

CHAPTER 5

REMARKS

This chapter gives a brief assessment of what happens in inland waters, including its fisheries, and for what needs should be identified and observed in the future, with respect to the current conditions.

Inland fisheries in Southeast Asia are characterized by the huge aquatic diversity based on various range of ecosystems, the great variety of gears used, the culturally complex society engaged, and the problems in collecting and compiling the fishery statistics. Inland fisheries are dynamic since there are other sectors also doing various activities in the same inland waters often causing changes in the habitats of the aquatic organisms that could impact on the fishery production. Inland fisheries are also influenced by nature, the occurrence of rainy and dry seasons that cause water level fluctuations leading to biodiversity alteration and adjustments in the fishery activities.

In many Southeast Asian countries, specifically in Cambodia, Indonesia, Myanmar, Lao PDR, Thailand, and Viet Nam, where there is wide distribution of inland waters, inland fisheries could be the main livelihood of the fisher households, although in most cases, the fishers also have other jobs such as farming or tending the rice fields. Despite such situations, the role of inland fisheries for improving the socio-economic of local people is often underestimated. As mentioned by Platteau (1989), the inland fisheries have been perceived as ‘backward, informal and marginal’ economic activities.

Generally, the people who inhabit the areas surrounding the inland waters are living under the poverty line, making them less capable of getting enough access to utilizing the fishery resources. Aside from inadequate catching ability to produce fish, because of limited capital to procure fishing gears, their catch is directly sold to middlemen who had previously loaned them some money-making poor fishers becoming much poorer. One of the most promising solutions for the sustainability of small-scale fisheries would be for the governments to provide support to fishers in terms of fishing gears and to conduct capacity building on catch management as well as to provide capital grants.

An integrated system of farming should be developed in and around the fishing areas such as fish-cum-agri-culture. This could be one way of increasing the fish stock through natural recruitment as fish

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supply could be sourced from the fish culture or promotion of culture-based fisheries and restocking using seeds produced from the culture activities. Agriculture activities could also provide the nutrition needs of the fishers.

The major threats to inland waters come from human activities and environmental degradation. Dam development could be one of the artificial obstacles of fish migration and fisheries activities. Converting of inland water sites into agricultural areas, e.g. palm plantation or recreational destinations or industrial areas could impact on the fishery resources threatening the survival of freshwater fishes, a consequence of the underlying causes of the decline of fisheries activities and production (**see Chapter 1 and Chapter 3**).

Although SEAFDEC has published the statistics on inland capture fisheries in Southeast Asia since 2008, the information is far from complete as data collection had always been a difficult task to undertake considering that inland fisheries use various types of fishing gears, involve large numbers of small-scale and part-time fishers, endure high seasonality, and comprise complex fishing activities. Moreover, inland fishery resources have diverse species composition, fish landing sites for the catch are inadequate, and significant portion of the catch goes directly for household consumption. The statistics reporting system for inland capture fisheries make use of enumerators, but because of their limited numbers, all fishers and landing sites could not be covered. The insufficiency of the statistics on inland fisheries production is one of the big challenges that hinder the sustainability of inland capture fisheries. As a result, some of the nominal catch statistics have been considered unreliable and could not be used unless they are reconciled with other sources of information (Coates 2002), because where the errors and biases are considered constant, the statistics are used to establish the trends (Lymer and Funge-Smith 2009). Therefore, it is necessary to improve the data collection systems and methods that could be applied to various conditions and background of inland capture fisheries in the region. The data to be collected could include among

others, fish production in quantity, species composition of the catch, operational time spent in fishing, and the kinds of fishing gears used. These data and information are necessary so that the contribution of inland fisheries to the economies of the countries could be visualized, and the sustainability of inland fisheries is ensured.

Regulations on inland fishery resources should include provisions that concern a wide variety of matters, including the use of responsible fishing gears, allowable mesh size of fishing gears, methods of fishing, prohibited fishing areas, closed and open seasons in inland water bodies, sustainable trading of fish catch, and the restrictions on fishing. The responsibility of managing the inland waters which should consider the impacts of the fisheries on the environment and other aquatic components, not only lies on the fishery authorities but also with some other relevant sectors. Fisheries interests are peripheral to policy-making and as such, are allocated the appropriate processes in most countries. Keeping the sustainability of biodiversity and habitats could be achieved by developing conservation zones and formulating the inland fisheries management plans. The value of the aquatic ecosystems lies in the sustained net benefits derived from the ecological services and food supply, direct and indirect human consumption, energy, as well as the aesthetic and recreational interests. Frequently, inland fisheries have been accorded lower priority in policy-making because of the perception that the alternative users of the water resources contribute more to society's welfare. Conservation of inland aquatic resources should be viewed within the multi-purpose use of inland waters. The principal constraints on fisheries management emanate from human activities, other than the fishing activities. The government, at all levels from central to local authorities, should set up mechanisms to conserve the aquatic diversity compatible with the sustainable use of the inland waters and for the whole range of its economic and social purposes.

Conservation and management decisions for inland fisheries should be based on the best scientific evidence and available data, taking into account local knowledge in managing the resources and their

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habitats. Countries should make it a priority to undertake research and data collection on improving the scientific and technical expertise of fisheries including their interaction with the ecosystem. In overcoming the concerns regarding the transboundary of the ecosystems, the concerned countries should promote bilateral and multilateral cooperation in research. A better understanding of the significance of inland fisheries resource would influence the direction of the general development policies for inland water resources.