

CHAPTER I

INTRODUCTION

Homegardens are a traditional kind of cultivation around the houses which usually include fruit and fuel wood trees, vegetables, root crops, poultry and small livestock and sometimes a fish pond (FAO, 1995). Homegardens may be known by other names such as horticultured house garden, mixed-garden, Javanese homegarden, compound farm kitchen garden, household garden (Terra, 1954; Stoler, 1975; Ramsay & Wiersum, 1974; Soemarwoto *et al.*, 1976; Lagemann, 1977; Brierley, 1985; Vasey, 1985; in Fernandes and Nair, 1986). In Sri Lanka (McConnell, 1992) it is called a Kandy garden. Homegardens produce food, such as cereals, vegetables, fruits and spices which improve household daily nutrition; diversify products and increase land use intensity. Homegardens also increase household income, improve living standards and reduce pressure on the use of natural resources (Thuoc, 1995). Plant distribution depends on site conditions such as climate, soil, landscape and the indigenous culture of local people.

Vietnam covers 33,169,000 square ha, of which more than 75% is upland and mountain land. It is a long and narrow country from 8° 30' N to 23° 32' N latitude with a complex topography from sea level to about 1444 m in elevation. According to Binh (1996), Vietnam is divided into seven ecological regions as presented on Figure 1.

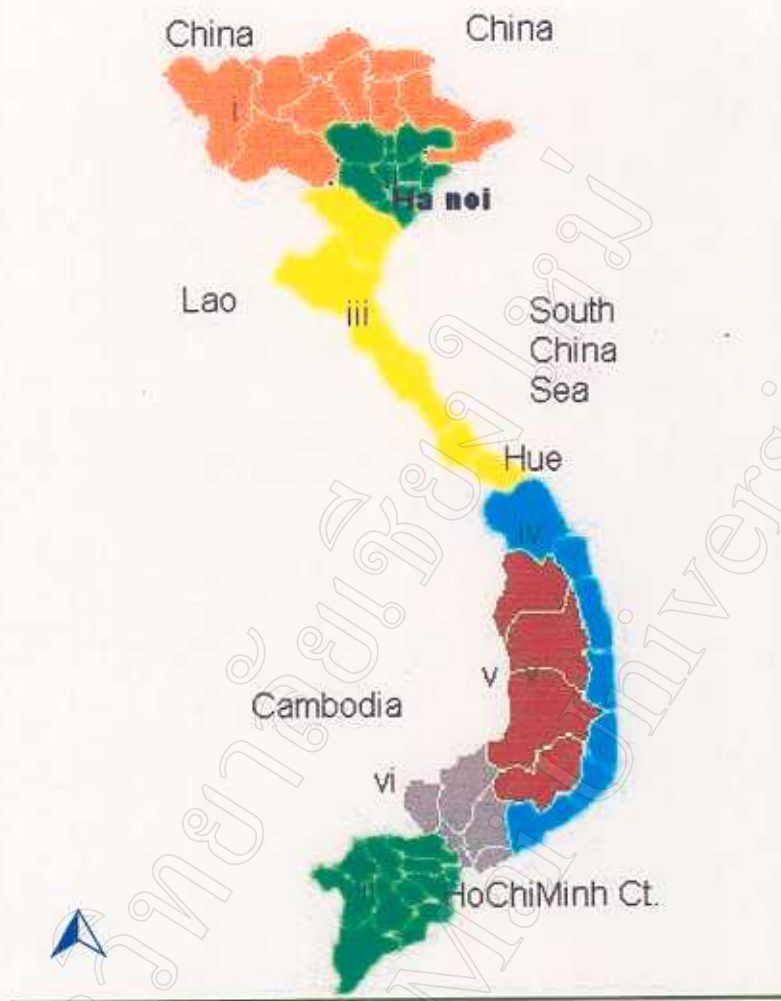


Figure 1. Vietnam with its seven main ecological regions

Source: Binh, 1996.

- i. Northern Mountain Region
- ii. Red River Delta
- iii. North Central Coast
- iv. South Central Coast
- v. Central Highlands
- vi. Eastern West
- vii. Mekong Delta

The plant species components in the homegarden systems of the seven ecological regions are different in both structure and function, and socio-economic influence. This study will consider homegardens in the third region of the country, the North Central Coast.

1.1 Problems

Population and its growth rate

Vietnam's population has rapidly expanded from 36.3 million in 1961 to 76.5 million in 1997 (FAO, 1998a), as presented in Figure 2, with an annual growth rate of 2.2%, in which 79.2% of population is rural (FAO, 1998a). The rural population growth rate is 4.2% compared with 1.2% for urban areas (UNDP, 1998). During this time, the Vietnam economy has also been developing. Together population and economic growth are the most important determinants of the demand for natural resources such as forest, natural water resource, land, etc.

As with other countries in the region viz. Indonesia, Malaysia, Philippines, Vietnam currently has a population with more than 50 % of the people aged 25 years or younger (FAO, 1998b). During the next few years, these people will place increasing demand on the consumption of natural resources.

Land use management and natural resources

More than 79 percent of the 76.5 million people living in rural Vietnam depend on natural resources and are influenced by their degradation and depletion. Economic growth and rapid industrialisation and urbanisation have all led to increase environmental pressures on the country's forestry and biodiversity. Natural resources are being degraded and depleted leading to a loss of upland natural forests and associated biodiversity, expanded soil problems due to inappropriate practices and pollution of surface and under ground water. With increasing population, agricultural land area has expanded but cultivated land in Vietnam is limited. Land use in many areas especially in rural areas lacks good management. Paddy land on the upland and mountain areas can not expand so forests are destroyed for crop cultivation.

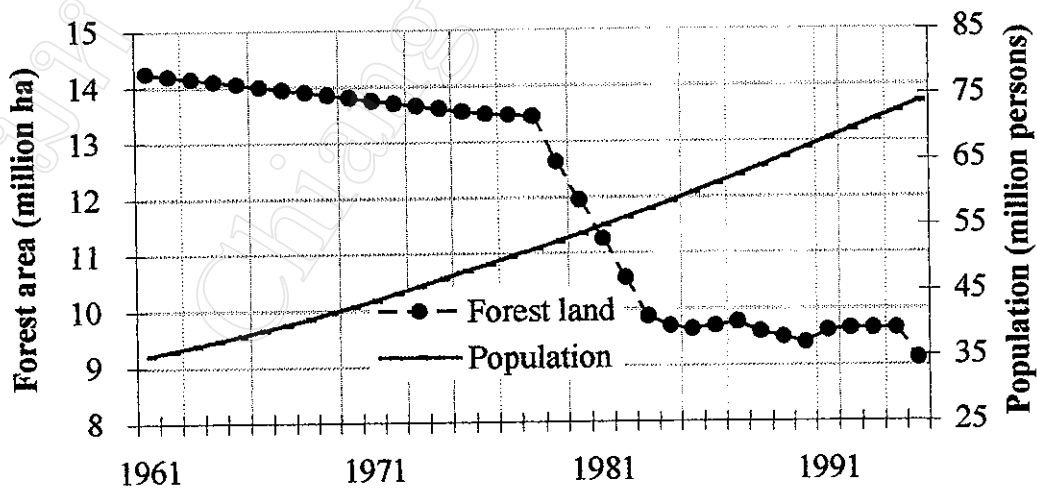


Figure 2. Dynamics of forest area and population in Vietnam from 1961 to 1995

Source: FAO, 1998

Almost all Vietnamese forests are found in the upland and mountain areas, mostly on steep slopes of more than 10 degrees. Agricultural activities lead to serious erosion, floods in the rainy season and drought in dry season. Many rivers in Vietnam have recently become shortage of water in the dry season.

Forest in Vietnam covered about 45% of the country in 1945. Since then, because of increasing population and land use, this value fell to approximately 27% in 1995 (FAO, 1998b). Figure 2 illustrates the loss of forest area in the country from 1961 to 1995. The total loss of forest cover from 1990-1995 was - 676,000 ha, with an annual loss of -1% (FAO, 1998a). The main reasons for forest degradation in the uplands and mountains of Vietnam is from over-exploitation of forest products including non-timber products and the turning of forest land for milpa of upland inhabitants.

Compared to other Asian countries, natural resources in Vietnam are very low (Figure 3).

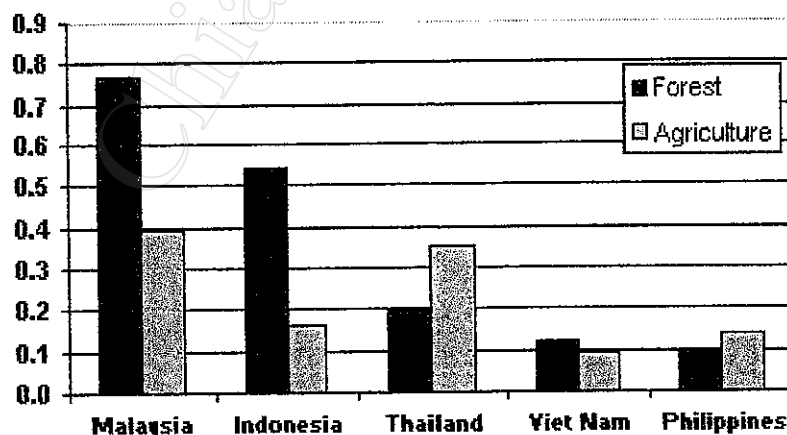


Figure 3 Natural resources base of some countries in ASIAN

Source: (UNDP, 1998)

With less than 0.1 ha of agricultural land and 1.2 ha of forested land per capita in Vietnam, this is much lower than other countries in the region. Increasing the potential of other kinds of land use to increase production has become a wise strategy in Vietnamese agriculture. Homegardens are also included of this mentioned strategy.

1.2 Rationale

Vietnam's population has increased but their cultivated lands are limited. Therefore, solutions to increase agricultural production and to reduce pressure from local farmers on natural resources must be considered.

The low incomes are a problem of rural farmers who live on the upland areas of the North Central Coast of Vietnam. While the rural labour force of Vietnam is 69% of the total labour force, about 30% are unemployed (GSO, 1997). Homegarden development can play an important role in creating jobs for the rural unemployed, whilst welding them to their own homegardens. Results of the research will be used to improve living standards and increase income sources and to invest and develop homegardens in each sub-zone in the upland areas.

The forests in the North Central Coast of Vietnam were suffered seriously due to degradation from the use of defoliant during the war and from intensive use of logging followed by shifting cultivation. Since 1990, the Government has embarked on a series of programs to rehabilitate all bare land and open hillsides. New Forest plantation programmes totalling five million hectares commenced in October 1998.

Upland farmers therefore face new problems. With no land for milpa, homegardens provide a good solution for a sustainable livelihood.

Traditional homegardens are small-scale production systems which are economically viable and environment friendly (Tsegaye, 1997). This land-use system with diversified cropping technique attempts to mimic key characteristics of natural ecosystems as they become more complex and well integrated (Gypmantasiri and Amaruekachoke, 1995).

This study focuses on the structure, uses and income of homegarden systems in the North Central Coast of Vietnam. The study will also recommend solutions for long-term land use and sustainable productivity at household level.

1.3 Objectives of this study

1. To describe the homegarden systems at four upland sub-zones in the North Central Coast of Vietnam
2. To analyse the structures and uses of homegardens
3. To analyse the food and income generating capacity of the homegardens at household level in different ecological sub-zones
4. To recommend appropriate homegardens' species components in upland areas