6 December 2023

**FEEDBACK ON THE REVIEW OF PART 3 OF THE FUTURE DROUGHT FUND ACT FOR THE AUSTRALIAN GOVERNMENT PRODUCTIVITY COMMISSION – A SUBMISSION FROM CRADLE COAST AUTHORITY**

The Future Drought Fund (FDF) represents an excellent opportunity to equip Australian landscapes, communities and farmers with a level of resilience to drought and climatic variability. The scale of the FDF ($5 billion or $100 million per annum over 50 years) would appear to have the capacity to achieve transformational change by targeting priority actions and utilising existing and trusted service providers and regional delivery partners already operating in this space. Improved practices, planning processes, better climate information and well-prepared communities will undoubtedly contribute towards drought resilience; this submission merely suggests that greater focus of the FDF might be considered for direct on-ground actions to achieve transformational change in the landscape. This submission suggests that a portion of the FDF could be invested in protecting and restoring riparian zone areas of Australia’s river systems through a large-scale on-ground works project, and briefly outlines why this would benefit drought resilience and water management.

A large scale on-ground works program to restore riparian zones and protect waterways across Australia would involve stock exclusion fencing of rivers, creeks and streams, revegetation and/or allowing natural regeneration to occur and the installation of water points for livestock. Significant in-kind contributions from participating landholders would be required as is the case with such smaller scale projects historically delivered by State and Territory governments, regional NRM bodies, Landcare Australia, Local Land Services, Catchment Management Authorities and Dairy Australia. In recent years, Cradle Coast Authority have delivered projects of this ilk including the ‘farm conservation grants’ program (2015-18), the ‘clean rivers programs’ (in partnership with DairyTas, 2014-18) and more recently the ‘giant freshwater crayfish recovery project’ (2019-23). Capacity building initiatives have been delivered as part of these projects, increasing landholder knowledge and skills on how to implement such projects and why they are important for water management, biodiversity conservation, increased farm production and drought resilience.

From a Natural Resource Management (NRM) perspective, restoration of riparian zones could improve resilience to drought, water quality (turbidity, eutrophication, faecal coliform contamination), biodiversity, native vegetation, soil carbon and natural capital is the condition of waterways across Australia. Rivers, creeks, streams and wetlands are the arteries and veins of Country, and their neglect, degradation and mismanagement are well documented.

A result of agricultural intensification is a reduced extent and increased fragmentation of endemic vegetation communities, giving rise to reduced biodiversity, landscape function and essential ecosystem services (Landis, 2017). In a fragmented or completely denuded riparian zone of a river system, this results in a reduced capacity to filter undesirable components from runoff water, manage soil erosion, mediate water temperatures and evaporation as well as provide a suitable habitat for beneficial fauna.

Across Australia many parts of the landscape are highly degraded, with the State of the Environment report (2021) reporting that in 2013 in New South Wales (NSW) the capacity for habitat to support native ecosystems was 33% of the original capacity, with the NSW government going on to state in 2018 that only 15% of remnant native vegetation was in ‘near-natural’ condition.

Using northwest Tasmania as a more detailed example, Norton *et al* (2007) reported that nine catchments were ‘of concern’ with measured turbidity exceeding trigger values, eight catchments were ‘of concern’ with measured nitrate values exceeding trigger values, nine catchments were ‘of concern’ for percentage sub-catchment (river and stream sections) with <20% riparian vegetation, that five catchments had between 0.2-10% native vegetation present remaining, and that all catchments in the region were ‘of concern’ for threatened vegetation in riparian areas with <20% vegetation cover. All catchments referred to as ‘of concern’ have been heavily modified over the past 200 years to support intensive agriculture. Ecosystem services provided by intact native vegetation provide a range of benefits across the triple bottom line, with Williams (2013) stating that ‘ecosystem services provided by the native vegetation in the Cradle Coast (northwest) region of Tasmania underpin ~45% of the State’s annual land-based food production as measured in dollar terms.

Temporal, environmental and spatial changes in the effects of windbreaks on pasture microclimate are well summarised by Baker *et al* (2021), giving a sense of the physical effects provided by shelter on a pasture-based production system and the production benefits realised by farmers from riparian restoration. Additionally, case studies undertaken recently by Private Forests Tasmania (PFT) to establish the effects of tree planting in riparian zones and paddock shelterbelts found that:

* Stream water phosphate and *Escherichia coli* contamination decreased, major turbidity decreased in wet winters after storms and periods of heavy grazing when evaluated by CSIRO (Tree Alliance, 2020a)
* Lucerne hay yields increased by up to 300% due to reduced wind speeds from shelterbelt wind protection resulting in a benefit from shelter of $147 per hectare (Tree Alliance, 2020b)
* Gross returns modelled over 25 years of net cumulative returns from a 1-hectare Radiata Pine shelterbelt protecting a pasture paddock indicated benefits to meat and wool production of $42,000, carbon sequestration of $3,090 and amenity/land value of $1,000 (Tree Alliance, 2020c)
* When the effect of a 16-year old shelterbelt on pasture production was measured, it was found that pasture production increased by 15% across the whole (24-hectare) paddock while the sheltered side reported a 30% higher pasture yield, and that windspeed was reduced by 50-80% between 30-100 metres from the trees (wind speed reduced by 20-30% between 100-300 metres from the trees) (Tree Alliance, 2020d)

Benefits to natural resources, the environment, agricultural production and resilience in addition to providing a level of buffering from the effects of drought and climate variability could be realised from direct action on the ground to improve the condition of riparian zones across Australia through a large-scale on-ground riparian restoration project. Environmental, economic and social benefits could also be realised from restoring riparian zones across Australia. While there would be some level of private benefit to landholders in the form of increased seasonal pasture production and amenity, public benefits in terms of improved waterway health and water quality in addition to landscape amenity would be realised in time. Restoring riparian zones would additionally increase natural capital and soil carbon stocks, restore native habitat for native animals and insects and provide strong links for indigenous engagement and land management to implement such on-ground projects. This would align with Recommendation 3.1 (from the Review of Part 3 of the Future Drought Fund Inquiry report) ‘Opportunities for achieving greater public benefits’ by ‘making support for transformational actions a higher priority’ and ‘investing more in activities that build natural capital, drawing on support from relevant organisations’. Some of the changes following from on-ground activities such as these are relatively easy to innumerate; such as the area of riparian area restored, kilometres of waterway protected, area of native vegetation protected/reinstalled. Other landscape changes are likely to be realised in the medium term, such as improved water quality, reduced erosion, increased landscape function and ecosystem services and increased storages of carbon.

The FDF has some fantastic initiatives underway presently, this submission merely suggests that a heightened focus on direct on-ground action could be an option to consider to fast-track transformational change in the landscape. Additionally, there are organisations already embedded in every region throughout Australia who could be involved in the delivery of such a project, such as Cradle Coast Authority in northwest Tasmania.

Thank you for your consideration.

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Yours sincerely,

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