



Presentation to the IAC on the environmental effects of the proposed Fingerboards Mineral Sands Project

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Work Experience

- Section Leader of the Food Science and Postharvest section at the Institute for Horticultural Development State Government of Victoria
- Manager for the Centre for Functional foods
- Project Director Quality Assurance for the ASEAN Secretariat Jakarta (AusAid funded)
- National Food safety and risk manager for SaladFresh
- National technical manager for PMFresh
- Consultant in food and horticulture Global F.S. Pty Ltd

What I will be presenting

- Flaws and problems in the conclusion and recommendations of the RMCG report especially as it relates to short term and long term potential impacts on the horticultural Industry (the food industry)
 - Short term issues related to Quality Assurance compliance (QA)
 - Long term issues related to potential water quality to grow our food

Horticulture = Food

- It is hard to quantify how much of the food grown in the Lindenow Valley by the horticultural industry is sold in what sector of the market but we know that one portion goes to the fresh produce market (Melbourne and Sydney) , one portion directly to supermarkets (Aldi, Coles, Woolworths, independents or Metcash and Costco), one portion goes to the processing industry (One Harvest or VegCo, PMFresh, SunFresh/Houston Farms)
- The Lindenow Valley is also a key geographical area for supply, it supplies over the hot summer months where other regions in Qld and NSW cannot supply. So it is critical for some processors as a source of raw material especially for baby leaf and head lettuce.

Problem number 1

- There has been no consultation with the clients that dictate the markets for these products. Especially no consultation with the supermarkets or the processors that take the bulk of the produce grown in the valley
- Had they had a consultation with them they would have learned the following

What is needed for market access?

- EnviroVeg or other environmental management systems are NOT the requirement of these customers and EnviroVeg would do nothing for the growers in terms of market access.
- Market access for growers is dictated by having the correct QA systems in place in each growing property



Market access to supply the processors

- All growers that supply supermarkets and processors must have an “on farm” QA system in place, this can be FreshCare, Global GAP, BR, SQF, in addition growers that supply supermarkets and processors that supply supermarkets in their house brands are also required to have an additional QA system in place (HARPS)
- Aldi, Coles, Costco, Metcash (IGA) and Woolworths have all signed on to the Harmonised Australian Retailer Produce Scheme (HARPS).
- So everyone supplying a supermarket needs a QA system in place plus HARPS
- These QA systems are audited by a third party auditor , HARPS is audited by a third party auditor and the processing industry also audits the grower. So growers must pass three audits to obtain market access to supermarkets and processors.
- These audits can take all day and are very strict, multiple failures can lead to the loss of accreditation and loss of market access.

Market access to supply supermarkets

	BR	GlobalGAP	Freshcare	SQF	HARPS
Aldi	Any JAS-ANZ (or equivalent) accredited Certification Body.	AsureQuality Aus-Qual BSI SAI Global SGS Merieux			
Coles	AsureQuality Aus-Qual BSI SAI Global SGS Merieux	AsureQuality Aus-Qual BSI SAI Global SGS	Aus-Qual BSI SAI Global SGS Merieux	AsureQuality Aus-Qual BSI SAI Global SGS Merieux	AsureQuality Aus-Qual BSI SAI Global SGS Merieux
Costco	<i>TBC</i>	<i>TBC</i>	<i>TBC</i>	<i>TBC</i>	<i>TBC</i>
Metcash	AsureQuality BSI SAI Global SGS	AsureQuality BSI SAI Global SGS	BSI SAI Global SGS	AsureQuality BSI SAI Global SGS	AsureQuality Aus-Qual BSI SAI Global SGS Merieux
Woolworths	AsureQuality Aus-Qual BSI SAI Global SGS Merieux	AsureQuality Aus-Qual BSI SAI Global SGS Merieux	AsureQuality Aus-Qual BSI SAI Global SGS Merieux	AsureQuality Aus-Qual BSI SAI Global SGS Merieux	Aus-Qual BSI SAI Global

Why is that?

- **Research from Roy Morgan : Food safety at the supermarket is important to more Australian grocery buyers than proximity to home, good value, trading hours or the quality and range of fresh fruits and vegetables. (This was not mentioned in the presentation by Dr Doris Blaesing).**

Results from studies into buying behaviour are inconclusive depending on methodology (e.g. asking people vs. examining actual behaviour).

The “Mapping Victoria's Food Systems Study” found major driver to be:

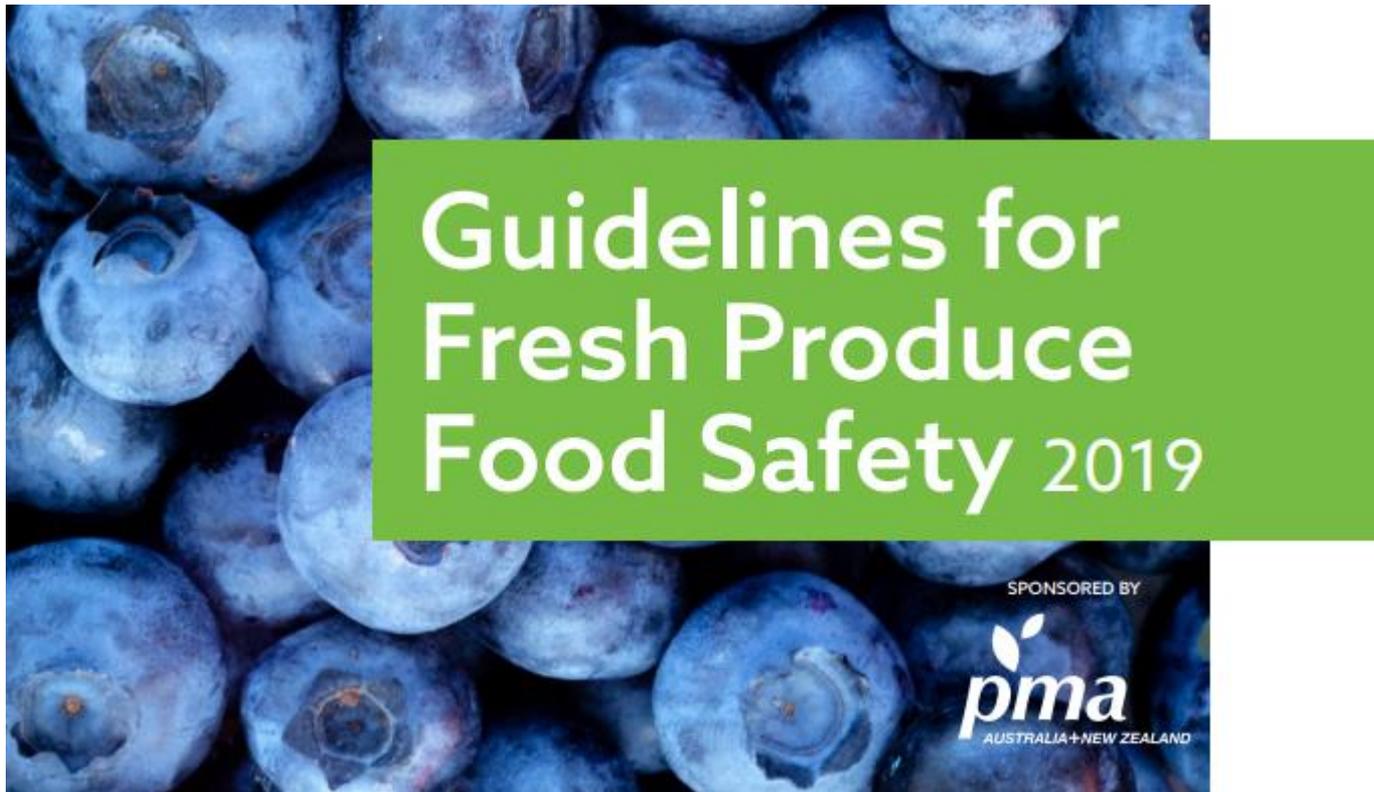
- Price of food
- Convenience
- Dietary preferences

Freshness is another major factor according to the Nielsen study cited in the HIA.

Market access to supply the wholesale markets

- More and more a QA system such as Freshcare, Global GAP, SQF, BR is required for traceability purposes. Each of these systems has traceability requirements that allows the produce to be nailed down to a region, to a grower, to a harvest date and to a specific block where the vegetable was grown in.

All QA systems are underpinned by these guidelines





Managing the growing site and planting material

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Growing sites must be assessed for potential microbial, chemical or physical contaminants. If hazards are present they need to be either removed or managed through crop choice, crop management and timing.

5.1. Hazards and sources of contamination

Growing sites include paddocks, orchards, buildings, greenhouses and shade houses. Not all sites are suitable for production of fruits and vegetables for human consumption. If the growing site is contaminated with significant levels of human pathogenic microbes,

chemicals or foreign matter, the products grown there may also be contaminated.

The suitability of the growing site should be assessed before planting annual crops and pre-establishment for perennial crops. The risk of contamination is higher for crops where the edible part grows in contact with the soil and may be eaten uncooked. The main risks include:

- Microbial contamination with human pathogens
- High levels of heavy metals or persistent chemicals
- Physical contamination from foreign matter

HARPS

Harmonised Australian Retailer Produce Scheme

- V. Each new or existing growing site, where risks have changed shall have a documented assessment to ascertain suitability for growing fresh produce. This assessment shall consider cropping, land use history, adjacent land use / industry and the need for soil testing (including microbial testing).

What does this mean?

- If hazards are present they must be managed through crop choice, crop management or timing. **(If they can't be managed you just do not grow the crop).**
- The risk of contamination is higher on crops where the edible part is in contact with the soil and may be eaten uncooked.
- **The majority of the produce grown in the Lindenow Valley grows in contact with the soil (lettuce, baby leaf, root vegetables)**

Processors audits not only for food safety but for quality as well

- Processors audit the growers for excessive dust and sand in the products. We also ask our suppliers not to overhead irrigate prior to harvest or to wash their produce at the farm as the wet produce will tend to deteriorate during transport. If our growers cannot control the level of contaminating dust and sand they may well lose their certification meaning that processors will have **no suppliers in this key geographical region.**

More importantly

- If the Lindenow Valley enters a routine testing for contaminants as stipulated in the presentation by Darren Billingsley. Consumers may see this as a risk to their health. Traceability requirements of the QA systems and HARPS would mean that clients would know exactly where that produce was grown and may refuse to purchase it. There is no hiding of where the produce was grown in the Horticultural Industry.

What is still required

- Finer grid gamma radiation survey of mining areas, and areas of exposed ore at the surface.
- Additional groundwater and surface water samples to identify Ra-226/228 concentrations.
- Air sampling for Total Suspended Particulates (TSP)
- Radionuclide content in local crops.
- Commitment to assess impact on livestock for human consumption.
- Preparation of all necessary Management Licence documents including RMP, RWMP and the REP.

- EnviroVeg and other environmental management systems are not the answer in protecting the growers from accessing markets if the mining goes ahead.
- Meeting the QA systems and HARPS (and processor audit requirements) are the only way that market access can be maintained.

If the mine goes ahead

- And the potential issues with dust contamination cannot be addressed through the QA systems it will lead to clients (supermarkets, processors) having to go elsewhere for their produce.
- **Washing of produce before delivery to processors is not allowed because of quality issues. Wet leaf degrades quickly during transport to Sydney/Melbourne/Brisbane**
- Hydro coolers which were mentioned as a possible way to treat produce are not used in baby leaf/lettuce production
- **Dust affect wash baths used to sanitise the cut vegetables prior to packing, sand is a major complaint from consumers when it flows through to the finished product. Specifications of raw material for processors include rejection of produce that does not meet specifications related to contaminants on leaf.**

Even Kalbar Operations paid consultants have recognised this

Effect of dust on certifications

According to:

- 'Guidelines for On-Farm Food Safety for Fresh Produce (2019)' and
- food safety standards (e.g. FreshCare)

Fresh produce affected by dust or dirt from any source cannot go to market.



Dr Robert Premier was involved in producing both the Guidelines for Food safety for Fresh produce (2019) and the Freshcare “on farm” food safety standard.

What I know so far

- Hence I question the ability of the mining project to control dust and sand emanating from the mining site. A blunt admission by Kalbar Operations that not all sand and dust can be contained during mining, makes me believe that there will be this type of contamination in the produce.
- More importantly strong winds will carry contaminating sand along the valley and beyond the valley. A short review of wind directions and wind speed showed that sand will blow towards the vegetable farms at the most critical times of the year when supply is short from other key geographical sites.



- Kalbar Operations does not explain the risk mitigation processes to any extent and from what I see, what they are proposing is primitive and lacks the control needed to contain sand and dust to the mining site. Using water to reduce dust and sand is probably not going to work well on hot days; ceasing operations would not be viable. Using wind breaks, vegetation cover and washing off are not going to work at the farm level.
- So I have no evidence before me to show that what is being proposed will actually work to eliminate dust and sand from reaching horticultural enterprises along the valley.

Conclusion to problem number 1

- I urge the committee to insist on evidence of how these dust and sand mitigation steps would work in real life and if no hard scientific evidence is shown that the dust and sand is contained within the mining site I urge the committee to reject the application.
- I have made no mention of the potential of radioactive dust and sand particles being involved in this because I ask the committee to require more information from the applicants to be made available so that I can make a decision on this threat. I would also welcome an independent report on this issue

Problem number 2

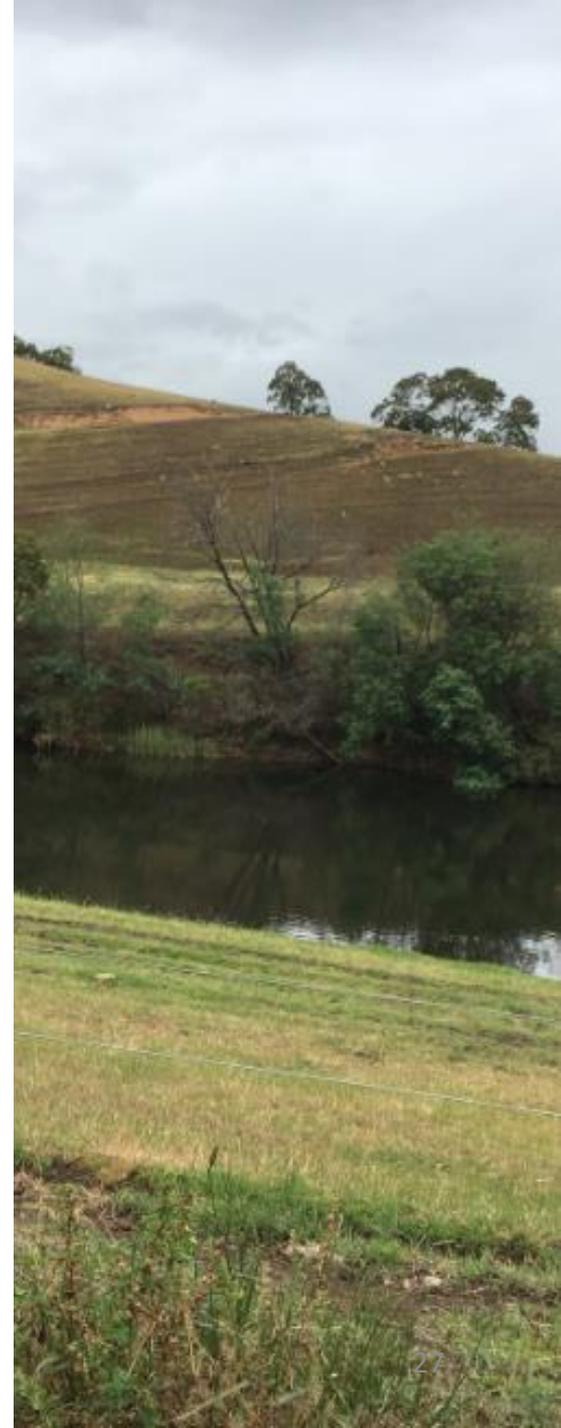
- Another important aspect of food safety is the quality of the water used to irrigate the vegetables.
- One important aspect that makes the Lindenow Valley key geographical area attractive as a supplier of raw material is the clean water of the Mitchell River and the clean water of the aquifers.

- There is no doubt that the clean water is due to the natural water filtration that the sand plains offer. Rain water is filtered by the deep sand reserves before it enters the Mitchell River and the aquifers that exist in that area

- The mining project puts at risk this very geographical feature that makes that area attractive for food production. The mining project will alter the status of this natural filtering step. The proposal seeks to remove sand up to 45 meter in depth, split the sand into what is of interest and return the rest to remediate the mining site.

- Removal of elements of the sand, will alter the filtration ability of this natural sand filter, also changing the nature of the sand could lead to heavy metals being released which will make their way into the aquifers and the river.
- Bore water from these aquifers and river water are used in growing the vegetables that growers rely on for their business. Under the food safety certification schemes that are required by horticultural food suppliers, the quality of the water is a major issue.

- Bore water from these aquifers and river water are used in growing the vegetables that we rely on for our business.
- Under the food safety certification schemes that we require of our suppliers, the quality of the water is a major issue.



Conclusion of problem number 2

- After reading the RMCG report and the Kalbar Operations proposal I do not believe that the current quality of the water used for vegetable growing will be maintained. I ask the IAC to consider this issue and to ask for more work to be done on this matter by Kalbar Operations so that we can all understand the extent of this problem. Again, an independent report would be welcomed.

- I am also concerned with the amount of water which will be used in the mining project and the amount of waste (recycled) water which will be returned to the aquifers and river (through overflow or filtration through the modified sand bed). There are real concerns about contaminants or suspended solids in this recycled water.
- Both of these have the ability to impact on vegetable growing.

Concluding statement

- I ask the Inquiry and Advisory Committee on the environmental effects of the proposed Kalbar Operations Fingerboards Mineral Sands Project to consider my concerns that could have a great impact on the horticultural industry in the Lindenow valley.



THANK YOU