

An Approach for Integrated Aquaculture in Philippine Coastal Communities

Ramon M. Macaraig

Alsons Aquaculture Corporation

E-mail Address: monmac52@yahoo.com

Economic opportunities abound for the local communities around the intensive culture systems as mariculture parks, brackishwater fish ponds and fish pens to produce a number of multi-trophic indigenous species with high market demand. Aquaculture of the species which mitigate the growing environment for the major species like milkfish *Chanos chanos*, tilapia *Oreochromis spp.*, shrimp *Penaeus spp.* and the high-value groupers, snappers and jacks in calibrated polyculture can provide livelihood for host communities. The invertebrate species such as the donkey's ear abalone *Haliotis asinina*, matched with the agarophytes *Kappaphycus alvarezii* and *Gracilariopsis sp.*, the slipper oyster *Crassostrea iredelai*, the sea cucumber *Holothuria scabra*, the snail *Babylonia areolata* and the sea urchin *Tripnuestes gratila*, which have complete aquaculture cycles may help improve the water quality, soak up excess nutrition in various ways, improve the trophic biodiversity in the mariculture parks, fishponds and pens and provide income to people's organizations in host barangays. Various finfish species may also be grown with the main species in cages and pens to help minimize fouling in the nets. Such species as *Scatophagus argus*, *Siganus guttatus*, *Siganus punctatus*, *Platax pinatus*, *Mugil cephalus* may be grown in controlled numbers with the target species and provide substantial income for growers.

Aquaculture in the Philippines will continue to be focused towards food production in the next five years as the catch of foodfish from the sea goes down; rather than for export and foreign exchange. Private investors are now intensifying productivity in locations defined by the local government units for aquaculture. With intensification comes the use of commercial feeds and feeding systems which put stress on the growing conditions as what locators consider as waste accumulates in the sea bed or the pond bottom making even the production of fish difficult in the long run.

The host communities may be able to take advantage of this situation by producing the multi-trophic species out of the increased nutritional status in the waters around the production areas. The production system of the local host communities may use the structures of the zoning systems in place in the some advanced fisherfolk communities

- a commercial zone, where the cages of the locators and the mariculture parks are, where there is a high degree of nutrition being deposited everyday;



- a management zone where people's organizations manage the seeding, growing and harvesting of the mitigating species for the benefit of the members and the local barangay
- and the marine protected areas which continue to be no-touch zones.

The production system will require a number of support structures like sources of seedstock, access to markets, research support from schools and government institutions, consistent local government rules and management capabilities for the people's organizations.