

# TCP/NAU/3201 Milkfish Farming and Environmental Impact Assessment (EIA) in Nauru

Masanami Izumi

FAO Sub-Regional Office for the Pacific Islands (FAO/SAP)  
[Masanami.Izumi@fao.org](mailto:Masanami.Izumi@fao.org)

The TCP/NAU/3201 project “Milkfish farming and environmental impact assessment in Nauru”, with a total budget of USD 39 493.00, was approved in August 2009 to provide technical assistance in re-establishing milkfish farms in Nauru. The project is designed to assist the Nauru Fisheries and Marine Resources Authority (NFMRA) and the Nauru Aquaculture Association (NAQUA) in the following two areas, namely:

- to guide the NFMRA and the NAQUA on the most appropriate path for re-establishing milkfish farms in Nauru and to provide basic training on husbandry and hatchery skills.
- to undertake a study on the potential environmental impact of proposed dredging in the Buada Lagoon, the largest freshwater lake in Nauru, with particular reference to its impact on the capacity of the lagoon to continue to support non-intensive milkfish farming.

Nauru is located at about 48 km south of the equator and described as a single limestone island. Its land area is 21 km<sup>2</sup>. In Nauru, milkfish (*Chanos chanos*) is traditionally the most valued fish species. In the late 1960s, tilapia (*Oreochromis mossambicus*) was introduced into the country for the purpose of feeding on mosquito larvae and as food fish. Despite the original purpose, tilapia became abundant in the lagoons and ponds, and competed with milkfish stock. As a result, milkfish farming in the island slowly diminished. Under the Five Year National Aquaculture Development Plan developed by the NFMRA in 2005, the revival of milkfish farming was given priority to support food security in the country.

Under the TCP project, a TCDC expert on milkfish farming was dispatched from 25 January to 13 February 2010 while a retired expert on environmental impact assessment (EIA) undertook his mission from 8 February to 20 February 2010. A one week overlap of mission of the two experts enabled them to work together.



J. E. BASCO, FAO

*Buada Lagoon, Nauru*

The TCDC expert provided the NFMRA and the NAQUA with a set of recommendations pertaining to the following:

- Existing milkfish farming system was reviewed in the Buada Lagoon and 21 other lagoons/ponds.
- Preliminary assessment on basic water parameters (depth, silt depth, temperature, salinity, transparency) and other observations were conducted in the Buada Lagoon and 21 other lagoons/ponds.
- Potential sources of milkfish fry were assessed. Appropriate fry collection geara (e.g. skimming net, push net) and fry storage, transport and stocking procedures were introduced. Field demonstration of milkfish fry collection was conducted.
- In the lagoon/pond preparation for milkfish fry stocking, eradication methods of unwanted species (e.g. tilapia) and fertilization methods of lagoons/ponds were demonstrated.
- Calculation of appropriate stocking density of milkfish fingerlings in a lagoon/pond was introduced. The importance of water

management, such as monitoring basic water parameters (temperature, salinity, transparency, dissolved oxygen) was emphasized.

- A one-day stakeholder workshop, with a total of 37 participants attending, on milkfish farming was conducted with lectures and practical sessions on the following subjects:
  - Milkfish farming systems
  - Milkfish deboning
  - Milkfish deboning demonstration
  - Field practical session:
    - ✓ Demonstration of pond eradication (tilapia and other unwanted species)
    - ✓ Pond preparation and fertilization
    - ✓ Basic water sampling procedures

The environmental impact assessment (EIA) exercise for the Buada Lagoon and the Buada community was carried out by the retired expert on EIA aimed to provide significant environmental management input into the implementation of the Buada Lagoon Rehabilitation Project funded by the Global Environmental Facility (GEF) Small Grant Programme, in relation to the revival of milkfish farming in the lagoon. The assignment of the expert concentrated on the following areas.

- review of existing environmental conditions (e.g. geological and topographic conditions, lagoon water conditions, ecological resources, and socio-economic and socio-cultural resources)
- other potential alternatives (other reasonable foreseeable and environmental alternatives)
- assessment of expected environmental impacts and mitigations
- socio-economic assessment
- environmental management plan (e.g. summary of impacts, proposed mitigating measures, monitoring programme and parameters, public consultations, responsibility for mitigation and monitoring requirements)
- consultations with members of the Buada Lagoon Owners Association.



M. IZUMI, FAO



M. IZUMI, FAO

*One-day Stakeholder Workshop on Milkfish Farming in Nauru*

For further strengthening national capacities (knowledge and skills) in aquaculture in general, it was recommended that the NFMRA regularly conduct local training workshops for the NAQUA members and other stakeholders. Direct assistance to the NAQUA members and individual farmers must be considered through the assistance of bi-lateral or multi-lateral donors under the good coordination of NFMRA. Particularly in milkfish farming, early consideration of training for the NFMRA staff was recommended to be undertaken in countries which have appropriate milkfish farm facilities and farming activities. ■