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Business planning for drought preparedness and resilience in the variable climate of Northern Australia

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ABSTRACT:
Northern Australia typically experiences an annual wet season (November to April) and dry season (May to October). However, it is common for wet seasons to fail, or be reduced, and dry periods to extend into drought. To survive the highly variable conditions that are predicted to increase with climate change, northern cattle producers are encouraged to implement management strategies for drought preparedness and resilience. Due to extensive land areas and high costs, most properties have limited fencing and water infrastructure which constrains best practice grazing land management.

The GrazingFutures Livestock Business Resilience project (GFLBR) is designed to enable a collaboration of livestock extension agencies to support Queensland cattle producers to analyse their business through the development of Farm Business Resilience Plans. Through the project, producers are supported to develop goals for their business and develop a plan to achieve these goals. Key business risks and challenges are also identified and strategies for risk reduction incorporated into the plan. A developed business plan also enables producers to apply for Queensland Government drought preparedness grants and low interest loans for improving capital infrastructure on their properties.

Kevin and Shelly Taylor on Ooralat Station, near Mt Surprise, Queensland, provide an outstanding case study of the benefits of using drought preparedness grants for improving capital infrastructure. The Taylor's used the grants to fence 11 additional paddocks and improve water distribution. This work increased their ability to rest pastures over the wet season and thereby improve pasture composition and land condition. More water points for livestock have improved pasture utilisation across paddocks and property carrying capacity from 800 to 1,200 breeders. Irrigating pasture for hay production in one of the paddocks, has facilitated feed storage for managing future droughts.

The GrazingFutures Livestock Business Resilience project enables northern beef producers to be better prepared for climate variability, improve productivity and profitability, and landscape resilience.

Introduction

The highly variable climate of Northern Australia is difficult for northern cattle producers to manage, especially with the increasing variability predicted with climate change (CSIRO, 2024). This region typically experiences a

wet season from November to April and a dry season from May to October. Producers rely on a successful wet season for forage production and feed supply over the dry season, however it is common for wet seasons to fail, or be reduced, and dry periods to extend into drought.

Northern beef producers face a variety of challenges in maintaining a successful business. Properties are typically large, family run enterprises and adoption of best management practice is often limited due to the resistance of the older generation to change. It is very difficult to maintain a reliable workforce in these regional areas, resulting in managers that are time poor and incapable of further extending themselves for educational activities such as workshops.

The rising cost of production across agriculture has minimised profit margins and is forcing producers to become more efficient across their business (Rolfe et al., 2016). Despite this, many producers are resistant to adopting known best management practices to improve their grazing and herd efficiency, such as wet season spelling, matching stocking rate to carrying capacity, feeding phosphorous in deficient country, culling unproductive animals, pregnancy testing and keeping records.

Droughts are a common part of managing an agricultural enterprise in Australia. Governments have historically approached drought support for producers in a reactive manner, such as through providing freight subsidies for drought feeding or restocking, as has occurred previously in Queensland. It has been suggested that in-drought freight subsidies legitimise overstocking practices and limit potential beneficial practice change (McCartney, 2017). Reactive approaches are seen as less effective at minimising the impacts of drought and have led to a policy change by governments towards incentivising proactive climate risk management. The GrazingFutures Livestock Business Resilience project was created to enable producers to become better prepared for, and resilient to, drought through developing a business plan to guide implementation of drought management strategies.

Methods

GrazingFutures began in 2015 in western Queensland to 'increase and better align inter-agency extension support through the grazing land management (GLM), animal production and people–business pillars of the livestock operation. The four objectives of GrazingFutures include: (1) *partnering* (government and non-government); (2) *staff training*; (3) *service delivery to* graziers; and (4) assembling project and industry *legacy* (*information*) *products* (Fig. 1) (Rolfe et al., 2021b)'.

Figure 1. The GrazingFutures operating environment, project cycle and objectives. (Rolfe et al., 2021b)

The initial success of the project led to progression to the GrazingFutures Livestock Business Resilience project (GFLBR) which expanded to include the entire state and increased the number of delivery partners. It was

developed to enable a collaboration of livestock extension agencies to support Queensland extensive livestock producers to analyse their whole of business through the completion of a Farm Business Resilience Plan. The extension providers include the Queensland Department of Primary Industries, Natural Resource Management groups, Rural Financial Counselling Services and various private consultants (Rolfe et al., 2021a). GFLBR is jointly funded by the Australian Government's Future Drought Fund and the Queensland Government's Drought and Climate Adaptation Program.

Producers undertake a self-assessment checklist Through the planning process that clearly identifies priority areas of focus enabling the development of goals and actions in relation to production, people and family, business, natural resources and climate (Queensland Government, 2022). These goals are developed to consider risk across these four areas and outline actions to build drought preparedness and business resilience. In addition, a Farm Business Resilience Plan (or equivalent farm business plan) also enables producers to apply for Queensland Government funded drought preparedness grant and concessional loans for improving capital infrastructure on their properties (QRIDA, 2024). Common activities are paddock subdivision, water infrastructure installation, dam construction, bore drilling, irrigation equipment and fodder storage sheds (QRIDA, 2024). Once the application to the Queensland Rural and Industry Development Authority (QRIDA) has been approved, applicants have 6 months in which to complete the project outlined in their business plan.

GFLBR also provides extension services to fast-track practice improvements through using a range of methodologies including educational workshops, industry forums, neighbour days, newsletters, case studies, property demonstrations, eExtension and one-on-one support. It also includes the capacity building of staff and producers through training, and the creation of legacy documents (Rolfe et al., 2021). GFLBR funds also contribute to Advancing Beef Leaders (ABL) a capacity building program that develops producer and community leaders to enact change in the industry (Rolfe et al., 2021). In addition to this, staff funded through GFLBR provide support during disaster response situations, such as flooding and fires.

Results

The GFLBR program has enabled many producers to implement planned strategies for drought preparedness and resilience. Ooralat Station, owned by Kevin and Shelly Taylor near Mt Surprise, Queensland, provides an outstanding case study of the transformational change benefits of using drought preparedness grants for improving capital infrastructure (Pickering & Buchanan, 2024).

When the Taylors purchased Ooralat in 2017 there were only four paddocks, one set of cattle handling yards and limited watering points across the 14,500-hectare property. When Ooralat was drought-declared shortly after purchase in 2018 the Taylors found themselves underprepared and set about implementing several drought preparedness strategies. With the support of a Rural Financial Counsellor these strategies were formalised in a Farm Business Resilience Plan, enabling them to apply for a drought preparedness grant (Pickering & Buchanan 2024).

The first action was to subdivide paddocks and increase water infrastructure for improved pasture utilisation and carrying capacity. Ooralat was further fenced into nine breeding paddocks, one bull paddock, three holding paddocks, two weaner paddocks and a few horse paddocks. Water troughs were installed in all paddocks across the property. Another two sets of yards were also built to reduce the stress from walking stock long distances during mustering. In conjunction with best practice management strategies, such as matching stocking rate to carrying capacity and appropriate supplementation programs, the Taylors were able to improve their pasture utilisation and increase their carrying capacity from 800 to 1,200 breeding cows (Pickering & Buchanan, 2024).

The second action was to build a dam and install irrigation infrastructure for hay production, to reduce the cost of drought feeding. A 32 ha hay paddock was developed with irrigation for half of the paddock and dryland for the

remaining half. This has enabled the Taylors to have low-cost and weed free hay for dry times, as well as allowing the flexibility to retain stock and sell at an optimum market price (Pickering & Buchanan, 2024).

In conjunction with good grazing land management (GLM) and breeder management, implementing the drought preparedness strategies outlined in their Farm Business Resilience Plan have improved weaning rates from 50% to 80%. This is significantly higher than the average weaning rate of 56% for the region (Rolfe et al, (2016) Weed infestations have also been reduced and the proportion of the property with greater than '70% ground cover' has increased from 32% to 89% in 7 years (Pickering & Buchanan, 2024).

The most recent progress report for the program stated 8,433 producers have participated in GFLBR activities since project commencement in 2021 (Smith & Long, 2024). This is more than double the project target of 4,000. Further success has been achieved in providing individual support services to 3,075 producers which is also double the 1,500-project target (Smith & Long, 2024). A producer survey record 63% of grazing businesses rating GFLBR activities they engaged in at 7 or more out of 10 for enabling them to be more prepared for drought; of these producers surveyed, 79% made at least one business change from being involved in the program (GR Consulting, 2024).

Discussion

The goal of GFLBR is to enable a collaboration of livestock extension agencies to support extensive livestock producers to adopt management strategies that will increase their drought preparedness and resilience, including tailored support to develop holistic farm business plans. The move to increasing privatisation of extension in the 1990s has unsuccessful and reduced the available extension resources for beef producers. (Rolfe et al., 2021a; Bommel et al., 2023). The collaborative industry partnerships developed through this project have now enhanced capabilities across the region to facilitate practice change (Rolfe et al., 2021a). This has been shown through the doubling of extension services in western Queensland from 2015 to 2021 and an estimated gross benefit of $28M from a $6M investment (Rolfe et al., 2021a). Therefore, through its collaborative partnerships the GFLBR model has been effective in improving capacity for facilitating change towards drought preparedness and resilience across Queensland.

GFLBR utilises a holistic 'whole of business' approach that enables producers to identify their specific needs and tailor their actions to these needs. To achieve practice change, support needs to be individually tailored and take a whole of business approach incorporating production, land management, financial and personal dynamics (Larard, 2022; Broad 2016).

Despite success, having the capacity and strategies for effectively facilitating the adoption of best management practice continues to be a challenge across grazing industry extension professionals. Due to the regional locations and time constraints of most producers in the north, workshops are often cancelled or not well attended in northern Queensland. While the program has improved this, staff capacity limits the ability to provide one-to-one follow-up. Specialised and individually-focused support from extension staff located regionally and integrated into the community is deemed most effective in achieving practice change (McCartney, 2017). An increase in extension services and other independent service providers was seen as an opportunity for improving drought management in Queensland grazing enterprises. Producers interviewed for the report noted that, although there was plenty of training and information available there is a shortage of extension staff available to provide this individually-focused supported (McCartney, 2017). Staff need to understand the complex nature of the family livestock business they are working with, and success within the program is typically seen where support staff are familiar with the intricacies of these business (Rolfe et al., 2021b). Therefore, although GFLBR has improved the capacity of extension services since 2015 there is still an opportunity to extend the capabilities of these services through increased staff and capacity building in the regional areas.

Producers typically only engage in the business planning process because it is required to apply for a drought preparedness grant. Nevertheless, producers generally find completing the business plan useful in other ways, such as beginning the conversation about succession, and identifying areas for improvement they hadn't considered. Producers who did not apply for a drought preparedness grant still rated themselves an 8 out of 10 for being better prepared for drought following a business planning workshop (GR Consulting 2024). Nevertheless, it is a genuine concern that if the funding for the drought preparedness grant ceases it will become more difficult for extension staff to engage producers on business planning, potentially limiting improvements in drought preparedness and resilience across the industry. The project needs to improve uptake of the planning by creating an attractive value proposition so that people want to do the planning to improve their business, not just to receive the grant.

Currently the drought preparedness grant can only be used for new permanent capital infrastructure, however there is the opportunity for further management strategies to be incentivised to support greater drought preparedness and resilience (QRIDA, 2024). GR Consulting's (2024) report recommended including strong elements of grazing land management (GLM) practices that improve land condition due to these practices being necessary to build pastures resilient to drought. There has consistently been a low level of GLM changes reported across annual producer surveys from the past 6 years (GR Consulting, 2024). If GLM practices such as wet season spelling, establishing improved pastures and improving land condition were incentivised, a significant change to the drought preparedness capabilities and profitability of these businesses could be made. This incentive also has the potential to be used in conjunction with government policy to improve land condition.

The GFLBR project has vastly enhanced the capabilities of extension staff to facilitate drought preparedness and resilience across Queensland. There is an opportunity for further capacity building through investment in greater numbers of staff that are based in, and integrated into, the regional communities that beef producers are a part of. Continued funding for drought preparedness grants and concessional loans from the Queensland Rural and Industry Development Authority (QRIDA) would support ongoing engagement of producers in the program, noting other motivations for participation could be promoted. There is also an opportunity to expand these incentives to include grazing land management practices for further development towards a drought prepared and resilient Queensland.

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