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QUALIFY FOR THE FUTURE WORLD
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Scholarship 2015

Agricultural and Horticultural Science

2.00 p.m. Wednesday 2 December 2015

Time allowed: Three hours

Total marks: 24

ANSWER BOOKLET

Check that the National Student Number (NSN) on your admission slip is the same as the number at the top of this page.

Answer ALL questions from Question Booklet 93105Q.

Write your answers in this booklet.

Start your planning and answers to Questions One, Two, and Three from pages 2, 8, and 14 respectively.

If you need more room for any answer, use the extra space provided at the back of this booklet.

Check that this booklet has pages 2–24 in the correct order and that none of these pages is blank.

YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

QUESTION ONE: EXPORTING IN A GLOBAL MARKET (8 marks)

The Building Export Markets report confirms the government's goal of increasing the contribution of exports to the economy from 30 per cent to 40 per cent of GDP by 2025.

The Minister of Finance says this is a challenging target, and that achieving it will require a concerted effort by New Zealand over many years. It will also require the continued development of new and expanding export markets.

Text source (adapted): <http://www.beehive.govt.nz/release/govt-releases-first-progress-report-export-markets>

Issues associated with achieving this goal include:

- access to international markets
- commodity versus value-added exports
- aspects of the "New Zealand story" – e.g. country of origin and traceability
- food safety.

Consider TWO of these issues and discuss how New Zealand's agricultural and horticultural exports might contribute to this goal, including both the challenges and opportunities. Refer to at least TWO specific primary production systems in your answer.

PLANNING

food safety

- boleum thing
- Kiwi Green, certification, organic market

→ export market

developing countries = more demand for safe food.

Also assures NZ dominance in int'l markets
be of high quality
brand image

Ensuring it continues, eg
boleum thing - Building in resilience.

access to int'l markets

- Dif between kiwi and dairy
- commodity vs value added reports
- cultivars, high quality upmarket, nutritious + organic
- processing – milk powders, fancy cheese, Eastern Country Cheeses, protein hydrolysates, peptones

↑
selective markets

commodity = expanding production, selling cheaply to end user.
Environmental challenge

VOLUME

Kiwi also

Both agricultural and horticultural ^{industries} exports will play a significant role in the goal of increasing the contribution of exports to the economy from 30% to 40% of GDP by 2025. New Zealand's export economy is ~~principally~~ dominated by agricultural and horticultural exports, with the biggest agricultural production system, dairy, ~~contribution~~ contributing \$13 billion and the biggest horticultural ~~industry~~, production system, kiwi fruit, contributing a further \$1.7 billion. Two significant issues that affect both ~~industries~~ production systems in regard to this goal are food safety and commodity versus value added exports. Both present challenges as well as opportunities. //

Food safety is an issue that is becoming increasingly relevant in export focused production systems because of the growing consumer awareness, and demand, for high quality, safe, certified food products. In particular, much of the growth potential in our primary production ~~area~~ systems comes from expansion into new markets in countries that are increasingly developing. These countries, ~~have been~~ such as India, ~~an~~ have a rapidly growing middle class — growing both in affluence and thus market potential, as well as demand for high quality products and the means to purchase them. This is significant for both the kiwifruit and dairy industries. //

New Zealand The kiwifruit export industry, run by Zespri, has ~~had~~ had a strong focus in the past on food safety following the potential loss of the Italian market following concerns over pesticide residues on NZ fruit. This led to a rapid industry-wide change and within 5 years, all Zespri growers were compliant with the new 'Kiwi Green' system, which has since been continuously developed and improved to now become the integrated 'Zespri system'. The system involves management of all

aspects of the production system and ensures the final export product is of extremely high quality, safety and is socially and environmentally responsible. The Zespri system involves the Integrated Pest Management, which controls the use of pesticides and favours monitoring and surveillance^(only spraying when there is a demonstrable need) rather than calendar control (spraying every 21 days, as was done previously). The types of pesticides that can be used are also controlled, limiting the use of pyrethros and synthetic pyrethroids and organophosphates to reduce environmental damage and residue levels on fruit. Similarly, improved management practices, such as maintaining an open canopy to allow air to circulate around the fruit, and 'curing' fruit by leaving it at ambient temperature for 48-72 hours after picking and before packing significantly eliminated the reduced the incidence of the Botrytis fungus, and the need for fungicide sprays. As a result, NZ to Zespri kiwifruit are now classed in the "G-12" - a list of produce that has minimal residue levels, while not being organically produced. //

Other measures include certification with internationally recognized food safety standards, such as BRC or ISO 2200. Again, this ensures consumer satisfaction and guarantee that they are buying safe and quality products, which increase the market reach of NZ kiwifruit and the potential new markets which it can expand to, as thus potential growth in export profits (as consumers are willing to pay more for safer products, and greater access to more markets overall leads to greater profit as well). Continuing to implement and improve management strategies such as these will therefore be crucial

~~Another approach~~ in the future//

Another significant opportunity exists in the organic market. There has been significant increases in the demand for organically produced food, particularly

in markets such as Japan and the European Union. These markets together account for approximately 50% of organic kiwifruit exports from NZ. Organic production is similarly relevant ~~is~~ in the dairy industry, with the number of farms ^{organic} producing growing from 7 in 2000 to over 200 by 2014, ~~from~~ to supply an increasing market demand. Producing organically increases market opportunities through supplying a growing niche market, and as well as an assurance of food safety, can be considered a value adding process as consumers are willing to pay higher premiums on organic produce as they consider its value to be greater. For instance, the ~~current~~ orchard gate return per tray is \$7.08 per tray of Green Zespri Green, but \$9.80 per tray of Green Organic (approximate 2014 values). The organic market represents a significant opportunity for growth, both in terms in export profits both in terms of increasing profit return rates, and export volumes as the market demand grows. However there are risks involved as in some cases market demand flags as consumers are unwilling to pay the higher prices compared to ~~traditionally~~ produced products, and the lengthy certification process (at least 3 years for BioGrow, NZ's organic certification organisation) ^{sometimes} combined with uncertain market demand and the significant changes in management practices can act as a disincentive to growers. Thus investment and support in this aspect of industry production by the overseeing company, such as Zespri and Fonterra, will be important in increasing farmer/grower supply of organic produce and thus the potential for increased exports in this aspect. //

~~Accept~~ Commodity versus value added exports is also a significant consideration when evaluating the potential for expansion into new markets. New Zealand has typically focused on value added exports rather than commodity products as size (~~commodities of scale and space associated with it~~) output volumes

and geographic location (transport costs) have not really made ~~the~~ ~~poor~~ favourable to supply large quantities of lower priced goods, instead encouraging ~~more differentiation and competing~~ the supply of high quality ~~product~~ value added produce targeted at the higher end of the market. This has been particularly significant for Zespri, which has consistently marketed itself as a high quality brand, relying on innovations in produce ~~and management systems~~ (eg. development of new, superior tasting varieties such as SunGold, which can charge a premium) and management systems (such as the KiwiGreen / Zespri system, and NZ's overall reputation as a "clean and green" country supplying high quality natural produce). In some cases this has limited markets to those more affluent that can afford and demand ~~higher~~ higher quality products, however this is expected to become an advantage in the future as more countries become developed and affluent, and Zespri is already dominant an established, ^brand well known for high-value produce //

In the dairy industry, value adding has typically been through manufacturing and processing rather than ~~direct~~ direct production value. While fresh milk is typically unsuitable and uneconomical for export, ~~and~~ because ~~it~~ it is so perishable, so ~~more~~ processing of milk into milk powders, cheese, ice-cream and similar products has been more favourable for the industry. Commodity production in this case would could be ~~never-second~~ regarded as bulk sale of cheaply produced milk powder to markets such as China, since little value is added to the product in this form ~~but large~~ but instead the industry relies on selling large volumes of it. However, this has negative consequences for the environment, as simply producing greater volumes of product encourages intensification of farming practices and leads

to greater stock densities and the associated issues of soil erosion, high rates of fertiliser use and leaching (waterway pollution) and so on. A better strategy would be to focus on increasing the value of goods exported by processing milk into higher value products such as specialty cheeses. While market size for these products might be lower, this would be more sustainable as return on profits would be greater, without increased risk to ~~cost~~ the environment and long term sustainability of the industry. The demand for high value processed dairy products is increasing as countries become more developed, and consumer trends for more healthy diets and "bio-nutrients" increase in some already developed countries - for example, Tatura is producing protein hydrolysates, which are used in protein whey powders and similar products. //

Overall, both the dairy and horticultural industry, as well as NZ horticultural and agricultural systems generally, have the potential to increase the contribution of exports to GDP significantly by utilising growing (existing) markets, and developing (new) markets as countries become more affluent. Both systems can increase profits by focusing on ~~exports~~ maintaining brand identity ~~as~~ as a supplier of high quality, "clean" and "pure" produce, ~~are~~ produced sustainably and safely and ~~other~~ catering to demands for more high value products. //

QUESTION TWO: SUSTAINABILITY AND REGIONAL COUNCILS (8 marks)

The Minister of Primary Industries has said that the introduction of the new national environmental standards for lakes and rivers will balance economic growth with environmental sustainability.

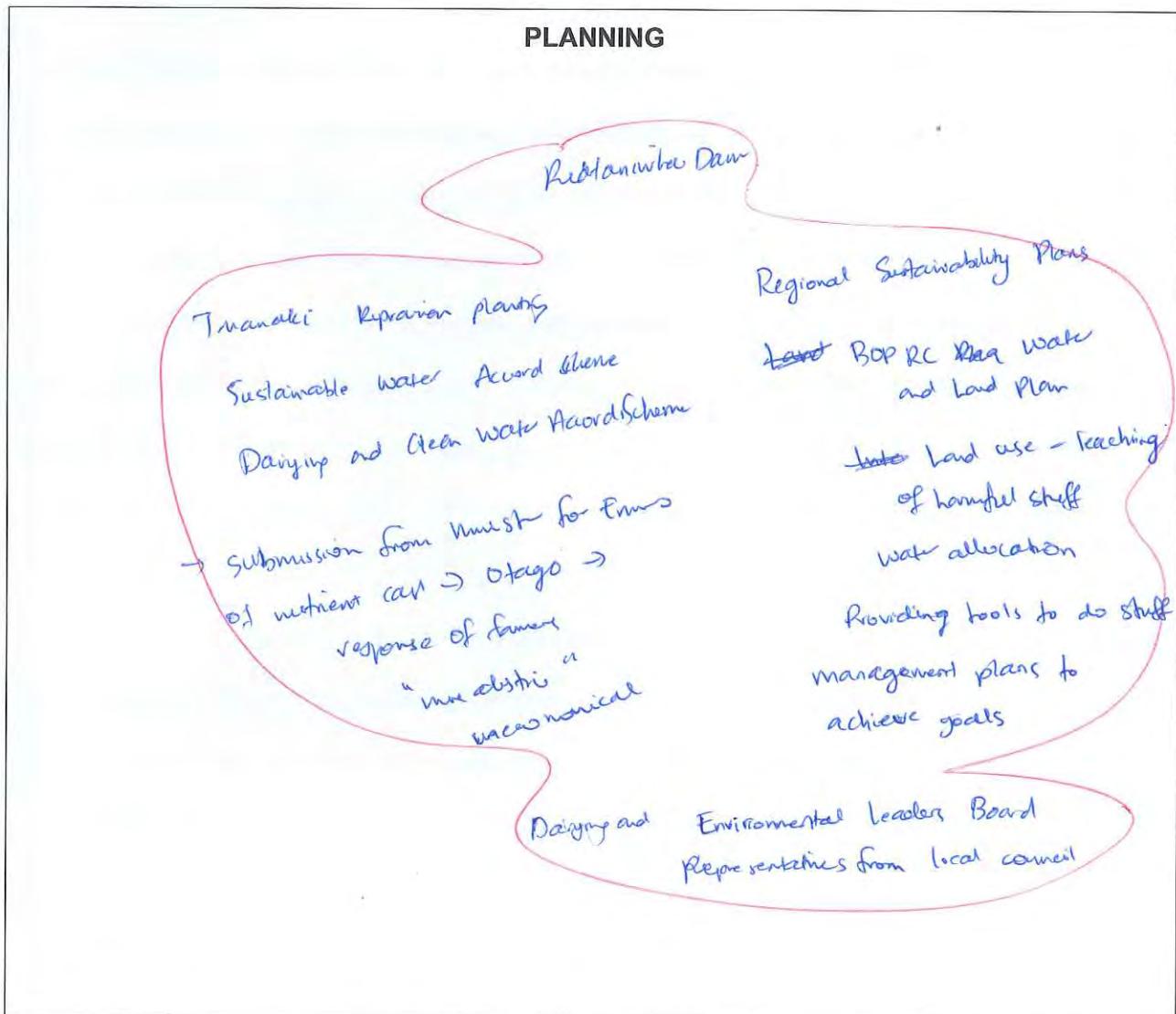
"It's not an either / or situation – we need both. Primary industries contribute a significant proportion of our merchandise exports and largely depend on fresh water, while tourism also relies on the beauty of New Zealand's water bodies. We all want sustainable and profitable primary industries. That will mean changes to some of our farming practices, but I know farmers are up for the challenge."

Source (adapted): http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11286994 (accessed 3 July, 2014)

With reference to this statement, discuss the role of regional councils in balancing the different aspects of sustainability (economic, social, and environmental) with the requirements of the stakeholders involved.

The stakeholders include:

- producers
- local communities
- central government.



The role of regional councils is crucial in ensuring a balance between broader aspects of sustainability and thus the long term success and profitability of our primary production industries, because of their key position in being able to manage and regulate the actions of the industry with the requirements of different stakeholders and long term sustainability goals //

As the Minister of Primary Industries states, economic growth must be balanced with environmental sustainability - "It's not an either/or situation, we need both". Sustainability refers to being able to carry out an activity presently to ~~satisfy~~ satisfy demand (for the product, for profit, etc), without compromising the potential for the ~~the~~ activity to be carried out in the future. Environmental while economic success has typically been the main (and only) 'bottom line' in primary production systems in the past, perspectives are rapidly changing as it is realized that the negative feedbacks from harmful system outputs (such as pollution and environmental degradation) jeopardise the long term sustainability of these industries and thus their potential for economic profit in the future. Environmental scientist Dr Mike Joy estimates that the environmental impact of harmful ~~design~~ ^{practices} agricultural practices^{is the dairy industry} (primarily from nitrogen pollution in water supplies and greenhouse gas emissions) a cost of \$15.8 bn ~~to the economy~~ - more than the dairy industry is worth to the economy. This means that further to this, ~~as~~ environmental degradation for the increasing intensification and economic productivity of ~~agriculture~~ agricultural industries comes at a cost to the tourism industry, which has significantly grown over recent decades to now almost exceed the value agricultural industry in terms of value and contribution to NZ's GDP. Pollution of waterways and high rates of greenhouse gas emissions undermines our image of a "clean and green" New Zealand, and while the response of the government has been to claim that "100% pure" is just a marketing campaign and not a "guarantee", the state ~~of~~ of our environment is nonetheless of great a source of great pride and value to New Zealanders and the industry and government //

is under increasing pressure to respond.

The biggest issues ~~concern~~ regarding environmental sustainability in New Zealand primary production industries are water use, waterway pollution and the emission of greenhouse gases. The dairy industry, which is the largest ~~of~~ primary production industry in NZ, contributes to these issues the most significantly, but other industries too will play a role in minimising environmental harm. Thus regional councils are critical in ~~coordinating~~ coordinating the management of disparate industries and groups ~~and~~ in a cohesive manner to ensure ~~effector~~ efficient and effective achievement of environmental sustainability goals without ~~compromising~~ compromising the economic or social aspects of sustainability //

The most important role of regional councils is developing and implementing management plans and action programmes as well as the necessary regulations and policies to implement these changes and achieve successful results.

Such plans need to balance the needs ~~to~~ of all stakeholders as well as all aspects of sustainability to be successful. For example, the Minister for the Environment recommended setting nitrogen ~~out~~ nutrient run off limits to improve attain ~~to~~ much-needed improvements in waterway quality. The Otago Regional Council proposed limits based on this, and received submissions from farmers and dairy industry representatives

describing the proposed regulations as "unrealistic" and "economically restrictive."

It is important for regional councils to be able to

balance the needs requirements of different groups ~~and~~ with differing

perspectives and interests (economic, social or environmental) to ensure

management plans are actually carried out, with the support and

engagement of all involved stakeholders. ~~by you~~//

In particular, an important aspect of this is adapting nationwide ~~targets set by central government~~ environmental targets to specific regional conditions and factors. For example,

New Zealand has set a goal of reducing greenhouse gas emissions ~~to~~ by 5% relative to 1990 levels by 2020, and by 50% by 2050. The agricultural and especially dairy industry contributes 50% of NZ's emission of greenhouse gases (primarily methane from stock digestive systems and nitrous oxide from urine and fertiliser application), so it is crucial these are included in policies set around reducing emissions. The distribution of these industries is concentrated in certain areas - for instance, 1/3 of all dairy farms are located in Waikato, and over 80% are in the North Island. Thus regional councils in these areas will have to ~~focuse no particular attention on~~ have a particular focus on the issue of greenhouse gas emissions, given that these regions are contributing to the issue more significantly. //

Conversely, regional councils also must be able to ~~but~~ identify local issues and the needs of local stakeholders such as community groups and also successfully integrate these into future management policies. For instance, water use is a significant issue in Canterbury, with water levels falling significantly in many major rivers such as the Rakaia, Waimakariri and Rangitikei due to water use for irrigation. This is neither environmentally nor socially sustainable: community groups such as ~~recreational watersport~~ those using the river for recreational water sports, fishing or tramping ~~leaves~~ are increasingly concerned on their own activities, on the impact this is having¹ and on the health and quality of the waterway itself - and the impact this is having on other ~~or~~ industries such as tourism.

Regional councils must be able to take these views into account and plan for water allocation and distribution between different users, including primary producers, in a way that ensures sustainability for all stakeholders and does not compromise their activities or values, or the health of the environment. The Bay of Plenty Regional Council, ~~etc~~ for example, is developing

the Integrated Water and Land Plan which outlines management and allocation of resources such as water to different groups (this is significant as the Bay of Plenty region is ~~important~~ one of the main areas of horticultural productivity in NZ) - for instance, no more than 15m^3 of water can be taken daily from groundwater sources, with specific exemptions and separate rules for industries. //

Another significant role of the regional councils is working in cooperation with national and local research institutions and ~~scientists~~ scientists to accurately quantify the extent of environmental issues and the most effective solutions, and then ensuring that other stakeholders ~~are~~ such as the producer themselves are aware of and understanding of the implications of the research. This can involve facilitating direct engagement, which is more likely to bring about ~~direct~~ engagement and rapport - for instance, the Motu River Catchment Trust was formed to protect the river from the impacts of stock ~~overgrazing~~ on waterway quality by preventing stock access to streams after farmers were directly involved in helping to gather data for research ~~studies~~ on the rate of stock urination in waterways compared to on paddocks (which was up to 40 times higher). //

Finally, the regional council will play a significant role in balancing the ~~multiple~~ different aspects of sustainability by providing the groups involved with the means to achieve set targets. For example, in 2013, the Dairying and Clean Streams Accord was replaced by the Sustainable Water Accord Scheme, which has new targets ~~of~~ including 100% fencing of 100% of waterways by 2017, all major stock waterway crossing points bridged or culverted by 2018, all stock excluded from ~~wetlands~~^{waterways} "significant wetlands" and all farms to have an effluent management ~~sys~~ scheme in place by 2020. These targets were developed with submissions from

Stakeholders such as central government, conservation organizations and industry

representatives, but will primarily need to be implemented by the actual farmers.

Regional councils can provide support through providing the tools, plans and means to achieve these targets. For example the "Taranaki system" is being advocated as an effective solution, with the regional council providing farmers with a riparian management plan and the native plants at cost price to allow them to complete riparian planting in the most efficient way possible, as it is councils that have access to research and overall management plans that can be used to determine the best management practices at each specific location, as well as the ~~best~~ resources to support the change occurring //

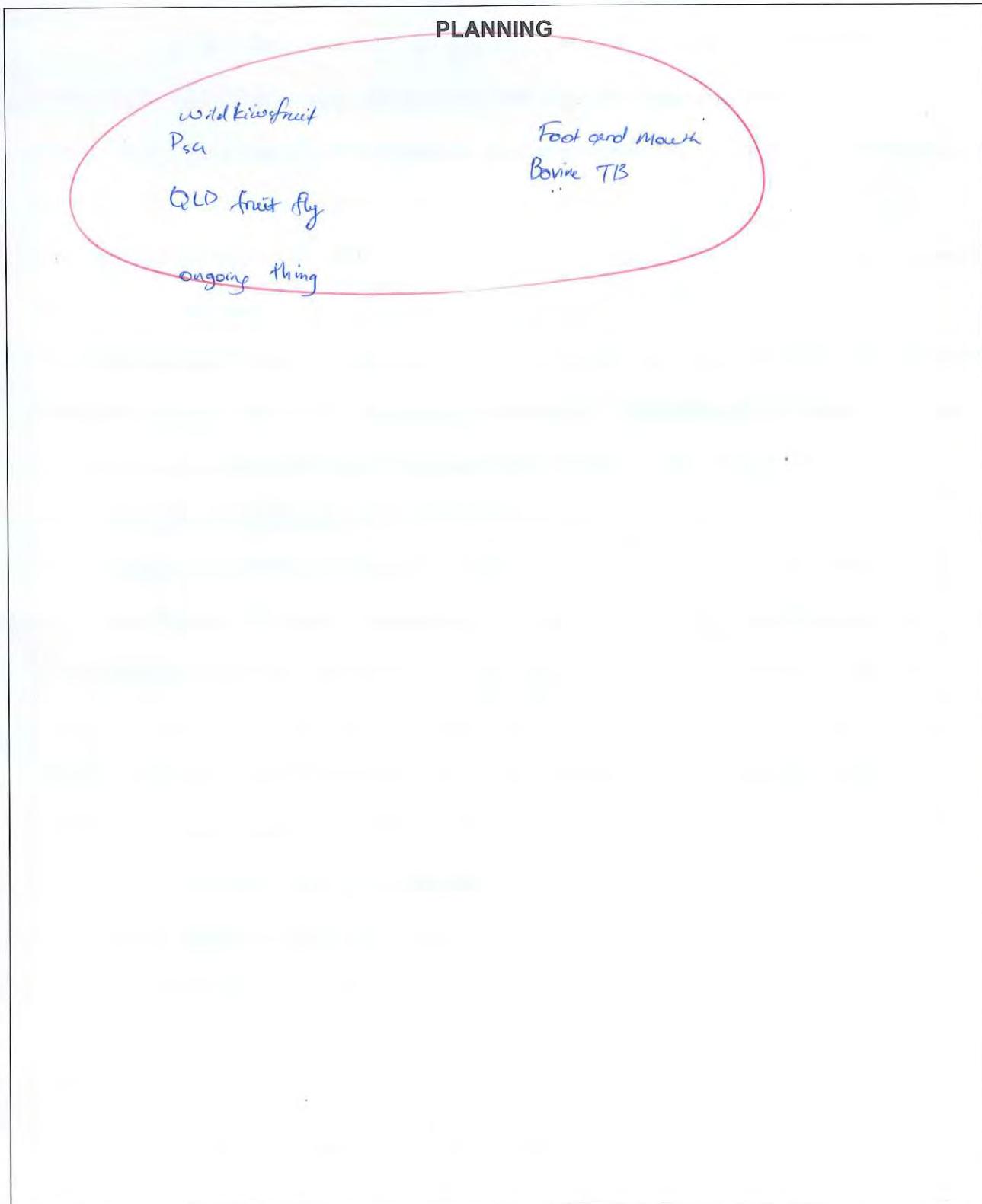
Overall, regional councils have a significant role to play in future management of primary production industries. Future ~~the~~ management and development must be sustainable from all aspects - environmental, social and economic, so that the needs of all stakeholders are satisfied (including the social needs of community / public groups, the environmental values and targets of conservation groups and central government, and the economic needs of producers and the government). Achieving sustainability will require changes to primary production practices, and for this to occur there must be a combination of leadership, ~~the~~ research, support and direction, ~~for~~ and regional councils are in the optimal position to provide this in a cohesive, integrated and locally ~~an~~ relevant ~~area~~ manner. //

QUESTION THREE: CONTEMPORARY ISSUES (8 marks)

Choose ONE of the following contemporary issues:

- changes in land use
- **biosecurity**
- animal welfare.

With reference to TWO nationally significant primary production systems, discuss the impacts that the selected issue has had on each primary production system, and the responses from the industry.



Biosecurity is a significant and ongoing issue and management of this is critical to the economic success and sustainability of our primary production systems. Biosecurity ensures that harmful organisms, plants and diseases are managed in a way that prevents them from causing damage to the economy, our natural environment, or public health, and also ensuring that our ~~businesses~~ export products comply with the biosecurity standards of our international markets. The significance of the issue of biosecurity is evident in the primary production systems of both agricultural (dairy) and horticultural (kiwifruit) systems in NZ. //

One of the biggest biosecurity issues that has affected the kiwifruit industry in terms of biosecurity is the outbreak of the disease Psa (*Pseudomonas syringae* pv. *actinidiae*). While not harmful to human health and not transmissible to other plants, Psa ~~can~~ poses a significant risk as it causes decreases in vine productivity and eventually vine death. The disease is spread through ~~contaminated~~ ~~soil~~. Spread of the disease is aided by heavy rainfall and strong winds, but limited by temperatures over 25°C. The outbreak occurred in 2010 and by November 2010, Kiwifruit Vine Health (KHV) designated 78% of kiwifruit producing hectares as being in risk zones. ~~Fast~~ The response of the industry was to control the outbreak ~~as~~ as effectively as possible and limit the spread of the disease and the economic impact. While urgent and temporary measures were taken, such as spraying orchards with the antibiotic streptomycin - while residues may pose a risk to human health and some export markets such as the EU have zero tolerance on residue limit, this action was necessary to control the risk and manage the outbreak. Pre-cautions were taken to minimise the effects on the production system as a whole, by spraying vines urgently before they had completed the flowering stage, so that fruit was not contaminated. Overall, approximately

\$900 million has been spent to date on control of Psa, and in the 2010/2011 season when the outbreak first occurred, profit fell from \$25.6 million to \$7.3 million, mostly due to the cost of control. The management of Psa is ongoing, and a cornerstone of recovery has been the development of a Psa resistant breed of Gold kiwifruit, the "Gold3" (SunGold 'Hort16A' were most susceptible to Psa; and the Green Hayward variety was also affected but less strongly). This var 'Gold3' was rapidly rushed through commercial ~~too~~ launch to allow supply to recover as rapidly as possible to satisfy market demand and maintain brand dominance of Zespri overseas. Export volumes are expected to return to pre-Psa levels in after the 2015 harvest season. Thus the response of the industry has been to implement all possible strategies at different stages of the production system (cultivar variety; antibiotic application on orchards, control of vector spread between orchards) to minimise impacts on the ~~too~~ long term economic bottomline of the system and its success and sustainability, despite short term cost. //

Similar actions were taken more recently when the Queensland Fruit Fly was discovered in Auckland. A 1.5km radius zone around the area of Grey Lynn was set up, restricting the movement of ~~the fresh produce to prevent~~ fresh horticultural produce to prevent the potential spread of the insect, and 7500 surveillance traps were set up. The situation was effectively controlled by MAF and the local council in coordination with horticultural ~~series~~ organizations. KHV estimated that the Queensland Fruit Fly could cost the kiwifruit industry between \$2 million (best case scenario involving only one individual in an area with no market implications) to \$430 million (a breeding population in Te Puke, where 80% of vines are located). Thus effective management of exotic pests is critical to the sustainability and economic success of the industry. //

Such biosecurity is an ongoing issue as these pests may return, or other harmful organisms currently present overseas may be introduced.

Strict border controls and biosecurity measures are in place to stop this occurring. For instance, MAF has identified possible threat organisms and likely entrance points that could affect the industry. An example would be the fungus *Ceratocystis fimbriata*, which is present in kiwifruit orchards in Brazil and causes vine losses of up to 20-40%. The fungus contaminates soil. Once soil is contaminated, the orchard cannot be replanted due to re-infection. This would devastate the industry if it was introduced to NZ and strict regulations on the biohazardous material that can be imported into the country as well as screening and surveillance systems ensure risk is minimised. //

Biosecurity also involves preventing damage to natural environments and this is relevant to the kiwifruit industry as wild kiwifruit vines are a significant issue. Birds feeding on fruit from reject bins, stock feed or remaining on vines can easily spread the seeds from orchards, and kiwifruit vines can smother native and commercial vegetation if uncontrolled, as well as increase the risk of spreading Psq between orchards. The Bay of Plenty Regional Council spends \$100,000 per year on wild kiwifruit control, and Zespri and KHV has recommended best practices for growers to minimise the effects of this issue. Again, control and management, as well as co-operation between key parts of the industry (both growers and regulatory bodies) is crucial in ensuring the successful management of this issue to prevent environmental damage and ensure long term economic sustainability by managing the industry in a way that does not harm the natural environment. //

Biosecurity is similarly significant in the dairy industry. An issue that affects dairy herds in NZ is Bovine Tuberculosis (Bovine TB). The disease causes

reduced milk production in infected cows, ~~as well as~~ and while it is transmissible to humans through infected milk products it ~~now~~ is not considered to pose a risk to human health, particularly in developed countries, because of procedures such as pasteurizing the milk and screening and testing. However, TB is still a significant issue because of the negative consumer perceptions and the impact on industry productivity, so the industry has responded with a significant effort to control TB. The spread of the disease. The Animal Health Board (AHB) spends \$15 million a year on control of TB primarily through control of possum populations, which are the primary vector for disease spread (in at-risk areas, 70% of Bovine TB cases can be traced back to possums - the disease makes them act erratically and venture out into the open in daylight, where they come into contact with stock). The goal of the industry is to eliminate TB from 2.5 million ha by 2016 2025 and eventually make NZ 'TB-free' - the majority of countries that compete with NZ on international trade markets have TB-free status, which harms NZ's reputation as the leading producer of high quality, safe "clean" dairy products. Again, the impact of biosecurity in terms of TB has been primarily economic, and the industry has striven to invert now to eliminate the issue to reduce ongoing long-term economic impact and ensure sustainability //

Another biosecurity issue relating to the dairy industry is Foot and Mouth Disease (FMD). NZ has never had an outbreak of FMD though the disease is present in some countries overseas. NZ has a status of ~~FMD~~ being free from FMD and not vaccinating against FMD by the World Animal Health Organisation, which ensures it can and the ~~base~~ biosecurity status of the health of national herds ensures that stringent border controls can be maintained without being perceived as unfairly restricting international trade. ~~FMD~~ similarly An outbreak of FMD would cause significant economic

The Reserve Bank of NZ estimated that an outbreak of FMD could cost NZ \$6 bn in economic losses if financial markets react to the impact to NZ's largest export industry.

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losses as trade of dairy (as well as cattle meat) products would likely cease for up to 6 months after the destruction of the last infected or vaccinated individual due to overseas biosecurity controls, and would likely necessitate the destruction of tens or hundreds of thousands of animals, depending on the scale of the outbreak, before NZ could be established as FMD free again. Thus the industry, in coordination with MAF Biosecurity, has systems in place to prevent such an outbreak from occurring, centred on surveillance, early identification and plans for rapid responses. 'Passive surveillance' by farmers, veterinary practitioners and employees is a key part of monitoring for FMD and other potential biosecurity risks, and the industry has taken steps to improve awareness and education around signs/symptoms and signs of biosecurity risks such as FMD and the response required.

Simple management practices that limit the spread of biosecurity risks are promoted, such as washing hands after handling stock and isolating new stock on the property //

Overall, biosecurity is a significant issue that affects both the beef and dairy industry in NZ, primarily in terms of reduced economic impact from either reduced productivity from the effect of the biosecurity risk factor at the production part of the system, or from the impact it has on market perceptions and demand for the product. This risk is ongoing as no border is impenetrable and the introduction of a new harmful organism or disease is always possible (and in the case of Bovine TB for instance, the disease is already present and has not yet been eliminated), as these risks are already present in some countries overseas. Biosecurity is expected to become an even greater issue in the future as climate change may make it more likely for exotic pests and diseases from warmer climates to be able to be established here. As a result, constant preparedness is necessary from the industry and ongoing investment into monitoring and control is needed to prevent more serious, and more long term, consequences for the success and sustainability of the industries. //