

The Flinders and Gilbert Agricultural Resource Assessment

Part of the North Queensland Irrigated Agriculture Strategy

The Australian Government is funding a CSIRO investigation of opportunities for water and agricultural development in the Flinders and Gilbert catchments in north Queensland.

Thousands of hectares of soil are potentially suitable for irrigated agriculture across northern Australia but access to sufficient water is a constraint to development.

In recognition of the challenges and opportunities facing northern communities and primary producers, the North Queensland Irrigated Agriculture Strategy (NQIAS) commenced in January 2012.

The \$10 million NQIAS is a collaborative initiative, funded by the Australian Government Office of Northern Australia and the Queensland Government. It provides a unique opportunity to leverage the resources and efforts of federal, state and local government, to access world-class scientific expertise, and to build on the enthusiasm and resourcefulness of local communities.

CSIRO is conducting one component of the NQIAS, the Flinders and Gilbert Agricultural Resource Assessment.

About the Assessment

The Flinders and Gilbert Agricultural Resource Assessment will provide a comprehensive and integrated evaluation of the feasibility, economic viability and sustainability of water resource development.

The focus will be on the catchments of the Flinders and Gilbert rivers in north-west Queensland, but techniques and approaches will be developed that could be applied elsewhere in northern Australia.

This Assessment aims to answer the following questions:

- What soil and water resources are available for irrigated agriculture?
- What agricultural products could irrigation support?
- Is irrigated agriculture economically viable?
- What are the trade-offs between irrigation and the integrity of the natural environment and local communities?

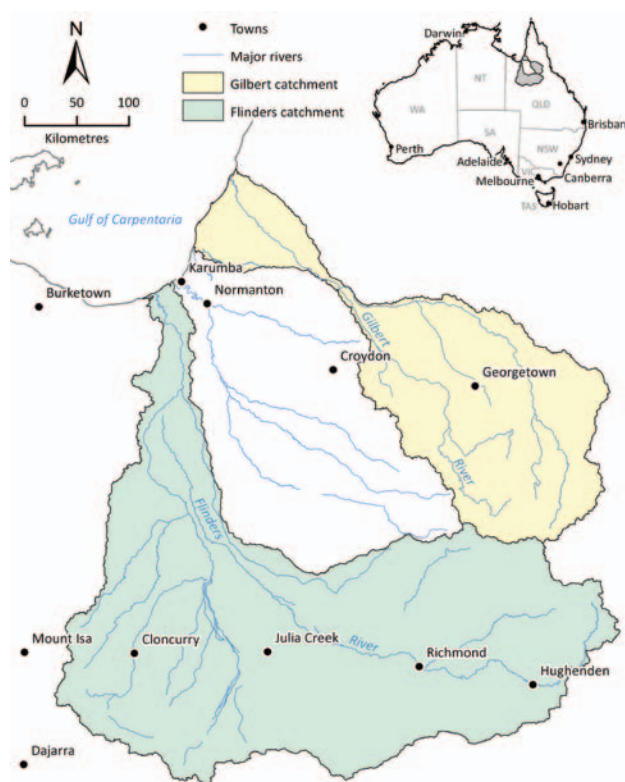
The Assessment is led by CSIRO and key parts will be undertaken by the Queensland Government and TropWATER (James Cook University).

This two-year, \$6.8 million project will be completed by December 2013.

Assessment goals

The Assessment will identify resources that could be deployed in support of irrigation enterprises, and the scale of the opportunity that might exist.

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



The Assessment will focus on the catchments of the Flinders and Gilbert rivers in north-west Queensland.

The Assessment will not invest in infrastructure that may be required to support irrigation enterprises. Instead, it seeks to lower barriers to investment in the Flinders and Gilbert catchments by addressing many of the questions that potential investors would have about production systems and methods, yield expectations and benchmarks, and potential profitability and reliability.

Assessment area and activities

The Flinders and Gilbert catchments were identified as appropriate because of interest from local stakeholders and the opportunity to build on past work in the region. Because it is not possible to assess all areas at the same level of detail, field work and modelling will focus on strategic locations.

This is a complex project, drawing on the capabilities of scientists across Australia. Key activities include:

- ◆ On-ground research, development and demonstration to establish the value, costs and risks of production, and to benchmark new production methods.
- ◆ Regional-scale geochemical and geophysical surveys to map salinity risks and the connectivity between surface and groundwater.
- ◆ Mapping land and soil suitability and production risks (floods and salinity) across agricultural, horticultural and pastoral systems.
- ◆ Topographic mapping and automated terrain analysis to identify and evaluate water storage and development options.
- ◆ Hydrodynamic and river modelling to assess the extent, magnitude and duration of floods; land suitability; and the connectivity between surface water and groundwater.
- ◆ Assess potential environmental impacts under a range of climate and development scenarios and identify Indigenous water values.
- ◆ Socio-economic cost-benefit analysis, including demands placed on key resources under a range of development scenarios.
- ◆ Information and data distribution through web-based information products, reports and regular community-based information sessions.

Why is it necessary?

Further development of northern Australia's agricultural industries will be assisted by identifying land and water resources that can be harnessed for irrigated agricultural production.

Past studies in the region have been undertaken by different organisations, using different methods and at different levels of detail. This has made it difficult to compare and apply results.

CSIRO will apply a consistent set of methods to assess all the main storage options, and will add more detail to previous work by the Queensland Government into the potential for water storage to support irrigated agricultural development.

The type and scale of agricultural enterprise and the methods, risks, costs and benefits of production have not previously been considered at the scale required. The social, cultural and environmental impacts associated with the establishment of new agricultural enterprises and associated infrastructure have also never been comprehensively assessed.

How will the results be used?

The results from the Assessment will be used to:

- ◆ **address local development needs and aspirations**, such as those identified by Gulf Savannah Development and the Mount Isa to Townsville Economic Development Zone planning group, to grow irrigated agriculture and intensify beef production in north Queensland
- ◆ **meet the information needs of governments** as they assess sustainable and equitable management of public resources with due consideration of environmental and cultural issues

- ◆ **meet the due diligence requirements of private investors**, by addressing questions of profitability and income reliability of agricultural and other developments.

Can locals have a say?

A diverse range of community groups have an interest in the outcomes and recommendations of the Flinders and Gilbert Agricultural Resource Assessment, including:

- ◆ north-west Queensland and Gulf communities
- ◆ farmers and graziers
- ◆ indigenous communities
- ◆ local, state and federal government
- ◆ landcare and natural resource management groups.

The Assessment team will conduct stakeholder engagement sessions, and local and state interests will also be represented on major stakeholder groups formed as part of the NQIAS engagement strategy.

The Flinders and Gilbert Agricultural Resource Assessment is being conducted for the Office of Northern Australia in the Australian Government Department of Regional Australia, Local Government, Arts and Sport under the North Queensland Irrigated Agriculture Strategy <http://www.regional.gov.au/regional/ona/nqis.aspx> The Strategy is a collaborative initiative of the Office of Northern Australia and the Queensland Government. One part of the Strategy is the Flinders and Gilbert Agricultural Resource Assessment, which is led by CSIRO.

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FOR FURTHER INFORMATION

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