

CHAPTER I

INTRODUCTION

1.1 Background

Agriculture, fisheries and forestry account for 45% of Cambodia's GDP and employ about 80-85% of the labor force. Strategies have been developed to improve food security, to stimulate economic growth, to increase rural incomes and to develop agricultural export industry (O'Brien, 1999).

The development of rice-based farming systems has a long history in Cambodia. Across these eras, only limited change has impacted on rice farming. There has been a rice shortage in the country since 1970. However, in the last three years, Cambodia has achieved a rice surplus. This has resulted from the innovation processes used by Cambodian rice farmers in the way they manage the farming systems (CIAP, 2001).

Integrated farming systems in Cambodia includes rainfed lowland rice (RLR), dry season rice, early wet season rice in some cases, animal production (cattle, pigs, chickens and ducks), fishing (or fish culture) and other activities (such as palm sugar production, vegetable productions, wild food collection and trade). The type of farming system selected by farmers varies from household to household, because it is generally based on the principal economic objectives and constraints faced. All these activities sustain and support rice production, which is a way of life for Cambodian farmers and farm households. Because of the close interaction of these components, a change in any one of them can alter the whole system. This on-going process is a result of system management that is the planning, timing, budgeting, resource management and problem management in relation to variable natural and social factors. This rice-based farming system has gone through a long process of change and innovation (CIAP, 2001).

Rice in the rainfed lowland condition in Cambodia suffers from water lodging after tropical rainfalls due to poor drainage. Therefore, almost the entire field is

flooded one or more months in a year. These conditions are suitable only for growing rice, however, it is also a constraint to farmer in integrating non-rice crop based farming systems. Consequently, rice mono crop continues to dominate the rainfed lowland rice ecosystem (Nesbitt, 1996).

As the population increase, there is a need to increase food production in subsistence farm households but the land is at low productivity in rainfed lowland rice. Hence, for sufficient food and their consumption, farmers in the selected area have to integrate activities on their farms. Therefore, it is necessary to manage the existing available resource to produce the greater output per unit of land through intensive and integrated farming systems. This alternative model is currently being introduced by the Church World Service (CWS) to promote the higher productivity and to maintain food security by reducing risk from environmental factor and by creating income-generating activities in the rainfed rice ecosystem. Consequently, based on current practice, it is imperative to study the effect of integrated farming on farmer food security, and income generation. Integrated farming systems development is now being used for agricultural development in “marginal” or “lagging” rural areas.

1.2 Rationale

Cambodia is one of the poorest countries in Southeast Asia and the rural population is especially poor, with its people depending on agriculture, fisheries and forestry for their livelihood. Their agricultural systems are vulnerable to flooding and drought. Transport costs, poor road conditions and banditry are constraints to distribution of food and resources, resulting in areas of food deficit. A rapidly expanding population does not offer relief in the future and production must increase just to provide sufficient food to feed the growing population. Based on recent data collected by the World Food Program, low agricultural productivity has meant that food production is still categorized as inadequate (Hunter *et al.*, 1998).

The productivity of the rice mono cropping in Cambodia is the lowest in Asia at 1.5 tons ha⁻¹ (Nesbitt, 1996). The production in a rainfed lowland rice crop farm is sufficient to feed a farm family for only 7-10 months of the year. The rice crop also at

risk of damage from irregular rainfall. In some years, the rain may be late, or excessive to point of flood, and is damaged (CIAP, 1999).

Therefore, it is necessary to manage the existing available resource to produce the greater output per unit of land through intensive and integrated farming systems. This alternative model is currently being introduced by the Church World Service (CWS) in order to promote the higher productivity and to contribute as a mean to increase farmer's income the CWS organization has practiced a diversification project for agricultural production.

This study has concentrated mainly on the technical and the socio-economic analysis of integrated farming systems, which have been practiced in Salavisay commune, Prasat Balang district, Kampong Thom province of Cambodia. And also food security analysis is based on rice production and agricultural income. However, the details of off-farm income and gender linkage are excluding.

1.3 Objectives

The general objective of this study was to analyze the agronomic and socioeconomic performance as well as food security through of integrated farming practices introduced by the CWS, a non-Government Organization, in the rainfed lowland rice ecosystem.

The specific objectives are as follows:

1. To identify and characterize types of integrated farming systems
2. To analyze and compare the performance of integrated farming systems
3. To evaluate the effect of integrated farming on farmers' present and future food security in the study area.