

Exploring agricultural production and viability in northern Australia

Part of the Northern Australian Water Resource Assessment

Northern Australia makes a substantial contribution to the Australian economy, particularly through agriculture, mining and tourism.

A number of opportunities have stimulated renewed interest in agricultural development in this vast region that stretches from the Pilbara to Rockhampton and comprises 40 per cent of Australia's land mass.

Interest in these opportunities stems from northern Australia's proximity to Asian markets, increasing global demand for food and natural fibre, Australia's good reputation in food safety and hygiene and the development of economically sustainable regional communities.

Millions of hectares of soil are potentially suitable for irrigated agriculture across northern Australia but constraints on water availability limit their use.

A number of other factors also need to be considered in assessing the commercial viability of new agricultural developments including: possible locations for agriculture; agronomic potential of crops, forages and integrated crop-forage-beef systems; environmental and social impacts; capital costs of development and associated operating costs; and supply chains.

As part of the Northern Australia Water Resource Assessment, our researchers will work with research partners and communities to complete an exploration of agricultural viability in three priority regions by June 2018.

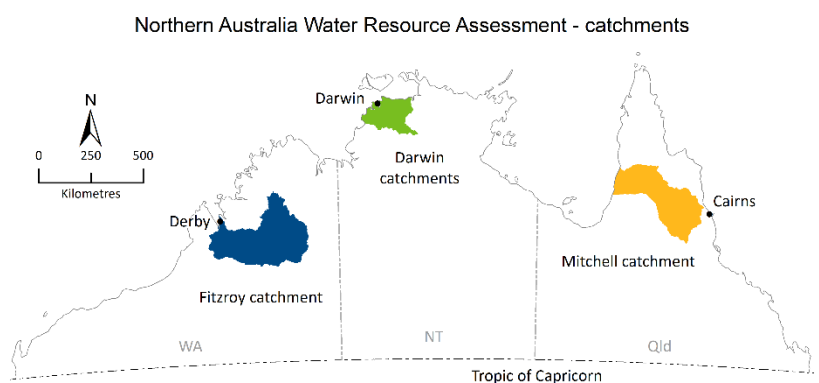
About the Assessment

The Northern Australia Water Resource Assessment will provide a comprehensive and integrated evaluation of the feasibility, economic viability and sustainability of water and agricultural development in the Mitchell catchment in Queensland, Darwin catchments (Adelaide, Finnis, Mary and Wildman) in the Northern Territory, and the Fitzroy catchment in Western Australia.

For each of the three regions, the Assessment seeks to:

- evaluate the soil and water resources
- identify and evaluate water capture and storage options
- identify and test the commercial viability of irrigated agricultural and aquaculture opportunities
- assess potential environmental, social and economic impacts and risks of water resource and irrigation development.

The Assessment does not seek to replace any planning processes, and will not recommend changes to existing plans or planning processes. The results, however, can be used to inform planning decisions by citizens, councils, investors and state



and federal governments. Please contact the relevant government department to discuss matters such as water allocation, clearing, change of land use, including diversification permits, and land development approval processes.

Agricultural Viability: physical and financial

The purpose of this activity is to provide an assessment of the range of cropping and crop-forage-livestock systems that may have the potential to generate returns sufficient to attract investment. The types of crops vary from broadacre (maize, sorghum, mung beans) to industrial crops (cotton, sugar) to high value horticultural crops (mangoes, Asian vegetables).

Our aim is not to provide recommendations on specific crops, cropping systems or crop-forage-livestock systems as these ultimately need to be decided by individual farmers or investors in the context of their specific location and circumstances. We will instead generate pre-feasibility assessments of options that will be useful to investors in understanding the scale and nature of risks and opportunities.

Our researchers will use economic analyses to drive the crop and forage-livestock systems assessments. This will involve initially assessing the likely costs of development - land development and preparation, capital costs of irrigation storages and equipment. Following this, the gross margins needed to provide an acceptable return on investment will be determined after allowing for risks such as failed crops associated with extreme weather events or pests and diseases. That will then drive an analysis of the type of cropping systems and/or crop-livestock systems capable of delivering required returns given the constraints of soils, environment, climate, and supply and reliability of irrigation resources.

The aim is to provide insights on the challenges and opportunities associated with developing integrated cropping or crop-livestock systems rather than just individual crops.

This approach will still require significant individual crop and fodder assessment using modelling, industry best practice and expert knowledge. Incorporating this within a broader financial and farming systems analysis is more relevant to development than a simple crop by crop approach.

We will work closely with the stakeholders in each of the three regions to undertake opportunistic field work to help validate crop modelling studies. Along with current industry initiatives in the priority regions, stakeholders will be closely involved in providing expert knowledge on crop and livestock assessments.



The Northern Australia Water Resource Assessment project is part of the Australian Government's Agricultural Competitiveness White Paper, the government's plan for stronger farmers and a stronger economy.

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