

## **CHAPTER VIII**

### **CONCLUSION AND RECOMMENDATION**

#### **8.1 Conclusion**

Homegardens are the traditional kind of cultivation around the house for commodities such as fruits, fuelwood trees, vegetables, medicinal herb and root crops, which mainly provide foods and income to the household. Homegarden practice is one of the good solutions to increase household income, food security and contribute the forest management in the upland areas.

Land use distribution in the upland areas of the North Central Coast, where most land areas are watershed forest and complex landscapes, showed the weak point as agricultural land resulting with low productivity. Expansion of agricultural land is no longer possible in this region. Increasing the potential of other kinds of land use to increase production, hence, has become a strong strategy in this region in which, homegarden practices are included in order to solve problems of land use management, low income of the farmers, forest protection and food security.

There are differences in location, ethnic status, education, social relationship, time of settlement and opportunity for development. All of the three factors affect homegarden structure, its uses and household income.

As the distances of the remote areas are far from the central market, the number of species in the homegardens is increased. The common species in the

homegarden are dictated by the needs from its output, which are dependent on the distance from the central market.

Based on the number of species and diversity indices the longer the distances from the central market, the greater the homegarden richness, evenness and diversity. In other words, nearer the central markets, homegarden farmers concentrate on a more limited of useful species.

From the higher elevation zone to the lower, there is a similar two to three layer structures. Many species are arranged on the same land, not only to provide a good soil cover using dropped litter but also to prevent disease and pests and provide protection during difficult climate conditions such as typhoons, monsoon and floods.

Horizontal structures in the homegardens follow the traditional rule of incorporating special plots. Because of the differences of the gardeners' needs and the gardening skill in different zones, tree and crop species are not similar. The farm households in the remote area prefer paddy field, cassava fields and other cereal crops. On the contrary, the nearer areas prefer cash trees and crops. Food plots in the homegarden in remote areas have the same role to the fruit plots, but in the lower land, fruit plots for cash play a stronger role in homegarden management.

There are differences in density structure in the homegarden of the upland areas. Density in the homegardens at Hongha is highest, then reduces with the distances of the studied sites to the central market. Densities of the large size homegardens are lower than of the smaller homegardens

In order to maintain sustainable income over time, homegardeners in near to city are better managers than those in the remote areas. Applying homegarden time structure management in the remote areas can improve income and stability of homegarden production.

Most of tree and crop species in homegarden are multi-purpose plants. Fifteen different uses have been identified such as cereals and starch crops, fruits, vegetables, spices, beverages, medicinal herbs, ornamental, hedgerows, host trees, tools and utensils, fuelwoods, soil conservation and construction.

Homegardens in the upland areas of the North Central Coast of Vietnam can fully meet the needs of the local people. Cereals and starches, vegetables, medicinal herbs, fuelwoods and construction material are provided by homegardens in the remote areas. The number of fruit, beverage and fodder species are similarly found in the studied sites, but those used for ritual and ornamental purposes are greater at shorter distances than at longer distances from the central city.

Close to the central market where there is better transport communications, homegarden farmers plant more tree and crop species for cash purposes whilst in the remote areas, farther from the market with worse transport communication, farmers have developed homegardens for domestic consumption.

Based on the gross income contribution of individual species in the homegarden, pineapple, pepper and banana are the most common species of the whole upland area. Coffee, longan, litchi, jackfruit are income potential species in the homegardens in the remote areas. However, fruit trees also can be encouraged to grow

at these areas. Fruit trees such as sapodilla, custard apple, litchi, jackfruit and lemon are cash income species in Binhthanh homegardens. In particular, grapefruit, pomelo are special products of homegardens for cash at Huongho.

The gross incomes of the homegardens are higher at shorter distances to the central market and lower in the remote areas. Ranging from 84% to 179% as comparing to the total income of the region (1994), the gross incomes from homegardens are higher.

The gross income time-dispersion of the homegardens depends on the income dominant species crops and trees in each sub-zone. With higher species diversity, the time dispersion gross income is large and distributed throughout the year. Homegarden income of the upland people is stable over time. However, gardening skills, market concentrations and meeting the market demands are successful criteria of the homegarden management.

It needs about 960 hours/year of gardening in which, women and children have the main roles in harvesting seasons such as collecting and selling the products but men do others work such as pruning, new planting management and tree cultivar selections.

Gardeners in the remote areas have focused on domestic consumption and stable incomes for their households. Cash incomes and homegarden hobbies are not their homegarden purpose. Stable income is main purpose of the gardening at Binhthanh commune. Followed by domestic consumption and cash income. Nearest commune from the central market, homegardens are cultivated for cash income and

inherited occupation. Gross income of the homegardens closest to the market center was higher than the income per capita of the country.

Common tree species in the homegardens of the sub ecological zone, the daily needs of local gardeners, cash dominate income species, diversity of species and types of plants and product disposal through all months in the year are used as criteria for homegarden species component recommendation. The species structure includes long-term tree species and annual crop species. They also can undertake inter-cropping together and establish multi-storeys in the homegardens. Especially, pineapple, banana, cassava and jackfruit are dominant species in upland's homegarden. Medicinal herbs and vegetable plots are also designed in the homegardens.

Homegarden practices continue to be important land use management in the upland areas of the North Central Coast of Vietnam.

## **8.2 Recommendation**

Development of homegardens can solve the great problems in the upland areas of the North Central Coast of Vietnam such as creating local employment, increasing local people income, reduce the pressure of the upland inhabitant to the natural resources, forest protection and land use management. Therefore, Certain recommendations could be derived from the study:

### **8.2.1 Policy recommendation**

1. Re-establishing homegardener union at the commune level in which, the homegardener union will respond the marketing issue for the homegarden product outlets and improve gardening skill (as well as species breed and new cultivars introduction) such as use of good crop varieties with appropriate technologies for crop planting.
2. Homegarden extension with credit service to commune level.
3. Continuing land allocation to the land-less household (new settlement households) in order to develop homegarden practices and reduce unemployed labour in upland areas.

### **8.2.2 Research recommendation**

The study has shown some researchable points for further confirmation of the finding. The following recommendations are introduced for further research.

1. Adaptive clones of indigenous tree species should be identified.
2. Market development for homegarden products in the remote areas.
3. Introduction of new and high value trees and crops.
4. Mass production of certain homegarden products should be developed for market demand.