



Mulloon Institute
For environment, farming and society

3585 Kings Highway,
Bungendore NSW 2621
PO Box 126
E info@themullooninstitute.org
themullooninstitute.org

3 July 2023

To Whom it may concern,

RE: Productivity Commission Review of Part 3 of the Future Drought Act Interim Report Submission

The Mulloon Institute (TMI) congratulates the Commissioners and their team on a thorough and comprehensive review of Part 3 of the Future Drought Act. TMI is particularly encouraged by the acknowledgement in the review of the need for:

- a clear strategy for the Funding Plan
- a greater focus on supporting natural resource management
- greater and more effective information sharing
- better defined goals for the drought resilience adoption and innovation hubs, and
- greater indigenous engagement.

It is very encouraging to see the acknowledgement that the FDF should more explicitly recognise the need for resilience to climate change not just to drought.

At the Mulloon Institute we see the repair of the function of our landscapes as critical to the continued success of Australia's agricultural sector and in the future as the sector responds and adapts to the impacts of climate change and drought. This response to the interim report is informed by our experience and we believe that has relevance to considering the future strategic direction of the FDF.

Natural Resource Management as an adaptation to climate change

We have observed firsthand at Mulloon Creek how nearly 200 years of European landuse including agriculture, forestry and mining has caused widespread land degradation. Like pulling the plug out of a bathtub, the deep and chronic erosion of creeks and gullies has lowered the water-table, dried up wetlands and dramatically reduced the water holding capacity of the soils.

The Mulloon Rehydration Initiative (MRI) the catchment scale landscape function repair project we are delivering in the Mulloon catchment in partnership with 23 landholders, across 23,000 ha and 50km of creeks has shown we can reverse these threats using landscape rehydration as natural infrastructure in waterways.

This project and the data it is generating is proof of concept that a natural resource management approach to climate change and drought resilience using natural infrastructure is crucial as one of the tools for our agricultural sector to manage the challenges ahead. The latest IPCC report tells us:

"Green/ natural and blue infrastructure supports carbon uptake and storage and either singly or when combined with grey infrastructure can reduce energy use and risk from extreme events such as heatwaves, flooding, heavy precipitation and droughts, while generating co-benefits for health, well-being and livelihoods" IPCC Climate Change 2023 Synthesis Report page 29

Restoring landscape function at scale for successful adaptation

We appreciate that land restoration can provide an approach that can be scaled to build resilience to climate change and drought.

“Many agriculture, forestry, and other land use (AFOLU) options provide adaptation and mitigation benefits that could be upscaled in the near-term across most regions.” IPCC Climate Change 2023 Synthesis Report page 29

We are also aware that the window for a land restoration approach to the development of resilience to climate change is closing as the temperature rise increases.

“At higher levels of warming (than 1.5 degrees), the effectiveness of most land- and water-based adaptation options starts declining, and the extent of residual risks increases, as do the chances of future unintended consequences.” IPCC 2022 Frequently asked questions.

A model for catchment scale resilience

The MRI provides a model to scale landscape repair for climate change and drought resilience. Landscape repair at the catchment scale can also deliver economic benefits as healthy functioning landscapes are more productive landscapes. It can deliver social benefits as communities that can take action to prepare for the extreme climatic events associated with climate change are empowered, prepared and can recover rapidly.

This project is a reminder that Innovation in agriculture is not always about Agri tech. Innovation can look like natural infrastructure that drives increased plant available water and increased riparian vegetation across agricultural landscapes that when managed within the limits of natural systems are more resilient, productive and biodiverse.

To consider the building blocks of transformational change required to deliver resilience to climate change we could do well to consider:

- where landscape function repair and rehydration can be of most benefit (see the Catchment Rehydration Assessment Tool (CReST) that TMI are developing as part of the NSW DPI Climate Smart Adaptation Program that provides a priority map for catchments across NSW).
- communities of practice that are underpinned by peer to peer (farmer to farmer) learning can support transformational change.
- education and capacity building that empowers landholders, farmers, agronomists, regulators and natural resource managers to repair and restore landscape function at scale, delivered via communities of practice can support transformational change to build resilience for drought and climate change.

Information Requests

Please see below for brief comments and suggestions on the information requests detailed in the interim report.

Information request 1

Emissions reductions has been the focus of action and funding since the 1970s. Agricultural land use change is the other side of the ledger in adapting to and mitigating climate change, it is something we can do now and rapidly achieve an impact. Suitable activities to fund would focus on a strategic approach to rebuilding ecosystem function and repairing landscapes across the country. Suggestions include:

- map and prioritise catchments for landscape repair across the country (scaling up the CReST Tool from an NSW to a National priority map).
- identify how landscape rehydration, grazing management and regenerative land management can combine to build resilience to climate change.
- prepare detailed costed implementation plans for priority catchments across Australia.
- undertake education and capacity building to support landholders to implement changed management in support of natural resource management of repaired catchments.

- train a workforce in landscape repair to create a restoration economy.
- identify and deliver the regulatory reform required to facilitate delivery of landscape scale rehydration and repair of catchments across the country.

Information request 2

See previous response under Information request 1.

We know that investment in landscape scale rehydration and repair can drive environmental and economic benefits.

A national priority map for landscape rehydration and repair with detailed implementation plans for priority catchments identifying the raft of co-benefits including social benefits from natural infrastructure is needed.

This would link landscape repair to the delivery of natural capital and increased access to those markets for landholders.

This would drive greater environmental and economic resilience through investment in natural resource management.

Information request 3

Social resilience can be supported by empowering landholders and communities to act in the face of the impacts of climate change.

Empowering communities with the knowledge and skills to restore the function of their landscapes, restore biodiversity and at the same time increase agricultural productivity will build social resilience and enable communities and landscapes to recover faster from climatic extremes.

Innovative assessment frameworks like the recent cornerstone indicators developed by Dark Matter Laboratories and Dr Katherine Trebeck maybe worth consideration in identifying how social resilience can be measured.

Information request 5

The suggestions by the commission for the next funding plan are valuable. Comprehensive stakeholder engagement should inform the suggestions.

Information request 7

The Mulloon Rehydration Initiative is an example of a long-term ecological monitoring site that is monitoring environmental resilience outcomes at the landscape scale and capturing data that can be analysed.

Information request 8

Aboriginal and Torres Strait Islander people hold knowledge of landscapes and how they have been managed going back 1000s of years.

Support is required for projects to capture Aboriginal and Torres Strait Islander people's input. The consultation processes take longer, and the form might be different e.g., mapping projects that involve input from entire communities. Short time frames and limited budgets for consultation are significant constraints.

Information request 10

The Mulloon Rehydration Initiative (MRI) is a model that can inform and support landscape scale environmental initiatives. The FBR program could adopt a "bringing the community along" approach with wide engagement across communities.

It could increase focus on education and capacity building of communities to:

- repair and restore healthy landscapes and
- manage them for productive outcomes in the long term.

This will support delivery of effective natural resource management at scale. The FBR and FDF need alignment and clarification of roles and responsibilities.

Information request 12

The FDF should be supporting agricultural innovation. We will not achieve resilience to drought and climate change with maintenance of the status quo. Further targeted stakeholder engagement with current innovators in the sector could inform the feedback the Commission is seeking.

Yours sincerely,

Carolyn Hall
CEO Managing Director GAICD
The Mulloon Institute