



1.3 The ACIAR-supported project – its goals and planned outcomes

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In 2016, the Australian Government through the auspices of ACIAR, was considering re-engagement with Sri Lanka after a long absence due primarily to the conflicts within Sri Lanka. ACIAR commissioned a scoping study and appointed retired Professor Sena De Silva (Deakin University) to conduct that study. The outcome was a recommendation to recommence funded research, and to start the program with a small research activity (SRA) to design a multidisciplinary project in aquaculture for freshwater shrimp, including a socioeconomic component, focused on communities in the Northern Province. The SRA was prepared and commissioned to James Cook University operating over a 20-month period through 2017 to 2019, in collaboration with NAQDA, Wayamba University of Sri Lanka and Ruhuna University. One of the project recommendations was that a large project be developed to build on the SRA work.

The large project, 'Improved productivity, efficiency and sustainability of the culture-based fishery for finfish and giant freshwater prawn in Sri Lankan reservoirs' (FIS/2018/157), is the subject of this report. It was approved in mid-2019 and due to commence 1 January 2020 and run 4 years to December 2023. Due to the COVID-19 pandemic at the time, followed by the political and economic crisis in Sri Lanka, the project's start was delayed until July 2021 with a scheduled end date of 30 June 2025. Although the project ran its course

over that 4-year time period, the first 12 months through to June 2022 were extremely difficult due to the impacts of the ongoing economic crisis in Sri Lanka, that resulted in rationing of electricity and fuel in particular which stymied field and laboratory work. The project team remained cohesive through that time despite the challenges, but the first year was largely lost due to the difficulty of performing research. In effect, the 4-year project was completed in a 3-year timeframe.

In the broadest sense, this ACIAR-supported project set out to enhance CBF in Sri Lanka's reservoirs.

There was a broad acceptance that the stocking of fingerling fish and post larval giant FWP was ad hoc and not based on rigorous science. The project sought to provide the science to enable informed decisions about stocking that will optimise fishery production, productivity, and social and economic benefits.

The project was multidisciplinary, including a broad range of biological and physical disciplines, including limnology, ecology, fisheries biology, biochemistry, investigations of value chain, bioeconomics, social science, livelihoods and gender. The research was gathered under 4 objectives. A logic framework was prepared to generate a theory of change, which was then used to guide the outcomes that were planned and the goals to be achieved.

The theory of change was structured with 3 pillars: biophysical research, government policy and planning, and industry and people development.

Outcomes for the biophysical research included aspects of giant FWP and fish biology and ecology, fisheries biology including stocking, population structure, harvesting and harvest quality, and relationships between giant FWP and fish fisheries and reservoir characteristics.

Planned outcomes for government policy and planning included providing government with the information generated for policy development, to provide a framework for assessing reservoirs as to their suitability for expansion of CBF and most importantly to enable science-based stocking strategies.

The third pillar of industry and people development sought to develop bioeconomic models of CBF to describe the value chain and define improvements, to identify barriers and enablers for CBF development, to improve social equity within the fisheries and to ensure the CBF industry of Sri Lanka was meeting its growth potential.

High-level goals of the project were:

- to improve equitable livelihood benefits to reservoir fishery
- to define reservoir stocking practices for prawns and fish that generate predictable production
- to improve yields and product quality of CBF in Sri Lankan reservoirs
- to contribute to government policy that actively and effectively supports CBF throughout Sri Lanka
- to assist in government planning that supports expansion of CBF to all suitable reservoirs within an environmental sustainability framework
- to maximise opportunity for Sri Lankan giant FWP to be recognised globally as a premium organic product
- to broaden employment opportunities for men and women in the Sri Lankan CBF sector
- to support career progression of female scientists and extension officers into senior and management positions.

While ambitious in scope, the project has largely achieved its objectives and the research outputs are presented in this report.