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Integrated Freshwater Aquaculture, Crop and Animal Production in the Mekong Delta, Viet Nam: Participatory Assessment of Current Situation and Opportunities for Sustainable Development

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Abstract

Participatory Community Appraisals carried out during 2001 and 2002 in the central part of the Mekong Delta aimed to understand practices of the integrated agriculture-aquaculture farming systems (IAAS), giving special attention to the contribution of the aquaculture component to household livelihoods, and to identify issues for further improvements and development of IAAS in general and integrated aquaculture in particular. Within the target area, three representative sub-areas were identified and in each sub-area an indicative community was selected for the participatory study. Integrated aquaculture farming was very diverse. Important factors influencing patterns of integrated aquaculture were: bio-physical setting, market accessibility, households' resources and livelihood options. Three common integrated aquaculture system types in the study areas were: (1) low-input fish — intensive fruit farming system, (2) medium-input fish — semi-intensive fruit — animal farming system, and (3) high-input fish — extensive fruit farming system. The first system was characterised by its links with fertile soils, low monsoon flood levels and intensive fruit production was perceived to be a major component, while the second and third systems were characterised by their links with less fertile soils, medium or high monsoon flood levels and less intensive fruit production. Integrated aquaculture was assessed to normally be dominated by medium and better-off households with more land, more labour, capital and experience. Better-off households usually operated their systems on a larger scale and/or attempted some levels of intensification. The high-input fish farming system was common in peri-urban areas, where markets for aquaculture inputs and outputs exist. Compared to low- or medium-input fish farming, intra-farm bio-resource flows were less important within high-input fish culture, the production system being based mainly on off-farm nutrients. Improving nutrient linkages between the ponds and the terrestrial components was identified as an important objective to improve systems (1) and (2) while more nutrient recycling to minimise pond nutrient discharge was an important option for (3). Sustainable development of small-scale integrated aquaculture systems needs a holistic and participatory approach, from which bio-physical and socio-economic factors at farm, community and regional levels need to be taken into account.

Keywords: Integrated aquaculture, nutrient recycling, participatory appraisal, Viet Nam