

Chapter I

Introduction

1.1 Introduction

Vietnam is located in the center of South East Asia with its coordination between $26^{\circ} 22'$ to $30^{\circ} 27'$ north latitude and $80^{\circ} 14'$ to $88^{\circ} 12'$ east longitude. Vietnamese map forms an S-shaped strip on the eastern seaboard of the Indochinese Peninsula, linking to the large Asian continent and looking out on the Pacific Ocean. Vietnam stretches 1650 kilometers from North to South. The widest from East to West is 600 kilometers and the narrowest is 50 kilometers (Kim, 1992). With border line of 3730 kilometers of Vietnam is border by China in the North, Laos and Cambodia in the West and by the East Sea in the East with a coastline of 3260 kilometers.

It covers an area of 330,000 square kilometers. Much of the country is mountainous and covered by tropical jungle. Only about 20 per cent of it is flat. However, the plains and coastal belt are especially fertile, with the deltas of the Red River in the north and the Mekong River in the south particularly rich in rice crops.

Vietnam has two distinct climates; in the north, there are four seasons; in the south and central areas, the climate is tropical, with a rainy and a dry season, and warm and humid weather all year round. Vietnam naturally falls into three distinct regions - the North, or Bac Bo; the Central, or Trung Bo, and the South, or Nam Bo, each of which has different natural endowments and climatic conditions.

Vietnam is agricultural country with greater than 75 percent of the people living in the countryside. Their lives intermediately depend on agricultural output. Agriculture continues to play a dominant role in the economy, accounting for about 53 percent of employment and 50 percent of GDP. Therefore, agricultural

development is initial policy of government. In the developmental strategies of Vietnam, agriculture is considered as background for modernizations and industrializations of nation, and it is also major factor to meet established goals of Vietnam about reducing hungry and alleviating poverty of the rural areas.

Vietnam has 7.3 million hectares used for agriculture, out of which 4.3 million hectares are used for rice cultivation. The rice is considered food security crop of nation and is the single most important crop with account for more than 85 percent of food grain output.

After reunification in 1975, government had concentrated to build infrastructures that have supported for agricultural development of nation. Especially, after Doi Moi (renovation) policy was launched 1986 by government, Vietnamese agriculture has developed so fast base on high efficiency supporting of irrigation systems, roads, markets, and etc. Vietnam was the rice-imported country before 1985 and became the rice exporting country at second on the world of the rice exporting countries in 1998 after Thailand (Bong, 1998).

Paralleling with investment about infrastructures, government also concentrate to increase the field practical knowledge of farmers by organize extension net through nationwide and coordinate with so many agricultural organizations on the world as Food and Agriculture Organization, International Rice Research Institution, and etc to transfer new technologies for the farmers.

Besides development of Vietnamese agriculture - in the last decades, the favourable zone of irrigated land in the Mekong Delta has a step development in the production agriculture - the unfavourable zone existing is “must” face with so much difficult situation – partially irrigated systems have not enough fresh water for production. However, the living standards of rice farmers are not so improved yet; their production is still facing many risks; the impacts of their farming activities on the environment are not clearly known and the questions on dynamics of dramatic changes in farming systems are not well answered. It is necessary to carefully re-

examine the past experiences in the transformation of farming systems to use as a base for modelling and predicting the future changes and their impacts on the environment and the economy forward to the sustainable agriculture in the area partially irrigated of the Mekong Delta.

The Mekong Delta is considered as the most important agriculture area of Vietnam. It is about 3.96 million hectares of natural land in which is over 3 million hectares of rice-cultivated area, accounted for 42.8 percent of the rice cultivation area and 49.7 percent of the total rice production of the whole country. Since the last two decades, the significant development of irrigation systems and the introduction of high yielding rice varieties (HYVs) have rapidly increased food production in the delta. The increase was account for the increase in yield and cropping intensity. Single rice cropping with local traditional rice was replaced by double or triple rice cropping with HYVs. These results are not only enough food to feed for around 80 million people in the whole country but also the rice exporter in the World. Rice is the most common crop in the Delta. Therefore, farming system in the Mekong Delta is actually rice-based farming systems. Mekong Delta has two typical agroecosystems, favourable zone of irrigated land and unfavourable zone of partially irrigated.

The Mekong River Delta has three major cropping seasons: winter-spring, summer-autumn or mid-season, and wet season-long duration. Fifty-two percent of the rice in the Mekong River Delta is grown in irrigated lowlands, with the remaining 48 percent grown under rainfed lowland conditions.

1.2 Rationale

The agricultural development in the Mekong Delta has gone through several phases of intensification. With the introduction of modern high yielding rice varieties, good irrigation and the transport systems, and prevailing marketing opportunities, the favorable irrigated land of the Mekong Delta has become one of the most intensively cropped areas of the world.

However, the rainfed lowland with fewer facilities in infrastructure has also benefited from the modern rice technology and favorable government policies during 1975-2000. Farmers have developed better land use systems, with availability of supplement water. The more favorable rainfed lowland had been converted to double cropping system.

The factors and conditions inductive for such land use transformation in the Tra Vinh Province are not well understood, especially the impacts on over all farm performance. Such understanding will help shape up research directions for rehabilitating the rainfed lowland of the Tra Vinh province, which possesses diverse agroecosystems with varying opportunities.

1.3 Objectives of the study

1. To find out the process of agricultural transformation in partially irrigated lowland rice-based farming system during 1975 to 2000
2. To determine the farm performance of rice-based farming systems in the partially irrigated lowland