CropLife AUSTRALIA

SUBMISSION IN RESPONSE TO

NATIONAL FOOD PLAN GREEN PAPER

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1. INTRODUCTION

CropLife Australia (CropLife) is the peak industry organisation representing the agricultural chemical and biotechnology (plant science) sector in Australia. CropLife represents the innovators, developers, manufacturers and formulators of crop protection and agricultural biotechnology products. The plant science industry provides products to protect crops against pests, weeds and diseases, as well as developing crop biotechnologies that are key to the nation's agricultural productivity, sustainability and food security. The plant science industry is worth more than $1.5 billion a year to the Australian economy and directly employs thousands of people across the country.

CropLife member companies spend more than $13 million a year on stewardship activities to ensure the safe and effective use of their products. CropLife ensures the responsible use of these products through its mandatory industry code of conduct and has set a benchmark for industry stewardship through programs such as ***drum****MUSTER*, ChemClear® and Agsafe Accreditation and Training.

CropLife members' products are vital tools that assist Australian farmers in sustainably producing and protecting food. CropLife recognises that food production is only one component of meaningful food security, albeit a central one. This submission will focus primarily on those aspects of the National Food Plan Green Paper that relate principally to the production of safe and nutritious food, and supporting a competitive and productive food industry.

The world's population is predicted to increase to 9.2 billion by 2050, requiring an increase in global food production of 70 per cent. Providing enough food in the context of production constraints, volatile consumption patterns and a changing climate will be an unprecedented scientific, economic and public policy challenge. The situation provides an opportunity for Australian farmers to both assist in the global food security effort and also to profit from increased demand for their agricultural products. By adopting innovative farming practices, such as the sustainable and efficient use of crop protection products and genetically modified (GM) crops, the Australian farming sector will be able to produce more with less, strengthening both the sector and the regional communities that rely thereon.

Meeting the challenges presented by sustainably increasing global demand for food will require open, rational and science based policies that support all production systems, including existing and future production tools. Sustainable production systems will include the conventional systems reliant on the timely, responsible and considered application of crop protection products in ways that maximise yield and manage potential environmental and other risks. Crop protection products (including herbicides, insecticides and fungicides) are currently relied upon to increase global food production by between 30 per cent and 50 per cent. Supporting industries to develop and introduce newer crop protection products that are better targeted to Australian pests, climates and crops will help Australia play its part in addressing global food security.

In particular, crop protection and biotechnology solutions can assist farmers in producing more yield per field with requirements for fewer natural resources by reducing water consumption, increasing a crop's nutrient uptake, reducing the need for other inputs, and reducing carbon dioxide emissions.

It is imperative that the Australian Government place science before ideology and facts ahead of scaremongering. There is a need for a paradigm shift in thinking from regulating the science (as it has been proven safe) to facilitating the growth of the Australian economy by driving the plant science industry (both in the public and private domain) to its full potential.

CropLife commends the Australian Government for its work in developing the National Food Plan Green Paper. The establishment of an overarching plan that addresses food issues in Australia can have numerous benefits for industry. A national plan will help to inform the plethora of government initiatives in the pipeline and will also be vital in informing and guiding legislation. A clear understanding of government priorities will assist companies in identifying opportunities for collaboration.

The National Food Plan Green Paper also successfully identifies the major challenges that are facing Australian agriculture this century and the need for a cohesive and cooperative approach to public policy in this area. In this respect CropLife encourages the Government to develop a national agricultural vision statement, or **Agricultural White Paper**, that operates seamlessly with the National Food Plan and delivers a long term, considered public policy approach to Australia's Agricultural Industries.

2. SAFE AND NUTRITIOUS FOOD

Chapter 5 of the National Food Plan Green Paper highlights the Australian Government's proposal to continue to:

> "maintain a best practice, risk-based regulatory approach to food production in line with international obligations that is founded on science-based risk analysis, without undue burden on industry."

CropLife supports regulation where it is commensurate with the associated risk, cost and benefit to the community. The current regulations in Australia already impose a much greater regulatory burden on the plant science industry than occurs in some other countries, and this burden is exacerbated by unclear and inconsistent market interventions by state governments.

CropLife supports the safe and sustainable use of modern agricultural tools to produce nutritious, affordable and disease-free food. These tools include agricultural chemicals and modern crop breeding techniques such as genetically modified (GM) crops. These innovations provide essential productivity improvements that ensure Australia is able to efficiently produce safe food for Australian consumers and overseas markets.

Agricultural chemicals are among the most heavily regulated of all chemicals used in Australia. Before they can be legally sold for use by farmers they must undergo a rigorous risk assessment by the Australian Pesticides and Veterinary Medicines Authority (APVMA) to ensure they can be used without any unacceptable risk of harm to users, consumers or the environment. This pre-market risk assessment examines all the available evidence regarding a product and results in a set of label instructions that must be complied with to effectively manage all the risks associated with that product.

Following the registration of a product, states and territories become responsible for ensuring that it can be used safely. States and territories use various mechanisms to control agricultural chemical use, which usually include training and licensing requirements, together with specific restrictions for state specific concerns. Extensive monitoring ensures that residues of chemicals are not present at levels that would indicate chemicals have not been used in accordance with label instructions.

GM crops are intensively studied and rigorously regulated in Australia. The Gene Technology Regulator is responsible for approving any dealings with genetically modified organisms. Food Standards Australia New Zealand is required to approve any GM food ingredient and the APVMA regulates crops with inbuilt pest protection. State governments can also block commercialisation of a GM crop when they believe there are "trade and/or marketing concerns". GM canola and GM cotton crops that are grown in Australia have passed all of these regulatory assessments.

These innovations are safe, modern agricultural tools that can improve food safety. The responsible use of agricultural chemical products both pre and post-harvest can control bacterial and fungal infestations that present genuine threats to consumers. Similarly, GM crops with inbuilt insect protection have been shown to be much more resistant to dangerous fungal infections that often occur when the grain is damaged by insects.

CropLife challenges assertions that low-level residues of chemicals on food can be hazardous to health. For Australian produced food, the robust and effective (if not efficient) regulatory system to control the use of agricultural chemicals ensures that food produced in Australia using approved crop protection products as required by the label is safe. Australia's modern methods of crop protection have an exceptional record in producing safe food. Likewise, approved GM food ingredients also have an unblemished food safety record and have been consumed in over two trillion meals globally without a single health concern. Recent reports of often deadly bacterial infections (*E. coli*) from organic produce and of melamine contamination of imported foods in 2008 demonstrate that there can be much greater dangers to consumers than safe and affordable locally grown produce.

Consumers should also be reassured that CropLife members take the safety and sustainability of their products seriously. Where potential new risks may be associated with a product, CropLife members regularly take the initiative to investigate whether the newly identified risk is real and significant and if so, take necessary actions to control that risk. Given the magnitude of the investment made by registrants to bring products to market, it is in a registrant's interest to actively investigate any concerns regarding product safety.

CropLife supports the continued use of science-based risk assessment as the basis for sensible decision making. Decisions based on a rigorous risk assessment will ensure that products are not inappropriately removed from Australian markets, while ensuring the highest levels of health and safety.

A major threat to Australian farmers continuing to produce 93 per cent of Australia's safe and nutritious domestic food supply is posed by quasi-regulatory, unworkable and unscientific standards applied to Australia's organic industry. These standards place unnecessary economic risk upon organic farmers as well as their non-organic farming neighbours. Further, the *National Standard for Organic and Biodynamic Produce* that is nominally governed by Biosecurity Australia is at odds with the realistic organic standards set by our major trading partners. The state of these standards has resulted in an artificially created conflict between organic farmers and modern conventional farmers, one that could easily and amicably be resolved by setting thresholds for the adventitious presence of approved GMOs similar to those in **all other forms of agriculture**. See also, 3G Organic standards and coexistence.

- **Food labelling**

The National Food Plan Green Paper notes that:

> "A Ministerial Policy Guideline will be developed to provide guidance on case-by-case consideration of both regulatory (labelling) and non-regulatory measures that would apply to a new technology requiring pre-market safety assessment."

There are a number of ways labelling can be used for the provision of adequate information relating to food to enable consumers to make informed choices. Options range from prescriptive regulations to market based mechanisms. Currently, the Food Standards Code mandates certain information in order to facilitate consumer choice. Well known examples include Country of Origin Labelling, the labelling of detectable GM food ingredients and the labelling of irradiated food ingredients. The reason for the compulsory requirement to label these foods is that there is believed to be a strong consumer demand for this information. This approach is, however, inefficient when compared to a market based approach for a number of reasons:

1. Mandatory labelling can imply a health concern, arousing rather than addressing community concerns.
2. Risk aversion can lead to the continuation of requirements after consumer preferences change.
3. Governments rely on surveys to determine consumer preferences and surveys are not always a good gauge of consumer behaviour at the supermarket where cost and taste can take precedence.
4. The Australian food production market responds rapidly to consumer demands for information.

Mandatory labelling for non-health reasons can imply a health concern and can reinforce misconceptions in the community. For example, GM food ingredients must be labelled in the same way as an allergen, despite the fact that a GM food ingredient has been assessed for its allergenicity, while a conventional ingredient has not. This sends a message to consumers that the ingredient is a hazard, regardless of the logic in providing the information. In these cases, the logic of mandatory non-health labelling is circular – the label arouses consumer concern that it then seeks to address through providing the information that caused the concern. It is also counterproductive in that the addition of this information to the label arouses, rather than addresses, community concerns.

It is important to remember that a food label is a finite space and only a certain amount of information can be placed on the label. Excessive mandatory requirements reduce the ability of food manufacturers to provide other information about the product that may be more important to consumer purchasing decisions. Also, all information comes at a cost and consumers should not have to pay for this information if it is not relevant to them. Consequently CropLife considers that the mandatory information prescribed for food labels should be limited to food safety information.

Information to satisfy consumer preferences can be met in other ways. The market will provide production information if there is a significant proportion of the community that would prefer to purchase products containing that information. For example, low fat, low salt, free range and many other production methods are voluntarily disclosed by manufacturers in response to community demand. Recently, Coles supermarkets have introduced beef that has been voluntarily labelled as being produced without the use of hormones. The Australian *Competition and Consumer Act 2010* ensures that any information provided on food labels must not be misleading or deceptive. Therefore, mandating labelling requirements for consumer choice is a redundant policy because market mechanisms and existing legislation already ensure that, when desired, this information will be available and accurate.

Governments need to be risk averse to perform most roles of government. However, this aversion means that it is much more difficult to remove precautionary measures than it is to establish them. This is true even when the uncertainty that led to the original precautionary decision is resolved. A market based system would react quickly to consumers losing interest in a particular piece of information on a food label. If a company was not providing the information to consumers and was producing food at a lower cost, without losing market share, then competitors would quickly emulate this approach. On the other hand, if a large proportion of consumers wanted certain information and was prepared to preferentially purchase products that provided that information, then the market would also promptly react.

Governments tend to assess what information is most desired by consumers through surveys. The result of all surveys can be influenced by the questions asked and the way in which they are asked. This leads to contradictory findings in different surveys and discussion can rapidly become polarised with a variety of statistics being used to support opposing arguments.

A related problem with assessing consumer behaviour based on surveys is that surveys that measure information desires of consumers very rarely correlate these desires with purchasing behaviour. In recognition of this fact, the European Union commissioned Kings College to perform a study[1] from 2006-2008 examining the differences between consumer intentions as measured by surveys and actual purchasing behaviour. The study found that:

> "Shoppers certainly behave differently from what they say they would do. One in three respondents was wrong in their perceptions about what they bought, while another third did not know. We conclude that one must be very careful in drawing conclusions about behaviour from consumer surveys which focus on opinions and intentions."

An alternative market-based approach would gauge consumer sentiment by reacting to purchasing behaviours. Companies are constantly responding to changes in purchasing behaviour in order to maximise profits. If a company provides information desired by consumers then it benefits from increased market share and the number of products providing that information increases as competitors follow suit. If the information is desired by a section of the community, then this information is provided to this market segment without requiring consumers who do not seek this information to pay for it. This contrasts with mandatory non-health labelling where the costs are shared amongst all consumers of the good because there is no choice to not pay for the additional information.

[1] European Commission (2008) *Do European consumers buy GM foods?* Available at http://www.kcl.ac.uk/schools/biohealth/research/nutritional/consumerchoice/downloads.html

3. A COMPETITIVE AND PRODUCTIVE FOOD INDUSTRY

3A. Regulatory barriers to commercialisation – costs of registering agricultural chemical products

Efficient and effective regulation is essential to support an innovative, productive and sustainable agricultural industry in Australia. Unfortunately, from an agricultural chemical perspective, innovation is undermined by a regulatory system that is inefficient and operated to discourage investment in modern crop protection technologies.

The Australian Pesticides and Veterinary Medicines Authority (APVMA) regularly miss prescribed deadlines for deciding upon applications for innovative new crop protection products. While the causes of inefficiency are varied and have been extensively considered through a series of research reports and enquiries, little genuine reform has been achieved. Indeed, the current *Better Regulation* reform process, as opposed to streamlining processes and reducing red tape, is likely to further increase this already excessive burden.

These regulatory burdens are not without consequence. In addition to raising costs and delaying introduction of innovative new products, excessive regulation increases the pre-market barrier for new products, meaning that fewer tools for farmers are ultimately registered and approved for use. Where the cost of registering a product exceeds the likely economic return associated with the product, a company will not generally make the necessary investment to register that product.

This is a well-recognised problem in a number of smaller and specialty products where the market size does not justify the necessary investment in data generation and registration costs by a registrant. Other countries address this issue through a 'minor use' program to coordinate and subsidise necessary research to support minor use of agricultural chemical products.

For this reason, CropLife welcomes and strongly supports measures in the Green Paper to consider a minor use program for Australia. Similar programs in the United States have demonstrated that every dollar invested in a minor use program generates a net return to the economy of $500. Targeted investments would also leverage complementary and collaborative investments from users and registrants.

Successful development and implementation of a minor use program would represent one of the key reforms to drive productivity and efficiency in Australian agriculture.

3B. Biotechnology innovation

The National Food Plan Green Paper indicates that the Australian Government is looking for options to improve innovation across the food supply chain, which could include:

> "develop a national strategy on the consistent application of modern biotechnology (including genetically modified crops) in agriculture, including considering constraints to adoption and the path to market."

What is not clear to CropLife from the Green paper is how this proposed national strategy would be implemented and in particular, what exactly it would add to the existing national gene technology regulatory framework, the existing constraints to which are further discussed at Item 3D (Barriers to commercialisation – lack of a clear path to market for GM crops).

3C. Cost of development of a new biotech or crop protection product

It is important in the context of the Green Paper that the Australian Government is aware of the investment the plant science industry makes in bringing a new crop protection product or GM trait to market.

To determine the relative cost and duration of the process, CropLife International commissioned consultancy firm Phillips McDougall to survey the plant science industry's largest developers. The survey found that it takes 10 years research and development (R&D) plus US$255 million to research, develop and register each new crop protection product[2] and 13 years R&D plus US$136 million to develop each new GM crop trait[3].

The cost and duration of new chemical product or GM trait development, particularly navigating the regulatory process, highlights the need for a transparent and workable regulatory system based on sound science and harmonised risk assessment. Improvements to state and territory participation in the national gene technology regulatory framework will help remove unnecessary barriers to innovation and trade for Australia, assisting the nation in achieving a clean, green and sustainable agricultural sector – Refer Item 3D (Barriers to commercialisation – lack of a clear path to market for GM crops).

The high level of private sector investment in agricultural R&D in Australia demonstrates the plant science industry's commitment to supporting sustainable agriculture and the extent necessary to bring technological innovation to the market. Ongoing investment by government and industry promises to continue to improve the sustainability of Australia's agricultural industries.

3D. Barriers to commercialisation – Lack of a clear path to market for GM crops

While farmers in New South Wales, Victoria, Western Australia and Queensland have the opportunity to be one of the 16.7 million farmers globally growing GM crops in 2011, growers in South Australia and Tasmania do not. By facilitating a clear path to market for current and future crop biotechnology traits, the Australian Government would ensure that Australian farmers could remain internationally competitive and become truly sustainable in their farming practices.

In Australia, The Gene Technology Regulator is responsible for approving any dealings with genetically modified organisms (GMOs). Food Standards Australia New Zealand is required to approve any genetically modified (GM) food ingredient and the APVMA regulates those GM crops with inbuilt pest protection. The GM canola and GM cotton crops that are grown in Australia have passed all of these regulatory assessments.

The *Gene Technology Act 2000* (Cth) was intended to establish a national system of regulating GMOs. Despite this intention, most states have implemented legislation to address "marketing concerns" that are neither consistent nor transparent. This unclear path to market was well demonstrated in 2003 when the Gene Technology Regulator approved GM canola for commercial release and all the canola growing states immediately implemented politically motivated moratoria on commercial cultivation of this crop. This led to years of delays, which reduced the management options for Australian farmers and created real uncertainty about the future of GM crops in Australia. State bans also cost food producers and consumers, with one analysis concluding that nationally, the bans on GM canola cultivation cost $157 million per annum[4].

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2 Phillips McDougall 2012, 'Trends in Industry Research and Development', April 2012

3 Phillips McDougall 2011, 'The cost and time involved in the discovery, development and authorisation of a new plant biotechnology derived trait'. A consultancy study for CropLife International, September 2011.

4 Norton R.M., Roush, R.T., (2007) Canola and Australian Farming Systems 2003-2007.

New South Wales, Victoria and Western Australia now allow the commercial production of GM canola, however, this was only allowed after at least a five year delay following federal regulatory approval. It is not clear if such a delay will be repeated if future GM crops are introduced in Australia. Several states still have legislative bans on GM technology, maintaining vague "market considerations" legislation, even in states where GM canola is now commercially produced. CropLife notes that the New South Wales Government announced on 1 June 2011 that it would be extending its *Gene Technology (GM Crops Moratorium) Act* until 2021, 25 years after the first GM crops were commercially grown in that state.

South Australia introduced the *Genetically Modified Crops Management Act 2004* (SA) to ensure that the cultivation of GM crops was regulated in that state. On 8 February 2008, against the advice of its own scientific advisory committee, the South Australian Government decided to extend its moratorium on growing GM canola in South Australia beyond the end of April 2008 when the regulations were due to expire. The South Australian Government has even gone beyond marketing concerns and banned the transport through their state of sealed bags containing GM seed. This intervention means that there is no clear path to market for the developers of GM crops in South Australia, even when licence applicants have satisfied the requirements of the Commonwealth *Gene Technology Act* and it has been clearly demonstrated in other states that effects on trade are negligible.

GM crops are intensively studied and rigorously regulated in Australia. As previously indicated, all regulation should be commensurate with the associated risk, cost and benefit to the community. CropLife supports the continued use of science based risk assessment as the basis for sensible decision making. It is a key principle of good governance that governments should only intervene in a market where there is demonstrated market failure. However, state government moratoria on commercial production of GM crops have never identified any such failings.

The regulation of GM crops by state governments creates uncertainty that acts as a major disincentive for private investment and as a brake on technological innovation in the sector. This uncertainty is exacerbated by the fact that the legislation is often written so that it prevents the Minister from granting a licence unless certain conditions are met. It does not, however, compel the Minister to grant a licence if an application meets these same conditions. As a result, there remains a very real possibility that a company would invest significantly in bringing a technology to market in Australia with data to address all the federal and state regulations and still be unable to sell its product commercially.

This sort of significant disincentive to private investment in Australian agricultural biotechnology is counter-productive if Australia wishes to have a modern, sustainable and profitable agriculture sector in the future. Perhaps ironically, this situation is also a large threat to the otherwise highly successful public investments by state governments in developing GM crops[5].

The failure to implement a consistent national regulatory scheme has created crippling uncertainty in the agricultural biotechnology industry in Australia and completely undermined the effective regulation of GM crops. Both of these issues need to be addressed if Australia is to continue to have a competitive and productive food industry with safe and affordable food choices available to everyone.

The Australian Government should recognise that evidence to date has demonstrated that GM crops do not pose any risks to human health and the environment that cannot be identified and managed, and consequently the state and territory moratoria on these crops is not commensurate with the risk.

[5] For example, it is worth noting that the South Australian Government is a major investor in the Adelaide-based Australian Centre for Plant Functional Genomics.

Opportunities Lost

In 2005, the then Australian Bureau of Agricultural Resource Economics (ABARE) reported that Australia's canola growers were suffering an economic loss as a consequence of the state moratoria on the commercial cultivation of GM canola. The report concluded that if the moratoria were to continue, it could result in a loss of $3 billion, in net present value terms, in the period to 2015[6]. While farmers in New South Wales, Victoria and Western Australia now have the opportunity to choose if they want to grow GM canola varieties, farmers in South Australia and Tasmania are still denied this choice.

Transgenic cotton, soy, maize and canola with productivity enhancing input traits have all been rapidly adopted globally[7]. This rapid adoption of these GM crops can be expected to force downward pressure on their prices in international markets. Given that Australian farmers also compete in these markets, barriers to future Australian commercialisation of GM crops will mean that Australian farmers will receive a reduced benefit from their crop, and a concomitant reduction in profit[8]. By facilitating a clear path to market for future crop biotechnology traits, the Australian Government is in the best position to ensure that Australian farmers can remain competitive on the world stage.

A more recent ABARE report in 2008 indicated that the estimated economic benefit to Western Australia from adopting GM canola from 2008-09 for the following ten years would be $180 million in 2006-07 dollars. Over the same period, the benefit to New South Wales farmers (excluding those in the Murray Catchment Area) was estimated to be $273 million and South Australian farmers would benefit to the tune of $115 million. Yet South Australian farmers are **still** denied access to this technology.[9]

3E. Using GM crops as a tool for a competitive and productive food industry

The first generation of GM crops, with productivity enhancing input traits such as insect resistance and herbicide tolerance, have been rapidly adopted around the globe providing clear agronomic, economic, environmental and social benefits to those 16.7 million farmers in 29 countries who have accessed the technology[10].

GM crops in Australia: a snapshot of GM cotton and GM canola benefits to sustainable agriculture

In Australia, growing GM cotton varieties has seen environmental benefits resulting from decreased insecticide use and changes in the types of insecticides and herbicides used. First grown in 1996, almost 100 per cent of Australia's cotton crop is now grown with GM varieties[11]. Cultivation of GM insect resistant cotton varieties has enabled a reduction in the amount of insecticide active ingredient used by up to 85 per cent[12, 13]. This, in conjunction with industry stewardship practices, has greatly reduced the potential for chemical runoff into rivers in cotton growing regions of Australia[14].

6 Apted et al 2005, *Op. Cit.*
7 James C 2011. 'Global Status of Commercialized Biotech/GM Crops: 2011'. *ISAAA Brief No. 43*. ISAAA: Ithaca, NY.
8 Apted et al 2005, *Op. Cit.*
9 Acworth W, Yainshet A and Curtotti R 2008, 'Economic impacts of GM Crops in Australia'. Prepared for the Australian Government Department of Agriculture, Fisheries and Forestry, Canberra, May.
10 James C, Op. Cit.
11 Cotton Australia Cotton Fact File: Biotechnology http://cottonaustralia.com.au/cotton-library/fact-sheets/cotton-fact-file-biotechnology accessed 5 June 2012.
12 Hattersley P, Johnson H, Glover J, Foster M, Wesley V and Mewett O 2009. 'Plant Gene Technology: Improving the Productivity of Australian Agriculture'. Australian Government Bureau of Rural Sciences, Canberra.
13 Holtzapffel R, Mewett O, Wesley V and Hattersley P 2008. 'Genetically modified crops: tools for insect pest and weed control in cotton and canola'. Australian Government Bureau of Rural Sciences, Canberra.
14 *Ibid.*

The types of chemical being used have also changed. Because of the 'in-built' insecticide in GM insect resistant cotton, insect control can be more targeted and specific, meaning there is less of an impact on non-target organisms, allowing beneficial (ie. predatory insects) to remain in the crop. It is worth noting that the insecticidal 'Bt' protein expressed in GM insect resistant cotton is also an approved input in organic agriculture. In-crop fuel use is also reduced as a result of fewer insecticide applications being required.

GM herbicide tolerant cotton has increased the adoption of minimum tillage practices and the replacement of some herbicides with less hazardous alternatives. By facilitating minimum tillage, GM herbicide tolerant cotton has reduced soil erosion, increased retention of soil moisture and increased soil carbon. Reducing the use of some residual herbicides, together with good industry stewardship, has decreased the potential for herbicide runoff into waterways[15].

Economic and social benefits have also been realised from the adoption of GM crops in Australia. For example, in GM cotton growing regions, the incidence of on-farm workplace incidents has decreased as a result of reduced insecticide spraying and also the reduced need for hand weeding in cotton fields. Community perceptions of the Australian cotton industry have also markedly improved since GM cotton was first grown in 1996[16]. Cultivation of GM cotton varieties has allowed cotton farmers to spend less time on the tractor and more time with their families, an important social implication for rural Australia that should not be overlooked.

The adoption of GM herbicide tolerant canola varieties in Australia has also resulted in environmental benefits and increased environmental sustainability. For example, just as for those farmers growing GM herbicide tolerant cotton, cultivation of GM herbicide tolerant canola has allowed farmers in New South Wales, Victoria and Western Australia to use selective, targeted and lower hazard crop protection products.

Herbicide tolerant canola provides farmers with more effective weed control, particularly for those broad leaf weeds, such as wild radish, that are closely related to canola. Varieties of non-GM herbicide tolerant canola have been grown in Australia since 1993 (triazine tolerant) and 2000 (imidazolinone tolerant). The introduction of glyphosate tolerant GM canola merely adds another weed management option to farmers' weed control toolbox. Both non-GM and GM herbicide tolerant canola technologies have led the shift to no-till or conservation tillage systems, with associated environmental benefits such as reduced soil erosion and increased soil water and soil carbon retention.

The agronomic benefits of GM (when compared to non-GM) herbicide tolerant canola include increasing the options for in-crop weed control, allowing herbicide rotations that address the risk of herbicide resistant weeds developing and increasing the yield in subsequent cereal crops, which could be adversely affected by herbicide carry over from the herbicides used in non-GM herbicide tolerant crops.

The control of insect pests and weeds is a significant cost for Australian farmers. Crop biotechnology provides Australia farmers with new tools that can be used as part of an Integrated Weed and Pest Management (IWM) program to maintain the sustainability and longevity of pest and weed control options in Australia.

[15] Hattersley *et al*., Op. cit.
[16] Holtzapffel *et al*., Op. cit.

The global socio-economic and environmental benefits of GM crops

The most recent annual report on the global socio-economic and environmental impact of GM crops from the British consultancy firm PG Economics indicated continued considerable economic and environmental benefits to the farmers and general public in countries where GM crops are grown[17]. The report indicated that the net benefit at the farm level in 2010 from growing GM crops was US$14 billion for the 15 year period (1996-2010) covered by the report, the global farm income gain has been US$78.4 billion. Australian GM cotton and canola farmers have realised a benefit of over US$400 million in the period 1996-2010[18].

If GM crops had not been available to the 15.4 million farmers growing them in 2010, maintaining global production at 2010 levels would have required additional plantings of 5.1 million hectares of soybeans, 5.6 million hectares of corn, 3 million hectares of cotton and 0.35 million hectares of canola. This total area requirement is equal to 30 per cent of the arable land in Australia[19].

The PG Economics report also notes that GM crops have contributed significantly to reducing the release of greenhouse gas emissions from agricultural practices. This results from less fuel use and additional soil carbon storage from reduced tillage associated with GM crops. In 2010, this was equivalent to removing 19.4 billion kg of carbon dioxide from the atmosphere, or 8.6 million cars (equivalent to 70 per cent of all cars registered in Australia) from the road for one year[20].

The report notes that crop biotechnology has contributed to a significant reduction in the environmental impact associated with insecticide and herbicide use on the areas devoted to GM crops. From 1996-2010, the use of pesticides on the global GM crop area was reduced by 448 million kg of active ingredient (9 per cent total reduction) and the environmental impact associated with herbicide and insecticide use on GM crops, as measured by the Environmental Impact Quotient (EIQ) indicator, fell by 17.9 per cent[21].

A recent study reported in the science journal *Nature*, found that in China over the past 16 years, vast plantings of GM insect-resistant crops have helped to control several major insect pests and reduced the need for additional insecticide applications by promoting the bio-control services offered by beneficial predatory insects[22]. On conventional crops, these beneficial insects were killed by the broad-spectrum insecticides used to control the major target pests (for example cotton bollworm). This study found a marked increase in the abundance of three arthropod predators (ladybirds, lacewings and spiders) and a decreased abundance of aphid pests associated with the widespread adoption of GM insect-resistant cotton and reduced insecticide sprays in this crop[23].

3F. Prohibitive cost recovery arrangements from government regulators

APVMA

Currently, almost all resources for the APVMA (with the exception of a nominal amount to fund some minor use permits) is cost recovered from applicants through a mixture of fees and levies. Rather than ensuring that the APVMA remains efficiently funded to service its functions, cost recovery has resulted in the APVMA increasing its funding at the same time as its performance in determining applications has declined. Consistent, secure and ongoing funding arrangements have precluded any significant productivity or efficiency enhancements by the regulator.

17 Brookes G and Barfoot P 2012. 'GM crops: global socio-economic and environmental impacts 1996-2010'. *PG Economics*, Dorchester, May.

18 Australian GM cotton farm income benefit US$394 million 1996-2010; Australian GM canola farm income benefit US$13.4 million 2008-2010.

19 Brookes G and Barfoot P., Op. Cit.

20 *Ibid.*

21 *Ibid.*

22 Lu Y, Wu K, Jiang Y, Guo Y and Desneux N 2012. 'Widespread adoption of Bt cotton and insecticide decrease promotes bio control services'. *Nature* doi: 10. 1038/nature11153 published online 13 June 2012.

23 *Ibid.*

CropLife recommends that despite the fact that the APVMA is a cost recovered agency, it should be subject to the same productivity dividends as other government agencies. Indeed, a more equitable split between cost recovered and government funding should encourage the APVMA and the Department of Agriculture Fisheries and Forestry to seek out and implement genuine efficiency and productivity reforms.

Food Standards Australia New Zealand

In June 2012, Food Standards Australia New Zealand (FSANZ) released an industry consultation paper indicating they intended to increase their cost recovery fee for assessment of applications by an average of 57 per cent (a cost increase that amounts to twenty-five time's inflation). Such an exorbitant and unprecedented increase, if it proceeds, will have an immediate negative effect on the competitiveness and productivity of Australia's food sector. This proposal would make the regulatory cost in Australia, on a per capita basis, over five times more expensive than any other country in the world to seek regulatory approval for a GM food or food ingredient.

CropLife also notes that in spite of the huge fees charged by FSANZ, applicants receive nothing in the form of data protection in return. Studies submitted by applicants for use in the assessment process become available for use by anyone, including overseas competitors.

Given the relatively small size of the Australian market in global terms, if the cost of doing business in Australia becomes prohibitive, CropLife member parent companies may decide to pull out of the Australian market altogether, resulting in a major stifling of plant science innovation in this country and a concomitant loss in productivity for Australia's farmers[24]. Maintaining the ability for Australian farmers to access the latest innovative tools in plant science will be essential if we are to secure a safe and nutritious food supply for both Australia and the rest of the world.

It is clear to CropLife that FSANZ, and indirectly the Australian Government, has not considered the serious and significant impact that such exorbitant increases in cost recovery fees will have on both private and public sector applicants and the concomitant significant disincentive to innovation.

3G. Organic standards and coexistence

As discussed at Item 3D (Barriers to commercialisation – lack of a clear path to market for GM crops), GM crops are intensively studied and rigorously regulated in Australia. The coexistence of different crops, production systems and pest management practices in agriculture and the supply chain is not new. Different agricultural productions systems have been successfully practiced in proximity to one another for many years and in many parts of the world.

Australia's current National Standard for Organic and Biodynamic Produce (National Standard) does not align with international standards and is inconsistent with other Australian Government policies regarding food labelling and thresholds. This is both a policy and regulatory matter that needs immediate action by the Government.

The National Standard prohibits a number of materials and substances from use in organic systems, including pesticides and GM crops. The majority of prohibited products and techniques are permitted if they are accidently introduced at a low level. However, there is zero tolerance for GM crops being present on organic farms or in organic products. This is both out of step with the principles that the Government brings to other areas of regulation relating to biological systems and entirely out of step with regulations in other similar jurisdictions. By way of example:

- In the United States and Canada, organic certification is "process-based" and relies on organic growers having processes in place to meet the standard. The presence of prohibited residues/crops does not automatically invalidate the certification of an organic farmer.

[24] Because of FSANZ's policy of sero tolerance of unapproved GM events, most CropLife member companies do not have a choice as to whether or not to make applications in Australia unless they want to risk causing major disruption of trade.

- In Europe, organic standards are product based and permit up to 0.9 per cent of approved GMOs in organic food products.
- Guidelines for organic production that have been produced by Codex are process-based as in the United States and Canada.

It is noteworthy that products approved under these international standards can be imported into Australia as “organic” products, despite the fact they could contain the adventitious presence of GMOs at very low levels.

Australian organic producers are being forced to certify their produce using an entirely product based system that has no threshold for adventitious presence. Thresholds recognise that there could be some accidental mixing of GM commodities and non-GM commodities due to the reality of agricultural supply chains and global trade.

The current National Standard is also out of line with Australian Government policies regarding food labelling, which allow for a 1 per cent threshold for the accidental presence of an approved GM food ingredient. This threshold recognises that occasionally, accidental presence of a GMO will occur at very low levels and low level thresholds prevent this occurrence from becoming either a trade irritant, or a dispute between neighbours. Thresholds also exist in virtually every Australian grain standard for the unintended presence of a range of things, including insect legs, cracked grain, weed seeds and other crops.

CropLife considers it critical for Australian agriculture and for the Australian agricultural biotechnology industry, that the National Standard is modernised to accommodate low level accidental presence of GMOs. The current situation undermines both organic and GM crop farmers, the credibility of Australian government regulation and the coexistence framework of the Australian farming sector.

CONCLUSION

Over the next 100 years, growing enough food for people to eat will challenge all countries. Australia, as one of the few large food exporting countries, has an unprecedented opportunity to take the lead in innovating to produce safe, nutritious and affordable food for domestic and export markets. Australia's National Food Plan must recognise the important role that Australian exports play in supporting food security throughout the region.

Agricultural chemicals and genetically modified crops are currently major contributors to the sustainability and productivity of Australia's food production systems. The benefits that they generate for farmers, other users, consumers and the environment far outweigh any real or imagined risks associated with their adoption or use. These tools are currently assisting to produce nutritious, healthy, affordable and disease free food for Australian and overseas consumers.

Australia's National Food Plan needs to recognise the significant contribution made to date by these modern technologies. It also needs to recognise that agricultural chemicals and genetically modified crops have the potential to maintain and increase yields into the future. Meeting food security challenges will require agricultural industries to continue to innovate and develop new tools and technologies to grow more food with ever diminishing water, land and nutrient resources. Australia's National Food Plan must allow farmers to make the choice to use innovative new technologies where it can be demonstrated that they are safe and sustainable.

The National Food Plan must address all aspects of Australia's food production supply chain to ensure that all essential inputs are supported with the ultimate objective of a safe, nutritious, disease free and sustainable food supply for Australian and export markets.

Agricultural chemicals and genetically modified crops will not be the only mechanisms necessary to support future Australian food production. However, these tools have the potential to make a valuable contribution to increasing productivity. Rather than engaging in a process of selecting acceptable production methods, Australia's National Food Plan should allow farmers to select the methods, tools and production systems that best suit their particular circumstances.