

## Annual Report 1997

### Fisheries Division

As an initial phase (1994-1998) in international collaborative activity in the field of fisheries, the Fisheries Division has initiated five major research projects in Asian countries, including efforts to improve the management of fisheries resources in Malaysia and Indonesia, aquaculture in Thailand and Vietnam, and fisheries product processing in China. In addition to these studies, the Division has also endeavored to secure the participation of Southeast Asian countries in a research project targeting prawn viral diseases.

During FY 1997, the Division initiated its first international collaborative research project on fisheries resource management in Malaysia with the Fisheries Research Institute (FRI) and the University of Malaya (UM). This multidisciplinary project, which examines the productivity and sustainable utilization of brackish water mangrove ecosystems, involves the integration of studies in fisheries, forestry, agriculture, and socio-economics. JIRCAS has successively dispatched two senior researchers to Penang, Malaysia, to provide long-term oversight for the project, and several short-term scientists specializing in fish larval ecology, crustacean ecology, and marine chemistry have also participated. In December, 1997, members of the project team conducted a workshop on brackish water mangrove ecosystems that brought together researchers from FRI, UM, and the Forest Research Institute Malaysia (FRIM).

At the same time, the Division remains involved in several other ongoing projects. These include collaborative studies on the life history of major coastal fishes in Indonesia based on otolith analyses now being conducted in Maros, South Sulawesi, Indonesia, in conjunction with the Research Institute for Coastal Fisheries (RICF) under the jurisdiction of the Central Research Institute for Fisheries (CRIFI). The project aims to deepen understanding of the ecology and life history of important coastal fish species in ways that may improve resource management methods. One researcher has been dispatched to Maros as long-term residing scientist.



Photo: Sampling from a fish market in Ujung Pandang, Indonesia.

The Division's collaborative work on the development of sustainable aquaculture technology in Southeast Asia also continues at Kasetsart University in Bangkok, Thailand. In addition, the Division

has been participating in a comprehensive project entitled "Evaluation and improvement of farming systems combining agriculture, animal husbandry, and fisheries in the Mekong Delta" with the College of Agriculture at Cantho University in Vietnam. This project involves multidisciplinary studies of integrated farming systems to address problems in rice production, animal husbandry, freshwater aquaculture, and socio-economics. Research in fisheries and freshwater aquaculture comprises an important part of the project, in particular as it relates to technologies for the production of fish and prawn fry, the prevention of disease among fish and prawn, and the utilization of new feed resources for freshwater aquaculture. To oversee components of the project which relate to fisheries management, JIRCAS has dispatched on short-term bases one researcher specializing in crustacean endocrinology and three Fisheries Agency scientists specializing in fish disease and fisheries nutrition.

Concerning the processing of fisheries products, the Division has continued collaborative research on postharvest and processing of freshwater fish in China with the Faculty of Food Science and Technology at the Shanghai Fisheries University. Two senior researchers have been dispatched successively to Shanghai, and short-term scientists specializing in postharvest technology have visited to lend support to the project.

Intensive aquaculture has been well-developed in recent years and has become one of the most important industries in many countries, but self-contamination and fish disease in culture ponds have given rise to serious environmental and social problems. In order to promote effective management and prevent problems from occurring, the Fisheries Division in March, 1998, organized a research workshop to consider aquaculture and related environmental problems in Southeast Asia. Five foreign scientists from four countries joined two Japanese university professors to share perspectives on the conditions prevailing in the regional and discuss the direction of future research efforts.

Finally, under the auspices of the JIRCAS Visiting Research Fellowship Program, one scientist from the Central Research Institute for Fisheries (CRIFI) in Indonesia has been invited to Tsukuba to undertake cooperative studies of aquatic animal physiology and pathology over a two-year period. Other invitees will soon follow. Participating Tsukuba Fellows are expected to become core scientists in JIRCAS's counterpart institutions and to contribute to the continued development of collaborative studies.

- **Division Topic #1:** Food-Chain Mechanisms and Productivity in Brackish Water Mangrove Ecosystems.
- **Division Topic #2:** Age Determination of Tropical Fishes in Indonesia.