

CHAPTER VII

CONCLUSIONS AND RECOMMENDATIONS

7.1 Conclusions

Integrated farming systems with crops and livestock were good solutions to increase household income, food security and generate year-round employment for farmers.

The productivity of rice and vegetables of both farm types IFS-I and IFS-II (under CWS project) was higher than IFS-III and IFS-IV (non-CWS project) because farmers in IFS-I and IFS-II had improved their capacity to farming practice and in the mean time, they had easy access to the inputs for rice and vegetable productions while farmers in IFS-III and IFS-IV always had limited labor and cash to invest on their farm production and management.

Apart from rice, vegetables and chicken were the major sources of incomes to households of each farm type. The cultured fish also provided big source of income to household but since the area was abundant with natural fish and the price of natural fish was higher than the cultured fish, therefore farmers in the study area were not so interested in fish aquaculture.

Based on whole-farm performance criteria, the farms in IFS-I and IFS-II were better than the farms in IFS-III and IFS-IV in terms of productivity, profitability, income diversity, income stability and sustainability. Thus, the technology had significant impact on farm performance that led to households in IFS-I and IFS-II received better incomes from agricultural activities, means that IFS-I and IFS-II provided incomes to households higher than IFS-III and IFS-IV.

Farmers in IFS-I and IFS-II were more fully engaged in farming enterprises and earned their living from farming while farmers in IFS-III and IFS-IV relied more on off-farm activity. The farmers in IFS-I and IFS-II spent more times on their farms

(203 man-day and 207 man-day year⁻¹, respectively) than farmers in IFS-III and IFS-IV (130 man-day and 96 man-day year⁻¹, respectively).

The IFS-I and IFS-II farmers also had rice grain surplus, average 873 kg and 647 kg HH⁻¹, respectively, while the IFS-III and IFS-IV farmers had a rice deficit of 12 kg and 548 kg HH⁻¹ during the studied year in 2001, the rice shortage was mitigated by income from off-farm employment.

Therefore, at present the households in IFS-I and IFS-II already had food surplus of about 1,833 kg and 602 kg per whole farm, respectively, if compared with food demands in 2010, while households in IFS-III and IFS-IV should effort 3,704 kg and 13,776 kg, respectively, for their food security in year 2010. So farmers in IFS-III and IFS-IV should try to improve their production systems on their farms to increase yields to access food security in the future.

The IFS-I and IFS-II could be used as farm models to achieve food security and income stability provided that good management practices were carried out through better-organized farmer training.

7.2 Recommendations

Rice was the most importance cereal both for obtaining food security and for the cultural reasons. Therefore, the development projects that provided local support must be geared towards obtaining higher yields from the rice cultivation. Other economically profitable enterprises such as livestock, vegetables and fish will get the second priority. However, the development of integrated farming systems can solve the great problems in the lowland area of Cambodia such as creating local employment, increasing local family income, forest protection and land use management. Therefore, certain recommendations could be derived from the study:

1. The rice-based integrated farming systems, which had shown to provide better and well distributed income over time, was knowledge and labor intensive. Extension of the system should be carried out with training services and initial credit support for inputs.

2. Rice sufficiency, and hence food security could be achieved where improved agronomic management was worked out with and adapted by farmers. Future work on resource management should focus on integrated nutrient management with increasing use of available farm resources, such as organic fertilizers, green manure crops, etc.
3. Integrated farming system is dynamic. The farm enterprises will change as farmers became more experienced. Supporting services from public and private sectors, as well as from the NGOs should also be able to adapt those changes. For instance, crop species and varieties, technologies, market access, etc.
4. Vegetables, livestock and fish aquaculture were shown to fit well with rice-based farming system. Integrating of such system requires careful and committed collaboration among governmental agencies, which are often sectorial and departmental. Therefore, it is commonly observed that IFS works when the NGOs implement the system with participatory approach.
5. Initial supports to farmers in terms of credit and input materials from developmental agencies are essential, when IFS will be used to improve food security and to stabilize household income.