

Contamination of Farms by Genetically Modified Organisms (GMOs): Options for Compensation

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Abstract

There is no satisfactory legal remedy for farmers in Australia whose farm has been contaminated by genetically modified (GM) material. This is a deficiency of Australia's Gene Technology Act 2000 and it has not been remedied. In the *Marsh v Baxter* case (2010-2016) an organic farm in Western Australia (WA) was contaminated with GM canola from a neighbouring farm. The organic farm lost its certification (along with the price premium for organic produce). The organic farmer (Marsh) sued the GM farmer (Baxter) for the agreed damages of A\$85,000. The case was lost in the WA Supreme Court, then in the Court of Appeal, and finally it was rejected by the High Court of Australia. The legal fees were in the order of A\$2,000,000, which is quite disproportionate to the agreed loss. A Parliamentary Inquiry (2017-2019) in WA examined "Mechanisms for compensation for economic loss to farmers in Western Australia caused by contamination by genetically modified material". There were 121 submissions to the Inquiry and 22 public hearings. Seven 'mechanisms' were considered: (i) Do nothing; (ii) a GM Levy; (iii) a GM Technology Licence Bond; (iv) Non-GM farmer Insurance; (v) GM farmer Insurance; (vi) a Compulsory Third Party (CTP) GM Scheme; and, (vii) the Government pays. After its deliberations, the Standing Committee on Environment and Public Affairs did not recommend any change from the present unsatisfactory state of affairs where reliance on the common law offers no effective protection for non-GM farmers against contamination by genetically modified organisms (GMOs) (as witnessed in the *Marsh v Baxter* case). The 'Do nothing' option, which was supported by Monsanto and pro-GM farmer groups, prevailed. This paper explores the context and content of the Parliamentary Inquiry, presents the six proposed proactive options for compensation (of which only four appeared in the Inquiry Report), and the twelve findings of the Inquiry. Ultimately the Committee was timid where it might have been bold. The Inquiry was a lost opportunity for righting a known wrong. The Inquiry outcome will ensure that GM-farming remains a very contentious issue in WA and continues to lack any semblance of a social licence. However, the WA Parliamentary Inquiry (*in toto*, viz. the submissions, the hearings, and the Report) provides a rich trove of views and material for legislators and regulators in other jurisdictions who face the exact same issue of GM contaminations.

Keywords: Genetic engineering, GM-free, non-GM, non-GE, organic farming, organic agriculture, Western Australia, *Marsh v Baxter*, RR canola, Roundup, glyphosate, Monsanto, Bayer, insurance, levy, bond, compulsory third party (CTP) scheme.

1. Introduction

Australia is a minor player in the world of growing crops of genetically modified organisms (GMOs). Australia accounts for less than 0.5% (ISAAA, 2017) of the world's GMO crops, and considerably less than one million hectares in total (cotton and canola) (ABCA, 2019) (Fig.1). This contrasts with organic agriculture, where Australia accounts for 51% of the world's certified organic hectares, and 35.6 million hectares in total (Paull, 2019a; Willer & Lernoud, 2019) with a broad spectrum of crop types (Fig.2).

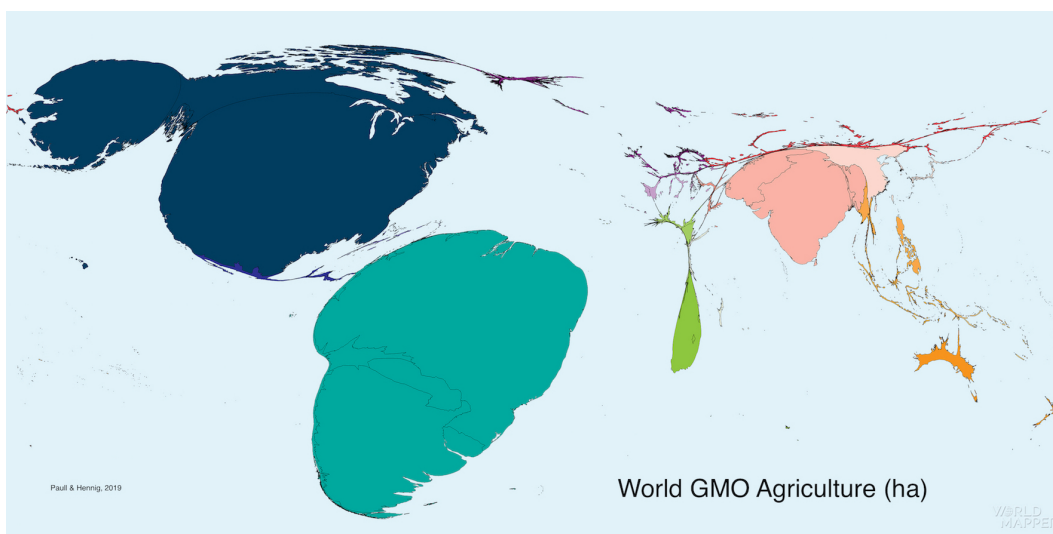


Figure 1. World map of genetically modified organism (GMO) agriculture hectares (density equalising cartogram): North and South America account for 85% of global GMO agriculture (Paull & Hennig, 2019a).

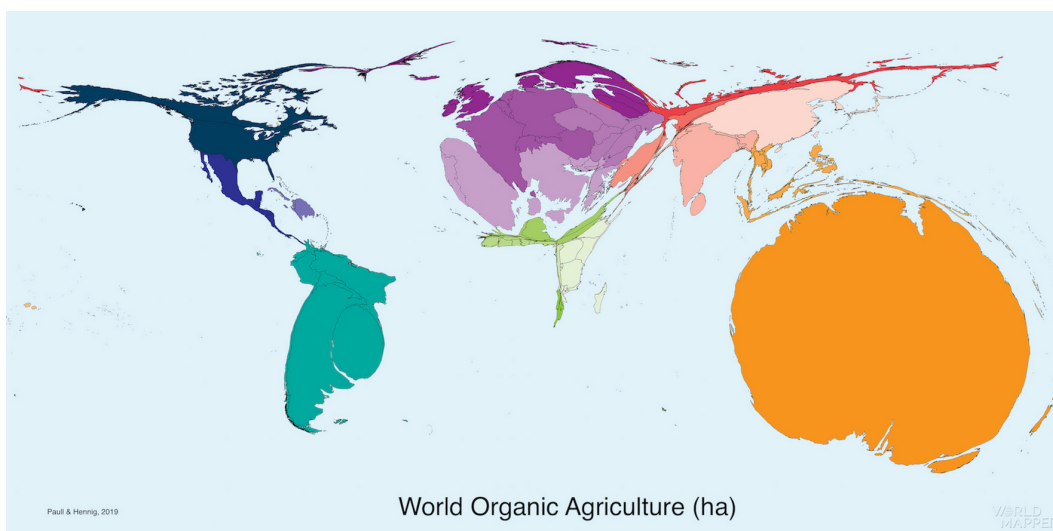


Figure 2. World map of organic agriculture hectares (density equalising cartogram): Australia accounts for 51% of global certified organic agriculture hectares (Paull & Hennig, 2019b).

The approval for particular genetically modified (GM) crops in Australia is overseen by a Federal Government agency, the Office of the Gene Technology Regulator (OGTR) based on their assessments of health and safety risks. The OGTR states that: "All GM crops grown in Australia (commercial and experimental) or imported GM grains are approved by the Regulator only if a scientific assessment shows that they are safe for people and the environment" (OGTR, 2018, p.1).

It is up to each state and territory to assess the trade and agricultural risks of GMOs within their own jurisdiction. So, a state that deems that there is a trade and marketing advantage in restricting or excluding GMOs is within their rights to do so (Bhula, 2018). At present, four states and territories, Tasmania, South Australia, Australian Capital Territory, and New South Wales, have GM moratoriums in place (NSW has exemptions for GM cotton and GM canola) (Swinbourn, 2019).

GMOs have been greeted with a great deal of hostility by consumers around the world and this antagonism remains unabated (GfK, 2017). GM technology has never been driven by consumer demand, it has, instead, been foisted on the public against their will, or without their knowledge, by large chemical and pesticide companies who have a vested commercial interest in the uptake of GM crops over which they hold patents and for which they sell proprietary herbicides, for example, Monsanto's formulation of glyphosate, Roundup (Monsanto, 2010).

Western Australia (WA) maintained a GM moratorium from 2003 under the Genetically Modified Crops Free Areas Act (Parliament of Western Australia, 2003). The Act was repealed in 2016 under a conservative (Liberal-National Coalition) government (Parliament of Western Australia, 2016).

The *Gene Technology Act 2000*, the Commonwealth Act enabling GMOs into Australian agriculture, makes no provision for compensation to farmers for contamination by GMOs. This deficiency of governance has long been recognised, but neither heeded nor remedied, including in WA:

- "The Committee is concerned that at present there is no protection for anyone adversely affected by the planting of GM crops";
- "The Committee is concerned that the avenue available for redress for anyone adversely affected by the planting of GM crops is through common law which can be both a very time consuming and expensive exercise (sic)";
- "The Committee notes that this is an issue that has not been fully addressed by the national regulatory scheme";
- "The Committee is of the view that the Government should give serious consideration to the issues raised in relation to the provision of liability and insurance, prior to the approval of the commercial release of GM crops in WA" (Sharp, 2003,p.194).

The issue of legal remedies for contamination by GMOs came to a head in WA when a certified organic farm was decertified due to contamination by GM canola. In January 2010, the WA government exempted GM canola from the WA GM Moratorium. In May 2010, at his farm near Kojonup, in the southern wheat belt of WA, Michael Baxter planted GM canola in his paddocks along the boundary of the certified organic farm of Steve and Sue Marsh (Fig.3). In November 2010, Baxter swathed his GM canola (cut off the heads,

herbicide them, and left them lying windrowed in situ). Some of this loose slashed GM material, including heads, seed pods and seeds, was carried by the wind across the Marsh farm (Fig.3). In December 2010, the Marsh farm was decertified due to GM contamination. The organic standards have zero-tolerance for GMOs. Marsh sued Baxter for damages. The parties agreed that the economic losses of Marsh amounted to A \$85,000 but no settlement was forthcoming. The case was heard in the Supreme Court of WA, with the case dismissed in May 2014, with costs of A\$804,000 awarded against Marsh (Paull, 2015b). It was later revealed that the costs of Baxter were covered by Monsanto. The case did not get to first base, with the judge rejecting the offending GM canola as 'contamination', and characterising it rather as an 'incursion' (Martin, 2014; Paull, 2014). The outcome was appealed, heard in the WA Court of Appeal in March 2015; the case was again lost, with findings of no negligence, no nuisance, and no compensation, and with costs awarded against Marsh. Leave was sought to appeal to the High Court of Australia without success (French, Kiefel, & Gordon, 2016). This exhausted the legal options for remedies in Australia. The legal costs are estimated at A\$2 million (Paull, 2015b).

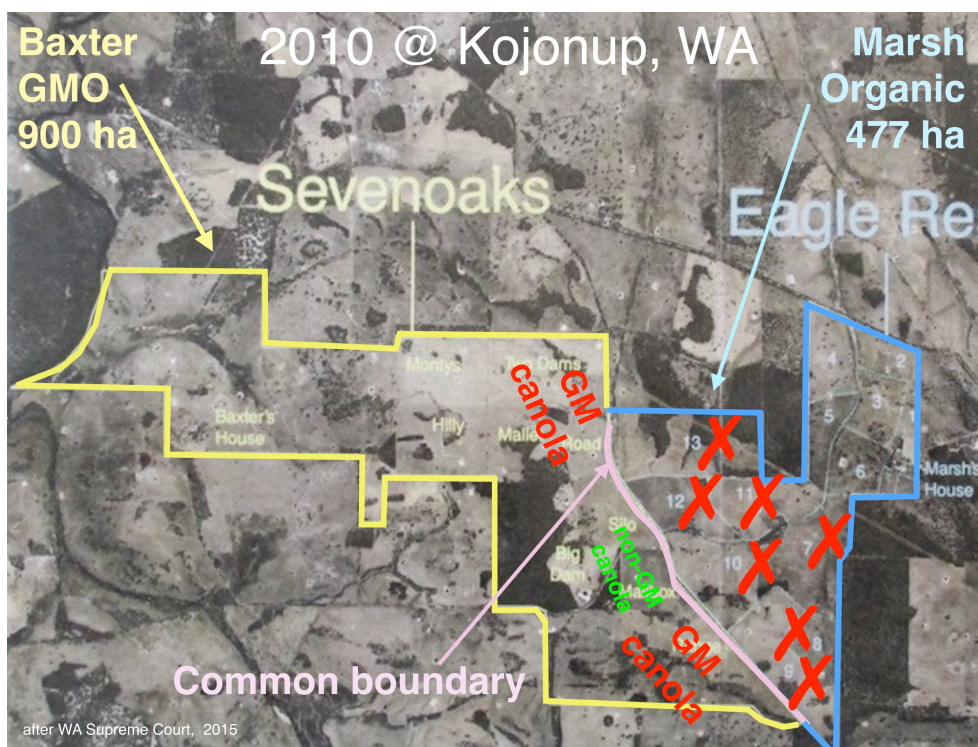


Figure 3: In 2010 GM canola from Baxter's farm (Sevenoaks) was dispersed by wind over Marsh's organic farm (Eagle Rest).

In the case of Marsh v Baxter of 2010-2016, the legal costs of seeking redress for GM contamination were out of proportion to the original harm. The process, which played out over seven years, delivered no remedy whatsoever, just costs to the harmed party. This case was a precursor to the WA Parliamentary Inquiry of 2017-2019.

A number of petitions - at least three - were presented to the WA Parliament requesting provision for farmers experiencing contamination by GMOs (Grogan, 2017a, 2017b; Grogan, Copeland & Liddelow, 2014). The Standing Committee on Environment and

Public Affairs of the Parliament of Western Australia decided: “In the light of the public and government interest in this matter, the Committee resolved to commence this Inquiry. This included an assessment of whether there is sufficient evidence of economic loss by farmers in Western Australia to justify a departure from the current common law mechanism of compensation” (Swinbourn, 2019, p.2).

Despite the apparent good intentions, the issue of compensation for GM contamination was not, however, resolved. The Parliamentary Inquiry was initiated in December 2017 in Perth, Western Australia, to examine “Mechanisms for compensation for economic loss to farmers in Western Australia caused by contamination by genetically modified material” (Swinbourn, 2019). The issues raised, the options proposed, and the outcome of deliberations are examined in the present paper.

2. Methods

The Parliamentary Inquiry was initiated in December 2017 in Perth, Western Australia to examine: “Mechanisms for compensation for economic loss to farmers in Western Australia caused by contamination by genetically modified material”. The terms of reference for the Inquiry were:

To inquire into and report on mechanisms for compensation for economic loss to farmers in Western Australia caused by contamination by genetically modified material, including approaches taken in Western Australia and by other jurisdictions and any other relevant matter (Swinbourn, 2019, p.1).

The Standing Committee on Environment and Public Affairs of the Parliament of Western Australia comprised five members of the WA Legislative Council (the upper house of the bicameral WA parliament) with representatives from the Australian Labor Party (n=2), the Liberal Party (n=1), the Nationals WA (n=1), and the Greens (WA) (n=1). The Standing Committee reported in February 2019 (Swinbourn, 2019).

Primary source material for the present paper includes the published submissions (n=99) to the Inquiry, the public hearings and transcripts (n=22) of witnesses (n=37) to the Inquiry, and the Report of the Standing Committee on Environment and Public Affairs (Swinbourn, 2019). The Report states that there were 99 submissions. That statistic is achieved by the Standing Committee by collapsing 23 separate submissions into a single submission for the purposes of their tally, on the basis that “The Committee resolved to publish on its website only those [submissions] offering individual views in addition to the template text used” (Swinbourn, 2019, p.1). So, there were 121 submissions albeit some of the texts were identical. There were five submissions classed as “Private submission”, and they were not available for inspection. The result is that there are 94 distinctive submissions available at: <www.parliament.gov.au/env> along with transcripts of the 22 Public Hearing sessions accounting for testimony from 37 individuals. It is understood by the author that there were, in addition, a number of in-camera hearings (n=unknown).

3. Results and discussion

Within the submissions and hearings for the Inquiry, a variety of mechanisms (n=7) to address the issue of compensating farmers for GM contamination were explored, of which five found their way into the Inquiry Report (Table 1). The Report presented twelve

findings (Table 2) and recommended the maintenance of the status quo, that is ‘do nothing’ (Swinbourn, 2019).

Table 1. Seven proposals explored by the Parliamentary Inquiry.

#	Option	Result
A	Status quo, i.e. Do nothing	The recommended outcome in the Inquiry Report
B	Levy GM industry	Not a recommendation in the Inquiry Report
C	Technology Licence Bond	Absent in the Inquiry Report
D	Non-GM farmer Insurance	Not readily available (or at all) in the marketplace
E	GM farmer Insurance	Not readily available (or at all) in the marketplace
F	Compulsory Third Party (CTP)	Not a recommendation in the Inquiry Report
G	Government pays	Absent in the Inquiry Report

Even a rudimentary consideration of the 12 findings of the Inquiry (Table 2) will reveal that the Committee has been timid. Yes, “There is a possibility that loss, including economic loss, may be incurred as a result of contamination by genetically modified material” (Finding 6). Yes, “Farmers seeking compensation for economic loss arising from contamination by genetically modified material face many of the same inadequacies in the common law as a compensation mechanism for economic loss as cases that do not involve contamination by genetically modified material” (Finding 7). But, “There is not a *sufficient* body of case law to draw a conclusion that the common law is an inadequate compensation mechanism for contamination by genetically modified material” (Finding 8), and furthermore “There is *insufficient* operational data on alternative compensation approaches in other jurisdictions to determine their merits over the existing common law mechanism” (Finding 9) (present author’s emphasis). So, the Committee felt that there is insufficient disquiet with the failure of common law remedies to right the wrong and harm done to the Marshes, and, besides that, how would we fix the process anyway? The Committee recommended nothing, which is to say they have just put the matter in the ‘too hard basket’ and effectively ‘kicked the can down the road’. It is an outcome which will surely delight Monsanto, and its new owners, Bayer. It is a timid decision at a time when the Committee might have been bold, or clever, novel, imaginative, innovative or ground breaking.

The Committee reported that: “There is minimal evidence of *systemic* contamination by genetically modified material in Western Australia” (Finding 10) (present author’s emphasis). How is ‘systemic’ quantified? The finding is a conditioned assertion that is rather less than what we really want to know: ‘Is there minimal evidence of contamination by genetically modified material in WA (*systemic* or otherwise)?’ Table 2. The 12 findings of the Parliamentary Inquiry (Swinbourn, 2019).

The Committee reported that: “Co-operative Bulk Handling Group [CBH] have ensured that there has been no loss of markets due to contamination by genetically modified

material” (Finding 11). So, it would appear that there has been GM contamination, but markets have not been lost. What we wanted to know is: how much contamination has there been? How many loads have been contaminated? What is the range of percentage contaminations and the temporal and geographic distribution of contaminations? What is the protocol for sampling, and what is the threshold of measurability? Why and where have the segregation failures occurred? How have the contaminated loads been ‘handled’? Have loads above the 0.9% threshold for ‘acceptable’ GM contamination (GRDC, 2006) been intermixed with less contaminated loads to get them below the threshold? Was any such dilution done before delivery to CBH, with the knowledge of CBH, or by CBH? There is an economic incentive for not downgrading a load of GM-contaminated canola to ‘GM canola’ to avoid the 7.2% price penalty for GM (Paull, 2019b).

Table 2. The 12 findings of the Parliamentary Inquiry (Swinbourn, 2019).

#	Finding
1	The breakdown of neighbour relationships does not help resolve cross boundary issues or the impacts from different farming systems.
2	The breakdown of neighbour relationships has broader impacts affecting the whole of the district, especially in the smaller communities which are so prevalent in Western Australian farming areas.
3	The requirements for non-genetically modified crops are largely driven by the requirements of the markets for non-genetically modified products.
4	The genetically modified, non-genetically modified and organic industries are best placed to decide the techniques for the management of coexistence of genetically modified, non-genetically modified and organic crops to ensure market requirements are met.
5	Potential sources of contamination in agriculture extend beyond genetically modified material to include pesticides, weeds, various diseases and straying livestock.
6	There is a possibility that loss, including economic loss, may be incurred as a result of contamination by genetically modified material.
7	Farmers seeking compensation for economic loss arising from contamination by genetically modified material face many of the same inadequacies in the common law as a compensation mechanism for economic loss as cases that do not involve contamination by genetically modified material.
8	There is not a sufficient body of case law to draw a conclusion that the common law is an inadequate compensation mechanism for contamination by genetically modified material.
9	There is insufficient operational data on alternative compensation approaches in other jurisdictions to determine their merits over the existing common law mechanism.
10	There is minimal evidence of systemic contamination by genetically modified material in Western Australia.
11	The handling practices of Co-operative Bulk Handling Group have ensured that there has been no loss of markets due to contamination by genetically modified material and that this has helped to ensure that there has been no significant economic loss to the agricultural industry in Western Australia.
12	There is no evidence to suggest that economic loss to farmers caused by contamination by genetically modified material is a widespread or systemic problem in Western Australia.

The Committee reported that: “There is no evidence to suggest that economic loss to farmers caused by contamination by genetically modified material is a widespread or systemic problem in Western Australia” (Finding 12). This is again a crafted and contrived finding. So, there is a problem, there is evidence of economic loss caused by GM contamination. But what we want to know is, how much evidence? Before the evidence is swept under the carpet of ‘not widespread’ and ‘not systemic’, we would want to know what are the thresholds or parameters entertained by the Inquiry for ‘widespread’ and ‘systemic’ (or are these just ambit claims)?

Options for compensation

The seven options for compensation (of Table 1) for GM contamination raised in the Inquiry are presented below.

3.1 Option A: Status quo/Do nothing

The pro-GM lobby, including Monsanto (May, 2018a), the Western Australia Farmers Federation (McNeil, 2018), Grain Producers Australia (Weidemann, 2018), and the WA State Agricultural Biotechnology Centre (Jones, 2018), were in agreement that there was no problem, no action was called for, no action should be taken, and no compensation scheme should be implemented (Option A). A submission by Monash University saw only “challenges” rather than solutions in creating a “compensatory mechanism” and asserted that “The point here is that demanding innovation governance (such as coexistence measures) ... may effectively defeat national policies of allowing innovation adoption” (Ludlow, 2018, p.7). Option A is the *de facto* recommendation of the Committee, since, in the 12 findings of the Parliamentary Inquiry, there is no call for any action and no call for any change (Table 2).

Of the six actionable-options (B through G: Table 1) none found favour with the Committee. Four of these proposals were varieties of ‘contaminator pays’ (Options B, C, E & F), one was ‘victim pays’ (Option D), and one was ‘government pays’ (Option G).

3.2 Option B: GMO Levy

Most of the anti-GM lobby proposals suggested some kind of a ‘levy’ imposed on the GM sector. A levy was proposed by, for example, Gene Ethics (Phelps, 2018), GM-Free Farmers (Copeland, 2018), Australian Food Sovereignty Alliance (Jonas, 2018) and the organics certifier, the National Association for Sustainable Agriculture (NASAA) (Anderson, 2018). Such a levy could be collected at some waypoint in the GM supply chain, somewhere from the GM patent holder company, the seed vendor, the seed purchaser, the grain hauler, the grain handler (CBH), to the grain purchaser. Such a levy would create a pool of funds to compensate economic loss due to GM contamination. There appeared to be no mechanisms proposed to balance the incomings and outgoings of such a fund, nor mechanisms for dealing with undisposed levies or levy shortfalls. The Committee noted the paucity of data on working examples of such schemes (Finding 9; Table 2). The Committee also questioned the legality of a levy, that is the State’s right to impose such a levy, asking: “whether such a levy imposed on farmers as part of any state based statutory compensation scheme may be categorised as an excise levy and therefore invalid” (Swinbourn, 2019, p.30).

3.3 Option C: GMO Technology Licence Bond

A “technology licence bond” was proposed by NASAA WA (James, 2018). “Such a bond is a feature of other industries regulation such as mining and environmental waste management”. Such bonds would be imposed on “the full chain of responsibility”; they nominated: licensers, licensees, handlers and processors. Bonds would provide the capital to “manage fugitive escape and clean-up of GM-technology in order to protect consumer interests, non-GM markets, cultural and historic rights of non GM operators, protection of ecosystems and the State’s biosecurity needs” (p.5). Such a proposal may resolve the issue that the Committee raised as to whether WA could legally impose a levy (see Option B above), and it warrants further consideration. In any event, the proposal of a technology licence bond is not mentioned in the Report, so it is not clear what consideration, if any, this proposal received.

3.4 Option D: Non GM-Farmer Insurance

Non-GM farmers could take out insurance for economic loss due to GM contamination (if such insurance was offered in the market place). This proposal has two fatal drawbacks. Firstly it is inherently unfair for non-GM farmers to bear the cost of premiums when they are not causing the potential harm, and those who are causing the potential harm are known. It also appeared from the submissions and evidence that such Multi-Peril Crop Insurance (MPCI) was not on offer in Australia, or was in its “infancy” (Swinbourn, 2019, p.32). It is not clear that there are policies that would protect against organic decertification, and a policy that covers crop contamination by genetically modified organisms (e.g. WFI, 2017) may still need to overcome the Justice Martin contentious objection that it is not ‘contamination’ at all, but is rather just an ‘incursion’ (Martin, 2014).

3.5 Option E: GM Farmer Insurance

GM farmers could take out insurance for economic loss due to GM contamination of third parties (if such insurance was offered in the market place). Such a scheme would be a fair impost on the potentially harming entity. It is not clear that such an insurance policy is on offer in Australia. Unless there is a no fault clause, a claim by a contaminated third party may require to be litigated and so once again a GM-contaminated farm is at a disadvantage by way or cost, time, and uncertainty of outcome.

3.6 Option F: Compulsory Third Party (CTP) GMO Incident Scheme

CTP Insurance was proposed by the present author following the model of CTP Motor Accident Insurance Schemes (Paull, 2018c). This approach takes a proven and known practice, and shifts the application to GM contamination incidents. Potentially harming parties are charged a premium, remedies are delivered to harmed parties at little or no cost on a no fault basis, and the insurer has the capacity to recover costs from the harming party. The Insurance Commission of Western Australia already has in place the infrastructure and expertise to manage such a scheme, since it currently manages the CTP Motor Accident scheme, and all Australian states and territories have comparable CTP infrastructure in place for motor accidents.

3.7 Option G: Government Pays

The Committee raised the idea, during hearings, of the Government covering the costs of contamination. The Committee asked at least four pro-GM witnesses variations of the question: "Would your views about a compensation scheme be any different if it were to be no-fault and funded through consolidated revenue rather than by the imposition of a fee on the GM industry?" (May, 2018b, p.7; McGill, Snooke, & Bradley, 2018, p.9; Taylor & Lamond, 2018, p.6; Young & McNeil, 2018, p.9). All of those witnesses, Monsanto, WA Farmers Federation, Pastoralists and Graziers Association of WA, and the Grain Industry Association of WA all responded that they would persist with their opposition to any compensation scheme. One witness stated: "we do not consider GM contamination to be a significant issue to warrant a scheme" (McNeil in Young & McNeil, 2018, p.9).

There is no measure of how many farmers are affected by GM contamination nor the cost of such contamination. The Committee noted the "chilling" effect (Collins, 2018, p.4; May, 2018b, p.9; Paull, 2018d, p.6) that the *Marsh v Baxter* case would have on any GM contaminated farmer. It is one explanation for the paucity of data. Also, there is no agency tasked with collecting such data. The simplest option for such a farmer is to just bear the harm in silence, rather than risk the angst, the costs, the time, and ultimately, the uncertainty of pursuing a legal remedy. In the absence of any reliable measure of extent of the problem, Option F seems to be a viable course of action, at least in the interim. It provides satisfaction to those who may potentially suffer harm. If there are few or no claims then the cost of instating a more complex scheme is avoided. If there are many claims then the dimension of the problem is known, a more sophisticated compensation scheme can be implemented, and the costs can be sheeted back to the GM industry. The Committee appears to have flirted with this idea, perhaps only in the hearings of May 3, and Option G was not progressed to the Report.

4. Concluding remarks

Compensation for farmers contaminated by GM is an unresolved issue. A decade of contestation and deliberation in Western Australia, and we are apparently no closer to a resolution. Three states and territories of Australia, Australian Capital Territory, South Australia, Tasmania, have resolved the issue by maintaining a robust GM Moratoriums. In taking the issue forward, consideration may be given to the following:

4.1 Licence to contaminate: There was no satisfaction for those seeking a mechanism for protection from GM harm in the exhaustive legal proceedings of *Marsh v Baxter*, nor in the outcome of the Parliamentary Inquiry. As was identified more than a decade ago in WA, there is no adequate protection against harm by GMOs, not even in the very narrow sense of farms contaminated by GMOs. The *Marsh v Baxter* case established that seeking legal redress for economic loss is impractical from a financial standpoint - the agreed economic loss was A\$85,000 and the legal expenses in seeking a remedy were in the region of A\$2 million which is quite disproportionate and inequitable. Whatever the deficiencies and defects of the legal presentation of the plaintiff's case in *Marsh v Baxter* - and there were certainly some - all that has been achieved is a *de facto* apparent right to contaminate.

4.2 New harms call for new remedies: After a decade of exploration there is still no resolution, and none is in sight, for compensating farmers where there has been

contamination by GMOs. The current common law mechanisms have proved to be quite inadequate for these purposes. That is hardly surprising when the common law has evolved in a different age, long before GMOs and before the grip of multi-nationals on agriculture and their quest for world domination. The battle between a remote WA farmer and a multinational corporate giant is an unequal battle. The farmer is fighting for livelihood while the multinational is fighting for global domination. New harms call for new remedies. It is time to consider laws constraining GM-trespass, genetic trespass and chemical trespass.

4.3 Farming beyond glyphosate: A future where chemical and pesticide companies rule agriculture is a dystopia that only a multinational without conscience could love. Designing a crop that is glyphosate-dependent, such as Monsanto's RR canola needs to be called out as the perverse enterprise that it is. "Spray this food crop with our whizz herbicide and everything will die except that food crop - then harvest it out of that chemical desert, and eat it". Who can imagine that is good idea? Who can imagine that there is a social licence for that? In the USA, farmers of GM soy use 28% more glyphosate than non GM soy farmers (Perry, Ciliberto, Hennessy, & Moschini, 2016). The herbicide glyphosate is pervasive in the food chain (Cook, 2019) and it is carcinogenic (OEHHA, 2019). In what is described as "the world's first Roundup cancer trial" Monsanto was ordered to pay US\$289 million (Bender, 2018). There are more glyphosate lawsuits coming with 9,300 plaintiffs reported (Bellon, 2018).

4.4 Bullying by proxy: Marsh v Baxter appeared as a contest between two adjacent farmers in the wheat belt of Western Australia 300 kilometres from Perth. But in the course of the Appeal hearing it was revealed that Monsanto was funding the GM farmer, so Marsh v Baxter was an asymmetric contest pitting a local farmer against a powerful off-shore multi-national, Monsanto, with the GMO farmer, Baxter, serving as proxy. Baxter planted his 2010 GM canola, his first GM canola crop, along the boundary shared with Marsh (there is a dirt track separating the two farms). The crop was swathed which was not his prior practice for harvesting canola. The wind uplifted some of the cut GM material and dispersed it over the Marsh farm. In a baffling assessment, Justice Martin declared that such wind dispersal was not foreseeable by Baxter (Martin, 2014); another view would be that it was almost a certainty given the prevailing winds and that the cut and unsecured GM material was left drying in situ for three weeks (Paull, 2015b).

4.5 Invasive species: GMOs are patented and this is *prima facie* evidence that they are novel organisms which are non-native to the foodscape (Paull, 2018b). This is a biosecurity issue because GMOs behave as invasive species. When Percy Schmeiser's farm in Canada was surrounded by neighbours growing GM canola, Monsanto inspectors raided his farm, found that there was Monsanto GM-genes in his conventional canola crop, and Monsanto sued him for breach of patents (MacKay, 2001; McLachlin et al., 2001). Issues including contamination risks, the concentration of seed suppliers in fewer hands, including Monsanto's, and the narrowing of seed offerings in Canada has resulted in 95% of the canola crop being genetically modified (Statista, 2019a) and almost none of it is organic. There are 8,754,000 hectares of GM canola in Canada (Statista, 2019b) and perhaps just 60 hectares of organic canola (author derived figure from privately supplied tonnage data from a processor). Over 99% of the cotton grown in Australia (in Queensland and NSW) is GM (Cotton Australia, 1918). As the Marsh v Baxter case

demonstrated, there is no peaceful coexistence with GM. GMOs are appropriately dealt with as a biosecurity issue (Paull, 2018b).

4.6 Privatised profits, socialised harms: Monsanto is one of the America's and the world's most hated companies (Duvall, 2015; Stebbins, Comen, Sauter, & Stockdale, 2018). That is not for no reason, and with Monsanto's takeover in 2018 by Bayer then that mantle can be expected to transfer intact to the new owner. GM farming is a textbook example of the principle of privatising profits and socialising costs. Monsanto has patented food crops (e.g. RR canola), and it profits from seed sales, herbicide sales, and licence fees. The costs of contamination and segregation are externalities for Monsanto, and the costs are borne by others. There is concern in Japan, for example, that GM canola "has been found at many locations on numerous occasions", that "many plants of related species are eaten traditionally in Japan" and that GM canola can outcross with them (CUJ, 2010, p.2). There is the call that "any genetically modified canola growing wild in Japan should be exterminated" but can that be achieved, at what cost, and who is to bear the cost? (p.2). The CUJ identify that "we need strict rules for liability and redress to deal with contamination issues that arise from ... genetically modified crops" (p.2). In Canada and USA the reversal of GM gene escapes may now be impossible (Van Acker, 2012). In the meantime, GM companies harvest the profits and societies bear the costs.

4.7 The myth of segregation: Despite the promise that segregation of GM and non-GM crops is practical and achievable, in practice it has failed. WA does not offer any GM-free canola. Instead there is 'GM canola' and there is 'non-GM canola'. In WA-speak, 'non-GM canola' does not mean GM-free canola. So called 'non-GM' canola grain has a threshold contamination level of 0.9%, and a threshold of 0.5% where sold as seed, "with the intention of reducing the limit to 0.1 percent" (GRDC, 2006). Since the original contamination levels were set in 2006 they have not changed, and, if there ever was a genuine intention to reduce the contamination levels, none has in fact materialised. These contamination thresholds acknowledge that the successful segregation of GM and true non-GM is a myth (at least in WA). It appears that GM-free is now not even aspirational; perhaps the plan was to condition markets to tolerate and expect GM contamination? If that is the plan then it is faltering because Japan is moving towards "zero tolerance for GE components" with the proposal that "the term 'Non-GE' now only be allowed where GE is non-detectable" (Sato, 2018, p.1).

4.8 The next Marsh v Baxter: The experience of Marsh v Baxter will have a "chilling" effect, as noted by the Committee (e.g. May, 2018b, p.9) and several witnesses (e.g. Tager, 2018, p.2) on anyone considering following that path - that is to say, seeking a common law legal remedy for contamination by GMOs. A person close to the case asked the present author, of the legal team for the plaintiff: "John, do you think they ever wanted to win this case?". Sad to say, I could not give an unequivocal 'yes' to that heartfelt question. The case for the plaintiff was run poorly (Paull, 2015a) and the appeal was worse, even drawing fire from the bench. Given the disproportionate costs and the outcome, there may never be a rerun of such a case, and in the absence of some other mechanism for compensation, that would be an enduring win for Monsanto, Bayer and other GM companies.

Marsh v Baxter was an opportunity lost, for affirming the rights of existing farming systems against the incursion of GM farming. The Parliamentary Inquiry into mechanisms

to compensate farmers for GM contamination is the next chapter of that lost opportunity for Western Australia to protect its majority farming against GM farming practices that are toxic, invasive, predatory and contaminating. Notwithstanding the present paucity of data, by staying with the status quo, the Committee has ensured that GM farming will remain contentious, will continue to lack any semblance of a social licence in WA, and that GM contamination will remain a reality and a concern for farmers, the public, and the export market.

4.9 The lost opportunity: The Parliamentary Inquiry flushed out six mechanisms for compensating farmers for GM contamination, along with the null option of 'do nothing' (Table 1). The Inquiry reported four of these six mechanisms in its final report, it recommended none, and it opted for the alternative 'do nothing' option. The Inquiry did not deny the reality of GM contamination in WA, and nor did it deny the pecuniary loss incurred by such contaminations. The Inquiry did not assert that the 'problem of GM contamination' was an intractable problem, nor a 'wicked problem' beyond the whit of regulators to solve, it merely opted for the Monsanto-endorsed option of 'do nothing'. The Inquiry did identify in the course of the hearings that there was a "chilling" effect on contamination-affected farmers who might 'suffer in silence', rather than the alternative of 'suffer in public' and thereby incur the wrath of GM-advocating farmer groups (who were well represented in the Inquiry submissions and hearings) and avoid the expense of litigation that offers no surety of success and risked bankrupting them (given that in the one case that has proceeded to court in Australia, *Marsh v Baxter*, Monsanto paid the legal costs of the offending GM farmer).

There was, in the WA Parliamentary Inquiry, the opportunity to resolve the issue of GM contamination of non-GM farms at a state level. Unfortunately the opportunity was squandered, and no innovation was forthcoming in the Report. Nevertheless, the issue of GM-contamination remains unresolved, in not just WA but in every jurisdiction where GM crops are growing and/or approved. Organic material is not readily contained, and GM pollen knows no boundaries and can go on contaminating the gene pool of a crop for generations indefinitely. The matter could be taken up (in Australia) by the federal Office of the Gene Technology Regulator (OGTR) which could require that the proponents of GM crops put in place: (a) proven mechanisms to effectively contain GM material; and, when and where containment fails; (b) instatement of a clear polluter pays principle; (c) a mechanism to compensate farmers (and others) who suffer contamination events; and (d) a mechanism to penalise the offending parties. Mechanisms for GM contamination compensation and for GM contamination penalties would incentivise the more effective oversight and implementation of containment. In the meantime, the WA Parliamentary Inquiry (*in toto*, viz. the submissions, the hearings, and the Report) provides a trove of views and material for the consideration of legislators and regulators in other jurisdictions who face the exact same issue of how to fairly compensate farmers (and others) who are contaminated by GM crops.

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A version of this paper was presented at the Agrifood XXV Conference (Paull, 2018a, December) before the Report of the Inquiry was published (Swinbourn, 2019, February). The author made a submission to the Inquiry (Paull, 2018c) and appeared as an invited witness to the Inquiry (Paull, 2018d).

References

- ABCA. (2019). *Statistics: GM Canola Uptake*. Melbourne: Agricultural Biotechnology Council of Australia (ABCA).
- Anderson, M. (2018). Submission to: Environment and Public Affairs Committee, Legislative Council: Inquiry into mechanisms for compensation for economic loss to farmers in Western Australia caused by contamination by genetically modified material. Adelaide: National Association for Sustainable Agriculture (NASAA), February 16.
- Bellon, T. (2018). Monsanto ordered to pay \$289 million in world's first Roundup cancer trial. *Reuters*, August 11.
- Bender, R. (2018). Bayer hit by more lawsuits over safety of Roundup weedkiller. *The Wall Street Journal*, November 13.
- Bhula, R. (2018). Submission to: Environment and Public Affairs Committee, Legislative Council: Inquiry into mechanisms for compensation for economic loss to farmers in Western Australia caused by contamination by genetically modified material. Canberra: Office of the Gene Technology Regulator, February 13.
- Collins, S. (2018). Transcript of Evidence to: Environment and Public Affairs Committee, Legislative Council: Inquiry into mechanisms for compensation for economic loss to farmers in Western Australia caused by contamination by genetically modified material. Perth: Environment and Public Affairs Committee, WA Parliament, April 23.
- Cook, K. (2019). *Glyphosate in Beer and Wine*. Sacramento, CA: California Public Interest Research Group (CALPIRG) Education Fund.
- Copeland, A.-M. (2018). Submission to: Environment and Public Affairs Committee, Legislative Council: Inquiry into mechanisms for compensation for economic loss to farmers in Western Australia caused by contamination by genetically modified material. Mukinbudin, WA: GM-Free Farmers, February.
- Cotton Australia. (1918). *Biotechnology and Cotton in Australia*. Sydney: Cotton Australia.
- CUJ. (2010). *Genetically Modified Canola Contamination in Japan: A Call for Action in Nagoya*: Special Report. Tokyo: Consumers Union of Japan (CUJ).
- Duvall, K. (2015). The 15 most hated brands in the world. <*the richest.com*>, April 6.
- French, R. S., Kiefel, S. M., & Gordon, M. (2016). Results of Special Leave Applications: Marsh & Anor v Baxter (P44/2015). 12 February. Canberra: High Court of Australia.
- GfK. (2017). *Decision Factors on What to Eat or Drink: Global GfK Survey (October 2017)*. London: GfK (Growth from Knowledge).
- GRDC. (2006). National limits set for GM canola presence. *GroundCover*, 59(January 1).
- Grogan, J. (2017a). Petition to Compensate GM-Free Farmers if Economically Affected by GM Contamination. Petition 10. Perth, WA: Legislative Council, Parliament of Western Australia; June 13.
- Grogan, J. (2017b). Petition to Compensate GM-Free Farmers if Economically Affected by GM Contamination. Petition 138. Perth, WA: Legislative Council, Parliament of Western Australia; January 30.
- Grogan, J., Copeland, A.-M., & Liddelow, J. (2014). Petition to Protect Farms from GM Contamination: Retain the WA Genetically Modified Crops Free Areas Act 2003. Petition 69. Perth, WA: Legislative Council, Parliament of Western Australia; November 20.
- ISAAA. (2017). *Pocket K No.16: Biotech Crop Highlights in 2016*. Manila: International Service for the Acquisition of Agri-biotech Applications (ISAAA).
- James, I. (2018). Submission to: Environment and Public Affairs Committee, Legislative Council: Inquiry into mechanisms for compensation for economic loss to farmers in Western Australia caused by contamination by genetically modified material. Perth: NASAA WA, February.
- Jonas, T. (2018). Submission to: Environment and Public Affairs Committee, Legislative Council: Inquiry into mechanisms for compensation for economic loss to farmers in Western Australia caused by contamination by genetically modified material. Melbourne: Australian Food Sovereignty Alliance, February 16.
- Jones, M. (2018). Submission to: Environment and Public Affairs Committee, Legislative Council: Inquiry into mechanisms for compensation for economic loss to farmers in Western Australia

- caused by contamination by genetically modified material. Perth: WA State Agricultural Biotechnology Centre, Murdoch University, February 16.
- Ludlow, K. (2018). Submission to: Environment and Public Affairs Committee, Legislative Council: Inquiry into mechanisms for compensation for economic loss to farmers in Western Australia caused by contamination by genetically modified material. Clayton: Law, Monash University, February 15.
- MacKay, J. (2001). *Monsanto Canada Inc. and Monsanto Company Plaintiffs and Percy Schmeiser and Schmeiser Enterprises Ltd.* 2001 FCT 256. Ottawa: Federal Court Decisions.
- Martin, K. (2014). Judgment: MARSCH -v- BAXTER [2014] - WASC 187BC201302729; CIV 1561/2012. Perth: Supreme Court of Western Australia.
- May, T. (2018a). Submission to: Environment and Public Affairs Committee, Legislative Council: Inquiry into mechanisms for compensation for economic loss to farmers in Western Australia caused by contamination by genetically modified material. Melbourne: Monsanto Australia and New Zealand, February 14.
- May, T. (2018b). Transcript of Evidence to: Environment and Public Affairs Committee, Legislative Council: Inquiry into mechanisms for compensation for economic loss to farmers in Western Australia caused by contamination by genetically modified material. Perth: Environment and Public Affairs Committee, WA Parliament, May 3.
- McGill, G., Snooke, J., & Bradley, B. (2018). Transcript of Evidence to: Environment and Public Affairs Committee, Legislative Council: Inquiry into mechanisms for compensation for economic loss to farmers in Western Australia caused by contamination by genetically modified material. Perth: Environment and Public Affairs Committee, WA Parliament, May 3.
- McLachlin, B., Iacobucci, F., Major, J. C., Bastarache, M., Binnie, W. I. C., Arbour, L., . . . Fish, M. J. (2001). *Monsanto Canada Inc. v. Schmeiser*, [2004] 1 S.C.R. 902, 2004 SCC 34. Ottawa: Supreme Court Judgements. 21 May.
- McNeil, M. (2018). Submission to: Environment and Public Affairs Committee - Legislative Council: Inquiry into mechanisms for compensation for economic loss to farmers in Western Australia caused by contamination by genetically modified material. Perth: Western Australian Farmers Federation.
- Monsanto. (2010). *Monsanto Technology/Stewardship Agreement*. St. Louis, MO: Grower Licensing, Monsanto.
- OEHHA. (2019). *Glyphosate*. Sacramento, CA: Office of Environmental Health Hazard Assessment (OEHHA), California Environmental Protection Agency (CalEPA).
- OGTR. (2018). *Genetically modified (GM) crops in Australia, Version 2*. Canberra: Office of the Gene Technology Regulator (OGTR) <www.ogtr.gov.au>.
- Parliament of Western Australia. (2003). *Genetically Modified Crops Free Areas Act 2003: An Act to prohibit the cultivation of certain genetically modified crops in designated areas of the State and to provide for their destruction in certain cases*. Perth, WA: Parliament of Western Australia.
- Parliament of Western Australia. (2016). *Genetically Modified Crops Free Areas Repeal Act 2016*. Perth, WA: Parliament of Western Australia, October 28.
- Paull, J. (2014). Organic versus GMO farming: Contamination, what contamination? *Journal of Organic Systems*, 9(1), 2-4.
- Paull, J. (2015a). GMOs and organic agriculture: Six lessons from Australia. *Agriculture & Forestry*, 61(1), 7-14.
- Paull, J. (2015b). The threat of genetically modified organisms (GMOs) to organic agriculture: A case study update. *Agriculture & Food*, 3, 56-63.
- Paull, J. (2018a). Contamination by GMOs: Issues & Options for Compensation. *AgriFood XXV Conference*, University of Queensland, Brisbane, December 3-5.
- Paull, J. (2018b). Genetically modified organisms (GMOs) as invasive species. *Journal of Environment Protection and Sustainable Development*, 4(3), 31-37.
- Paull, J. (2018c). Submission to: Inquiry into mechanisms for compensation for economic loss to farmers in Western Australia caused by contamination by genetically modified material. Perth: Environment and Public Affairs Committee, Parliament of Western Australia.
- Paull, J. (2018d). Transcript of Evidence to: Environment and Public Affairs Committee, Legislative

- Council: Inquiry into mechanisms for compensation for economic loss to farmers in Western Australia caused by contamination by genetically modified material. Perth: Environment and Public Affairs Committee, WA Parliament, April 24.
- Paull, J. (2019a). Organic Agriculture in Australia: Attaining the global majority (51%). *Journal of Environment Protection and Sustainable Development*, 5(2), 70-74.
- Paull, J. (2019b). Genetically modified (GM) canola: Price penalties and contaminations. *Biomedical Journal of Scientific & Technical Research*, 17(2), 1-4.
- Paull, J., & Hennig, B. (2019a). New world map of genetically modified organism (GMO) agriculture: North and South America is 85%. *Acres Australia*, 101, 66-67.
- Paull, J., & Hennig, B. (2019b). New world map of organic agriculture: Australia is 51%. *Acres Australia*, 101, 28-29.
- Perry, E. D., Ciliberto, F., Hennessy, D. A., & Moschini, G. (2016). Genetically engineered crops and pesticide use in U.S. maize and soybeans. *Science Advances*, 2(8), 1-8.
- Phelps, B. (2018). Submission to: Environment and Public Affairs Committee, Legislative Council: Inquiry into mechanisms for compensation for economic loss to farmers in Western Australia caused by contamination by genetically modified material. Melbourne: Gene Ethics, February 16.
- Sato, S. (2018). Japan set to modify its GE Food Labelling System. GAIN Report, No. JA8017, USDA Foreign Agricultural Service, March 20.
- Sharp, C. (2003). *Gene Technology Bill 2001 and the Gene Technology Amendment Bill 2001; Report 8*. Perth: Standing Committee on Environment and Public Affairs, Parliament of Western Australia; July 11.
- Statista. (2019a). Biotech canola share of seeded canola area in Canada from 2012 to 2018. Hamburg, DE: Statista <statista.com>.
- Statista. (2019b). Genetically Modified (GM) Crops in Canada - Statistics & Facts. Hamburg, DE: Statista <statista.com>.
- Stebbins, S., Comen, E., Sauter, M. B., & Stockdale, C. (2018). Bad reputation: America's Top 20 most-hated companies. *USA Today*, February 1.
- Swinbourn, M. (2019). Mechanisms for compensation for economic loss to farmers in Western Australia caused by contamination by genetically modified material; Report 49. Perth: Standing Committee on Environment and Public Affairs, Parliament of Western Australia; February 14.
- Tager, J. (2018). Transcript of Evidence to: Environment and Public Affairs Committee, Legislative Council: Inquiry into mechanisms for compensation for economic loss to farmers in Western Australia caused by contamination by genetically modified material. Perth: Environment and Public Affairs Committee, WA Parliament, August 31.
- Taylor, L., & Lamond, M. (2018). Transcript of Evidence to: Environment and Public Affairs Committee, Legislative Council: Inquiry into mechanisms for compensation for economic loss to farmers in Western Australia caused by contamination by genetically modified material. Perth: Environment and Public Affairs Committee, WA Parliament, May 3.
- Van Acker, R. (2012). *The Movement of Genetically Modified (GM) Material and Containing or Confining GM Material: A Report to the Supreme Court of Western Australia*, Proceeding No. CIV 1561/2012 Marsh vs. Baxter.
- Weidemann, A. (2018). Submission to: Environment and Public Affairs Committee, Legislative Council: Inquiry into mechanisms for compensation for economic loss to farmers in Western Australia caused by contamination by genetically modified material. Canberra: Grain Producers Australia, February.
- WFI. (2017). *WFI Early Bird Crop Policy*. Launceston: Insurance Australia Limited trading as WFI.
- Willer, H., & Lernoud, J. (Eds.). (2019). *The World of Organic Agriculture: Statistics and Emerging Trends 2019*: Frick, Switzerland: Research Institute of Organic Agriculture (FiBL) & Bonn: IFOAM-Organics International.
- Young, D., & McNeil, M. (2018). Transcript of Evidence to: Environment and Public Affairs Committee, Legislative Council: Inquiry into mechanisms for compensation for economic loss to farmers in Western Australia caused by contamination by genetically modified material. Perth: Environment and Public Affairs Committee, WA Parliament, May 3.