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Submission

8 February 2022

Australian Government, Department of Industry, Science and Resources
GPO Box 2013
Canberra, ACT, 2601

Submitted via email: NRF_Consultations@industry.gov.au

Dear Sir/ Madam,

Re: Australian Government, Department of Industry, Science and Resources - National Reconstruction Fund: Consultation paper (December 2022).

The Queensland Farmers' Federation (QFF) is the united voice of intensive and irrigated agriculture in Queensland. It is a federation that represents the interests of 20 peak state and national agriculture industry organisations and engages in a broad range of economic, social, environmental, and regional issues of strategic importance to the productivity, sustainability, and growth of the agricultural sector. QFF's mission is to secure a strong and sustainable future for Queensland farmers by representing the common interests of our member organisations:

- CANEGROWERS
- Cotton Australia
- Groom
- Nursery & Garden Industry Queensland (NGIQ)
- EastAUSmilk (formerly QDO)
- Australian Cane Farmers Association (ACFA)
- Turf Queensland
- Queensland United Egg Producers (QUEP)
- Queensland Chicken Meat Council (QCMC)
- Pork Queensland Inc
- Bundaberg Regional Irrigators Group (BRIG)
- Burdekin River Irrigation Area Irrigators Ltd (BRIA)
- Central Downs Irrigators Ltd (CDIL)
- Fairbairn Irrigation Network Ltd
- Mallawa Irrigation Ltd
- Pioneer Valley Water Cooperative Ltd (PV Water)
- Theodore Water Pty Ltd
- Eton Irrigation Scheme Ltd
- Lockyer Water Users Forum (LWUF)
- Queensland Oyster Growers Association (QOGA)

QFF welcomes the opportunity to provide comment on the Australian Government, Department of Industry, Science and Resources - National Reconstruction Fund: Consultation paper (December 2022). We provide this submission without prejudice to any additional submission from our members or individual farmers.

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Overview

The Australian Government is establishing the $15 billion National Reconstruction Fund (NRF) to diversify and transform Australia's industry and economy. By establishing the NRF the government is proposing to help to create secure, well-paid jobs; secure future prosperity; and drive sustainable economic growth. The NRF is a key initiative of the Government's Future Made in Australia agenda.[1]

As part of this initiative, the NRF has been designed to target projects and investments that help capture new, high end value market opportunities. The NRF has proposed that it will provide finance (including loans, guarantees and equity) to drive investments that add value and develop capability in seven priority areas of the Australian economy. The NRF will partner with industry to unlock private sector investment to create high quality, sustainable industries, and jobs.

The NRF will invest across 7 priority areas, a few of which will have a direct impact on agriculture including:

- Renewables and technologies.
- Transport.
- Value-add in the agriculture, forestry, food, fibre, and fisheries sectors.

QFF note the key areas that we wish to address in this submission are detailed below.

The NRF and Agriculture

From the establishment of the NRF it is important to note that out of the $15 billion, only $500 million has been directly allocated towards agriculture. Agriculture remains the most critical priority area that underpins our potential as a food secure nation, which impacts all levels of the supply chain, including renewables, transport, and the resource sector.

The ability for Australia to become a stronger nation, requires strategic funding positioned in agriculture, not just the Government but also the private sector. Diversification in funding allows for economic growth, and for emerging technologies to be integrated into farming, that are not always attainable due to cost. Enabling a more efficient, affordable framework, that allows value-add diversification through investment, where strategic priorities are set, will require support and direction to achieve outcomes that enable a return on the risk.

Australia is a net exporter of agricultural products, with numerous uncertainties not only fuelling issues with trade, but also our own domestic market. These uncertainties and disruptions to the agriculture sector in Australia are underpinned by key inputs such as fuel, fertiliser, labour, supply chain distribution, national production, consumption and export, and relative threats and opportunities of climate change. There are several key areas where agricultural imports such as pork threaten the viability of some sectors, potentially leaving us vulnerable to food security risks. Imports outcompete our local farms, which may have a short-term benefit to some consumers, but long-term negative impact on food security and sustainability of our agriculture sector.

It is predicted that Australia's population is expected to reach 35 million by 2050,[2] which will exacerbate the rate of change and demand on our primary production system and threaten Australia's position as a leading world class nation in the production of food, fibre, and foliage. Land use, social and environmental challenges, available arable land, and water, coupled with increased drought and flood

[1] Consultation hub | National Reconstruction Fund: consultation paper - Department of Industry, Science and Resources
[2] Australia to 2050: Future Challenges (treasury.gov.au)

events and climatic extremes because of climate change are likely to threaten Australia's position as a food secure nation.[3]

Immediate provisions for the protection of agricultural land, with increased controls and regulation over urban land planning and development; adequate legislation safeguarding productive land from mining and other developments; addressing and implementing a realistic strategy for skilled labour; and increasing agricultural research and development are paramount in ensuring Australia remains both a domestic and export supplier of world class food, fibre and foliage.

Renewables and technologies

Energy and Water

QFF's research, on-farm extension and policy work is helping to inform policies and actions that are changing the way that agriculture uses energy and improving land use management practices so that we can ensure reliability in sourcing energy, decarbonise our sector to meet targets, access more export opportunities and manage our input and operating costs.

Operating costs on farm are currently at risk of high energy costs (network expansion, accelerated renewable energy projects, etc) which will have a direct impact on irrigated food production. Currently many agricultural businesses are heavily reliant on diesel as an energy source, due to the continuing increase of energy prices. Energy is a major input cost on farm, due to a variety of factors, whether it is for climate control of intensive animal facilities for animal welfare, refrigeration of horticultural produce, cotton ginning or irrigation, energy forms a major cost component of the agricultural sector.

High electricity costs are eroding the viability and productivity of many agriculture businesses and eroding Australia's international competitiveness. An international comparison of Australia's key agricultural trading partners conducted in 2012 showed that Australia's average electricity prices had grown by 40 per cent since 2007. Cost increases for irrigated agriculture have been more than 100 % for most and as high as 300 % for others over the same period. Affordable tariffs are a main driver of sustainable business.

QFF advocates for a more sustainable system to remove the burden of high electricity costs on Queensland's food, fibre, and foliage producers. This includes supporting sound policy and proven technologies that advance improved energy productivity, farm-scale renewable energy systems as part of integrated regional energy supply and demand management solutions, improving the utilisation of existing distribution assets; and addressing issues arising from the lack of retail competition.

Gearing energy pricing mechanisms around agriculture productivity levers will enable our primary producers to increase production, which in turn results in higher returns to the economy, bolstering long term stability in regional economies and contribution to maintaining a viable agricultural sector. While agriculture accounts for approximately 3% of national energy consumption, it has a considerable impact on regional energy networks. Our farming community contributes significantly to rural development projects and jobs in regional areas, and thus are dependent on long term sustainable energy pricing to maintain economic viability. Installing sustainable pricing, linked to productivity, will contribute to a stronger economy, and see farmers and irrigators continue in business as opposed to reducing farming practices to save costs or seek alternative electricity supply options.

[3] Changes in Australian agriculture and land use: implications for future food security; Millar, J. Roots J. International Journal of Agricultural Sustainability, 10:1, 25-39. 2012.

As energy costs continue to rise, a clear and concise overview of the pricing structure is needed to provide an economical service for producers that enable them to remain on the grid for the long-term sustainability of both users and suppliers of electricity.

The converging energy challenges of ageing infrastructure, decarbonisation, and affordable distributive energy alternatives mean that regional networks face deepening vulnerabilities without integrative planning. Prosumer owned technologies offer not just cheaper electricity, but also reliability and resilience benefits that the grid may not be able to provide. Extreme weather events, decreasing productivity, and grid performance impacts on business and climate resilience meaning producers are increasingly exploring energy solutions with reduced or no grid utilisation. Pricing that's not fit for purpose remains the primary driver.

Avoiding the integration of consumer owned assets to the grid risks defection from or underutilisation of regional grids as the price of smart energy technologies decrease. Underutilisation similarly undermines the energy productivity and therefore economic development of regions and resilience of communities. To ensure robust regional grid electricity service in the near future, networks must be incentivised by regulators to reform their valuation mechanisms of a variety of new grid participants and enable the integration of consumer-owned energy service providers at the local and NEM levels.

Agricultural producers adopting smart energy technologies understand untapped value streams exist on farm and beyond the gate for consumers and networks. Developers of new energy technologies, including microgrids and on farm fertiliser production, perceive the greatest risk to be market risk by way of regulatory uncertainty. Regulatory innovation, smart metering penetration and standards, grid connection and network pricing reform, and an appetite for funding that encourages de-risking by data and deployment are a handful of the enabling actions necessary to progress productively in the energy transition while equitably distributing benefit. Flexible and resilient regional energy networks via integrated consumer energy assets create opportunities for consumers to reduce vulnerability locally, build resilience to losses and extreme events and price shocks, and democratise productivity for consumers.

Queensland's agricultural sector requires a combined and coherent policy approach to address these issues, otherwise Queensland will continue to experience a fast decline across both its electrical and water infrastructure, risking the future viability of the intensive and irrigated agricultural sector in the state. QFF believes that investment by the NRF in emerging energy technologies that support agriculture and its satellite industries to achieve reliable, low-cost energy networks are essential in building the resilience of the supply chain, sector and indeed regional communities while also decarbonising our economy.

Energy-Water Nexus in infrastructure

Planning for water infrastructure projects such as dams, pipelines and irrigation schemes should include suitable design for energy efficiency to ensure that the systems are designed for optimum energy productivity so that the ongoing operating costs of the infrastructure is minimised. Accordingly, water infrastructure proposals should have a life-time energy cost and emissions calculation demonstrating a high degree of efficiency or productivity compared to business-as-usual.

Excessive costs and a lack of long-term price certainty in critical inputs, such as water and electricity, are eroding investment and investment confidence in Queensland. QFF has continued to educate and work with governments on the inextricable connection between energy and water in agricultural systems. Over the past decade, Australia's irrigated agricultural sector has responded to pressures of water resource scarcity, climate variability, and productivity challenges by making large-scale structural

adjustments on farm. In a COVID-19 world, the irrigated agricultural sector has continued to respond to pressures, at their own cost, and with little support from the government to adjust.

Agricultural producers are progressively tackling the energy-water-climate nexus challenges through innovative thinking and collaborative engagement between different stakeholders. A clear and cohesive policy direction from Government that allows for innovative practices to align with policy needs to occur in a timelier manner that will allow for greater economic and environmental sustainability for on-farm practices. Identifying gaps in the water policy framework that incorporate climate change challenges is a priority for future farm planning and also ensuring that the development of future water policies do not cause adverse impacts for the future of the food, fibre, and foliage sector.

QFF has the opportunity to bridge these relationships between various stakeholders and government to develop a smoother pathway for innovative mechanisms to be implemented that allow for the economic and sustainable delivery of water and electricity.

Circular and resilient supply chains

Transport

There are many variables in farming, but the sector has been innovating for many years to build its capacity to manage risk. A reliable, cost-effective supply chain is critical to the future of agriculture. If we accept that Australia is truck dependent, it's easy to see how fuel increases are going to impact all that are reliant on transport. Every delivery of fertiliser, seed, stock, etc. will increase. On farm, if the costs of operating machinery increase then getting produce to retailers and consumer increases too.

Disruptions to the supply chain will have a direct impact on when produce is delivered to its end point, and its final cost. Harvested crops dependent on time sensitive supply chain deliveries can go unsold, which has devastating effects in all areas of the food supply chain. The increased costs for fuel, energy, water, labour can be crippling to small farmers supplying the domestic market. The increased prices in fuel for truck dependent farming operations has become a large proponent of the input costs on farm that delivers increased prices of food to the end of the supply chain, and in most cases primary producers not receiving the increased food prices to recover their initial supply chain costs.

The Australian Government has not recognised the impact to the agricultural sector and their reliance on supply chains, which is a priority area which will see businesses grow if given policy priorities and through focusing on circular and resilient supply chains. Integrating circulatory priorities back into the supply chain aids in a more sustainable, more affordable system over the long-term. This circular business model has the added benefit to incorporate a buy back system for investors, such as incentives for the utilising of waste and raw materials into bi-products.

The impact from a delayed and / or short supply of fertilisers, chemicals, or seed, can also cause major disruptions to the food supply chain and availability of food. A delay in any of the required farm inputs, including seed, can impact the supply in the food chain and thus lead to an increase demand and cost on a limited supply. This also can impact other areas of the agricultural industry, however less concern for some Australians as they are non-reliant on other industries, such as fibre, due to the reduced pricing components of imports and therefore more attainable for everyday Australians. Having the ability to increase local production of other fibre and forestry products in Australia will not only change the economic strength of the nation, but also provide a more sustainable product, if built on a circular based economy by reducing supply chain costs.

The same can also occur in extreme weather events where flooding can decimate a year's supply of produce, putting a strain on the domestic market, whilst also trying to supply limited stock to the overseas market which will see the economic value of produce increase rapidly due to limited availability. Logistics and freight are not the sole disruptors to the supply chain distribution but do compound the impacts on cost and availability in times of natural disasters, including biosecurity threats and high input costs. Workforce shortages contribute directly to transport and logistics capability. Currently, for instance, there is a severe shortage of truck drivers. This is having a direct impact on the ability for truck transport to operate at efficient levels and is seeing delays in moving produce and stock on and off farm. A sustainable pipeline of appropriate workers is important in ensuring a strong transport and logistics sector into the future.

Farm produce requiring processing and packaging is transported via road or rail and with any instability in the logistics network, can cause vulnerability and disruptions in the food supply chain. This is also relevant for extreme weather events such as flooding and bushfires that limit transport options, and or destroy large volumes of crops, which trigger a decline in food affordability and increase food insecurity for those already vulnerable and in crisis. QFF encourages the NRF to consider building transport and supply chain resilience when investing funds.

Urban encroachment is another major impact occurring into agricultural land, particularly in areas where there are large, intensive (e.g., feedlots) agricultural businesses that utilise lots of heavy vehicle transport. The increase in urban development, has led to an increase in motor vehicles on the roads, and residential zones where previously there were none. The zoning of these new developments in a highly heterogenous space where heavy vehicle transport is a regular component of the adjoining agricultural land. The relative retroactive relationships for this heterogenous space have not been thoroughly considered when it comes to existing land use. The implications to the agricultural transport system, due to the change in road infrastructure and residential traffic, leads to a reduction in productivity and an increased risk of accidents etc.

QFF recommends that there needs to be a necessary framework that integrates land use planning, that accommodates maintaining and making appropriate road upgrades, to continue to support agricultural businesses in areas of urban encroachment, that enable agricultural businesses to continue business as usual.

Workforce

The Australian agricultural sector has undergone significant challenges over the past decade**,** with pressures significantly increasing since the COVID-19 pandemic on the ability to secure a sufficient, competent and reliable workforce. The COVID-19 pandemic resulted in a crippling labour shortage that has impacted all facets of the agricultural workforce sector, especially those directly responsible for the supply of the domestic food market. The insufficient supply of seasonal workers continues to be a critical issue impacting food production, restricting expansion and increasing the strain on growers throughout the production period. These challenges have more recently also been exacerbated by shortages in housing and accommodation, particularly in regional communities.

The reduction in a dependable workforce for the agricultural sector is, and will continue to have, a direct impact on the crop productivity level for our growers, but also have a long-term impact on food security, as current investment on farm is reduced in the short term to ensure profitability and business viability. Long-term investments on farm, which would otherwise contribute to increased production for further seasons and expand farm practices, have been minimised due to externalities such as workforce shortages.

To drive future growth in regional communities and increase the available workforce, Australia needs to encourage and open workforce trade agreements with other countries. Policy must also include the current drivers supporting Australia's unemployed population and provide incentives to help provide a backbone for a skilled, reliable mobile workforce. Providing incentives for the creation of a mobile seasonal workforce would therefore provide labour throughout the varied production regions and seasons when harvesting of crops is required. Public policy change and investment is required to find solutions to alleviate short term accommodation and housing shortages and to ensure adequate, diverse housing stock into the future to support a sustainable workforce for agriculture.

QFF recommends supporting unemployed Australians to reintegrate back into the workforce and supporting the opportunity for older Australians to be incentivised to retire later or work part time during retirement. Unskilled workers could be trained to fill harvest positions, whilst workers with pre-existing skills could be retrained to take on semi-skilled and skilled roles. Programs to reintegrate long term unemployed have been used in some regional areas, with training providers organising transport and not only training them on work skills but also life skills.[4] Support to enable the agricultural sector to build a diverse workforce including the capacity to incorporate potential workers who are currently hindered by barriers to employment, gain work within the sector.

Securing a skilled workforce has always been a challenge for the agriculture sector, and over the years Queensland farmers have innovated and devised diverse ways to attract and retain staff to the regions to work in their farming enterprises. However, in the last one to two years, these workforce challenges have become a crisis.

We are all aware of the many factors that have contributed to the current situation ranging from the effects of closed borders during the COVID-19 pandemic, disruptions to holiday workers and immigration strategies, gaps in our current training pathways and more recently the housing shortage.

Support to regional communities and farmers is needed to address the current housing shortage to enabling the building of a diverse housing stock that meets the needs of the workforce required by agriculture, including full-time, part-time, casual and seasonal workers. This is also going to be a requirement to fulfill any short- or long-term migrant workforce that will underpin any future policy development.

Migrant workers are critical for the Australian agricultural industry. It is well known that migrant workers add significantly to the productivity of agriculture. The reduction in available workers for the agriculture industry, needs both a short-term approach and a long-term framework to cater for the increased demands of a rising population, technological advancements and integrating disruptions due to climate change.

There is a need for a short-term immigration strategy to address the immediate workforce shortage issues in regional communities as there is a real concern around productivity, harvesting and getting produce to market.

Longer term, there needs to be a broad range of strategic immigration strategies that enable engagement in a number of countries to access a diverse range of skills. The agriculture sector is rapidly transforming. It is evolving and growing, and the types of skills and jobs that we need filled are diverse. It is not just on-farm labour; there are a wide range of skills that is required in the agriculture sector. It is important for the long term that Australia has effective and strong relationships and arrangements in place with partnered countries to help migrant workers obtain skilled roles. Studies have been undertaken that show that when permanent migrant workers who are given opportunities in regional

[4] Ausveg, Jobs and skills summit, white paper submission, November 2022.

agricultural regions have a higher level of social engagement in the community than other immigrants.[5] This is an important factor and benefit of retaining workers in regional communities, which integrates the socio-economic aspect of providing a more permanent and productive workforce.

To improve the future productivity of the Australian agriculture sector, the contribution of immigrant farmers and both permanent and temporary immigrant labour in Australian agriculture needs to be recognised. This will help to fill a critical gap and help inform future policy development in the area.

As the agricultural workforce demand continues to both grow and change, moving towards a more skilled and capable workforce aware of emerging market and technology developments revolutionising agricultural industries is paramount for long-term economic growth.

NRF Opportunities to Support Technological Innovation and Transformation

- Regional development and the competitiveness of agriculture requires access to enabling infrastructure that supports innovation; energy productivity, smart energy, and climate resilience are foundational to the future of regional economies.
- Modernisation of energy and communications infrastructure to support equitable innovation, systems transformation, and resilience in regions.
- De-risk emerging solutions and new business models with early stage-growth funding mechanisms that prioritise enabling the adoption of smart energy, climate, agriculture/food, and internet of things related technologies.
- Maximise de-risking opportunity of implementation paired with detailed data collection and insights and decision-making for regulators and markets, ie. Insurance products developed to value risk mitigation via on farm microgrids and other smart technologies.
- Regulatory innovation must meet the speed of changing energy market demand, regulatory lag perpetuates market uncertainty.
- Strategies for income certainty needed during market transitions and climate impacts on changing farming practices, ie. Carbon market and changing climate impacts on the viability of the agricultural sector.

Farm inputs

Climate and Disaster

Climate variability adversely impacts all facets of the agricultural sector with most commodities heavily reliant on historical climate data to determine peak growing periods. As the climate continues to change, increased intense flood and drought events will heavily impact Australia's reliance as a food secure nation. Flood and drought preparedness is paramount in the agricultural sector and is a prime component of farm business planning.

The impacts from events such as drought and floods can cause major constraints from crop production, farm planning to the supply chain. The projected impacts from climate change will be quite diverse in nature throughout Australia with some regions expected to be at more risk due to geographical location and increased probability of rainfall events from increased warming.

Investment in R&D is imperative to help innovation in climate change adaptation measures. Farmers are already putting mitigation practices into place, at their own cost, (such as more efficient irrigation

[5] Collins, J., Krivokapic-Skoko, B., & Monani, D. (2016). *New immigrants improving productivity in Australian agriculture*. Rural Industries Research and Development Corporation.

systems and reducing tillage) which help reduces costs of water and reduces nitrification and therefore minimises the release of nitrous oxide, which contributes to GHG's. The IPCC also recommends the investment in Australian agriculture to help further reduce GHG's from agriculture such as nitrous oxide, through subsidies.[6]

Providing funding in climate and disaster as part of the NRF is a necessary component of strong economic investment in Australia's future, but also part of Australia's obligation as a nation to the United Nations Climate Change agreement.[7] With investment in climate change adaptation farmers will be better able to facilitate better preparedness for climate risks associated with climate variability and climate change.

Insurance and farm income stability mechanisms

An area of priority for farmers and government must include an assessment of the gaps currently existing in the agriculture insurance market that impacts the capacity for farmers to self-manage risk, income stability and the variability of weather seasonal and market conditions. An assessment must include: a review of State-based stamp duty on agricultural insurance, establishment of a reinsurance pool to support suppliers of parametric insurance in the market; assistance in the affordability of agriculture insurance premiums; long term support for the capitalisation of an agriculture sector discretionary mutual fund; and research and education programs to support farm income stability mechanisms.

Fuel, fertiliser, and chemicals

The sustainability of the agriculture sector is driven by many factors, with input costs such as fuel continuing to rise, putting increasing pressure on farm input costs and creating a cost-price squeeze.[8] Diesel prices over the past few years have hit record prices, in some cases the combined input costs of fuel, fertiliser and chemicals has increased to 150%, representing an average compounding inflation rate of 4.7% p.a. with a 28% increase since 2019.[9] Many of these inputs are sourced from overseas. Most consumers have not yet seen the impact of this as farmers have absorbed many of these price increases, however this is not sustainable.

We need the federal government to work closely with industry to help shore up the supply of fuel and other key inputs, so that farmers have a secure and stable environment to operate in, costs can be contained, and we can continue to do what our farming sector does best in producing high quality, food, fibre, and foliage. We also need government to ensure a transparent and level playing field and to discourage market power imbalances occurring due to dominance of large companies who have power through their market power. The ACCC has an important role to play to ensure a fair and equitable operating environment and market for the supply of key inputs.

Input prices, especially fertiliser, being almost totally reliant on imported farm inputs puts Australian agriculture at risk during disruptive global events. Disruptive global events that impact input prices are not limited to fuel and fertiliser but also herbicides, energy and farm machinery. If Australia relies on the overseas import market for inputs such as fertiliser and chemicals we will continue to see the unstable fluctuation of food production, and continual stress placed on our primary producers.

[6] ar4-wg3-chapter8-1.pdf (ipcc.ch)
[7] International climate action - DCCEEW
[8] (Millar & Roots) *in* Beyond 'get big or get out': Female farmers' responses to the cost-price squeeze of Australian agriculture; Newsome, L; Journal of Rural Studies, 79:57-64, 2020.
[9] https://mecardo.com.au/cost-of-farming-up-28-in-3-years/

QFF supports a renewal of domestic production capacity of farm inputs such as fertiliser, which under the transition to renewables could provide cost effective incentives for fertiliser production if a more stable and affordable energy supply network is achieved. This would also require a public ownership stake to reduce the potential of parity pricing to imported products.

Investment Mandate for the NRF

- Legislated emissions reductions and net zero targets.
- Sustainability and circularity principles.
- Prioritising Regional Development.
- Creating opportunities for regional communities.

Opportunities, challenges, and solutions

As farmers strive to increase their capacity to prepare for extreme weather events and manage as much of their own risk as they can, gaps in the insurance market in relation to flooding and other natural disasters is limiting. Insurance is often so expensive that it is prohibitive or in some instances just not available. This can impact a farmer's ability to manage their own risk and can also have a flow on effect in relation to the bankability of individual enterprises. A new, innovative approach to insurance options is required to assist growers more successfully manage their risk and ability to increase their preparedness for extreme weather events and natural disasters.

The ability to reduce and transfer risk is imperative when asking farmers to adopt new technologies or rely on supply chains and systems that might be new or innovative. We know that new and emerging technologies require investment from bodies like the NRF to embed them until they become business as usual. QFF encourages the NRF to look beyond immediate commercial viability and consider the long-term resilience opportunities associated with these more diverse supply chains.

Food security is a large risk to Australians as the government emergency infrastructure planning classifies food security as a secondary concern, with many taking food security for granted. Adverse weather conditions such as the increase in flooding and drought events and increases in oil prices all have a flow on effect to the supply chain. There is limited evidence that food security issues, beyond productivity enhancement, are being considered in discussions and policies for climate change and natural disasters. It is understood that a broader view of climate change, beyond disasters and food production, has yet to be fully integrated into food security policy and supply chain governance and practice in Australia.[10]

Maintaining a sustainable and profitable agriculture sector is essential to the Australian economy. The longevity and prosperity of farmers and the environment into the future. It is necessary for the federal government to provide clarity around emissions reductions targets and support to achieve them to ensure the state's agriculture sector remains competitive in the global market. Reductions in emissions is an opportunity that the agricultural sector continues to contribute to. This inevitably contributes to the profitability of their businesses as more on farm renewable energy sources are utilised, and reduced soil tillage, changes in farming practices and changes to animal feed are evident. It is critical that environmental outcomes are linked to productivity increases. To achieve environmental outcomes that ultimately result in reductions in production will essentially place food security and many food supply chains under pressure.

[10] MacMahon, A., Smith, K. & Lawrence, G. Connecting resilience, food security and climate change: lessons from flooding in Queensland, Australia. *J Environ Stud Sci* **5**, 378–391 (2015). https://doi.org/10.1007/s13412-015-0278-0.

Agricultural exports compete with the domestic produce of other climate ambitious nations who are implementing emission-intensity legislation and carbon border adjustment mechanisms to ensure a level playing field for imported goods, so their sectors are not unfairly disadvantaged, or their bold carbon reduction targets undermined. It is imperative that the federal government must provide a firm commitment and clarity on emissions reduction targets and commit support to achieve them, otherwise farmers and agribusinesses will be left to do the difficult work, and critically, certify that our products meet the emission intensity criteria of the import country. Efforts in this regard must be meaningful and support a more sustainable, productive and profitable overall food supply chain. Additionally, the Australian Government must contemplate the need for tariffs and bans on imports from countries with even poorer emissions score cards than our own, otherwise our domestic sector's efforts to decarbonise will be compromised.

Reconstruction after Natural Disasters

It is also important for projects and investment to include suitable mechanisms to assist farms (and other businesses) to recover from natural disasters in a way that avoids the impacts of similar events in the future.

Accordingly, opportunities to invest in recovery projects that build resilience on farms and in regional communities should be a priority for the NRF to ensure that:

- The rebuilt infrastructure is more likely to withstand the impacts of the severe weather events.
- The opportunity is taken to rebuild with state-of-the-art technology so that farms and communities can recommence as efficiently as possible.

For example: If a farm's cultivated areas and irrigation equipment are damaged by a flood, then the farmer could benefit from prompt advice and possibly support funding to implement the most efficient equipment and practices at this key time. This might include starting regenerative agriculture practices and installing a replacement irrigation system designed specifically for the task and for optimum energy and water productivity.

Similarly, producers may need assistance to transition their businesses over time to meet the challenges of climate change. For example, farms may need to adopt incremental changes to allow for increasing temperatures and natural disasters; and will also need to consider alternative crops and production methods as certain crops cease to be viable in some areas. There are several risks that a well-targeted support program could assist in managing.

Emissions reduction

The Queensland agribusiness and food sector contributes significantly to Queensland's economy. It has a key role in providing safe, sustainable food to an increasing world population. Queensland's primary industry commodities are forecast to be $23.54 billion in 2021–22, and account for more than 13% of Queensland's overseas exports. The industry employs more than 365,000 people across the agribusiness supply chain. Industry and government are committed to reducing greenhouse gas emissions and increase carbon capture in the landscape.[11]

Consumers want food that is sustainable and ethically produced. Carbon-neutral branded products currently attract a price premium. Consumer trends suggest in the future there will likely be an expectation that all food products will be low or carbon neutral. Investments in drought resilience and

[11] Department of Agriculture and Fisheries | Queensland Low Emissions Agriculture Roadmap 2022-32 consultation (engagementhub.com.au)

climate adaptation measures have expanded to increasingly focus on limiting the sector's greenhouse gas footprint and streamlining production efficiencies.[12]

The ag sector has seen a gradual step towards emissions reduction using new technologies. The take up in new technologies however, is not always available to all producers, and although farmers are making steps towards emissions reductions, not all options are economically feasible. Climate smart technologies are effective in farm planning whereby inputs such as fertiliser and pesticides are reduced because of smart farming techniques. Navigating weather and climate data not only helps lower greenhouse gas emissions but it can also save costs on unnecessary farm inputs.

Australian farmers know that unsustainable practices deplete soils, increase costs and contribute to greenhouse gas emissions (GHG). With a direct reliance on natural resources for agricultural production, and to protect the environment, artificial Intelligence (AI) and Internet of Things (IoT)-based smart farming techniques have been considered as an essential part of agriculture practice.[13]

Climate smart technologies effectively help manage emissions reduction and help protect the environment by minimising the use of water, fertiliser and pesticides through a sensor and Internet of things (IoT) based precision agriculture, which is used to help monitor the minerals, temperature and moisture level in the soil. This in turn improves and increases yields and minimises the use of both resources and land. As technology advances, agricultural processes will be better planned and managed, such as planting seeds, harvesting, fertilizing and irrigation. This simplification not only increases efficiency but also helps to reduce carbon footprints.

Key industry initiatives and funding for further research and development (R&D) will enable the agricultural sector to be at the forefront of emissions reduction, carbon smart farming, increased agricultural efficiencies, reduction in crop waste through value add in raw materials and better land management practices.

As Australia transitions towards lower emissions, opportunities are emerging for agriculture industries that can demonstrate more emissions-efficient production systems, or even carbon neutrality, which require economic support to ensure Queensland and Australia continue to be providers of world class food, fibre, and foliage.

Recommendations Summary

QFF does not support investments that would allow the fragmentation of rural land by the excision of individual small lots in agricultural production areas.

QFF supports the need to encourage and open workforce trade agreements with other countries. Policy must also include the current drivers supporting Australia's unemployed population and provide incentives to help provide a backbone for a skilled, reliable mobile workforce.

QFF is calling on the federal government to work with industry to find and progress ways to provide farmers with surety and security of supply of fuel and other volatile inputs.

[12] Department of Agriculture and Fisheries | Queensland Low Emissions Agriculture Roadmap 2022-32 consultation (engagementhub.com.au)
[13] Panchasara, H., Samrat, N. H., & Islam, N. (2021). Greenhouse gas emissions trends and mitigation measures in Australian agriculture sector—a review. *Agriculture*, *11*(2), 85.

QFF supports a renewal of domestic production capacity of farm inputs such as fertiliser, which under the transition to renewables could provide cost effective incentives for fertiliser production if a more stable and affordable energy supply network is achieved.

QFF supports policy that ensures a transparent, fair environment for farmers in relation to retail and wholesale contracts and terms of trade and effective actions through the ACCC to stop anti-competitive behaviour and inappropriate market power being held by large companies due to their market share and dominance. Where investment in local infrastructure might cause a power imbalance, it's important that frameworks are put in place that foster cooperation for the benefit of the local community and not that of large corporations.

QFF recommends that more funding needs to be prioritised for impacts of climate change on agriculture and the impacts to biosecurity from the inevitable increase of pests and diseases as the climate continues to warm. Where investments are undertaken in agricultural areas, impact on our food supply systems must be with the aim of building resilience, and not add to the cumulative risks already present for farming businesses.

Consider expanding the scope of the scheme to incorporate funding that aims to build resilience into farms and link them to the NRF projects that aims to build resilience and helps them recover from natural disasters.

QFF recommends that there needs to be a review to the recovery eligibility parameters, regarding natural disasters. After a flood event, that attribute to a large volume of crop losses, the most effective way to assist farmers with recovery, is by providing a provision to claim costs of replanting. This is currently not a provision in Queensland and needs to be recognised nationally as part of the NRF when integrating reconstruction and recovery for primary production after natural disasters.

QFF recommends that there needs to be a necessary framework that integrates land use planning, that accommodates maintaining and making appropriate road upgrades, to continue to support agricultural businesses in areas of urban encroachment, that enable agricultural businesses to continue business as usual.

QFF encourages the NRF to consider building transport and supply chain resilience when investing funds.

Ensure that the development of new infrastructure under the scheme is designed to be as efficient as possible, with suitable assessment of lifetime energy and water consumption and cost as well as greenhouse gas emissions. Projects should demonstrate high levels of efficiency compared to business as usual.

Summary

Input costs domestic food prices, affordable energy, soil health, water availability, affordability and reliability, biosecurity, unseasonal climatic events and increased frequency of natural disasters, change in crops, workforce shortages and global supply shortages on the supply chain, are all going to impact the production, availability and supply of food, fibre, and foliage.

The establishment of an effective, and innovative NRF that has meaningful and proactive consultation with industry will be able to help diversity and transform Australia's industry and economy. As outlined, the establishment of the NRF is to help secure Australia's future prosperity and help drive sustainable growth.

QFF has provided an overview in this submission of the exceptional value and growth that the NRF can help to transform the agricultural industry and support sustainable growth in all aspects of the sector. The Queensland agricultural sector is a priority area that through finance support by the NRF, will see agriculture-based projects leverage Australia's natural and competitive strengths.

As part of this process, QFF requests further consultation be undertaken to establish a framework that sees all of the Queensland agricultural sector benefit and helps contribute to the Australian economy.

If you have any queries about this submission, please do not hesitate to contact Ms Sharon McIntosh at sharon@qff.org.au.

Yours sincerely

Ms Jo Sheppard
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