Thank you for the opportunity to comment on The Review of the Mortarium on Genetically Modified Organisms in Tasmania (2018).

SUBMISSION AUTHOR: MICHELLE DYER Organisation: Harvest Feast (position: Owner, Co-operator)

I am a producer, retailer & wholesaler of organic & bio-dynamic produce.

Please find below issues I have addressed for your consideration.

Kind Regards, Michelle Dyer (with co-signatories appearing at end of document)

A. The potential market advantages and disadvantages of allowing or not allowing the use of gene technology in Tasmanian primary industries, including food and non-food sectors.

I and my partner are retailers and wholesalers of organically and regeneratively grown produce sourced exclusively from within Tasmania and mainland Australia. All of what we sell is Australian grown and marketed as GMO-free produce - we advertise ourselves as a "GMO-free zone" to which customers respond very positively.

We work very closely with all our producers, producer networks and customers, made up of individuals, fellow retailers, community organisations, and hospitality businesses. I also provide consultative services to mainland producers seeking to relocate to Tasmania and to other businesses wanting a share in the growing organics and non-GMO sector. Having been in the business for over a decade, I understand what the current organic sector needs: what consumer demands are. This experience and in-depth customer interactions in order to grow our business allows me an "at the coalface" understanding of customer wishes and trends.

Although there is frequently industry and Government focus on providing for key international markets, there is also demonstrably increasing demand for branding by local producers growing for the LOCAL market - the growing local economy which benefits from and relies on demand for "clean green" non-GMO and organic (certified or not) status for their livelihoods.

My own experience is that more and more, particularly over the last four or five years, local establishments now source produce from small scale growers directly. Their numbers are increasing as Tassie attracts not only consumers moving for lifestyle changes and greater access to fresh organic produce, but also many niche growers.

In the last year our small business alone has had approaches from around a dozen Tassie newcomers seeking a healthier diet due to chronic health and well-being issues, and a similar number of approaches from lifestyle-changers investing in property with a specific view to setting up organic/regenerative farming enterprises.

When I started in the organics industry in Tasmania some 12 years ago, I could name only a handful of local organic growers selling to us, and even fewer selling directly to a couple of restaurants.

I can now list about 30 small scale producers sell directly to over a two dozen businesses (including ours), and to consumers as well, via retail outlets, markets, and Community Supported Agriculture (CSA) & other direct “producer to consumer” delivery schemes.

In the past much of this produce would have been imported (as ours was), however the rise of permaculture networks and regenerative farming supports (such as Permaculture Tasmania, Huon Producers’ Network, Slow Food Hobart, Regenerative Agriculture Network Tasmania and Sprout Tasmania) has resulted in many growers - largely unrepresented by other industry bodies – making up the backbone of a number of the state’s largely regional economies, particularly in the South. And like our business, these producers and associated industries rely on increasing demand for "clean & green" organic, regeneratively grown and GMO-free produce. Some of our producers who export to the mainland are particularly reliant on this.

We are members of Non-GMO Compliance Australia, and extensively and actively promote ourselves as sourcing and offering GMO-free produce both in our retail space, and online, via social media. We are finding more customers asking for GMO-free produce and are increasingly interested in the perceived benefits. Our experience is that they are very willing and prepared to pay a premium for this, as they trust us to be able to honestly answer their very directly expressed question – “Is all this produce GMO-free?”. “Yes, it is”. With this reassurance, they commence and/or continue to shop.

Globally, strong anti-GM public opinion continues to grow particularly among consumers in Europe and the United States. European government policy reflects this, as does commercial activity in the US.[1]

Over 11000 people are suing GM proponent and producer, Monsanto, alleging serious health issues caused by their products. Two recent successful US court cases have contributed to fuelling consumer concerns and continue to do so, with a third trial (Alva and Alberta Pilliod v Monsanto) currently in its fifth week in California.

Consumer petitions in the US have recently caused Costco, one of the major retailers in that country, to remove Roundup® from their shelves. While this is not directly concerning GMO-labelled produce, in our experience, consumers strongly associate such chemicals with GMO produce and its related industries. This includes the patenting of plants via gene technology as well as the patenting of seeds, and the harm this has caused to producers and food sovereignty globally, especially in India.

In 2017, the Tasmanian Government’s GMO Environmental Scan noted that:

Non-GMO provenance is the fastest growing clean label claim, increasing 49 per cent over the past five years and in the US alone, sales data of non-GMO products growing by 270 per cent in the past three years.

The continued growth in sales for non-GMO provenance products has positive implications for this State. The 2017 Legislative Council Select Committee inquiry into the dairy industry in Tasmania noted that companies such as Fonterra are marketing Tasmania separately so that they can demonstrate attributes (non-GMO) with traceability that are preferred in their markets. Tasmanian beef brands like Cape Grim Tasmania continue to expand their market share presumably in response to consumers valuing their attributes including GMO freedom.

[1] DPIPWE GMO Annual Environmental Scan 2017 p 17/56

Cape Grim were the first Australian food brand to be certified by the USA based NON-GMO Project protocol.

Research on consumer attitudes indicates that views have shifted from a lack of knowledge of gene technologies that drive negative attitudes, to confirming that attitudes are driven more by personal risk-benefit perceptions and values. Recent research into perceptions of harm versus safety noted that even the highly science literate women who worked in health science saw GM food as being in conflict with their core food values with all the women surveyed preferring food that was 'natural' (as in unprocessed), locally produced, healthy and nutritious and free from additives.[2]

This is certainly true of our experience, with our customer base consisting of many scientists, science-based professions and health practitioners who make highly informed choices for premium priced GMO-free and organic produce. A prime consideration in their decision making is the perception of our offerings as being the healthiest, freshest, most nutritious, and flavoursome choice.

With current issues our business faces in terms of pricing within cheaper commodities markets, and increasing climate change and biosecurity challenges, that market differentiation is very important to us. The price of mainland organic produce is rising significantly due to climate events over the last few seasons and, as it is all organic, none of what I import is fumigated coming into Tassie - which restricts what I import. Mainland and Tasmanian Biosecurity fees and freight cost increases have also added to this burden.

This is no longer quite so critical as more local producers are starting to grow lines previously not available commercially. This is because climate change is not only affecting the price and availability of mainland produce – it is also providing Tassie growers with new opportunities.

Whereas 10 years ago it was hard for me to source locally and organically grown tomatoes, capsicum, chillies and eggplants, now we find small local producers growing these in abundance, as well as avocados, rockmelons, and many other varieties previously considered exotic. As growers are experimenting, adapting to change and bringing in their own ideas and expertise, we're finding new, reliable local sources of produce which is increasingly difficult and costly to source from the mainland. The length of seasons is also changing so that produce such as cucumbers and zucchinis now have longer growing seasons here, and in some cases even more so than on the mainland.

If opportunities to grow and develop non-traditional lines are identified and explored, it is possible that retaining Tassie's GMO-free status could potentially benefit a greater range of agricultural sectors locally - and open opportunities within key export markets demanding or preferring GM zero tolerance in their imports.

Niche markets gaining momentum globally are reflected in local initiatives such as FermenTasmania, an industry-led concept unique in the world in terms of exploring the potential of fermentation as a value-add to a region. These tap into the global phenomenon of reviving traditional methods of food production and preservation, and their perceived health benefits.

[2] DPIPWE GMO Annual Environmental Scan 2017 p 22/56

Successful fermentation relies on natural microbial activity found in chemical free and organic produce – it is not present in the same ways in sprayed, conventional nor GMO produce.

Local fermenters such as Two Metre Tall (who also exports overseas), Southern Wild and Rough Rice support local industries and organic (not necessarily certified) growers by not only sourcing produce locally, but also arranging for organic produce to be grown specifically for them. This is just one example of a developing local industry with potential to meet demand within global markets for produce with "clean green" provenance.

There are a growing number of artisan industries in Tasmania relying on these properties to create their products and their livelihoods – many small businesses in a range of sectors such as olives, cheesemaking & dairy, brewing, distilling, winemaking, heirloom & organic seeds (a growing export market), bakery and fermentation.

Small scale quality food production and fermentation captures its sense of place, the character of its ingredients, speaks of its produce and how it was grown – Tasmania has the potential to tap into the worldwide hunger for these, attracting premium prices, rather than just large-scale commercial commodities available anywhere. For example, distinctive organic and biodynamic pasture qualities are reflected in our artisan cheeses, the biodiversity within its native and pasture species adds complexity and depth of flavour – it is these regional characteristics upon which we can grow an agritourism sector reflecting the unique tastes of Tasmania.

Until we start to quantify the value of these industries and their potential, there is an argument to retain the GMO moratorium – as once this is lifted, these opportunities face the risks, challenges and costs associated with co-existence and contamination - and are potentially lost, particularly in terms of customer perception and market advantage.

B. Domestic and international gene technology policy relevant to primary industries;

Are there any examples of innovative GMO policy and regulation from other jurisdictions that Tasmania could adopt or learn from?

I note shifts in agricultural trends globally, some of which are influenced by government policy and others increasingly reflected within innovative government policies. Many of these are directly supporting the move towards True Cost Accounting and understanding that organic farming and agro-ecology (rather than GM and other gene technologies) are best suited to responding to climate change, biosecurity, environmental degradation, world food security and poverty.[3]

Government authorities in Germany, Austria, India, and Kyrgyzstan, for example, are implementing policies and action plans to substantially upscale organic farming…..
There is broad consensus that agriculture and food systems urgently need to change, but progress is far too slow. A major obstacle is the deep divide between two competing schools of thought on how the change needs to happen: through step-wise improvements of the

[3] Sustainability in global agriculture driven by organic farming - Frank Eyhorn, Adrian Muller, John P. Reganold, Emile Frison, Hans R. Herren, Louise Luttikholt, Alexander Mueller, Jürn Sanders, Nadia El-Hage Scialabba, Verena Seufert, Pete Smith

predominant agricultural systems, making use of biotechnology and IT solutions, or through a radical system redesign based on agroecological principles.[4]

Examples of innovative government approaches and policies to support these principles with quantifiably successful results can be found in South America, and Europe:

Brazil: National Policy for Agroecology and Organic Production (PNAPO)
Denmark: Organic Action Plan "Working together for more organics" (2011-2020)
Ecuador: Participatory Urban Agriculture Programme[5]

In the US, the value of organic investments and identifying "organic hotspots" has directly assisted in boosting both regional and urban communities and economies through policies supported by that country's Department of Agriculture and Federal Reserve.[6]

Worldwide, many communities and governments are instituting third-party Participatory Guarantee Systems (PGS), which are locally administered verification and quality assurance systems specially designed for local markets and short supply chains as a more accessible alternative to organic certification

Governments can (and do in several countries, including Brazil, Argentina, Mexico, India, Costa Rica, the Philippines) support PGS development through both regulation and policy.[7]

I cite these examples of non-GMO based policies as initiatives which may be argued have successfully provided broader social, economic and environmental benefits than some provided by the gene technology sector. Rather than being returned to concentrated corporate interests, the profits of these sorts of innovative policies are returned to benefit local economies, have proven to reduce dependence on the welfare and health sectors and provide ongoing support to regional and urban communities.

In terms of specifically GMO policy, my view is that it should be based on the principle of conservatism and caution. The standard of zero tolerance should be maintained to support organic certification, a growing sector both locally and globally.

In terms of liability if co-existence cannot be contained, clearly the possibility of contamination exists and provides additional risks associated with continuing to promote and market our produce as being GMO free. Co-existence in the market as well as the paddock is a risk carrying significant costs to all involved – at producer, industry, regulatory and government levels.

C. Research and development relevant to the use of gene technology in primary industries.

1. Are there new GMOs that would provide positive benefits to your business or the State as whole? What are they and what would the benefits be?

2. What impact has the moratorium had on the research and development in Tasmania? If possible, please provide examples.

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[4] https://sustainabilitycommunity.nature.com/users/254217-frank-eyhorn/posts/47653-coherent-policies-driving-sustainable-food-systems

[5] https://www.organicwithoutboundaries.bio/2018/10/24/silver-awards-2018/

[6] https://www.stlouisfed.org/community-development/publications/harvesting-opportunity

[7] https://www.ifoam.bio/sites/default/files/policybrief_how_governments_can_support_pgs.pdf

The government's GMO Annual Environmental Scan 2017 discussed sequencing of the barley genome as a development which hopefully "*will ultimately lead to more stable and sustainable yields and improved malting, resulting in reduced farmer risk and increased profitability. Given the importance of barley as a cereal crop in Tasmania, and the recent growth in Tasmania's brewing and distilling industries, it has the potential to deliver significant long-term benefits and opportunities for Tasmanian agriculture and the broader agri-food sector".*[8]

Local farmer, fermenter, brewer and qualified chemist Ashley Huntington of Two Metre Tall responds that he is unable to imagine of something more contrasting to the Tasmanian industry's modus-operandum and ideology. He responds that yields are in fact a long way from being the most important factor in cropping and brewing. That the "*recent growth in Tasmania's brewing and distilling industries*" has not come from industrial multi-nationals who rely on yields - it has been driven by a huge diversity of very small businesses, for whom the overriding concern within their growing local and export markets is flavour.

He argues that biotechnical innovation does not lead to increased profitability for farmers. "The clear evidence from the past couple of generations is increased productivity is immediately offset by lower prices per unit of productivity. Cattle prices were $2/kg in 1972 and are barely higher today (and I need not remind you what $2 in 1972 dollars is worth in 2019), so the statement underpinning this push - unsupported by evidence - remains unsustained."

Ashley opines that cereal cropping is already effectively a mono-culture in Australia. "When was the last time you heard a [major commercial] brewer or distiller actually interrogate the variety of the barley they were using or conducted varietal research to find something that better suited their production needs? The answer is it simply doesn't happen. Brewers & distillers buy 'barley'. Farmers sow 'barley'. Grain traders trade 'barley'. The collective noun for a family of grains has become a singular term. The varietal selection and force-feeding of the seed-market comes from commercial contracts between breeders and 'big grain'. The new replaces the old. There's barely any cross-over. Like the vast majority of farming in this country, varietal diversity has almost disappeared. Two Metre Tall has spent an inordinate amount of time re-propagating older (reputedly more flavoursome) varieties of barley for some years, at our own expense. There is no commercial interest. […] Ideas from the small businesses, responsible for the "*recent growth in Tasmania's brewing and distilling industries*", are ignored because these ideas are generated by small, numerous, individual businesses with no financial clout and research today is only conducted by those who can pay for those who can pay."

There is a strong argument here for continuation of the GMO moratorium and for additional support to assist in reviving traditional methods and old/heirloom varieties – because it is these very qualities that are being captured by our small businesses and sought by niche markets both locally and globally.

In terms of the deregulation of new breeding techniques (NBTs), the introduction of these into Tasmania would jeopardise our organic producers' ability to remain GMO-free, and therefore the viability of the sector.

In 2018 the European Court of Justice ruled that new genetic engineering techniques be regulated as GMOs. Although the ruling only pertains to EU member states, on 26 July 2018, IFOAM – Organics International welcomed the decision, which has implications for its

[8] DPIPWE GMO Annual Environmental Scan 2017 p 41/56

Australian affiliates, organic certifying bodies ACO, NASAA and BDAA, which represent most certified farmers within Tasmania.

IFOAM- Organics International's position images that of IFOAM-EU which is that –

[NBTs] and breeding techniques involving GMOs use technology that interferes at the sub-cellular and genomic level. Therefore, IFOAM EU considers that they are not compatible with the principles of organic farming and must not be used in organic farming. Although GMOs are only cultivated in small areas in a very limited number of countries in the EU, addressing the risk of contamination has nonetheless already triggered technical complications and increased economic costs for operators in the organic sector. Moreover, consumers of organic products and organic farmers clearly reject the use of GMOs and hold as a key principle the right to know that what they eat and grow is GMO-free.[9]

IFOAM – Organics International also stressed "how important it is that other governments follow suit and impose strict controls on the development and release of any novel organisms and their products. We call for globally applicable rigorous risk assessment and risk mitigation protocols that require full transparency, traceability, and accountability for all activities undertaken with respect to genetic engineering."

This has implications for the development and use of NBTs in Tasmania, and questions what investment should be made in such technology, since it would jeopardise an organic sector reliant on zero tolerance. One of the findings from the 2017 Environmental Scan supports this consideration for Tasmania's export market:

There remains a zero tolerance to the presence of GM organisms in organic crops in Australia, with growing markets for Australia (China, Korea, Japan) having no tolerance for GM in their organic standards.[10]

D. Any other relevant matters raised during the review

Although it is argued that new technologies have the capacity to provide some industries the opportunity to produce such things as non-browning apples and GM potatoes, supporting statements ignore that the issues these "innovations" are seeking to fix can be addressed via other interventions and policies.

Issues such as food waste and tackling obesity through increasing consumption (the argument for the GM "Arctic" apple) can and should also be matters for community and industry education.

It is the education of producers, supply chain logistics, wholesalers, retailers, consumers – rather than the development of GMOs – which could be key factors in overcoming food shortages and nutritional deficiencies. Reducing food waste at every step of the supply chain, influencing consumer behaviour and sentiments, encouraging & promoting the acceptance of produce for its nutritional qualities rather than aesthetics; education around food storage; the promotion of local markets, eating and buying locally and seasonally.

Supporting local food hubs and community level food security initiatives; developing government policies and incentives to encourage community level education and food distribution; and supporting school garden and cooking programs – these are all alternatives key to benefiting and empowering local economies rather than supporting industries whose interest and profits are based and often sent elsewhere.

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[9] https://www.ifoam.bio/sites/default/files/ifoameu_policy_npbts_position_final_20151210.pdf

[10] DPIPWE GMO Annual Environmental Scan 2017 p 11/56

In Summary

Tasmania can continue to be at the forefront of innovation in the specialty food industry, as well as in the preservation of ancient and traditional techniques gaining a resurgence worldwide without the introduction of GMOs and gene technologies. These opportunities may be compromised or possibly lost if the mortarium is lifted.

The arguments for the need to develop gene technologies to feed the world's growing population are not as compelling as addressing broader factors such as food waste, supply chain and distribution issues. These can be addressed by government programs and polices alternative to supporting gene technologies and provide broader, more widely distributed benefits.

In our personal experience as well as globally, more consumers are seeking what is perceived to be ethically sourced produce. With an increasing understanding of risks associated with environmental degradation, climate change, biosecurity, food security and sovereignty, we are witnessing greater demand for organic and GMO-free produce with traceability and proof of provenance.

If the mortarium were to expire, we would certainly lose this point of difference and a key sector of our customers who have demonstrated repeatedly over the past decade that they are willing to pay the premium.

CO-SIGNATORIES & additions to this submission

1. Bream Creek Community Market Garden (BCCMG) Committee

Even big industry has now taken note & are interested in the significant profit margins offered by regenerative agriculture per acre.

https://www.google.com.au/amp/s/www.forbes.com/sites/devinthorpe/2018/12/12/how-investing-in-regenerative-agriculture-can-help-stem-climate-change-profitably/amp/

As an exclusively organic organisation (it's in our constitution that we are Tasmanian and organic) we'd be severely affected if GM crops were introduced to our tiny district full of agriculture. Weeds blow in and GM crops would send their seed in too. We are a strong yes to extending the moratorium.

BCCMG Manager Rebecca Kelley

2. Southern Wild owners/operators Ronald Aveling & Michele Diener

   Supports continuing the GMO moratorium

3. Ashbrittle Farm (egg producers Oliver & Bec Benson)

   Supports continuing the GMO moratorium

4. Christina Urso-Cale, regenerative farmer as The Basil Girl Supports

   continuing the GMO moratorium

5. Sebastian Watson, regenerative farmer as Glenview Farm Supports

   continuing the GMO moratorium