IMPACT CASE STUDY
March 2018

Agricultural development and intensification in northern Australia

CSIRO's robust research informs decision-making to realise the significant opportunities for the region's sustainable development.

The challenge

Northern Australia makes a substantial contribution to the Australian economy, particularly through agriculture, mining and tourism. Much of CSIRO's work since 2009 has arisen from CSIRO delivering the Northern Australia Science Review to the Northern Australian Land and Water Taskforce. This case study has focussed on two projects from the portfolio of research.

TRANSPORT NETWORK STRATEGIC INVESTMENT TOOL (TRANSIT)
Agricultural transport costs are high. Agriculture supply chains in Australia are often characterised by transport distances of over 1000 km between production, processing and markets, with transport costs accounting for up to 40 per cent of the market price.

FLINDERS AND GILBERT AGRICULTURAL RESOURCE ASSESSMENT (FGARA)
Millions of hectares of soil across northern Australia are potentially suitable for irrigated agriculture. However, this depends on users being confident they will have reliable access to sufficient water. It is also important that diverting water for irrigated agriculture does not create adverse environmental consequences downstream.

The response

CSIRO's research into the development of northern Australia began in the 1930s, and has expanded to include research to support the minerals and energy, tourism, wildlife, Indigenous knowledge, defence and fisheries industries as well as the emerging carbon economy.

TRANSIT
CSIRO developed TraNSIT to analyse both small and large scale investments in the agriculture supply chain, with current applications covering almost all Australian agricultural logistics.

TraNSIT analyses every possible combination of transport routes and modes (road and rail) and determines optimal vehicle movements between enterprises in the agriculture supply chain.

FGARA
More than 100 researchers contributed to a comprehensive and integrated evaluation of the feasibility, economic viability and sustainability of agricultural development in the Flinders and Gilbert catchments in north Queensland.

Their work ranged from highly technical activity reports to integrated catchment reports, summaries and factsheets – all of which have informed decisions in the Flinders and Gilbert catchments.

The impact

CSIRO has around 200 current and recent projects designed to improve northern Australia's hard and soft infrastructure, economic value chains, Indigenous knowledge and land management, Indigenous economic development, public health, land and water management and understanding of northern Australia's environment.

TRANSIT
TraNSIT has led to better informed investments in transport infrastructure, primarily reducing travel times, which reduce costs along Australia's agriculture supply chain, reduce the risk of accidents due to driver fatigue, and alleviate the stress placed on the agriculture being transported.

FGARA
FGARA reduces the likelihood that water managers will invest in agricultural or water projects that will become loss-making or unviable in the future. Farmers can optimise cropping choices and manage crop production uncertainty with greater effectiveness.

The net present value (NPV) of these two projects is estimated to be $83.9 million, with a benefit-cost ratio (BCR) of 9.3[1].

1. ACIL Allen Consulting. 2018. Northern Australia – An Independent Assessment. ACIL Allen Consulting: Canberra.

CONTACT US
t 1300 363 400
+61 3 9545 2176
e enquiries@csiro.au
w www.csiro.au

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FOR FURTHER INFORMATION
Dr Ian Watson
Agriculture and Food
t +61 7 4753 8606
e ian.watson@csiro.au
w www.csiro.au/impact

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