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## RESEARCH REPORTS

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SUSTAINABLE AQUACULTURE FOR A SECURE FUTURE

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**Title:** Developments in integrated aquaculture in Southeast Asia

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**Abstract:** Integrated aquaculture is inclusive of interactive utilization of resources and ecosystems in the artificial rearing of aquatic animals and plants. By the nature, purpose and scale of the operation, integrated fish culture can be categorized into five major modes. One is the traditional small-scale subsistence farming where fish are produced by recycling on-farm wastes in ponds or rice field, two is recycling of human excreta, three is the “industrialized” commercial operation by integrating medium and large-scale poultry or livestock farms with ponds for fish production, four is integration of aquaculture with natural ecosystems, e.g., shrimp culture with mangroves, cage and pen culture in lakes, cove culture in reservoirs. The fifth is environmental-oriented integration, where waste effluents from intensive aquaculture ponds are recycled to improve water quality and to grow filter feeder/herbivores or macrophytes as secondary crops. This paper presents concepts and practical examples for some of these systems.

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