

Using International Mechanisms for the Control, Movement and Responsible Use of Alien Species in Aquatic Ecosystems

reported by
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Figure 1. Awareness brochure on alien species

Previous articles in FAN have addressed the responsible use of alien species in fisheries and aquaculture.¹ Furthermore, the Fisheries Department, with the assistance of Member countries and other partners, has developed a framework of FAO mechanisms for the responsible use and control of alien species in fisheries figure 1 (<ftp://ext-ftp.fao.org/FI/Brochure%20aliens/brochure1.pdf>). However, alien species are a cross-cutting issue whose use will be under the mandates of several international agencies and conventions. Policy makers will need to be aware of all of these mechanisms, how they interact and what obligations they impose on national fishery management.

In order to enable policy makers and senior resource officers in the Greater Mekong/Lancang Subregion to use international mechanisms for the control, movement and responsible use of alien species in aquatic ecosystems, an international workshop, International Mechanisms for the Control and Responsible

Use of Alien Species in Aquatic Ecosystems, was convened from 27-30 August 2003, in Xishuangbanna, People's Republic of China. The workshop was sponsored by the Asian Institute of Technology (AIT); the Food and Agriculture Organization of the United Nations (FAO); the Mekong River Commission (MRC); the Network of Aquaculture Centres in Asia-Pacific (NACA); the University of California Sea Grant College Program (UCSG); the World Conservation Union (IUCN); the Ministry of Fisheries, Peoples Republic of China; and the FAO/Netherlands Partnership Programme (FNPP). The workshop was hosted by the Yunnan Provincial Bureau of Agriculture and the Xishuangbanna Fisheries Administration and Regulation Station.

The objectives of the workshop were to review the relevant international mechanisms, to identify major constraints to their implementation in the subregion, to review the status of alien species in the area, and to identify future actions needed to promote the control,



Opening session of workshop, from left to right are: Mr Sam Nuov, Mr Simon Funge-Smith, Ms Liu Qing, Mr Yang Zhimin, Mr Han Huaxing

movement and responsible use of alien species in the greater Mekong/Lancang Subregion. A full report and proceedings of the meeting will be published in 2004. A brief summary of the main findings is presented here.

SUMMARY OF WORKSHOP CONCLUSIONS

The workshop affirmed the fact that alien species provide valuable food and economic opportunity to rural sectors of the Mekong/Lancang River Basin. However, there are also environmental and social risks associated with their uncontrolled use. Aquaculture and fisheries in this subregion are composed of a mixture of native and alien species – management must acknowledge this mixture and strive to balance benefits and risks.

In order to provide useful information on this issue, the workshop determined the following broad elements to be important:

- Evaluation of existing mechanisms dealing with alien species and their application in the Mekong/Lancang River Basin,
- Identification of the main drivers of the practice of moving species into new areas,
- Identification of constraints to effective control of alien species, and
- Identification of practical control measures.

Several significant conclusions emerged from the meeting:

There is still little awareness among senior policy makers and line officers in the subregion of the contents of the Code of Conduct for Responsible Fisheries (CCRF) in general, and much less awareness of codes of practice and guidelines such as the International Council for the Exploration of the Sea/European Inland Fisheries Commission (ICES/EIFAC) codes of practice on introductions. Once these codes and guidelines were explained, there was general agreement that they provided a useful means to manage introductions of alien species.

- While many countries in the subregion advocate some form of environmental risk assessment, less formal queries on potential impacts are often directed to resource managers and aid agencies. Assessments or answers to informal queries cannot often be given because of a lack of readily available information on the potential impacts of alien species on the environment in general and on the specific habitats of the Mekong/Lancang. Thus, many countries expressed the need for additional assistance to increase capacity in order to undertake preliminary environmental impact assessment and import risk assessment. Additionally, countries noted the difficulty in accessing relevant information for impact/risk assessment, and there was a

clear call to organize the various types of information on impacts of alien species into a central repository or clearing house for the subregion.

- Alien species, such as tilapia (*Oreochromis spp.*), play an important role in providing cheap and readily available protein to rural and poor sectors of the basin. Alien species are easy to breed, are tolerant to pond conditions and are therefore suitable for mass production (this is important for those areas that do not enjoy massive inland capture fishery resources).
- The development and use of indigenous species are options to the use of alien species. However, indigenous species have not received the same amount of attention, research, development and use as many alien species. Therefore, in order for indigenous species to compete, the Workshop recommended much more research and development be devoted to domestication and husbandry of native species. The Mekong River Commission's (MRC) programme on Aquaculture of Indigenous Mekong Species was highlighted as a good example of this type of development.
- There is an urgent need for and interest in the creation of regional guidelines on the responsible use of alien species in fisheries. Associated with this is the desire to establish an international body or group of experts to advise on introductions of alien aquatic species. Participants felt that this group could be informal and non-mandatory, and that there were several organizations operating in the subregion that could offer assistance; FAO and NACA were identified as lead partners in this endeavour.
- There is still the need to standardize terminology and concepts related to alien species and invasiveness. The definitions of the Convention on Biological Diversity (CBD) and FAO's Code of Conduct on Responsible Fisheries (CCRF) help in this regard, but more is needed. The Workshop noted that the "invasiveness" of a species depends on the specific environment, potential disturbances to the environment and on society's perception of what "harm" is. Similarly, many genetically differentiated stocks within a species constitute alien "genotypes", yet these organisms are often not thought of as "alien".
- Much of the regulation and control of alien species is based on political boundaries and not on ecological conditions or watersheds. Thus, within a country species may be moved across natural boundaries or into ecologically sensitive areas, and subsequently cause adverse impacts. Countries and regions should look at the distribution of species within their borders and prevent the unrestricted movement of species within a country. Zonation and Global Information Systems (GIS) could assist in this regard.
- In light of the difficulty of enforcing regulations on the movement of alien species and patrolling long coastlines, borders and airports, participants thought that awareness of the dangers of irresponsible movement of alien species should be improved among the general public and fishery line officers. This should be done through training courses with the assistance of international and regional organizations, the popular media and local governments.



Alien species, such as tilapia, can provide food and economic opportunity to rural and poor sectors of society

- Several steps are necessary for effective use and control of alien species in the subregion. Subregional coordination of policies and practices on alien species is needed for effective national management. National policies need to be in place, and the population needs to be aware of issues before countries can implement international mechanisms such as the CBD or CCRF. Thus, regional coordination and national policy development are necessary actions that should go hand in hand in order to facilitate implementation of broader international agreements.

NEXT STEPS

The meeting was extremely useful as a means to raise awareness of important issues and how international instruments can address them. We plan to produce similar workshops in other regions with slightly different emphasis, e.g. how to involve donors and private industry

in the responsible use and control of alien species. Following this series of workshops, we will produce Technical Guidelines on the Responsible Use and Control of Alien Species in Fisheries and Aquaculture.

For further information on alien species in aquaculture and aquatic environments please contact Mr Devin Bartley at FAO/FIRI (devin.bartley@fao.org).

¹ Bartley, D.M. and C.V. Casal. 1999. Impact of introductions on the conservation and sustainable use of aquatic biodiversity. FAO Aquaculture Newsletter 20; Garibaldi, L. and D. Bartley. 1998. Database on Introductions of Aquatic Species (DIAS): the web site. FAO Aquaculture Newsletter 20:20-24. Bartley, D.M. 1994. Conservation of Biodiversity and coho salmon broodstock development in Chile. FAO Aquaculture Newsletter No 8: 19-20. Bartley, D.M. 1993. Introduced Aquatic Organisms. Editorial. FAO Aquaculture Newsletter 5: 1-2.



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Participants from four international development agencies, two advanced centers of learning, and nine countries met in Jinghong, Yunnan Province of China to promote responsible use and control of alien species in aquaculture and fisheries