



AGRICULTURE, NATURAL RESOURCES CLIMATE CHANGE

ANRCC is focused on a whole-of-landscape approach to land management. This theme recognises the role of biomass yield and quality, biodiversity and habitat as necessary indicators of enviro-economic sustainability and improvement for government and commercial land managers alike. In recognising the importance of enterprise in driving ground-up development and adoption of sustainability paradigms, the theme's focus areas will develop spatially-based measurement, monitoring, management and market-enabling tools for commercial and government land managers to better meet the needs of climate change.

Background

The theme is being structured to improve the capacity of Australia's rural land base to maximize output of commercial and non-commercial environmental services.

The objective of the research and development undertaken in this theme is to improve our ability to respond to climate change and to understand how rural landscapes are adapting to climate change due to both natural and human-induced changes.



Climate Change & Whole-of-Landscape Management



Common to all of the Focus Areas is the need to know the quantity and type of vegetation on the landscape. The Universal Work Package (far right) will undertake activities that enable the production of a high quality biomass inventory. The goal of the Universal Work Package is to be able to efficiently and economically map the amount of carbon present over all land types, soil carbon for agricultural areas, and carbon by species composition and structure for forested areas.

Environmental Management & Monitoring is targeted at Australian public land agencies. The work will:

1. Establish a web-based software system that will facilitate environmental monitoring and reporting at spatial, temporal, and taxonomic scales appropriate for public agencies concerned with landscape management. This software system will establish data standards and maintain and update core data sets that are fundamental to environmental monitoring and reporting. Flexible developmental

capability will be an inherent part of this to enable the addition of organisation-specific reporting and monitoring modules.

2. Enable multi-temporal whole-of-landscape reporting functionality for rapid assessment of trends in environmental health with an emphasis on benchmarking land characteristics critical for environmental services such as biodiversity and water.

3. Create a monitoring system that uses fused multi-temporal spatial and socio-economic data to monitor natural and human landscape changes.

Biomass Business is targeted at large industrial agricultural business. The work will:

1. Provide multi-temporal maps of soil moisture content for crop and pasture areas to improve water use efficiency.
2. Link temporal assessment of pasture condition to stock movement to improve livestock management.

Farm Enterprise Toolkit is targeted at directly at small-to-medium farm enterprises. The work will use the system developed in Focus Area A to create farm-specific functionality. Farmers will have access to historical and up-to-date data (including those produced by the Focus Area B work packages), economic analysis, and modeling results to improve their ability to manage farms. Provision will also be made to encourage farmers to input up-to-date farm management information.

The Universal Work Package / High Quality Biomass Inventory is a necessary input for all focus areas. Landscape management is increasingly driven by a need to have better information about biomass with a particular focus on woody biomass. This work will provide the capability to have an inventory of woody biomass with a high spatial resolution in three dimensions. It will also produce better tree species discrimination to provide for improved monitoring of biodiversity and natural responses to climate change.

Further information

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