canola study" that ran in the Eastern states from 2008 to 2010.

A 2013 GRDC-commissioned survey of South Australian growers found 55% will not grow GM canola, even if the GM-free moratorium is lifted, and just 15% say they may grow it. http://www.theland.com.au/news/agriculture/cropping/grains/sa-farmers-divided-on-gm-crops/2640447.aspx?storypage=0 In states where GM canola can be grown, just 12% of canola growers are doing so, while another 12% may grow it at some stage.

We strongly support the GM-free states and recommend that other governments support their decision.

Agricultural Chemicals Review and Reregistration

Mandatory agricultural chemical reviews and re-registration due to begin July 1, 2014 are an essential step in safeguarding farmer and shopper health so we oppose the proposed legislative changes that would remove re-approval and re-registration of agricultural and veterinary chemicals. We favour retention of the existing law and its regulations, unamended. The government's claimed commitment to reduce red tape for the agvet chemicals industry opens the way again to old, dirty, polluting practices that are unsafe and unacceptable.

The issues paper claims to have as a goal: "Improving chemical registration by reforming agricultural and veterinary chemicals legislation;" But this fails to disclose what will be improved or the goal of those improvements to: Make agricultural workplaces safer? Ensure the science behind all registered chemicals is fully up to date and rigorous? Minimize the chemical residues in the human food supply? Protect the natural environment from harm?

Instead of these socially responsible goals, the Agricultural and Veterinary Chemicals Legislation Amendment (Removing Re-approval and Re-registration) Bill 2014 aims to give agrochemical companies an unfair advantage by weakening legislation that the parliament has already agreed to and passed.

The parliament rightly decided that an orderly review of all registered agrichemicals over the next 15 years, using modern science to ensure they are safe, is prudent and ethical. Any backslide on this would mean many more lives are needlessly blighted with birth defects, behaviour disorders, cancers, disease and death.

We do not consider that precautionary regulation imposes any unnecessary burden on the Australian economy or the agricultural sector. We have seen no evidence for the claim that these and other proposed amendments would save business at least $1 billion per year. Instead, an easing of chemical regulation is likely to increase imposts on the healthcare and ecological systems by a much larger amount. A cost/benefit analysis of the trade off between health and compliance costs should be a necessary pre-requisite to government gutting the existing law.

We oppose any law that would enable a company to avoid a thorough and timely review of a registered chemical and its uses, when new scientific or experiential evidence of collateral damage from its use becomes known or is published. All the chemicals used with approved 'active' ingredients should also be the subject of registration and review.

The primitive data behind thousands of toxic pesticide and herbicide approvals needs review to protect farmer and public health. Farmers and rural communities already have very high rates of chemical-induced diseases. And city-dwellers will continue to eat the residues of unsafe, poorly regulated and toxic, synthetic chemical residues in fresh and processed foods. Pesticides no longer approved by other nations require particular scrutiny.

The so-called experimental data referenced in support of the list of Acceptable Daily Intakes of Agricultural and Veterinary Chemicals, available here: http://www.health.gov.au/internet/main/publishing.nsf/Content/ocs-adi-list.htm reveals a system that relies on minimal and outdated evidence. Assessments also fail to account for the

synergistic and interactional impacts of registered chemicals and their breakdown products. The proposed Bill delays the many necessary reviews and reforms that are needed to protect human and animal health and safety and the environment from the impacts of the chemical industry.

Top priority should be given in the regulation of all chemicals to worker and public health and safety, and the environment. Instead, the proposed amendments will remove the very necessary checks and balance that the last parliament rightly decided were long overdue. The precautionary principle should be applied so appropriate precaution can be exercised during review processes, even in the absence of complete information on the harm that a registered chemical may do. We supported the 2013 amendments which went some way to redressing the glacial pace of the review, re-registration and de-registration of toxic chemicals – such as dimethoate and fenthion.

The re-registration program would not ban safe pesticides. It would ensure that agrichemicals that do not meet today's higher scientific and regulatory assessments are replaced by safer, more effective and environmentally friendly products. Many other nations have precautionary pesticide re-registration schemes and so should we.

The processes of reviewing scientific data and commercial experience, that regular chemical re-registration would entail are essential to the maintenance of public health and safety, and the environment. The government has produced no hard evidence that amending the law to remove re-approval and re-registration requirements from the law will do more than give another free kick to polluting industries.

We do not believe that: "The reforms are also intended to improve community's confidence that chemicals approved for use in Australia are safe." An open and transparent review process is the best way to build public confidence, so removing chemical safety and performance from public view by granting perpetual extensions will accelerate public distrust.

The APVMA must have the power to access any information it may need to ensure public health, safety and the environment, and that may include information on marketing, distribution, use and trade.

Registrants should also be required to notify APVMA of any new information of which they may have notice or become aware, concerning the negative impacts of a registered chemical on health, safety or the environment. Penalties should apply for non-disclosure.

We have concerns about the note in the explanatory memo to the Bill (P10) which says: "Removing re-registration removes an opportunity for the APVMA to confirm that chemical products supplied to the market are the same as the product evaluated and registered by the APVMA." This is a crucial matter and is one strong reason that we support retention of periodic re-registration and the review that it would entail.

We want the APVMA to be a pro-active and effective regulator in the public interest. It should have the power to require the production of any information, at any time, that is necessary to achieve precautionary outcomes. The chemical industry must not be given unrestricted licences to facilitate pollution. So the APVMA (and its state and territory collaborators) must continue to have notification, registration, monitoring, compliance and enforcement powers

commensurate with its great responsibilities.

We absolutely oppose the Bill's intention to remove 're-approval' and 're-registration' from the Act. These review processes are the public's minimal safeguards against pollution and poisoning by agricultural and veterinary chemical use and removing them will create hazards that have not been evaluated. The pretexts of removing red tape and reducing industry costs are transparently false and are not supported by a shred of credible evidence.

The review and re-registration scheme would give the public confidence in the safety of the Australian food supply and ensure we are all protected against the impacts of toxic pesticides.

We strongly recommend that the chemical review and reregistration scheme passed by parliament in 2013 be implemented in full from July 1 2014.

New Food Technologies and Novel Foods

Cloned animals; Food irradiation; Nanotechnology and food; Novel foods; Tagatose
http://www.foodstandards.gov.au/consumer/foodtech/Pages/default.aspx

New foods that have a limited or zero history of safe use in the human food supply require pre-market assessment. The Blewett national labeling review recommended they also be labeled until a review after 30 years of commercial use. Australia's governments rejected this recommendation.

The point of sale labeling of irradiated foods that is now required by Food Standard 1.5.3 should be strengthened, not reviewed and scrapped, as now intended. We urge the mandatory labeling as 'treated with ionizing radiation' on all retail packages and individual items of irradiated 'fresh' fruits and vegetables. As the use of this process cannot easily be detected otherwise, it would be false and deceptive to imply by the lack of labeling that they are untreated with ionizing radiation equivalent to 1 million x-rays.

Labels on foods registered under Standard 1.5 are a positive source of good public decisions and confidence building and should remain on all such products for 30 years. During that time, a program of data-collection, monitoring and enforcement should be undertaken, to guarantee that public health and safety is thoroughly and assuredly protected.

We recommend that all the products of new food technologies and processes be required to be fully labelled for at least 30 years of commercial use.

Recommendations

- **DAFF's top priority should be a national transition to organic food production systems, capable of feeding all Australians well and providing food sovereignty and security for this and future generations.**
- **Australia seriously consider making all its agricultural production GM-free again.**
- **Official support be given to the states with GM-free Zones, endorsing their right to maintain such status under the national uniform regulatory arrangements for GM crops and foods.**
- **Farmer Protection laws be enacted to place a levy (say, 50c/kg) on all GM seed sold in Australia, to create a fund out of which claims for GM contamination leading to harm or financial loss for landholders would be paid, without resort to the courts.**
- **The United Nation's IAASTD report become the basis for serious assessment and planning for Australia's agricultural future.**
- **A critical review of the official commitment to GM technology be conducted, so its successes and failures can be robustly evaluated and policy shaped accordingly.**
- **The chemical review and reregistration scheme passed by parliament in 2013 be implemented in full from July 1, 2014.**
- **All the products of new food technologies and processes be required to be fully labelled for at least the first 30 years of their commercial use.**

Appendix 1

Despite significant public investment in these genetic manipulation R&D projects before and since 2005, no commercial GMOs have resulted. No further scarce scientific resources should be wasted on these failed projects.

A selection of GM broadacre crops under development in Australia is shown in table 7.3. Although, for a variety of reasons, not all of these crops will reach commercialisation, the table demonstrates the potential of GM technology.

TABLE 7.3 **Some GM crop traits under development in Australia**

Traits			Crop	Stage of development
First generation traits	Environmental stress tolerances	Salt tolerance	Wheat	Proof of concept
		Drought tolerance	Wheat	Proof of concept
		Acid soil tolerance	Barley	Proof of concept
		Acid soil tolerance	Pasture species	Technology discovery
		Frost tolerance	Wheat	Proof of concept
	Pest control	Insect pest protection — Bt/1It	Cotton	Field trials
		Resistance to cane grubs	Sugarcane	Proof of concept
	Disease control	Virus resistance	White clover	Field trial
		Virus resistance	Barley	Proof of concept
Second generation traits	Improved feed, feed value and pastures	Omega-3 oil production in plants	Oilseed	Technology discovery
		Starch modification	Wheat	Proof of concept
		Improved digestibility	Wheat, barley	Proof of concept
		Improved oil quality	Cotton	Field trial
		Modified lignin biosynthesis	Pasture species	Proof of concept
		Reduction in pollen that causes hay fever	Ryegrass	Proof of concept
		Improved oil quality	Canola	Proof of concept
		Improved sugar content	Sugarcane	Proof of concept/ field trial
Third generation traits	Plant molecular farming	Alternative sugars for food ingredient and industrial applications — isomaltose	Sugarcane	Proof of concept/ field trial
		Production of precursors of bio-degradable plastics	Sugarcane	Technology discovery/ proof of concept

Source: Glover et al. (2005b).

Report by the Agriculture and Food Policy Reference Group to the Minister for Agriculture, Fisheries and Forestry FEBRUARY 2006 Chair: Peter Corish