

THE NEED FOR NULLINGA DAM

TINAROO AN ECONOMIC SUCCESS STORY

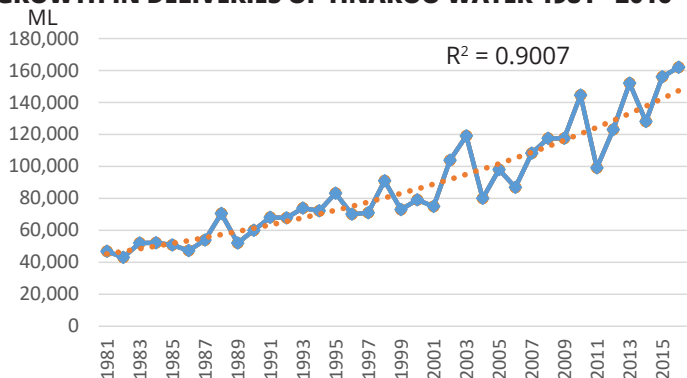
The Tinaroo Dam, that underpins the Mareeba Dimbulah Irrigation Area ⁽¹⁾ in Far North Queensland, has proved a major success in recent decades. The dam that cost \$12.7m in 1958 (about \$420m in current values) is now underpinning agricultural production worth close to \$400m each year – in terms of gross value added to the regional economy now equalling its original cost every 18 months.

(1) Mareeba Dimbulah Water Supply System (MDWSS)

TINAROO: WATER NOW FULLY COMMITTED

Water demand from Tinaroo Dam has increased at an average of 3.4% per annum since 1981. The Dam's water is now fully committed at 150,000 ML (mega litres) per annum.

GROWTH IN DELIVERIES OF TINAROO WATER 1981 - 2016

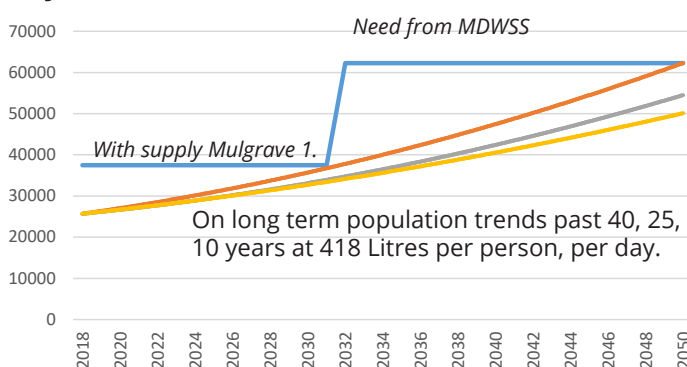


Source: Sunwater Annual Report DNRM

DEMAND FOR URBAN WATER FOR CAIRNS

Cairns is one of Australia's fastest growing regional cities having more than trebled population since 1976. A continuation of past long-term population growth trajectories could see a need to commence drawing from the MDWSS by as early as 2032 and need up to 24,000 ML by 2050.

PROJECTED DEMAND CAIRNS



Source: Cairns Regional Council

TINAROO DAM

- Cost in 1958 £12.7m
- In 2018 dollars ⁽¹⁾ \$420m
- Gross Value of Agricultural Production MDWSS 2015 \$380m ⁽²⁾
- Annual Addition Gross Regional Product est. \$320m per annum ⁽³⁾

(1) CPI Brisbane.

(2) Source: Queensland DAFF.

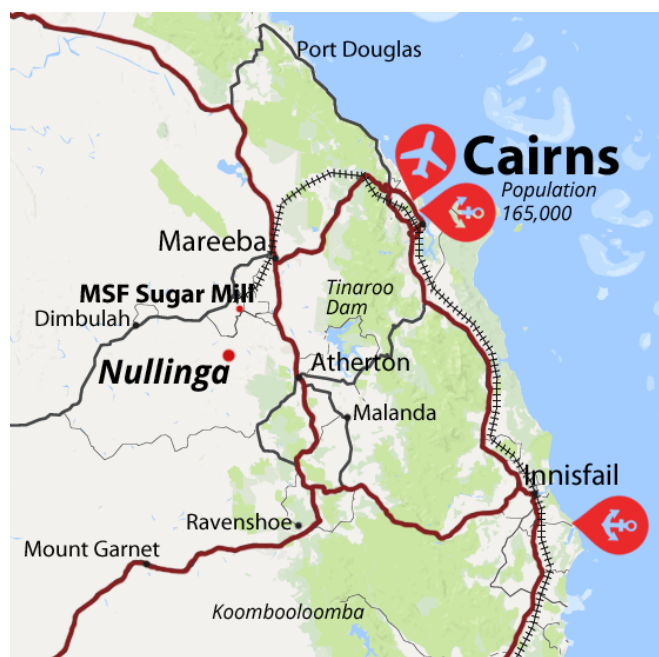
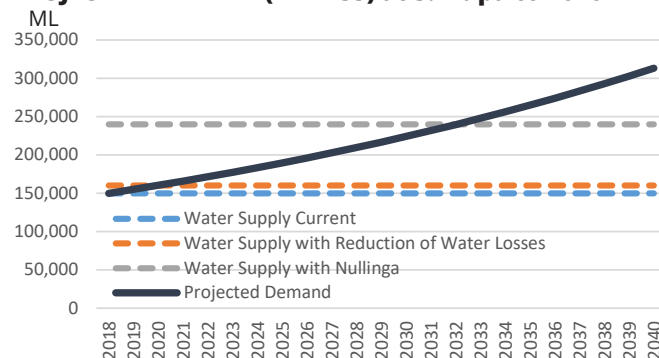
(3) Estimate Cummings Economics.

DEMAND FOR AGRICULTURE

On continuation of long-term 35-year growth trajectory of 3.4% per annum, additional supply needed would be, by 2030: 70,000 ML and by 2040: 160,000 ML.

Maryborough Sugar (MSF) have indicated they would take 40,000 ML from a new dam for expansion of sugarcane production to supply their sugar mill in the area. Some irrigators are now paying up to \$4000/ML for water allocation.

PROJECTED DEMAND (MDWSS) at 3.4% pa to 2040



NULLINGA DAM: THE ANSWER

A VOLUME SUPPLY POTENTIAL

A project to modernise the distribution system to especially reduce losses is estimated to only yield about 10,000 ML. A diversion tunnel from the North Johnstone River into the Tinaroo Dam has not been subject to detailed studies but seems only likely to yield something of the order of 20,000 ML. Nullinga Dam at a cost of the order of \$300m to \$500m could be expected to yield of the order of 60,000 to 80,000ML

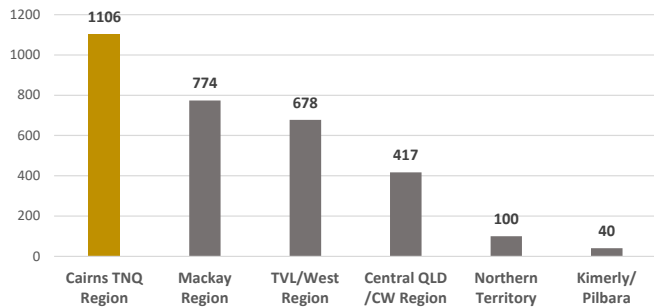
On demand trends, it can be expected that water of about 80,000 ML coming available will be taken up relatively quickly and underpin additional agricultural production of the order of about \$200m a year in current value.

THE CAIRNS/TROPICAL NORTH QLD PENINSULA REGION LEADS THE WAY

Annual water runoff of about 105 million ML in the region accounts for 26% of Australia's total and 67% of Queensland's total. Not surprisingly, the region is leading the way in cropping development in tropical Australia with a value of crops of over \$1 billion recorded in 2016-17 compared with \$182m in 1982-83.

CROPS TROPICAL AUSTRALIA

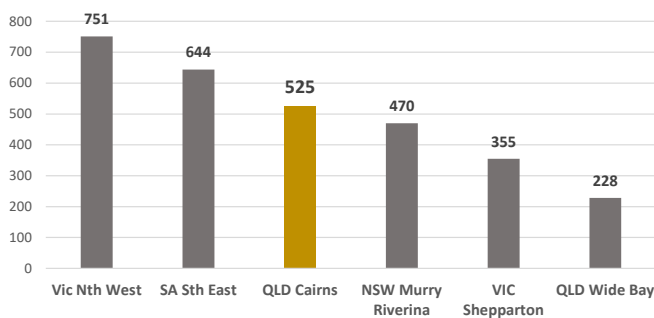
COMPARATIVE VALUE 2016/17 (Millions)



Source: ABS Cat. 7503.0

FRUIT VALUE OF PRODUCTION AUSTRALIA

SA4 REGIONS 2012-13 (Millions)



Source: ABS Cat. 7503.0

IN THE RIGHT PLACE AT THE RIGHT TIME

The site is not as efficient as Tinaroo in terms of yield but is at a very cost efficient location.

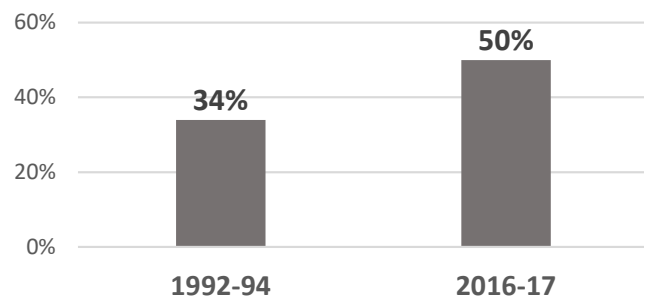
- Existing distribution channel system already in place
- Existing experienced and entrepreneurial farmers
- Existing close-by Mareeba, a highly developed agricultural support centre
- Existing highly developed transport services to southern markets and close to Cairns international airport and Cairns seaport for future export growth



TROPICAL AUSTRALIA GROWING AGRICULTURAL SUCCESS

Historically, tropical Australia represented a greater challenge for a young nation with most of its population and technology drawn from north western Europe. In recent decades however, major progress has been made. Superior tropical cattle breeds plus developing markets in Asia have seen a major increase in the beef cattle herd in the North. Mechanisation of sugarcane harvesting and bulk sugar shipping have led to global competitiveness. Improved roads and transport to southern markets has seen the North's superior growing conditions come to the fore for tropical and offseason fruit and vegetable production. The Cairns region is now Australia's third largest fruit producing region.

PROPORTION OF BEEF CATTLE IN TROPICAL AUSTRALIA



Source: ABS Cat. 7111.0