AG2030 Proposition and Vulgar Explanatory Memorandum

2022

NYSF *Vertical Thinkers*

Hydroponic (aquaponic), Aeroponic Subsidisation Act

INTRODUCTION

The Australian Government has set the goal to reach an agricultural industry evaluation of $100bn (AUD) by 2030. To achieve this, a change to the status quo agricultural sector must be made so as to grow a $61bn industry (ABS, 2022) by $39bn in 8 years, a mean linear increase of $4.875bn.

To achieve the goal, hydroponic (aquaponic) and aeroponic must be utilised. The justification for this as well as scientific and socioeconomic descriptions and prescriptions will be outlined in a vulgar explanatory memorandum, and then a proposition will be presented so as to encourage the writing of a legislative bill to support the proposition and memorandum. Note that this vulgar memorandum is designed to be succinct albeit complete in discussion.

Hydroponic (aquaponic) and aeroponic agriculture will be defined as ponic agriculture.

POINTS OF ORDER

1. Increase the Australian agricultural sector to be evaluated at $100bn by 2030.
2. Increase the value of the Australian agricultural sector via ponic farming.
3. Minimise the impact of an industrial shift from monoculture to ponoculture.

VULGAR EXPLANATORY MEMORANDUM

DEFINITIONS

1. **Hydroponic agriculture** is the process of growing plants without soil through aqueous nutrients delivered directly to the roots system sourced through applied chemicals.
2. **Aquaponic agriculture** is the same process as item 1 except the chemical source is aquaculture (fish farming).
3. **Aeroponic agriculture** is the process of growing plants without soil through nutrient-rich mist that applies nutrients to the root-system of plants through a mister.
4. **Food security** is defined as the ability of an agricultural system to withstand stresses applied to it, so as to maintain a positive flux of human-consumable food in spite of changing geological conditions and political climates.
5. **Sterile land** refers to land in which insects and unintended plants cannot easily grow, and in which the Simpson's Diversity Index as a result is small (SDI<0.05)
6. **Political domain** is defined as a class group that is affected by policy due to their relation to the means of production.
7. **Adoptability** refers to the ease with which an object can become dominant in relation to other objects in the same group.
8. **Adaptability** refers to how an object defined in a domain maintains characteristics as a domain becomes abjectly foreign to the original one.
9. **Monoculture** refers to the status quo system of agriculture, which involves the growth of a single plant in a large area causing a small SDI, however, in the context of this report, it refers additionally to agriculture of a single species in an area without the assistance of ponic methods.
10. **Polyculture** refers to sustainable or regenerative agriculture in which multiple species are grown in tandem so as to increase biodiversity.
11. **Manufactured liberty** is defined as a policy that has a strong pull to a certain outcome that is nevertheless libertarian, through positive encouragement, which while does not punish those who do not undertake, nevertheless results in the systemic inequity of those who do and do not as a result of the pull towards a strictly positive and beneficial outcome.

DESCRIPTIONS

In the face of increasingly tenuous climate conditions, alongside the top soil problem (top soil is increasingly becoming nutrient barren), ponic agriculture has become widely adopted as an alternate form of agriculture. Seen in the UK, USA, Japan, India and the Netherlands, ponic agriculture has already demonstrated itself of capabilities in an industrial context. Human consumable products that are grown at such facilities also have extreme quality, meaning that the justifiable selling price of the crop is increased. This categorically achieves the first point of order, because if the crop is at least 64% better in market quality (defined as the lowest economically feasible selling price), then the first point of order is achieved. Furthermore, ponic agriculture has increased food security of places like the UK, and would undoubtedly do so in the Australian context because any part of Australia would become feasible crop land, and changing climactic conditions would be ineffectual towards the yield. Therefore, the adaptability of a ponic agricultural sector is effectively infinitely higher than monoculture especially in the domain of central Australia which is completely unfarmable for the majority of commonly consumed crops.

Ponic agriculture works by supplying nutrients directly to the roots of plants through mist or water, and the chemicals are either sourced from fish or from bought chemicals. Therefore, there is complete control over the environment, allowing for direct and complete agency over pH, temperature, absorption of nutrients, nutrient density, water control et cetera. Since such farms are indoors, it remains effective despite location and climactic events.

Pollination can be simulated through keeping bees or other pollinators within the ponic environment. Due to the directness of this process, the cultivation time, quality of crop, and yield are all optimised to the maximum theoretical growing capacity of the plant species per acre. Therefore, the crop density of an infrastructure using the second point of order will cause the first point of order to be achieved. The aforementioned list of companies all exemplify complete implementation of a ponic infrastructure. The objective of the subsidy is to minimise the friction of an industry transition resulting from new infrastructure, and so pollinators are classified separately from chemicals and fish as they are single investments that naturally occur in all other agriculture variations.

Ponic agriculture has been demonstrated to use 90% less water and 60% less space than alternative traditional farming. Therefore, this process will contribute to Australian efforts to maintain water security and environmental conservatorship (for land unused), especially in water insecure regions like the Murray Darling Basin, or other frequent locations within Australia. Furthermore, this will allow a proliferation of less taxing cotton crop on the water system, which will allow water levels to rise eventually in the MDB, eliminating the cause of the fish kill, salinity catastrophe and blue green algae infestation.

Furthermore, because crops are not affected by seasonal weather changes, the crop which goes faster, grows all year round, contributing further to the completion of the first point of order.

PRESCRIPTIONS

The goal of the AG30 bill is to encourage the widespread adoption of ponic agriculture through a manufactured liberty on consumer goods and subsidy on the construction of such facilities, so as to formulate a smooth transition into a new landscape for the agricultural industry.

The bill will be twofold, it will encourage the market to resist traditional monoculture, then use it to subsidise and fund ponic agriculture. The subsidisation outlined in 1a,2a,3a excludes 1b,2b,3b because the goal of the bill is not to subsidise the industry, but rather to subsidise the transition, so as to alleviate the onus on farmers to support a change and the onus on the government to increase the budget. The liberty of the farmers to change to ponic agriculture is manufactured because consumers

will a) support traditional farming from which they are the negative benefactor and ponic agriculture is supported, or b) purchasing from ponic agricultural vendors which directly supports the endeavour, and does not directly disadvantage the traditional farmer, albeit indirect disadvantage; hence the liberty of transition is manufactured.

The subsidies alongside taxation means that the industry becomes temporarily socialised, allowing for no party to be individually severely affected by the transition, accomplishing the third point of order.

As outlined in 1a,2a,3a the proposed bill will affect only those with the intention of large scale industrial agriculture, such existing farmers or farmers wishing to break into the industry, so as to avoid only small areas of conversion to occur; large land-owners have more land to convert. This change will influence domestic consumers and exports due to an increase in quantity and quality.

It is the responsibility of the investee of the bill to produce such a plant. Failure to do so, not due to unforeseen consequences, is classified as malicious intent to fraud the government, granting proposition(s) 1c,2c,3c. Uncharitable predictions for the timescale would lead that large institutes would be constructed in under a year, defining the time scale. A caveat is maintained to account for the heterogeneity of the Australian geographical landscape.

The 3 most recent pars hitherto ensure ethical adoptability of the new infrastructure.

The implementation of a ponic infrastructure will allow for extreme adaptability to adverse climate conditions, developing both a strong food and water security for Australians. It will also boost the economy greatly, and allow for yearlong cultivation of seasonal crops, including other crops which can be equally important for growth such as opium poppies and cotton, since qualities like temperature and pH can be intimately controlled.

Given the short roll-out time, if this bill were passed in 2022, effects of it on the $61bn industry would be immediate, and a development of $39bn would be an uncharitably conservative estimate.

ETHICAL AND SOCIAL CONSIDERATIONS

While this vulgar memorandum is primarily focused on the succinct evidential economic ramifications of abroad ponic agriculture inasmuch as the scientific presuppositions. This section will briefly summarise the ethical and social considerations presupposed by the bill proposition.

The political domain can be bifurcated and each segment may be further isolated to producer and consumer; the effect on the proletariat is bifurcated between the proletarian consumer and the proletarian producer; the consumer in this context is temporarily affected by higher prices due to taxation, however the taxation in 4a is ensured to have an impact that is fairly ineffectual on most domains. However, it will make low socioeconomic classes have a decrease in their food accessibility, so support through government institutions through prexisting structures must be maintained so as to afford charity to those people. The producer in this context would be farming land-owners who have a distant relationship to the higher echelons of the means of production as a result of their socioeconomic status, regionality, or crop consideration. They may be affected by the changes put into place, however, the bill ensures that a transition is still possible. While it will be systemically easier for a higher order land owner to transition as they have more capital, in either case the outcome is still possible, and post transition, both houses will be in superior economic cold-states. Furthermore, the increased investment will drive down the start-up capital for following novel ponic agricultural facilities. The effect on the bourgeoisie producer and consumer is equally bifurcated, and in each case the effect is almost minimally felt, which has been a deliberate consequence of the bill, so as to cause the least amount of opposition to the legalities surrounding the bill. This allows the accomplishment of the third point of order.

The adoptability of the system is ensured through the a sections of the bill, with 1bi,1bii,2bi,2bii,2biii,3bi,3bii allowing the government to not subsidise the industry, in alignment with a capital model. The clauses in the c level propositions are designed to account for varying landscapes.

The opposition to change in farming due to conservative values is not abjectly opposed by the proposition, so as to follow the democratic and egalitarian processes of free choice. However, the bill will strongly encourage a shift to allow for a more environmentally adaptable sector.

The land saved from ponic farming as outlined in the following section is the solution to the environmental ethical problems surrounding the adoption of sterile monoculture, and will increase the natural native landscape of Australia.

By ensuring the outlined ethical considerations within the bill upon the political domain, the third and therefore all points of order are addressed.

Being a capital model, the goal of the bill is to drive economic pressure to cause a complete transition, however the tax only accounts for a small transition of the industry. The reason for this is that the land subsidised will cause increased profit for the farmers, which will allow them to proliferate their land further allowing for increased privatisation of the sector, so as to encourage a positive economic loop perpetuated by the industry. Essentially, the land owner is assumed to be discouraged from transition due to start up cost, and is subsidised to produce enough land that they are in a position to afford a start up cost; as this trend continues, the private funds will exponentiate allowing for more land to be cultivated, eliminating the longitudinal onus on the government in addition to the temporary onus on land owning farmers in the early transitory stages. To encourage this private investment positive feedback loop, the d level of the clauses are added to limit the utility that can be ascribed to the bill to primarily the private sector in the early transition of the bill, defined as a minimal natural majority of the funds of the land owner in relation to the density of the land. Therefore, the land that a low economic land owner can produce at the start of the transition is categorically lower; however, this allows for a unilateral and fair implementation that is nevertheless rate limited to ‘ween’ the subsidisation such that farmers, who could afford the transition of land, are no longer affected. The bill is not capped, however, at limitation of use, because lower economic status farmers may require more assistance in order to reach that point than higher economic status land owning farmers. The number 10% is decided as a factored percentage of the total land that is covered by the taxation.

ALTERNATIVE MODES

Monoculture agriculture has been extensively shown to be inferior to ponic agriculture, however, polyculture is also inferior to ponic culture because sustainable/regenerative agriculture is incredibly difficult to utilise and if highly inefficient. While it is more environmentally ethical, the space saved by ponic agriculture can be afforded towards direct native Australian regeneration, which itself lends to be more ethical than polyculture.

Polyculture is too difficult to effectively implement on a large scale because current technology is designed to farm monoculture, as different crops require different ways to harvest, and separating them is highly difficult. The benefit of ponic agriculture is that it maintains the practicality of monoculture, is novel in its efficiency, and the land saved has the same positive impact on biodiversity as would be obtained by polyculture farming. This is the primary rationale for choosing it to be subsidised.

Notwithstanding the ethical impacts of low diversity and sterile environment, the polyculture model is economically unviable and systemically more challenging to implement than an advanced form of monoculture. Therefore, polyculture is just as ineffectual as monoculture in this comparative context, in relation to ponic agriculture.

LIMITATIONS

There are fundamentally two limitations of ponic agriculture which will be presented, explained and addressed:

1. **Biodiversity reduction.** In outdoor farming, including monoculture, weeds, animals and insects infiltrate the field, albeit in minimal quantities. This small biodiversity is in effect eliminated in the context of the ponic environment as it is sterile at large. However, this is ameliorated by the land that is liberated due to the intrinsically denser farming. The increase in conserved land therefore accounts for the apparent decrease, de-homogenising in actuality the biodiversity with an effectual net increase. This increases overall environmental conservatorship.
2. **Notwithstanding lower upkeep costs, a high start-up cost.** This caveat is the largest one apparent, however in lieu of just putting the onus on government, or the onus on the farmers, subsidisation in the form of a minimal natural majority of the total relative cost of structure per acre is absorbed by social netting program, which is underpinned by manufactured liberties on the producer and consumer. Therefore, the initial transitory cost becomes moderate on all parties (the government and their people) and the land owners, which on the state of land owners should be fully compensated by the market by 2030 given conservative predictions of crop cost in the context of increased yield density, speed, volume and quality.

AG30 LEGAL PROPOSITION

See APPENDIX section for computation of subsidisation and taxation.

1. **Hydroponic Agriculture Subsidy**
    a. All land-owners of government recognised institutions of agriculture (or) land-owners that are to construct institutions of agriculture, that engage in hydroponic agriculture, are eligible to claim through relevant authorities a grant of 51% of the cost of a hydroponic facility per acre, not to exceed $194,718.00 or fall short of $143,922.00, per acre of eligible farmland.
    b. This fund (1a) must go towards the construction of a hydroponic facility, and cannot go towards, excluding pollinators:
        i. Maintenance (upkeep: defined as construction on an already functional facility), or other actions which will move towards the development of a pre-existing facility.
        ii. Farming (including the supply of chemicals, water, vehicles and other tools excluding direct equipment that only can be used in hydroponics), or other actions which move towards the cultivation of a plant species in a facility that is not constructive on the facility itself.
    c. Foreseen failure to construct a facility within a year is classified as malicious fraud. Further time spent on the construction of a facility is only considered non fraudulent, at the discretion of the government, if the total construction is incompleteable in the time frame, specifically due to either:
        i. The area of land to be converted being significantly large, such that the total of the subsidy afforded as a proportion of what has been spent by the land-owner in relation to a size defined economically.
        ii. The geographical conditions, including clearing of land, results in the same consequence of i.
    d. Funds obtained by 1a can only be claimed if the party engaging in the subsidisation would be spending more than 51% or more of their net worth (including a loan which is already put into force) on the transition of 10% or less of their untransitioned land or less. A land owner is not eligible if:
        i. They would be spending 51% or more of their actable net worth on strictly more than 10% of their owned land.
        ii. They would be spending strictly less than 51% of their actable net worth on 10% or less of their land.
2. **Aquaponic agriculture subsidy**
    a. All land-owners of government recognised institutions of agriculture (or) land-owners that are to construct institutions of agriculture, that engage in aquaponic agriculture, are eligible to claim through relevant authorities a grant of 51% of the cost of a hydroponic facility per acre, not to exceed $251,022.00 or fall short of $185538.00, per acre of eligible farmland.
    b. This fund (1a) must go towards the construction of a aquaponic facility, and cannot go towards, excluding pollinators:
        i. Maintenance (upkeep: defined as construction on an already functional facility), or other actions which will move towards the development of a pre-existing facility.
        ii. Farming (including the supply of fish food, water, vehicles and other tools excluding direct equipment that only can be used in aquaponics), or other actions which move towards the cultivation of a plant species in a facility that is not constructive on the facility itself.

iii. Cultivation of fish, maintenance of fish, care of fish, excluding purchase of fish that must reside for their lifetime in the facility. The fish must be suitable for the aquaponic environment, which itself must be ethical for the fish to reside, all aforementioned of which is of the discretion of governmental authorities.

c. Foreseen failure to construct a facility within a year is classified as malicious fraud. Further time spent on the construction of a facility is only considered non fraudulent, at the discretion of the government, if the total construction is incompleteable in the time frame, specifically due to either:
    i. The area of land to be converted being significantly large, such that the total of the subsidy afforded as a proportion of what has been spent by the land-owner in relation to a size defined economically.
    ii. The geographical conditions, including clearing of land, results in the same consequence of i.
d. Funds obtained by 2a can only be claimed if the party engaging in the subsidisation would be spending more than 51% or more of their net worth (including a loan which is already put into force) on the transition of 10% or less of their untransitioned land or less. A land owner is not eligible if:
    i. They would be spending 51% or more of their actable net worth on strictly more than 10% of their owned land.
    ii. They would be spending strictly less than 51% of their actable net worth on 10% or less of their land.

3. Aeroponic agriculture subsidy

a. All land-owners of government recognised institutions of agriculture (or) land-owners that are to construct institutions of agriculture, that engage in aeroponic agriculture, are eligible to claim through relevant authorities a grant of 51% of the cost of a aeroponic facility per acre, not to exceed $196,027.068 or fall short of $144889.572, per acre of eligible farmland.
b. This fund (1a) must go towards the construction of a hydroponic facility, and cannot go towards, excluding pollinators:
    i. Maintenance (upkeep: defined as construction on an already functional facility), or other actions which will move towards the development of a pre-existing facility.
    ii. Farming (including the supply of chemicals, water, vehicles and other tools excluding direct equipment that only can be used in aeroponics), or other actions which move towards the cultivation of a plant species in a facility that is not constructive on the facility itself.
c. Foreseen failure to construct a facility within a year is classified as malicious fraud. Further time spent on the construction of a facility is only considered non fraudulent, at the discretion of the government, if the total construction is incompleteable in the time frame, specifically due to either:
    i. The area of land to be converted being significantly large, such that the total of the subsidy afforded as a proportion of what has been spent by the land-owner in relation to a size defined economically.
    ii. The geographical conditions, including clearing of land, results in the same consequence of i.
d. Funds obtained by 3a can only be claimed if the party engaging in the subsidisation would be spending more than 51% or more of their net worth (including a loan which is already put into force) on the transition of 10% or less of their untransitioned land or less. A land owner is not eligible if:
    i. They would be spending 51% or more of their actable net worth on strictly more than 10% of their owned land.

ii. They would be spending strictly less than 51% of their actable net worth on 10% or less of their land.

4. Nonponic Food Tax

a. All products sold within The Commonwealth of Australia from recognised institutions of agriculture that do not employ a recognised form of ponic agriculture, evaluated at the discretion of a government authority, will be taxed 22.54% on purchase. This money will be held by The Government of the Commonwealth of Australia and be used only for the purposes of funding grants awarded by 1a, 2a, 3a of AG30. This taxation is on the gross value of the selling price and is ignorant of GST (or) other taxes. Products of agriculture are defined as:

i. Consumables, commodities, services, goods or other items that carry transactional bearing in the context of the economy of The Commonwealth of Australia, sold and/or bought within the jurisdictional boundaries of The Government of the Commonwealth of Australia.

APPENDIX

CALCULATIONS OF SUBSIDIES

Written, the cost per acre of aeroponic farming is 334232AUD per acre, the cost per acre of hydroponic farming is 332000AUD per acre, the cost of aquaponic farming is 428000AUD per acre. The minimal natural majority subsidisation is trivially 51%. Assuming for a standard deviation of costs of 5% of the written costs (as an average), the following may be deduced:

$$99.7\% = \int_{C-3s}^{C+3s} \frac{1}{\sqrt{2\pi s^2}} e^{-\frac{1}{2}\left(\frac{x-C}{s}\right)^2} dx$$

Where C is the cost per acre and s is the variation due to structural processes. The boundaries of non-outlied terms are thus the limits of the Gaussian integration, namely:

$$Hydroponics = 332000 \pm 49800AUD$$
$$Aeroponics = 334232 \pm 50134.8AUD$$
$$Aquaponics = 428000 \pm 64200AUD$$

CALCULATION OF TAX

To ethically preserve libertarian ideology in the context of the meaningful adoption of such a policy without contention from the majority of Australian citizenry, in all cases charitability is afforded to costs. 93mn hectares, roughly, of land is farmed currently for agriculture (of 2021). In accordance with suppositional material, the taxation accounts for the full liberty of farmers to transition to ponic agriculture, surmising a transition of 0.01% of the farmland. Supposing the shift of land, the charitable estimate upon a homogenous average of the three methods reveals a cost of 310032.40AUD per acre. This will require roughly $71.2bn. Sourced upon the taxation bracket surmised, the amount outstanding for the Government on behalf of the people is $36.3bn over 8 years, or, roughly $4.575bn yearly.

Given Australia's agriculture sector produces food for 70mn people, and the population of 2022 is roughly 25mn people, it is crudely estimated that $20.3bn of the agriculture industry is within Australian taxable jurisdiction, without considering foreign taxes. The percentage change of $20.3bn to $24.875bn (which accounts for the subsidisation) is a 22.54% (roughly increase). Therefore, a strong estimation for the tax account is roughly 22.54% on non ponic agriculture.