

The Asian Fish Health Network

Massive losses of wild and cultured fishes have recently occurred due to the "epizootic ulcerative syndrome", a disease of unknown etiology which has caused millions of dollars in losses to aquaculturists and small-scale fishermen in countries such as Thailand, Malaysia, Indonesia and the Philippines. The likelihood that this disease, as well as many others which cause less spectacular mortalities, is being spread throughout the region by the movement of live fishes for culture has made government scientists, administrators and policymakers aware that programs are needed for the certification of disease-free fish stocks and the quarantine and inspection of imported fishes. These problems are clearly of international scope and require the cooperation of both importing and exporting countries in a concerted regional effort towards their solution.

A high level of expertise is needed in many areas, among them virology, bacteriology, parasitology, histopathology and field diagnostics. The equipment needed for some fish health disciplines (e.g., virology) is rather sophisticated and the cost of operating a fully competent laboratory can be prohibitively high. Regional cooperation and communication

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are needed so that research efforts are not duplicated.

FAO has played a leading role in the attempt to determine the cause of the "epizootic ulcerative syndrome" by sponsoring a joint two-year investigation by staff of the National Inland Fisheries Institute (NIFI), Bangkok, and the University of Stirling, Scotland. FAO also sponsored a consultancy in Bangkok, August 1986, attended by fish disease experts and representatives of concerned governments from some 16 countries. To follow up the recommendations of this group, FAO has recently granted funds to the Network of Aquaculture Centres in Asia (NACA). Under the NACA program, research will be initiated on the "fish ulcerative syndrome" and fish health workers from the region trained in environmental disease monitoring and disease diagnostics at NIFI and at the Universiti Pertanian Malaysia (UPM).

The University of Stirling, through core funding from the Overseas Development Agency (ODA) has also been instrumental in training MSc and PhD students from many Asian countries, as has Auburn University's International Center for Aquaculture through core support from the United States Agency for International Development (USAID).

Funds for capital construction of facilities for fish health research in Asia have been supplied by the Canadian International Development Agency (CIDA), Japan International Cooperation Agency (JICA) and USAID. In 1985, the first general reference text designed specifically for scientists working in Southeast Asia, the book "Parasites of Fishes in the Tropics", by Dr. Z. Kabata, was published under IDRC support.

IDRC-Supported Fish Health Projects

Since 1976, IDRC's Agriculture, Food and Nutrition Sciences Division, through its Fisheries Program, has been supporting an expanding number of fish health projects in Southeast Asia. Research efforts are typically directed towards solving disease problems which affect the livelihood of the small-scale rural fisherman. Five such projects are currently receiving support:

Fish Parasites (Indonesia). Begun in 1976, this is a joint project between the Research Institute for Freshwater Fisheries (RIFF) and the Institute Pertanian Bogor (IPB), both in Bogor. Under the project leadership of Mr. Akhmed Rukyani, project staff have studied bacterial and parasitic diseases in Indonesian cultured fishes and assisted in the formulation of plans for a quarantine system, the first to be developed in the region. Past research activities have included developing methods for controlling the parasitic copepod *Lernaea* and investigating the "epizootic ulcerative syndrome" in common carp. The project leader is currently completing a PhD in parasitology at Auburn University, while one additional PhD and two MSc candidates have recently begun studies in Canada and Malaysia.

Fish Parasites (Malaysia). Begun in 1978, this project has developed a core group of researchers under the leadership



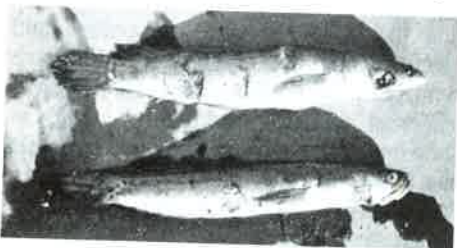
Participants in the Workshop on Protozoan Parasites of Cultured Fishes, 27 April-2 May 1987, UPM, Malaysia. Seated left to right: C. Baticados, F. Shaharon, J. Lom, S. Regidor, M. Rsantazo. Standing left to right: J. Natividad, O. Komaruddin, L.T. Seng, L. Ruangpan, M. Shariff, K. Tonguthai, L.K. Seng, S. Zahrah, D. Seenapa, C.T. Mee, L.S.K.W. Balasuriya, R. Subasinghe, R. Arthur.

of Dr. Mohd. Shariff of the Faculty of Fisheries and Marine Science, UPM. Research is presently underway to establish the native bacterial flora and parasites of Malaysian fishes while investigating the pathogens of fishes being imported into the country for aquaculture purposes. Project staff act as advisors to the Department of Fisheries on the development of policy on fish health matters and provide expertise in diagnosing the causes of disease outbreaks.

Fish Health (Philippines). This three-year project with the Bureau of Fisheries and Aquatic Resources, Quezon City, was funded in April 1985 to develop fish disease expertise and diagnostics capabilities within the Philippine government. Under the leadership of Mr. Jose Natividad, the project team has been conducting surveys of the parasites of cultured and wild fishes and of those being imported into the country for both aquaculture and the aquarium trade. Four project staff are currently undergoing MSc training, two locally at De La Salle University in Manila, and one each in Canada and Scotland. The project will assist in the development of certification and quarantine regulations for the Philippines, provide diagnostic services to fish growers and train BFAR extension workers.

Marine Fish Diseases (Malaysia). A two-year project funded in April 1985, this study is headed by Drs. Leong Tak Seng and Wong See Yong of the Department of Biological Sciences, Universiti Sains Malaysia. The parasites and bacterial diseases of marine cage-cultured fishes of Peninsular Malaysia are being studied for the first time, with the eventual goal of increasing fry-to-market survival and of developing methods for preventing the introduction of diseases with imported fry.

Fish Diseases (Thailand). This three-year project, funded in August 1986 with the Thai Department of Fisheries, is led by Dr. Kamonporn Tonguthai of NIFI. The already well-established fish health team will be further developed through



Snakehead (*Ophicephalus striatus*) from Laguna Lake, Philippines, afflicted with the "epizootic ulcerative syndrome".



Fish Disease Clinic, Department of Fisheries, Thailand. Left to right: J.R. Arthur (IDRC), S. Areerat (DOF), L. Margolis (Canadian consultant).

postgraduate training in histopathology, virology and immunology; a virology unit will also be established. Diagnostics capabilities will be upgraded to aid the fish grower, and an inventory of the parasitic and bacterial diseases of native and imported fishes will be initiated so that the country's disease status will be better known.

Other projects are being developed with the Sri Lankan Department of Fisheries and the University of Colombo, and with SEAFDEC-AQD, Tigbauan, to investigate the cause of the "fish ulcerative syndrome" in the Philippines. New proposals will include other countries such as China, India and Nepal.

The Asian Fish Health Network

The Asian Fish Health Network was inaugurated in April 1985 with the appointment of a network coordinator (the author) funded by IDRC and attached to BFAR, Quezon City. A primary goal of the Fish Health Network is to foster development of regional perspectives, approaches and solutions to fish disease problems in South and Southeast Asia.

The network coordinator assists staff of interested universities, national government agencies and regional centers in formulating proposals for support. Once the project is approved, he also monitors and evaluates project progress; assists staff in arranging training and consultancies, resolving administrative problems and preparing reports and publications; and provides technical assistance in fisheries parasitology.

In addition to projects, other activities of the network include the following:

- * As part of the Asian Fisheries Forum, held in Manila in May

1986, the network organized three sessions on fish health topics at which over 30 papers were presented by regional workers.

- * A variety of short-term training courses and workshops have also been organized by the network. In May 1986, the network hosted a one-day regional fish diseases workshop. In June 1986, scientists from fish health projects met at Punta Baluarte, Philippines, for a three-day workshop on "Parasitic Nematodes of Fishes" sponsored by the network. A second workshop, on "Parasitic Protozoans of Cultured Fishes", was held in April this year at the UPM. A third workshop is being planned for February 1988 at Sanur Beach, Bali, by the Indonesian Department of Fisheries and IDRC through funding to the Fish Parasites (Indonesia) Project. The topic will be fish histopathology. Accompanying Network activities will include review of research conducted by member projects and the annual meeting.

The Asian Fisheries Society Fish Health Study Group

As a result of the interest expressed by participants at the first network meeting in Manila, a questionnaire was circulated to workers in South and Southeast Asia to determine if a professional society is needed. As a result of the strong response received, the network has approached the Asian Fisheries Society about founding a formal Fish Health Section. The AFS has agreed to establish a Fish Health Study Group as an initial step towards this goal. Two ad hoc committees have been established: an organizing committee composed of Dr. Leong Tak Seng, Dr. Kamonporn Tonguthai and Ms. Lila Ruangan; and a newsletter committee chaired by Mr. Jose Natividad and Ms. Cecilia Baticados. ICLARM's quarterly, Naga, which serves as vehicle for AFS news, will also provide space for the new Fish Health Study Group. Membership in the group is open to all interested AFS members.

Questions on Fish Health Network activities should be directed to the author.