



Fisheries

Improving technologies for inland aquaculture in Papua New Guinea



Overview

Approximately 80% of people in Papua New Guinea (PNG) are unemployed, with most living in rural areas where access to animal-based protein is limited. Food production from small-scale chicken and pig farming does not currently meet protein needs, and high feed costs are a constraint on small-scale animal rearing. In addition, most households lack refrigeration, and fresh meat and tinned meat and fish are prohibitively expensive.

The pond-based production of genetically improved farmed tilapia and European carp is rapidly expanding in PNG's rural areas. Current production levels are low compared with those in South-East Asia because of an inadequate supply of quality fingerlings, poor broodstock management practices and the cost and availability of formulated fish feed and fertilisers.

A general lack of knowledge of fish husbandry and pond management is also widespread in PNG.

The National Fisheries Authority (NFA) requested a follow-on project to continue research on resolving industry constraints in order to improve food and income security in rural areas and increase the social benefits of aquaculture.

KEY FACTS

ACIAR Project No. FIS/2014/062

Duration: July 2015 to June 2019 (4 years)

Target areas: Papua New Guinea

Budget: A\$1,600,354

Project Leader

Associate Professor Jesmond Sammut,
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Key partners

- Australian Nuclear Science and Technology Organisation
- National Fisheries Authority (NFA), PNG
- Faculty of Applied Science, University of Technology, PNG

ACIAR Research Program Manager

Dr Ann Fleming

Objective

The project's overall aim is to increase production of tilapia and carp using low-cost and farmer-friendly technologies to improve food and income security and increase the associated social benefits for smallholders.

The project's specific objectives are to:

- Evaluate the strengths, weaknesses, opportunities and threats (SWOT) to inland aquaculture in PNG and develop a sector-based strategic plan for the NFA.
- Evaluate the social and economic benefits of aquaculture development in PNG.
- Improve broodstock management, fingerling production and husbandry technologies.
- Develop effective, low-cost feed formulations and feeding and fertiliser strategies.

Expected scientific results

- A change in research culture and improved research excellence at NFA and UniTech through the adoption of more rigorous quantitative research methods.
- Application of new scientific methods leading to a better understanding of the diet and nutrition pathways of tilapia and carp farmed under PNG conditions and farming environments.
- PNG scientists with greater capacity to adopt new or emerging technologies.
- New research methods leading to more efficient and effective research.
- Research findings, communicated through peer-reviewed publications, contributing to the knowledge base for aquaculture management in PNG and Pacific Island Countries and Territories.

Expected outcomes

- Adoption of better management practices by farmers leading to higher yields and table-size tilapia and carp.
- Incorporation of SWOT analysis findings and strategic aquaculture development plans into decision-making processes at the NFA, National and Eastern Highlands Province Department of Agriculture and Livestock, and other agencies, and the Government's aquaculture policy and development plans.
- Greater research and management capacity enabling the Highlands Aquaculture Development Centre to strengthen its position as the national centre for broodstock management and research.
- More targeted funding interventions by NFA to foster sustainable growth of the industry, particularly the PDF funding scheme and provincial grants for aquaculture development.
- Increased access to fish-based protein in rural areas, contributing to better nutrition and health of children, the elderly and people affected by disease and potentially the quality of life and longevity of people affected by HIV/AIDS.
- Greater community participation in fish farming as a livelihood.
- Lower fish production costs, better survival of stocked fingerlings, sustainable growth of the sector and greater profitability for farmers.

