

CHAPTER VI
HOMEGARDEN
INCOME AND LABOUR

6.1 Farm income

6.1.1 Relative contributions of crops to the homegarden's gross income

Table 20 provides a short overview of the relative importance of particular individual crops, in terms of their contribution to gross income at the four studied sites. The data were aggregated in order to illustrate the contribution of the first six crop and tree species, the income dominant crops, to the gross income of the homegardens in the upland areas.

The homegardens' incomes in Hongha commune came from pineapple, pepper, coffee, litchi, banana and longan. These species' products contributed 62.29% of the average annual homegardens' income. The 71 other species gave just 37.71% of the total income. In detail, Hongha homegardens' products were used for domestic consumption. However, pepper, longan and litchi were three species contributed high income to household income but they were non-cash income species because of non-market activities with these products. On average, saleable homegarden products in Hongha contributed 6% of the total income. Pineapple and banana were saleable products of Hongha's homegardens.

Table 20. Relative contributions of individual tree and crop species to household annual gross income in the four studied sites

Commune	Main species contribution	Gross income (US\$)	Percent of contribution	Percent of contribution	
				Cash	Non-cash
Hongha	Pineapple	147.07	18.85	80	20
	Pepper	108.70	13.93	0	100
	Coffee	129.46	16.56	25	75
	Litchi	36.56	8.14	0	100
	Banana	57.63	8.35	85	15
	Longan	34.32	4.40	0	100
	Other	239.68	37.70	6	94
Hongtien	Banana	118.23	13.62	80	20
	Pepper	94.08	10.83	90	10
	Sweet potato	88.73	10.22	0	100
	Longan	57.21	6.59	0	100
	Jackfruit	48.48	5.58	25	75
	Arrowroot	47.28	5.44	35	65
	Other	414.37	47.72	27	73
Binhthanh	Pepper	389.33	30.91	95	5
	Sapodillar	327.78	26.02	85	15
	Custard-apple	72.46	5.75	25	75
	Litchi	72.04	5.72	75	25
	Jackfruit	63.04	5.00	50	50
	Lemon	51.91	4.12	85	15
	Other	283.19	22.48	55	45
Huongho	Grape-fruit	375.99	24.65	95	5
	Pine-apple	255.91	16.78	95	5
	Pepper	235.19	15.42	90	10
	Pomelo	181.32	11.89	95	5
	Sapodilla	110.79	7.26	85	15
	Banana	88.25	5.79	75	25
	Other	277.75	18.21	72	28

*Note: - The rate of exchange: 11,799 VND = 1US\$ (Average exchange rate in 1997)
- Estimate income in 1997 converted from market price rate in April 1998.*

Banana and pepper products contributed 13.62 % and 10.83 % of the gross income of the homegardens in Hongtien. Ninety percent of pepper products were sold for cash, with the other 10% for the domestic consumption. The four other species, which strongly contributed to the gross income in Hongtien's homegardens were sweet potato, longan, jackfruit and arrowroot. The first six income dominant species gave 52.28 % of the gross income for Hongtien's homegardens. As with Hongha's gardens, although longan was an income dominant tree, its product was not used as a cash product.

Pepper and sapodillar were the major products of Binhthanh's homegardens. The first six income dominant species were pepper, sapodilla, custard apple, litchi, jackfruit and lemon, which contributed 77.52 % of the total gross homegardens' income. In particular, pepper and sapodilla gave 57 % of the total income. Differing to the income dominant species at Hongha and Hongtien, the fruit group provided a higher income contribution at Binhthanh. Most homegardens' products concentrated on fruits for cash.

As well at Binhthanh, fruit trees such as grapefruit, pineapple, pepper, pomelo, sapodilla and banana, strongly contributed to the gross income of Huongho's homegardens. These six species contributed 81.79 % of the gross income for the whole homegardens. In particular, grapefruit, pineapple, pepper and pomelo shared nearly 70% of the total income of the homegardens.

In brief, based on the gross income contribution of individual species in the homegardens, we could find the income of dominant species for homegardens at each

of the sub-zones in the upland area of the North Central Coast of Vietnam. Pineapple, pepper, and banana were the most common species of the whole upland area and should therefore be expanded. In the case of market development providing homegarden outlets, coffee, longan and litchi would be strongly advised as a main species for Hongha's homegardens. Similar to Hongtien, longan, jackfruit and other fruit trees species would be recommend. In addition, for short-term homegarden development, sweet potato and arrowroot should be cultivated in homegardens to provide household income. Fruit trees such as sapodilla, custard apple, litchi, jackfruit and lemon will be advocated. Grapefruit and pomelo would be encouraged to increased areas at Huongho's homegardens. In economic terms, homegarden development should be based on the income of dominant species of each ecological sub-zone.

6.1.2 Product price

Homegarden product prices in the upland areas differed according to the distance from the central market. The main reasons for these differences were the distance, transport, qualitative product and products concentration. Bad infrastructure and long distance to the central market were the first and second reasons that affected the homegarden product outlet in the upland areas. It took 7 to 8 hours to travel the 75-km from Hue City to Hongha commune. Further from the city, homegarden product prices as in Hongha commune were cheaper by 10 to 25% as compared to prices in Hongtien. Huongho, which was the nearest commune to the city, could therefore keep prices of homegarden products highest. Sometimes, retail price is

higher than wholesale by 5-7%. The third reason, was quality of the products. Shortage of gardening experiences and techniques made for lower product prices. Dispersing products without local market were also the fourth reason which led to the homegarden product prices in the remote areas being lower than at shorter distances areas from the central market.

6.1.3 Homegarden household income at the four studied sites

Strictly speaking, the determination of profitability would require that production costs be deduced from the gross farm income. In the homegardens of the upland areas, however, such costs were quite low, especially in the remote areas. Therefore, direct measures of per homegarden profitability had been used. Thus homegarden gross income or profitability measures consisted of cash from saleable products and the value of consumed products. The results were reported in Table 20. All of the homegarden's gross income data were collected and measured in 1997 and converted by local markets prices in April and May 1998. The rate of exchange of 1 US\$ to Vietnamese currency (VND) is 11,799 VND.

Table 21 presents the average monthly and yearly gross income of the homegardens at the four studied sites. The average homegardens' income at Hongha was 780.43 US\$/ year and 65.04 US\$/ month. At shorter distances from the Hue City, the gross incomes were higher. The average gross incomes per year of the homegardens at Hongtien were 11.27% higher than at Hongha, 45.07% higher at Binhthanh and 21.07% higher at Huongho. The difference of gross incomes came from the crop and tree yields, size of the garden, tree and crop populations and

location. Trees and crops in homegardens at Hongha as well as at Hongtien concentrated on household consumption, but at Binhthanh, and especially at Huongho cash income was more important. The sixth row of Table 21 also presents the non-cash income and cash income index of the homegarden gross incomes at the four studied sites. Non-cash/cash index in Hongha and Hongtien were greater than 1. In contrast, Binhthanh's and Huongho's indices were 1:3.13 and 1:7.14 respectively (Figure 16).

Table 21. Average gross income per homegarden at household level and income per capital (US\$)

	Hongha	Hongtien	Binhthanh	Huongho
Average income/household/year	780.43	868.37	1,259.76	1,525.20
Average income/household/month	65.04	72.36	104.98	127.10
Income/person/year	132.28	166.99	159.46	250.03
Income/ person/month	11.02	13.92	13.29	20.84
Non-cash/Cash index	2.68:1	1.71:1	1:3.13	1:7.14
Household size	5.90	5.20	7.90	6.10

Note: Annual income of upland area people of Thuathien Hue province is 135.33 US\$/person

Sources: (Thuathien-Hue statistic office, 1995)

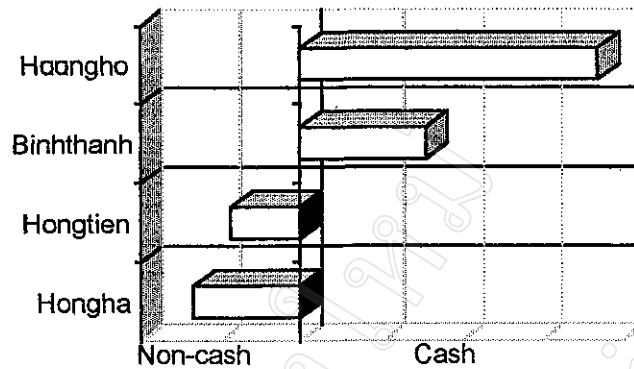


Figure 16. Non-cash & cash index at the studied communes

Table 21 also reports the average income per capita at Hongha, Hongtien, Binhthanh and Huongho communes. This data illustrates that the gross income from the homegardens of the two communes, Hongha and Hongtien is 132.28 US\$/year and 166.99 US\$/year. While the total income per capita of the country was 192.44 US\$/year and the total income of the North Central Coast region was 147.24 US\$/year. Also according to Thuathien-Hue Statistic Office (1995), the total income per capita in Thuathien-Hue province was 135.33 US\$/year. Higher than these two communes, homegarden farmers at Binhthanh and Huongho got gross incomes higher than the average income of the country and the region (see detailed individual gross incomes of each garden in Table 22).

In brief, compared to the total income of the region (1994), the gross incomes from homegardens in the upland areas of the North Central Coast were higher. These ranged from 84% to 179%.

Table 22. Individual homegardens and gross income

HH ID	Garden size (m ²)	Income per capita (US\$)	Total income (US\$)	HH ID	Garden size (m ²)	Income per capita (US\$)	Total income (US\$)
HH01	3,000	421.00	842	BT01	2,060	709.94	2,130
HH02	1,000	109.29	874	BT02	2,488	673.83	2,021
HH03	2,380	56.96	342	BT03	10,098	216.77	867
HH04	560	91.91	551	BT04	5,100	188.89	1,889
HH05	490	48.98	392	BT05	5,108	346.63	1,040
HH06	2,140	108.65	1,626	BT06	2,078	167.51	670
HH07	1,240	209.34	837	BT07	1,600	119.98	600
HH08	3,070	69.43	764	BT08	3,120	143.49	861
HT01	5,110	127.84	1,023	HU01	1,596	249.05	1,245
HT02	5,060	93.53	655	HU02	1,330	232.65	931
HT03	3,580	168.46	1,179	HU03	1,630	818.10	2,454
HT04	5,050	171.05	1,197	HU04	2,160	254.71	2,038
HT05	1,560	91.39	823	HU05	2,608	229.55	1,377
HT06	1,050	154.36	309	HU06	3,865	126.72	1,014
HT07	2,230	106.28	850	HU07	3,115	251.87	2,015
HT08	5,280	130.20	911	HU08	3,108	375.89	1,128

6.1.4 Time dispersion of income in the homegarden

Time dispersion of the homegarden incomes were important criteria in evaluating crop and tree compositions. The total annual incomes or output of the homegardens could be concentrated within a single harvest month, or it could be perfectly dispersed in a uniform flow of incomes received in most months of a year. Ideally, homegarden products should be dispersed almost throughout the year. The spring season was the harvest season of the vegetables from December to mid April.

As reported in the previous section, the main output products in the Hongtien's homegardens, in the new economic zone, were food crops and the other fruits including longan, pepper, jackfruit and banana. The main income period of this sub-zone was from the January to August. In addition, in the other commune at this sub-zone - Huongnguyen commune, fruit trees were planted in the last 5-7 years. The fruit tree species would become the predominant tree species in homegarden incomes.

From April to September was the main period that Binhthanh's homegardens harvest products. Huongho homegardens concentrated their income in last 8 months of a year. Their main incomes came from fruit tree species in summer and winter. In contrast to Hongha and Hongtien, Binhthanh and Huongho farmers controlled their homegarden products to be sold at the time they would gain for highest benefit. Banana and pineapple were examples. Banana was planted and collected at the end of the Lunar year and from May to August for marketing at traditional New Year and Buddha ceremonies (Table 23. B, C, D). The other fruits were collected in the middle or the end of the months by the lunar calendar.

In brief, the gross income time-dispersion of the homegarden in the upland areas of the North Central Coast of Vietnam depended on the income dominant species crops and trees in each sub-zone. With higher species diversity, the time dispersion gross income was large and distributed throughout the year. Homegarden income of the upland people was stable over time. However, gardening skills, market concentrations and meeting the market demands were also successful criteria of the homegarden management.

6.2 Homegarden's work force and labour use

6.2.1 Family labour supply and family labour use

To enable income requirements of household to be estimated, the population can be standardized in terms of adult male equivalents for income. The following factors for calculating income requirements were used: an adult male represented one adult male equivalent (AME) consumer unit; an adult female represented a 0.7 AME consumer unit; and a child represented a 0.4 AME consumer unit (McConnell, 1992). The total available work force consisted of all except the very young and very old.

Except for the harvesting periods, gardening needed less labour than in other agricultural cultivation. Homegardens should be taken care of throughout the year, especially in the spring and summer seasons. Normally, farmers used to garden for the rest period for paddy rice and hilly rice cultivation. An estimate for an average homegarden with an area of 2500 to 3000 m² was 4 hours/ day (2/5 công*) for gardening in two periods, March to April and mid May to the end of June and 2 hour per day of one homegarden labour for the other months of a year. Thus, it needed 960 hours/year of gardening. Women and children had the main roles in the harvesting seasons, as they collected and sold the products. But men did other work such as pruning, new planting management and tree cultivar selections.

* công is unit of normal man labour day at North Central Coast of Vietnam. It equals 10 hour working and is worth VND 20,000 (US\$ 1.70)

6.2.2 Farmer thinking and the development of homegarden

Farmer evaluations are a corollary to on-farm technology testing (David, 1995). The need for feedback from farmers is critical for evaluating and recommendations for the strategy of homegarden development. Farmer's thoughts on homegarden cultivation were surveyed in two main ways, (1) the purpose of homegarden cultivation and (2) homegarden developing environment.

Following the needs of gardeners, purposes of homegarden cultivation also depended on the location. Table 24 reports the thoughts of homegarden farmers of the four studied communes. The purposes of homegarden cultivation focused on domestic consumption, gardening hobby, cash income, and inherited occupation. Seventy-five percent of the Hongha gardeners paid attention to domestic consumption then 38 % to inherited occupation. One-fourth responded gardening hobby and cash income. It was clear from the results that cash income was the third importance as compared to consumption, in other words non-cash income was the priority.

Table 24. Farmer opinions (%) on purpose of homegarden cultivation

Purpose	Hongha	Hongtien	Binhthanh	Huongho
Domestic consumption	75	63	38	38
Gardening hobby/leisure	25	25	13	38
Cash income	25	25	38	75
Inherited occupation	38	13	13	75

As well as Hongha gardeners, Hongtien farmers also focused on domestic consumption for their households. Cash income and homegarden hobby were not

accepted by many. In Binhthanh domestic consumption and cash income were the main purpose of homegarden cultivation. Traditionally, Huongho gardeners had cultivated homegardens for cash income. The life of upland people, especially ethnic minorities, was unstable and strongly depended on nature, climate and soil (Loc *et al.*, 1984). Domestic consumption and a stable income, therefore, were the first priorities in upland areas.

The homegarden changing environment included government upland development policies, credit, market of garden products and the standard of people's education. The government had encouraged development of the upland economy by encouraging homegardens and land allocation to upland people and credit promotion. However, homegarden products "output" has been the main obstacle of the homegarden development. Homegarden cash products at Hongha, Hongtien and sometime at Binhthanh communes can easily turn into consumption products because of the lack of markets.