

Foreword

Rice today is grown in 113 countries in the world in a wide range of ecological conditions and water regimes. The cultivation of most rice crops in irrigated, rainfed and deepwater systems offers a suitable environment for fish and other aquatic organisms. Over 90% of the world's rice, equivalent to approximately 134 million hectares, is grown under these flooded conditions providing not only home to a wide range of aquatic organisms, but also offering opportunities for their enhancement and culture.

The purpose of this review is to synthesize available information and highlight the important role that aquaculture in rice-based farming systems can play for food security and poverty alleviation. Aquatic production, in addition to the rice crop itself, is a critically important resource for rural livelihoods in developing countries; its local consumption and marketing are particularly important for food security as it is the most readily available, most reliable and cheapest source of animal protein and fatty acids both for farming households as well as for the landless.

This review describes the history of the practice and the different rice ecosystems in which fish farming takes place. The various production systems, including modifications of the rice fields necessary for integrating fish farming, and the agronomic and aquaculture management are examined. Pest management in rice has evolved tremendously over the past decades, and the culture of fish and other aquatic organisms can reinforce environmentally and economically sound farming practices.

The real and potential impact of rice-fish farming in terms of improved income and improved nutrition is significant but generally underestimated and undervalued. Hidden benefits of rice-fish farming such as risk reduction through diversification of the farming system may have a strong attraction to many farmers and their families. Fish can be sold directly, or may reduce the dependence of families on other livestock which can then be traded for income. Also, fish from the rice fields may not be sold but the production may be used to feed relatives and those who assist in rice harvesting, a benefit which could almost be considered essential in families with a labour shortage.

The time for emphasizing the importance of rice-fish farming is particularly relevant in light of the currently celebrated UN International Year of Rice 2004.¹ Fish from rice fields have contributed in the past, and continue to contribute today, towards food security and poverty alleviation of many people in rural areas. With significant changes particularly in pest management and fish seed availability taking place in many rice-producing countries, there is now considerable potential for rice-fish farming to further expand its contribution to improve the livelihoods and food security of the rural families.

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¹ The United Nations General Assembly (UNGA) declared the year 2004 the International Year of Rice (IYR) and invited the Food and Agriculture Organization of the United Nations to act as the lead agency for the implementation of the IYR, in collaboration with partners from national, regional, and international agencies, non-governmental organizations, and the private sector. The FAO Fisheries Department with the assistance of Fisheries Officers from the Regional and Sub-Regional Offices contributes to the IYR through various awareness-raising activities related to the importance of aquatic biodiversity in rice-based ecosystems. Information is available at <http://www.rice2004.com>.