

Research project EMMA – Environmental monitoring and modelling of aquaculture in risk areas of the Philippines

Akvaplan-niva undertook a 2-year NORAD funded research project to investigate the impacts of aquaculture in the Philippines, to develop predictive models and make recommendations on ways to mitigate impact. Akvaplan-niva trained Government staff in the operation of the monitoring equipment, analysis of data collected and the use of models for predictive assessment of impact and estimation of safe carrying capacity.

Environmental monitoring

Akvaplan-niva undertook 6 baseline environmental and production surveys in three areas of the Philippines, Bolinao Bay an enclosed marine bay, Dagupan, a brackishwater estuary and Taal lake a large freshwater lake. These areas suffered fish kills in the past.



Milkfish Fish pens in Dagupan

Environmental monitoring equipment

Government staff were trained in the use of the monitoring equipment, analysis of the results and ways to mitigate the impact of aquaculture.



The equipment used included;

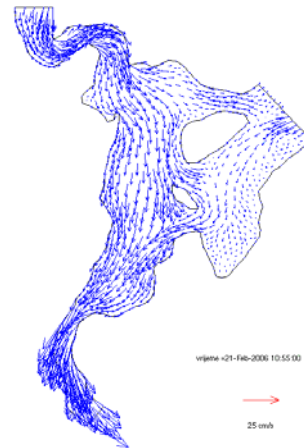
- An echo sounder with GPS, to collect bathymetry of the area
- Current meters, to collect current speed and direction

- Drogues, for the collection of water dispersion data
- CTDO, to collect temperature, turbidity, salinity, oxygen, profile through the water column
- Water quality analysis in the laboratory, to analyse chlorophyll, phosphorous, nitrite, ammonia

This equipment was donated to the Government Institute.

Modelling of aquaculture impacts

Hydrodynamic models were developed for predicting aquaculture impacts and to estimate safe carrying capacity for aquaculture.



Akvaplan-niva's competence

Akvaplan-niva provided the following services for the project:

- Project Management and coordination
- Monitoring of aquaculture impact
- Training of Government staff
- Capacity building
- Methods to mitigate aquaculture impact