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Freshwater Aquaculture project studying systems and developing strategies

By Jonas Cullwick 5 hrs ago

The Freshwater Aquaculture and Governance project launched by the Minister for Fisheries, Matai Seremiah, this week is studying the role of small-scale community-based freshwater aquaculture systems in a changing climate, and developing adaptation strategies at the government hatchery and on-farm level.

Project Team Leader Dr Satya Nandlal, says in recent times, extreme climate events like cyclones and prolonged dry seasons have been stressing fish farming, along with lack of quality broodfish, leading to increasing risks to farmers.

Despite this, the Department of Fisheries researchers with support of other agencies, for example, JICA, ACIAR, GIZ, FAO, SPC and QUT are gaining knowledge about how to sustain fish farms and perhaps even grow the industry, he adds.

“This EU-GIZ funded project “Freshwater Aquaculture and Governance” led by QUT is studying the role of small-scale community-based freshwater aquaculture systems in a changing climate, and developing adaptation strategies at the government hatchery and on-farm level.

In Vanuatu, Nile tilapia (and in some locations their hybrids) is the main species of choice.

This fish is suited to life in either a man-made pond on farmer’s land or a cage/net pen placed within a lake or reservoir.

Fish farmers along with the Department of Fisheries staff produce fingerlings for stocking, and monitor and observe fish health.

“Some of the barriers faced by fish farmers are that they have limited scientific information about the tilapia fish they grow and the systems they use to grow them.

Farmers are not always aware of the best ways to farm including to use quality fingerling or ‘seeds’ and to reduce risks from climate variability or to adapt to climate change.

“The research team in this project is helping to improve management practices at the hatchery and on-farms by examining factors such as fingerling ‘seed’ quality, water chemistry, fish farmer’s decision-making, gender roles and government policies,” Dr Nandlal says.

Two important examples are the need to maintain broodfish to produce quality fingerlings ‘seeds’, and to manage pond/tank water quality so that it does not affect fish health. Across Vanuatu, water management plans take into account irrigation for gardens, water requirements for livestock, to some extent, flood mitigation, and commercial and domestic uses, but as yet to account for small-scale aquaculture, he says.

In case of small-scale pond aquaculture, allocation of water in the dry season to maintain appropriate water level in ponds is often challenging, given many competing uses.

“Helping other water users understand aquaculture’s stake and devising strategies in water management is critical to its sustainability.

Climate variability and change complicate existing fish farming systems and water management.

“The risk of droughts is highly seasonal and of vary substantially from year to year.

The extreme weather and climate events stress fish by directly affecting the water resources and other resources that small-scale fish farmer depends on.

This may lead to poor fish health, and even fish mortality-all of which affect farmers’ food supply and livelihood security.”

Collaboration and goodwill among stakeholders is needed to develop appropriate adaption strategies in response to these uncertain, variable, and changing environmental conditions.

The research team is enabling cooperation between research agencies, Department of Fisheries, Ministry of Climate Change, and community group’s to help inform and set priorities for action at different levels.

The results from this research- ranging from production of quality fingerlings ‘seeds’, pamphlet’s, scientific papers, to recommendations for farmers (and staff), to new collaborations and policy priorities- have the potential to make a difference across Vanuatu and may be also across the South Pacific region.

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