

Bradfield Scheme strikes controversy

By Jeremy Beck

The growing support for the Bradfield Scheme to water inland Australia has prompted recent howls of protest, the latest of which, broadcast on 30 April by ABC 7.30 reporter Madeleine Morris, was passed off as a "Fact Check". Apparently, the scheme has been "debunked" by experts and it's just a "pie in the sky" proposal. RMIT ABC Fact Check principal researcher Christina Arampatzi quoted some of those "experts" in an extensive 24 April article on the ABC website. But there's something fishy about this whole process, which is really a shameless attack on Australia's greatest engineer, Dr John Bradfield, and his vision to transform vast areas of inland Australia from a dust bowl to an oasis.

RMIT ABC Fact Check researchers just happened to miss one glaring fact. In 1984, at the direction of the Queensland state government, four of Australia's leading hydraulic engineering firms investigated a revised Bradfield Scheme. Based on this study, the government's Office of Northern Development estimated the scheme would have a net capital cost of \$2.49 billion and would produce an annual gross revenue (value of production) of \$2.02 billion. Bob Katter MP reminded the Australian Parliament of this fact, as reported in Hansard of 29 September 1993 during the debate over the Snowy Mountains Engineering Corporation Limited Sale Bill 1993.

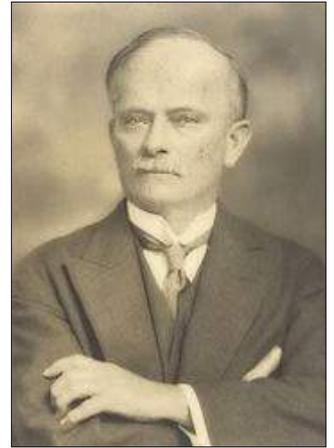
The engineering firms were: Gutteridge Haskins and Davey; McIntyre and Associates; Munro and Johnson; and Cameron McNamara. Their Bradfield Study Consortium Report and the Office of Northern Development's *Summary of Assessment and Feasibility of Revised Bradfield Scheme* report included a breakdown of detailed costings, and forecasts for *annual increases* in agricultural production which Bob Katter MLA (then Member for Flinders) summarised in the Queensland Parliament on 3 December 1991 as recorded in Hansard: "The figures revealed in this report are \$507 million from the production of cotton; \$105 million from the production of woodchip; \$220 million from the increase in cattle production; and \$72 million from drought and flood mitigation benefits, comprising some \$904 million. With the inclusion of the water from Tully and other areas, an extra \$600 million can be added to that, which brings \$1,500 million worth of export earnings [a year] into north Queensland and into the State of Queensland for an outlay of \$2.4 billion." Due to a change in State government the above reports were not officially published.

Morris and Arampatzi both repeated the lie that the Bradfield Scheme is "financially unviable". NSW Professor Richard Kingsford told Fact Check that it "wouldn't deliver; wouldn't repay the cost". But Kingsford is Director of the UNSW Centre for Ecosystem Science and his field of research is in conservation biology, wetland and river management. It's fair to say that ecology has become a biased science that is prejudiced against human industry, and is therefore not a reliable source when it come to accurate costings in civil engineering works and agricultural production!

Arampatzi referenced the Revised Bradfield Scheme and even hyperlinked to a November 1981 government report, but did the "fact checkers" take the time to read it? This report provided a breakdown of costing estimates for the various dams, weirs, channels, tunnels etc.

True, elevation measurements used in Bradfield's original proposal were somewhat in error as they were

estimated from barometer readings. We can't blame Dr Bradfield for not using GPS readings! But in all seriousness, such minor errors are inconsequential. Water from the Herbert River can still flow via gravity to the Burdekin River. And the most important dam in the Bradfield Scheme, at Hells Gates on the Burdekin River, sits where the river is at an altitude of 330 metres. A suitably tall dam wall will ensure water levels will be at



Dr John Bradfield. Photo: Wikipedia

around 400 metres or more, depending on which plan is chosen. This will allow water to be pumped over the Great Dividing Range using cheap electricity overnight. Several low head, high volume hydroelectric power stations could generate power on the Bradfield storages.

Consider *Guardian* journalist David Marr's hysterical 24 March outburst on ABC's *Insiders*. Saying the Bradfield Scheme is "a 1938 delusion that you can turn the rivers of Queensland inland, and pour the water down through the inland river system", Marr then claimed it was comprehensively debunked in the 1940s and "it would be cheaper to post water inland than do this". Clearly Marr has not read (or understood) the above-referenced Office of Northern Development report.

Would it improve the climate?

The possibility that major water diversions will improve the climate and increase rainfall has sparked much debate over many decades. But Arampatzi made quite a bizarre statement of note: "Dr Neville Nicholls ... currently emeritus professor at Monash University, told Fact Check that even if large evaporation *could be avoided*, there would not be substantial changes to the climate." (Emphasis added.) Dr Bradfield relied on the research of Edwin Thomas Quayle, Senior Meteorologist at the Bureau of Meteorology, and the whole point was that evaporation should *not be avoided*, because at some point the evaporated water would fall back down as rain!

True, most establishment meteorologists have long poured cold water on the idea. But establishment scientists are often wrong. "Heavier than air flying machines are impossible", said Royal Society President Lord Kelvin in 1895, only to be proved definitively wrong just eight years later.

Quayle dissented from other meteorologists. Prior to his work at the Bureau of Meteorology he worked for the Melbourne Observatory, which experience no doubt assisted his research into the relationship between sunspots and rainfall. Would an ignorance in astrophysics be the problem here? For example, the well-funded British MET office has a history of making blunders in weather forecasts whereas astrophysicist Piers Corbyn of WeatherAction, on a shoe-string budget, has a decades-long track record in more accurate medium to long-term weather forecasts.

That said, the benefits of the Bradfield Scheme do not hinge on whether it would improve the climate; its benefit is that it would definitely improve the water supply for the fertile but arid inland of Queensland and New South Wales.

Bradfield Scheme won't be crushed

By Jeremy Beck

RMIT ABC Fact Check's pathetic attempt to discredit the Bradfield Scheme requires more than a cursory examination. Last week we dipped our toes in the water with reports on the scheme's enormous economic potential.¹ With a \$2.49 billion net capital cost (1984 estimate), it would produce an annual gross revenue (value of production) of \$2.02 billion. The stakes are high for our children's future, so much more need be said. In the face of overwhelming evidence, why would RMIT ABC Fact Check be so intent on squashing Dr Bradfield's vision to transform vast areas of inland Australia from a dust bowl to an oasis?

Dr John Bradfield, Australia's greatest engineer, built the Sydney Harbour Bridge and the city's underground railway system; he built Brisbane's Story Bridge, and much more. He was co-designer of the Cataract Dam and Burrinjuck Dam early in his career, and for decades worked on ideas to water inland Australia. In 1938 he went public with what became known as the Bradfield Scheme, a project to utilise the floodwaters of the Tully, Herbert and Burdekin Rivers for inland agriculture. With such grand achievements and vision in mind, Australians should ask a few questions. Should we think big, or think small? Be bold, or timid? Plan for the future, or react to crises of our own making? Should we support our farmers, or watch their demise? Should we expand agriculture to help feed a growing population, or be complicit in instigating famine? Should we celebrate economic achievement or snub it for poverty, despair and squalor.

A well-heeled class of academics and bureaucrats are hostile, not only to the Bradfield Scheme, but to just about any economic development. Fortunately, leaders of yesteryear thought differently; otherwise the Snowy Mountains Scheme would not exist. Consider University of NSW Professor Richard Kingsford, who told RMIT ABC Fact Check that the Snowy Mountains Scheme was like a mini-Bradfield in that it had diverted water successfully to irrigators, but "it has devastated the [Snowy] river". He also claimed that in the Murray-Darling Basin, "we have large areas that are dying with not enough water because, essentially, we have taken the floods away". RMIT ABC Fact Check principal researcher Christina Arampatzi cited Prof Kingsford as an authority: "Diverting floodwaters from their natural paths could cause wide movement of invasive species, collapse marine and estuary ecosystems, and even cause economic damage to coastal communities, according to experts."

These "experts" dribble nonsense! Floodwaters are far more damaging to flora and fauna alike, and there are numerous reports that so-called environmental flows since the enactment of the Murray-Darling Basin Plan have caused severe riverbank erosion. A history lesson shows that all advanced civilisations benefited from good water management. Dr Bradfield noted this in 1938: "If the Egyptians diverted the Nile through the middle of Egypt in the dawn of history, and aqueducts, some of them 450 miles in length, watered the whole of the Inca Empire centuries before Australia was known to civilisation, there is no reason why the scheme I have outlined should prove too big for Australia."

The 1947 Nimmo report

Critics of the Bradfield Scheme often cite Chief Engineer of the Stanley River Works Board William Nimmo, whose 3 February 1947 report concluded "the quantity of

water delivered will be only a fraction of the 6,000 cubic feet per second claimed by Bradfield and the cost will be enormous". Arampatzi of RMIT ABC Fact Check concluded: "Nimmo's critical review demonstrated that Bradfield had overestimated the 'water capability supply'—the quantity of floodwater available for diversion—by 250 per cent, while grossly underestimating the plan's cost."

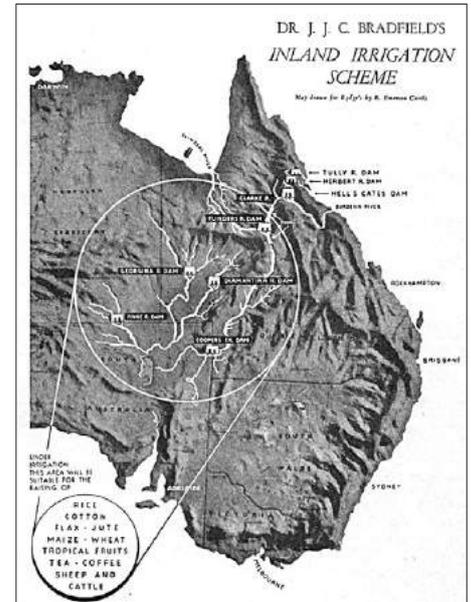
This claim is provably false. Nimmo made several errors which were addressed in detail in a November 1981 report by the Queensland Northern Peninsula Area (NPA) Water Resources sub-committee. Titled "The Revised Bradfield Scheme", the report was compiled by Dr Eric Heidecker, Roy Stainkey, and Bob Katter Jnr MLA. Arampatzi hyperlinked to this report but dismissed it as an iteration of Bradfield's idea that "also failed to gain traction". Had she or any of the "fact checkers" read this report, they would have noted a section headlined "Criticising the Critics", specifically addressing Nimmo's 1947 report.

Part of this section states: "In criticism, Nimmo said the Tully could yield only 270,000 megalitres (ML), not 540,000 ML, as Bradfield claimed. Unlike Bradfield (1929) and Nimmo (1947), who had to use complex formulas and models to estimate discharges, some 50 years of accurate stream discharge records are now available to anyone. This discharge of the Tully can be accurately stated, therefore, as 434,000 ML.

"For the Herbert, Nimmo was again more inaccurate [by percentage] than Bradfield. Nimmo claimed discharge available was 630,000 ML, whilst Bradfield said 2,070,000 ML. The discharge at Glen Eagle (approximately 70 km above the diversion weir) is 1.072 million ML, a figure of some 1.2 million ML would not be unreasonable: most certainly ... at least 1.072 million ML could be diverted."

From 1981, fast forward to 2019 and check official river discharge data.² The mean daily flow of the Herbert River at Glen Eagle is 3,017 ML, which multiplied by 365 gives a 1.101 million ML average yearly flow. This being in the ballpark of Heidecker et al., shows the "fact checkers" once again missing in action! Nimmo's economic and costing assessments also don't stack up, which Heidecker et al. dissect.

Encouragingly Sir Leo Hielscher, former Chairman of the Queensland Treasury Corporation, and Sir Frank Moore have recommended a revised Bradfield Scheme to Prime Minister Scott Morrison. "It'll work financially, it'll work environmentally, it'll work socially and engineering-wise it'll happen", said Sir Leo on the Alan Jones Breakfast Show.



2. Streamflow Data, Water Monitoring Information Portal, Queensland Government Department of Natural Resources, Mines and Energy (DNRME).

1. "Bradfield Scheme strikes controversy", AAS, 1 May 2019.