The comparative internal rate of return for the scheme including the supply of North Queensland flood water to the Murray -Darling Basin is between 5-10%, based on capital expenditure of $12.75 billion dollars, and annual agricultural revenue between $2 and $4 billion. Revenue from the supply of water for mines and towns and hydropower generation is not included.

The stages of the plan are shown as stage 1 (red), 2 (orange), 3 (yellow) and 4 (green). The figures below are very approximate and may change over time as estimates become more precise (Note 1). The cost of the main stages are as follows (Note 2):

1. Burdekin River Irrigation Area Mt Foxton to the Flinders Hwy. This stage captures flood flows and provides gravity-feed irrigation to 50,000ha north of Charters Towers.
   125km of 11m aqueduct ($1.25B), 75m weir ($0.5B) TOTAL $1.75B (Note 3)
2. Lake Galilee Basin Supply Flinders Hwy to Lake Galilee. This stage transfers flood flows to Lake Galilee Storage on the Great Dividing Range and supplies the Galilee pipeline to 5 mines in the Galilee Basin.
   250km of 11m aqueduct ($2.5B), 20m storage ($0.5B) TOTAL $3B,
3. Aramac/Muttaburra/Longreach Irrigation Area. Lake Galilee to Longreach. This stage is one arm of western Mitchell Grass Downs distributor providing 50,000ha of new gravity-fed irrigation area. 200km of 5m HDPE lined aqueduct and local storage ($2B)
4. Murray Darling Basin. Lake Galilee to St George. This stage conveys water from the Lake Galilee Storage to the cotton growing regions around St George. 600km of 5m HDPE lined aqueduct and short pumped pipeline ($6B)

These first four stages could provide the water for the three new irrigation areas of approximately 50,000ha each – 150,000ha and five new coal mines in the Galilee Basin. This would require 1500GL of water pa based on efficiencies of 10ML per hectare of the irrigated crop, plus an additional 500GL for mine and other usage, losses, and environmental flows. Based on stream monitoring records a weir at the Mt Foxton site could provide in excess of 2000GL per annum, enough for the scheme and additional regular stream flow (Note 4).

With an expected return on the crops of between $6,000 and $25,000 per ha, this would produce a total output of between $1B and $4B per annum. As the water is gravity fed the operational costs are very low (Note 5). At a water cost of $50ML, the water purchases would be $7.5M pa. The following is based on economic modeling done for the Burdekin River Irrigation Scheme scaled up x3.

CONSTRUCTION OUTPUT (4 stages)

- $12.75 billion dollars.
- $8.1 billion contributions to GRP
- $2.4 billion in household income
- 25,000 FTE jobs

AGRICULTURAL OUTPUT (3 stages)

- $1-5 billion in total output
- $2.4 billion in contributions to GRP
- $0.75 billion in household income
- 15,000 FTE jobs

IRR between 5% and 10%

Notes

1. Each stage produces additional revenue so that the costs of the scheme are not entirely front-loaded but could potentially be progressed in a self-funded manner.
2. Cost of the aqueduct is assumed at $1million per km. Costs for dams are guesses only. Resumption costs included.
3. This is half the estimate for the similar Upper Burdekin River Irrigation Scheme proposed by SMEC due to the absence of hydropower, lower weir, and relocation of road infrastructure on Gregory Development Road (-$0.69B). The water would be gravity-fed from the aqueduct delivering water at a considerably lower cost.
4. Additional stages of the scheme could supply an additional 2000GL of water from the Herbert and Tully Rivers into the Mt Foxton weir.
5. Expected revenue for the generation of hydropower, mine, and town water usage and forestry will be calculated in a later post.