

## Annex 3 – Interventions from the final workshop session

The final session of the workshop included a number of interventions from participants concerning future directions and mechanisms for regional cooperation in the development of mariculture in the Asia-Pacific region. These interventions include various suggestions, priorities and commitments and provide an important basis for further development of a regional mariculture cooperation.

### Australia

The research and development programme (R&D) of the Australian Center for International Agricultural Research (ACIAR) has been actively cooperating in the region in various aquaculture subjects and locations. There is willingness and interest to engage in further regional cooperation. Some of the recent activities and recommended future areas of cooperation include:

- Grouper hatchery technology programme;
- Pelleted feed development;
- Asia-Pacific Marine Finfish Aquaculture Network (APMAN) model for networking with other mariculture commodities;
- Indonesia training on feed development;
- Environmental impact assessment for cage culture, which can be an EIA model for the region, especially strategies and GIS;
- Marketing study (e.g. with Australian National University, Canberra):
  - Price and demand study,
  - Consumer study (taste, wild vs. aquaculture);
- Viral nervous necrosis (VNN) study (Sydney University);
- Development of management systems for VNN.

### Bangladesh

Compared to the other countries, Bangladesh has a less developed mariculture sector. Establishment of hatchery, nursery and grow-out systems for seabass, milkfish and bivalves are country priorities for which cooperation and support are needed.

### China

Mariculture is well developed in the country and there are numerous opportunities for cooperation with other countries in the region as follows:

#### Needs for regional cooperation

- Utilization of the open/deep-sea area. There are plans for development of deep-sea cage culture in the South China Sea;
- Value addition;
- Diversification of commercial species. There is a long list of potential species in China and many more species are of interest for commercial-scale development;
- Improvement of abalone production technology. Production is currently 3 000–4 000 tonnes but suffering from disease and insufficient seed supply;

- Cobia has been cultured for two years, but has not become a popular commodity in the country;
- Training in feed processing and vaccine production for marine finfish.

#### **Offers for regional cooperation**

- Transfer of ongoing seaweed farming technologies to other countries;
- Training course can be offered for sea cucumber and bivalve hatchery production (e.g. Yantai Fisheries Institute);
- Shanghai University has ongoing studies on policy, marketing, resources and environmental economics. There is an opportunity for cooperation on such issues as “environmental policy development for mariculture”.

### **India**

#### **Needs for regional cooperation**

- Although extension materials are available, further demonstrations are needed for successful extension;
- Training for trainer and farmer level (on marine finfish hatchery and cage culture); Regional tools are needed for the policy to farmer level.

#### **Offers for regional cooperation**

- Andaman mariculture and cooperation with NACA and FAO;
- Marine fish and other mariculture.

### **India, Marine Products Export Development Authority (MPEDA)**

#### **Under-development/Needs for regional cooperation**

- Cooperation on production already exists (e.g. barramundi with Australia);
- Cooperation is needed on market access.

### **Iran (Islamic Republic of)**

#### **Needs for regional cooperation**

- Marine cage culture management;
- Marine finfish hatchery development;
- Marine finfish processing;
- Feed development.

#### **Offers for regional cooperation**

- Sharing of experience on sturgeons, Caspian salmon, blacklip pearl oyster, yellow seabream, grey grouper.

### **Japan**

#### **Offers for regional cooperation**

- Information sharing (e.g. establish a mechanism to translate and disseminate journals and papers in English);
- Training courses;
- Sharing of stock enhancement experiences, including seed production.

### **Malaysia**

#### **Needs for regional cooperation**

- Broodstock improvement (domestication and genetic improvement);
- Low-cost feed formulation technologies and nutrition;
- Live feed production development (including copepods);
- Hatchery production of marine finfish (groupers) and recirculation hatchery technologies;
- Sea cucumber and oyster production systems.

**Philippines****Needs for regional cooperation**

- Mollusc hatcheries and farming technologies;
- Hatchery for sea cucumber;
- Hatchery for marine finfish (grouper, etc.).

**Offers for regional cooperation**

- Hatchery and production technologies for milkfish;
- Seaweed (*Eucheuma* spp.) culture.

**Republic of Korea****Needs for regional cooperation**

- Special study on market in China;
- Mariculture system, feed development;
- Food safety guideline;
- Food safety (e.g. heavy metal contamination in eel) due to environmental degradation;
- Formation of producer's association to work together and to share information.

**SPC****Offers for regional cooperation**

- Natural biodiversity, marine ornamental study;
- Larval collection experiences;
- Experiences in pearl farming environmental planning using GIS;
- Biosecurity experiences.

**SEAFDEC****Offer for regional cooperation**

- Cooperation for development of farm standards, food safety and ecolabeling.

**SEAPLANT****Offer for regional cooperation**

- Looking to expand the SEAPLANT network to whole region and willing to cooperate with NACA;
- Use of seaweed as an ingredient in aquaculture feed.

**SINTEF****Offer for regional cooperation**

- Six years capacity-building experience in Viet Nam;
- Willing to facilitate in regional cooperation;
- Topics of possible cooperation:
  - Cage development (for shallow water, hence mooring)
  - Harvesting and post-harvesting handling
  - Experience from salmonid culture
  - Tropical seaweed
  - Logistic traceability experience from salmon

**Thailand****Needs for regional cooperation**

- Longline technology for bivalves;
- Broodstock and hatchery for finfish including groupers;
- Establishment of closed recirculation system for marine finfish broodstock, nursery and grow-out system;
- Large-scale offshore cage culture technologies;

- Small-scale (low cost) bivalve hatchery operation (instead of existing complicated extensive system).

#### **Offer for regional cooperation**

- Food safety training;
- Hatchery for molluscs (abalone and *Babylonia*);
- Hatchery for seabass and some grouper species;
- Seafood processing training, which is ongoing for local personnel.

#### **Viet Nam**

##### **Needs for regional cooperation**

- Improved hatchery technologies for marine finfish;
- Marine finfish disease prevention and treatment;
- Offshore cage culture technologies.

#### **FAO**

- This workshop was delivered from the FAO regular programme and aims at the development of a regional platform for cooperation. The opportunity is now there for institutions and countries to cooperate based on this platform. For example, a regional collaborative approach is needed to effectively tackle environmental issues;
- An FAO project in Micronesia is assisting development of biodiversity management plans for aquaculture. Management of transboundary risks may be useful to the region;
- A better management practices (BMP) approach is encouraged along the lines of the shrimp consortium. The International Principles on Shrimp Farming and the Environment will be submitted to the FAO subcommittee on aquaculture meeting in September 2006;
- An overall management framework for governments, with the collaboration of other stakeholders, is required to formulate policies and regulations for the mariculture sector. This may be another common issue for cooperation;
- Food safety and quality in mariculture products are needed;
- Labeling and certification of aquaculture products are needed.

#### **NACA**

- Based on the recommendations, NACA will work with FAO and its members to develop the regional mariculture cooperation to assist countries of the region in development of sustainable mariculture.

The next step is to work together to prepare clear and practical workplans and projects to take the process forward.