

EXPERT CONSULTATION ON SMALL-SCALE RURAL AQUACULTURE¹

(FAO Headquarters, Rome, Italy, 28-31 May 1996)

¹Based on excerpts from *Report of the Expert Consultation on Small Scale Rural Aquaculture*,

FAO Fisheries Report No. 548, FIRI/R548. Rome, Italy. 1997.
See previous related articles:
'Rural aquaculture : From myth to reality'. FAN, number 2, 1992.
'Development of type rural II aquaculture in Latin America'. FAN, number 11, 1995.

Manuel Martínez-Espinosa
Fishery Resources Officer
Fishery Resources Division

This is not what I meant by "participation"!

Background

The term "aquaculture" refers to a diverse range of practices, undertaken in equally diverse locations with varying constraints, potential and objectives. It encompasses large scale, high input, industrial fish culture and small scale, low input - low output fish farming. For the former, principal motivations relate to productivity and financial profit. For the latter, a complex blend of food security, income generation, livelihood strengthening, and diversification are all likely to be important. Between the two extremes are varying levels of input and intensity of cultivation: a continuum.

Aquaculture production from developing countries in 1994 accounted for 84% of global production of finfish and shellfish by volume. The bulk of this production comes from small scale farmers in rural areas, and much of international assistance has been to smaller scale, low input and output aquaculture. For many of the adopters of re all likely to be important. Between the two extremes are varying levels of input and intensity of cultivation: a continuum.

Aquaculture production from developing countries in 1994 accounted for 84% of global production of finfish and shellfish by volume. The bulk of this production comes from small scale farmers in rural areas, and much of international assistance has been to smaller scale, low input and output aquaculture. For many of the adopters of sector, optimism about the prospects for developing similar models elsewhere has waned in recent years. This is most marked for Africa south of the Sahara and Latin America. The precise nature of the "failure" in these regions is complex. However, certain factors are characteristic: the reluctance of farmers to adopt the technology, a tendency for ponds to be abandoned, less than optimal productivity, and the poor sustainability of aquaculture development projects. On the departure of external assistance, aquaculture activities have often slowed down, and eventually stopped. Arguably, such problems have beset many other aspects of rural development. Recently, a number of attempts have been made, under diverse geographic coverage and approach, to learn from the diagnosis of unsuccessful earlier development efforts. To date, little

attempt has been made to draw together and synthesize the results and implications of those efforts or to reflect on their effectiveness and impact, in order to provide guidance for appropriate future actions in policy and practice.

The general objective of the consultation was therefore aimed at providing FAO and its Members with information and advice on the role of small scale aquaculture in rural development in the light of recent experiences in research and development.

The meeting

The Consultation was attended by 5 experts from Africa, two from Asia and one from Latin America. Five consultants assisted with the background documentation, preparatory work and general support. A good number of FAO staff members from the Department of Fisheries as well as from other FAO units involved in activities related to rural aquaculture participated in the Consultation (Rural Development, Animal Production and Health, Land and Water Development, Food and Nutrition).

The meeting was organized in 4 thematic sessions plus one concluding session. An overview background paper, 4 thematic background papers and 4 information papers provided the inputs for the discussion. The main issues covered in these papers and the subsequent discussions were:

- 1) defining objectives and indicators and identifying target groups,
- 2) the implications of integrating small-scale rural aquaculture within agriculture and rural development,
- 3) the institutional context: roles of the public and private sectors/other institutional mechanism, and
- 4) options in research methodologies/approaches and mechanisms for extension based on research results.

Highlights

Defining objectives and indicators and identifying target groups

As with many other technologies, those most likely and most able to become productive fish farmers are not the most needy. Policy makers face a dilemma: whether to

focus development efforts on the resource poor or to concentrate on technology development which may be viable in the long term but which is unlikely to be related to the needs of the poorest, at least in the short term.

Participants agreed that even small-scale rural aquaculture is far more readily adopted by relatively wealthier groups in rural communities. The "poor", who have often been targeted by rural aquaculture programmes in the past, frequently face considerable problems in effectively making use of aquaculture technology or gaining access to the resources required to make it work. They are unlikely to be early adopters of aquaculture unless they are specifically targeted for long term support. A number of participants stressed the importance of working with those farmers who show evidence of capacity to succeed. The nature of this capacity was the subject of some debate. While there was general consensus about minimum capacity in terms of land and water availability, there was more disagreement as to whether it is justifiable, appropriate, or possible, to identify in advance those farmers with 'progressive' or 'entrepreneurial' attitudes. Some participants suggested that this was a necessary prerequisite for successful adoption, while others maintained that promoters should not impose such criteria. However, it was agreed that although early adopters are likely to be the more well off in rural communities, the promoters of aquaculture should make every effort to ensure the continuing availability of low-input and low-cost technology likely to be accessible to the poorer segments of the rural population.

It is widely accepted that conventional methods for socio-economic rural diagnosis have not been very effective in determining the real needs and aspirations of people when development projects are formulated. In this context, new diagnostic methods have appeared, such as Rapid Rural Appraisal (RRA) and Participatory Rural Appraisal (PRA), that incorporate community members in the identification, analysis and evaluation of their limitations and possibilities, according to their own perceptions, so that priorities are established jointly with institutional facilitators. Some of the risks in using participatory approaches "out of context" were also highlighted. Participants differed in their perceptions of the importance of these problems. It was mentioned that greater attention paid to the "ground rules" for use of participatory approaches and the sort of limits likely to be encountered in different contexts could remove some of the perceived difficulties. The need to regard RRA and PRA as options which can be combined with other approaches as appropriate was highlighted. Means of linking participatory planning in the field with mechanisms for policy formulation and national planning were felt to be generally lacking. It was also pointed out that development approaches which aim at empowerment of local communities require adaptive

political, social and institutional frameworks which are not always available.

The implications of integrating small-scale rural aquaculture within agriculture and rural development

The importance of approaching small-scale rural aquaculture as one component or option for rural development, not an isolated technology, was emphasized by many participants. The need for a more widespread adoption of a holistic farming systems approach was seen as key to ensuring that

aquaculture is adopted as a development option where it is genuinely appropriate and addresses specific needs recognised by the intended beneficiaries themselves. Wider use of interdisciplinary approaches to rural development, which include aquaculture, is essential for this purpose.

The risk of aquaculture losing its identity during the process of integration into "rural development" was also highlighted. Examples were given of how, once aquaculture is incorporated into a more integrated development approach, it can easily end up being given such low priority that it is practically ignored as a potential solution to problems of rural income-generation and food supply, especially in areas of the world where it is not yet widely practised. In this connection, the need to promote aquaculture and its potential, and to analyze past problems and failures, was underlined. It was also noted that there is need to demonstrate the usefulness of aquaculture as an option, with well-documented proof of its current and potential contribution in integrated farming systems and rural development in general. While such documentation is available from many parts of Asia, information and cases from Africa and Latin America need to be made more readily available. Materials promoting aquaculture clearly need to show how it compares to the range of alternatives generally available for rural development.

The structural inadequacies of many development organizations to accommodate the kind of multi- and interdisciplinary work which more integrated rural development approaches require was also noted by many participants. The FAO itself was felt to have considerable difficulty in ensuring the proper incorporation of different disciplinary skills and



knowledge into its rural development activities, at least in relation to aquaculture in rural development.

At government level, participatory approaches require new mechanisms and planning procedures which can link participatory planning efforts at the field level with the policy formulation processes at higher level. As noted earlier, techniques for doing this are not always available.

The effect of structural adjustment programmes and changes in the macroeconomic environment obviously have complex, and sometimes paradoxical, impacts on the development of rural aquaculture. The need to assist governments in analysing these effects was identified by several participants as a possible role for the FAO.

The institutional context: roles of the public and private sectors/other institutional mechanism

A principal criticism of earlier development efforts has been that production was subsidized from government and donor funds without creating the stimulus required to ensure autonomy. Recent changes in the political and economic environment have led to a change of approach. The role of the state has been reduced, and the emphasis is now on decentralization and privatization.

For aquaculture development, this clearly means that the role of government in providing key support services such as extension and fingerling supply has to be reconsidered and alternative channels identified. Aquaculture development agencies need to identify new, more effective means to reach their objectives

and target groups. It was pointed out that the current trend to encourage co-operation between development institutions and the private sector has greatly expanded the range of possible counterparts for rural aquaculture development programmes. The possible role of the private sector, particularly in fingerling production and supply was repeatedly mentioned as of great importance. Participants noted that over the past few years, many development organizations have increased their delivery of aid through non-governmental organizations (NGOs). While generally supportive of this, they stressed that there is still an important role for governments, particularly in the effective regulation of the private sector.

The implications of decentralization processes undertaken by national governments need to be taken into account and understood. It was noted that in many instances decentralization has been carried out without the devolution and delegation of authority.



A farmer in Northeast Thailand discusses fish production

Options in research methodologies/approaches and mechanisms for extension based on research results

Variations (and similarities) between regions and individual sites are significant. A generalized, blueprint approach to aquaculture technology development was accepted as being generally inappropriate but lessons from one area need to be communicated to others. Some disagreement arose over the way in which research feeds into development in the field. Participatory approaches to development emphasize the need for research to be reactive to the needs and problems encountered at the field level and for participation of farmers in research. New methodologies for conceiving and conducting research have evolved

from field trials in which the farmer's perspective is fully appreciated and farmers are incorporated into the research process from the beginning. Farmer-participatory approaches in research aim to capitalize on the strengths of both modern science and traditional knowledge bases. These new approaches require important shifts in the structure and focus of many aquaculture research institutions. On the other hand, the representatives of research institutions clearly feel that prior research, at research institutions, to develop viable technical options, is of key importance. Compromise solutions which combine the two elements need to be worked out according to local conditions.

Questions were raised about the linkage between participatory farm research and extension. Some participants felt that farmer-to-farmer extension is the most effective way of transferring information. Others expressed concern that if this were relied upon as the main method of extension, it would be impossible to

control side effects. These might include the conveyance of inaccurate or misleading information and the consolidation of inappropriate practices.

The need for both global and regional co-ordination of research efforts and the collection and diffusion of information was highlighted. It was felt that this was an important role for the FAO. The FAO's "bird's eye view" of world-wide developments can be of great assistance to governments trying to refine and develop new policies for rural aquaculture development. While the weaknesses of transferring techniques developed in one area directly to another was widely

recognised, the FAO can make important contributions by developing and diffusing methodologies, whether for research, extension, needs analysis, development planning or policy formulation.

Other potentially important contributions of the FAO would be in assisting governments in developing appropriate research strategies and techniques and in balancing adaptive and technical approaches to aquaculture research, as well as in the regional and global co-ordination of research and dissemination of information on rural aquaculture. Assisting governments in the decentralization of research activities might also be important.



Small-scale fish farming in Ivory Coast

General issues

The role of the consultation itself was discussed at some length. On the one hand, some participants were anxious to see concrete and workable recommendations produced by the meeting while others were emphatic that the consultation was a "first step" in analyzing the issues facing rural aquaculture development, and further discussion and research would be required before recommendations or proposals could be produced. In particular, given the emphasis placed by participants on the incorporation and integration of aquaculture into more generalised rural development processes, the importance of greater involvement of agricultural and extension specialists in the discussion was highlighted.

The relative level of intervention of the FAO was also discussed. While generally the FAO's role as a global and regional focal point for information collection and diffusion was recognised, there was also concern expressed over the possibility of the FAO becoming isolated from the realities of the field, particularly as the funding for field projects is steadily reduced. The need to keep open channels to the "grass-roots" was felt to be important and, while the FAO will inevitably continue to deal primarily with governments, contacts with properly recognised, more locally-based institutions, such as NGOs or local administrations need to be maintained in some form. In this connection, there is need for a review and analysis of the wide range of institutions with which FAO could work, directly and indirectly, including those within the private sector.

There was agreement that FAO regional offices and programmes should be emphasized over activities directed by head-quarters. It was also felt that the Organization should assist in investigating and clarifying the impact of the changing macro-economic environment on small-scale farmers; restructuring of research, extension, credit and marketing systems; and to continue to play a major role in supporting national, regional and global information systems.



Selling cultured common carp in Laos

Photos p24-25: courtesy of AIT, Asian Institute of Technology. Partners in Development: The Promotion of Sustainable Aquaculture.