

EXTENDED ABSTRACT ONLY

Unlocking development in northern Australia: have we found the key?

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Abstract: Agriculture was northern Australia's first major industry. Within three years of the Burke and Wills Expedition (1865) more than 200,000 cattle and 1.3 million sheep were living in Australia's north. By 1880 cattle numbers exceeded 3 million, and today >9 million cattle occupy >60% of the northern landscape. The development of substantial intensive agriculture occurred later and took longer. Amongst the wide range of crops tested in northern Australia from the 1880s only peanuts, tobacco and sugar persisted through to the 1940s. It rapidly became apparent that irrigation was, in most of the north, a critical ingredient for success. But providing water for cropping businesses has posed its own challenges. Of the nine major irrigation schemes established in northern Australia since the 1940s only three have met their own expectations, attaining an irrigated area of 146,000 ha or less than 0.5% of the north's landscape. The remainder achieved less than 13% of their planned areas, and most persisted for <5 years. The harsh northern environment poses challenges, but it has mainly been farming systems introduced at too ambitious a scale without an adequate "learning" phase, and planning of finances, especially overcapitalising early, that has caused irrigation schemes to fail.

In most of the north irrigation is required for crops to reliably achieve break-even yields. Today, we know that the north has soil sufficient to potentially support >16 million ha of intensive agriculture, and water sufficient to irrigate about 10% of that area. Where water is available, the north is capable of growing a wide range of food or fodder crops, and could feed 7.5 million people.

The available evidence suggests that profitable supply chains, rather than the quantum of physical resources, is the major constraint to development of the north's intensive agricultural industries. Transport costs are high with nearly all of the supply chains drawn to southern Australia through existing transport infrastructure and logistics because of undeveloped and cost-ineffective transport routes to the north. Use of tools such as the recently developed TRANSIT model are being used to optimise use of the north's existing infrastructure and also to inform strategic investment to reduce transport costs.

CSIRO continues to drive an integrated program of research designed to reduce the risks and costs associated with development of northern Australia's agriculture, so that it might reach its full potential.

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