

Four

Comparative View of Range and Quality of Farming Options

Range of Farming Options

The number of livelihood options practised by the sample households from the two farming systems in Sikkim are given in Table 4.1³ (Figure 4.1). It shows that there is no significant difference in the number of livelihood options adopted by the households between the two farming systems. For example, in the maize-potato dominated system, more than fifty per cent of the households adopted four options, followed by twenty-five per cent adopting three, and around eight per cent adopting five. On the other hand, in the large cardamom-dominated farming system, 47 per cent adopted four options, followed by 27 per cent adopting three, and 13 per cent adopting five options (Figure 4.1). Furthermore, there was a positive relationship between the household and per capita incomes and the number of livelihood options adopted by the households in the maize-potato dominated farming system. The per capita income of those households adopting five options was as high as US \$ 235 compared to a low of US \$ 57 in the case of households adopting two options. In comparison, no such relationship was seen in the cardamom-dominated farming system; the per capita income of the households adopting one option was as high as US \$ 288 compared to a per capita income of US \$ 222 for those adopting as many as five livelihood options. A more or less similar pattern was discernible among the small and large households in both areas. It is, however, important to emphasise that the household and per capita incomes from all options in the cardamom dominated farming system were nearly double those in the maize-potato dominated farming system.

The contributions of different options to the total income of the households practising a different number of livelihood options in the maize-potato dominated farming system are shown in Tables 4.2 through 4.4. The contribution of large cardamom farming, as a livelihood option, towards total household income decreases with an increase in the number of options adopted by the households. The pattern is similar in respect of both small and large households. In the case of small and large households which had adopted two livelihood options and did not have large cardamoms, livestock contributed more than 90 per cent of the total income in the case of small households and around 60 per cent in the case of large households. The contribution of the service sector increased with an increase in the number of livelihood options.

3. See Tables 4.1 to 4.4 in Annex 2

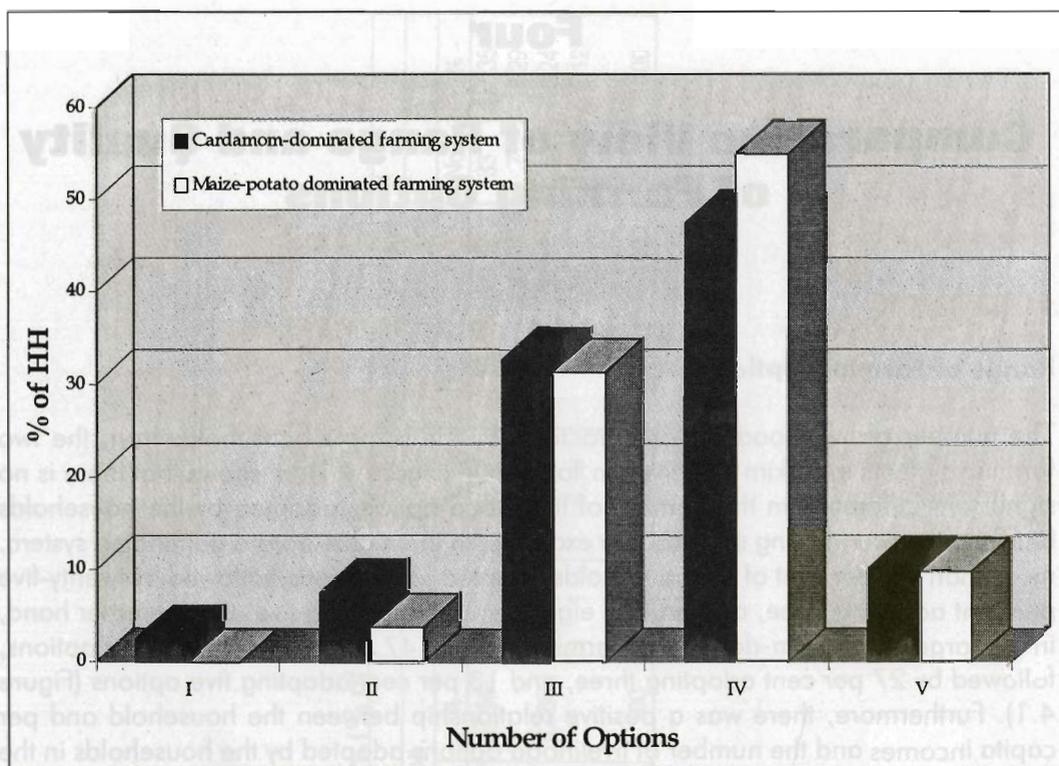


Figure 4.1: Range of Livelihood Options

In the large cardamom-dominated farming system, Tables 4.5 through 4.7 demonstrate the following features. As in the case of the maize-potato dominated farming system, the contribution of large cardamoms to the total household income declines with an increase in the number of options. The notable exception, however, was in the case of households adopting only two or three livelihood options and households adopting large cardamoms as the main livelihood option. In brief, it demonstrates that the households having sufficient land under large cardamoms tend to adopt fewer livelihood options. On the other hand, those who do not have enough land to grow cardamoms tend to diversify their livelihood options in order to meet their basic needs. A variety of factors, at both the household and community levels, determines the number of livelihood options adopted by a household. At the household level, availability of assets (land, labour, assets, skills, and so on) is the important factor affecting the number of options practised by a household.

In sum, the micro-evidence shows clearly that those households in both farming systems which have enough land to grow cardamoms, a high-value cash crop, adopt fewer livelihood options than small holders. In other words, there is some evidence to support the hypothesis that the diversification of livelihood options tends to be distress-driven. However, it should be noted that the number of options practised by a household is, *inter alia*, contingent upon their quality. A household might adopt fewer options which yield a sufficient amount of income, for example, large cardamoms.

Table 4.5: Range-wise Livelihood Options and Their Contribution to Household Income (all households: cardamom-dominated farming system)

Options/Range of Options	Per cent of households					Per cent of income				
	1	2	3	4	5	1	2	3	4	5
Crop production	-	-	100	100	100	-	-	9.15	9.06	4.16
Large cardamoms	100	100	100	100	100	100	65.74	66.84	41.70	28.98
Livestock	-	66.67	100	100	100	-	7.62	18.77	9.43	8.48
Agri-labour	-	-	-	15.79	7.50	-	-	-	2.70	4.99
Non-agri labour	-	-	-	21.05	-	-	-	-	4.05	-
Service sector	-	-	-	63.16	25.00	-	26.64	5.24	33.06	39.92
Business/shop	-	33.00	-	100	100	-	-	-	-	13.46

Source: Field Survey, 1996

Table 4.6: Range-wise Livelihood Options and Their Contribution to Household Income (small households: cardamom-dominated farming system)

Options/Range of Options	Per cent of households					Per cent of income				
	1	2	3	4	5	1	2	3	4	5
Crop production	-	-	100	100	100	-	-	13.49	7.67	4.16
Large cardamoms	100	100	100	100	100	100	65.74	52.27	42.63	28.98
Livestock	-	66.00	100	100	100	-	7.62	22.35	8.16	8.48
Agri-labour	-	-	-	21.43	75.00	-	-	-	5.08	4.99
Non-agri labour	-	-	-	28.57	-	-	-	-	7.63	-
Service sector	-	33.00	12.50	50.00	25.00	-	26.64	18.89	28.83	39.92
Business/shop	-	-	-	-	100	-	-	-	-	13.46

Source: Field Survey 1996

Table 4.7: Range-wise Livelihood Options and Their Contribution to Household Income (large households: cardamom-dominated farming system)

Options/Range of Options	Per cent of households					Per cent of income				
	1	2	3	4	5	1	2	3	4	5
Crop production	-	-	100	100	-	-	-	5.71	10.62	-
Large cardamoms	-	-	100	100	-	-	-	78.35	40.65	-
Livestock	-	-	100	100	-	-	-	15.94	10.87	-
Agri-labour	-	-	-	-	-	-	-	-	-	-
Non-agri labour	-	-	-	-	-	-	-	-	-	-
Service sector	-	-	-	100	-	-	-	-	37.86	-
Business/shop	-	-	-	-	-	-	-	-	-	-

Source: Field Survey 1996

Quality of Farming Options

Employment

The contribution of different livelihood options towards total employment in person days in both the above-mentioned areas has been shown in Table 4.8 and Figure 4.2. Agriculture which is defined broadly to include crop production, large cardamoms, and livestock-rearing contributes nearly one-half of the total employment days in the maize-potato dominated farming system. Agricultural labour is yet another important source of employment, accounting for as high as one-fourth of the total employment days. Among the non-farm sources of employment, the service sector contributes 15.25 per cent. An almost similar pattern is obtained in the cardamom-dominated farming system with agriculture, defined broadly, accounting for more than 50 per cent of the total employment days, followed by the service sector and agricultural labour. The total number of employment days in the maize-potato dominated farming system is, however, significantly (about 15%) higher than in the large cardamom-dominated area. The situation in the maize-potato dominated farming system typically represents a misguided unemployment scenario, as will become clear in the following paragraphs.

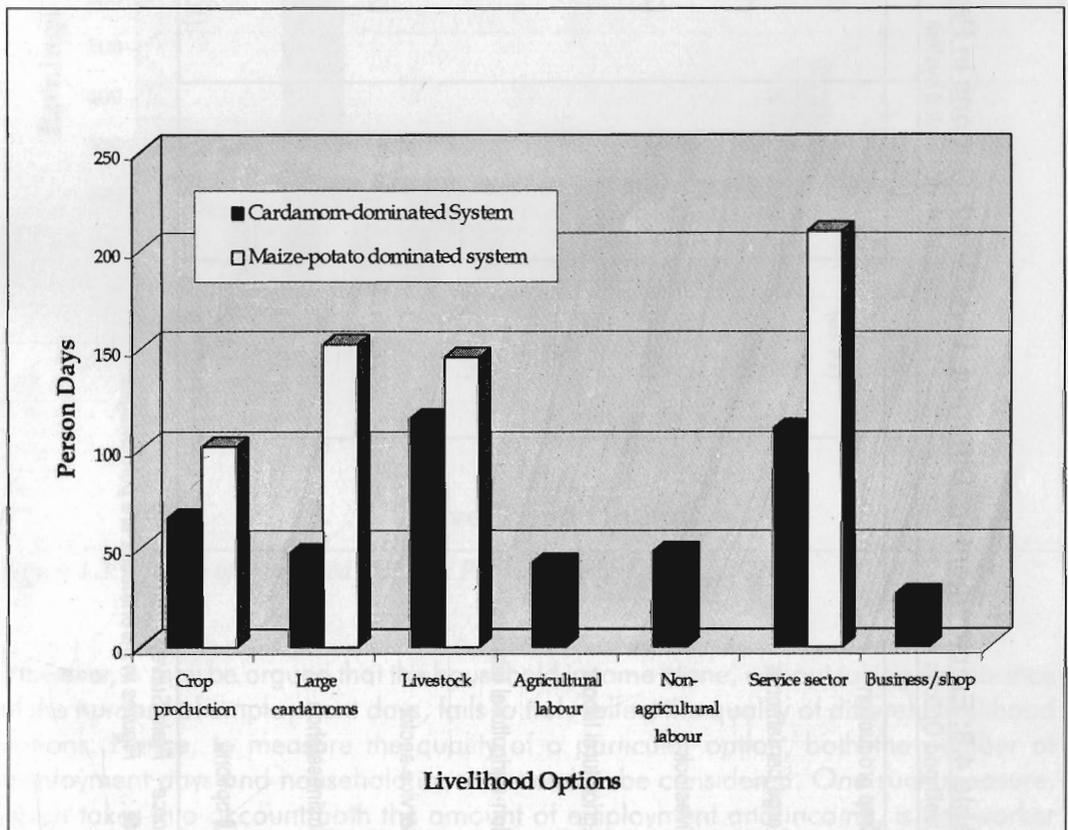


Figure 4.2: Quality of Livelihood Options:: Employment in Person Days

Table 4.8: Employment in Different Livelihood Options in Person Days

Livelihood Options	Cardamom-dominated system			Maize-potato dominated system		
	Small	Large	All	Small	Large	All
Crop production	64 (14.15)	101 (16.58)	73 (14.84)	77 (13.97)	116 (15.57)	87 (15.13)
Large cardamoms	47 (10.40)	152 (24.96)	73 (14.84)	41 (7.44)	83 (11.14)	50 (8.70)
Livestock	115 (25.44)	146 (23.98)	122 (24.80)	149 (27.84)	211 (28.32)	144 (25.04)
Agricultural labour	42 (9.29)	-	32 (6.50)	131 (23.77)	92 (12.35)	124 (21.57)
Non-agricultural labour	48 (10.62)	-	37 (7.52)	31 (5.63)	30 (4.03)	27 (4.70)
Service sector	110 (24.34)	210 (34.48)	135 (27.43)	84 (15.25)	183 (24.56)	107 (18.60)
Business/shop	26 (5.76)	-	20 (4.07)	38 (6.90)	30 (4.03)	36 (6.26)
All options	452 (100.00)	609 (100.00)	492 (100.00)	551 (100.00)	745 (100.00)	575 (100.00)

Source : Field Survey 1996

Note : Figures in parentheses are percentages

The household earnings yielded through different livelihood options are yet another important indicator of their quality. In this context, Table 4.9 (Figure 4.3) reveals that, in the maize-potato dominated system, the service sector is the most important source of income followed by income from large cardamom and crop production. The pattern is similar for both small and large households. In comparison, in the cardamom-dominated system, almost 50 per cent of the total household income comes from large cardamoms alone. Among the different categories of households, the contribution of large cardamoms is lower in the case of small households (45.45%) than in the case of their larger counterparts (54.43%). Another one-fourth of the household income is contributed by the service sector.

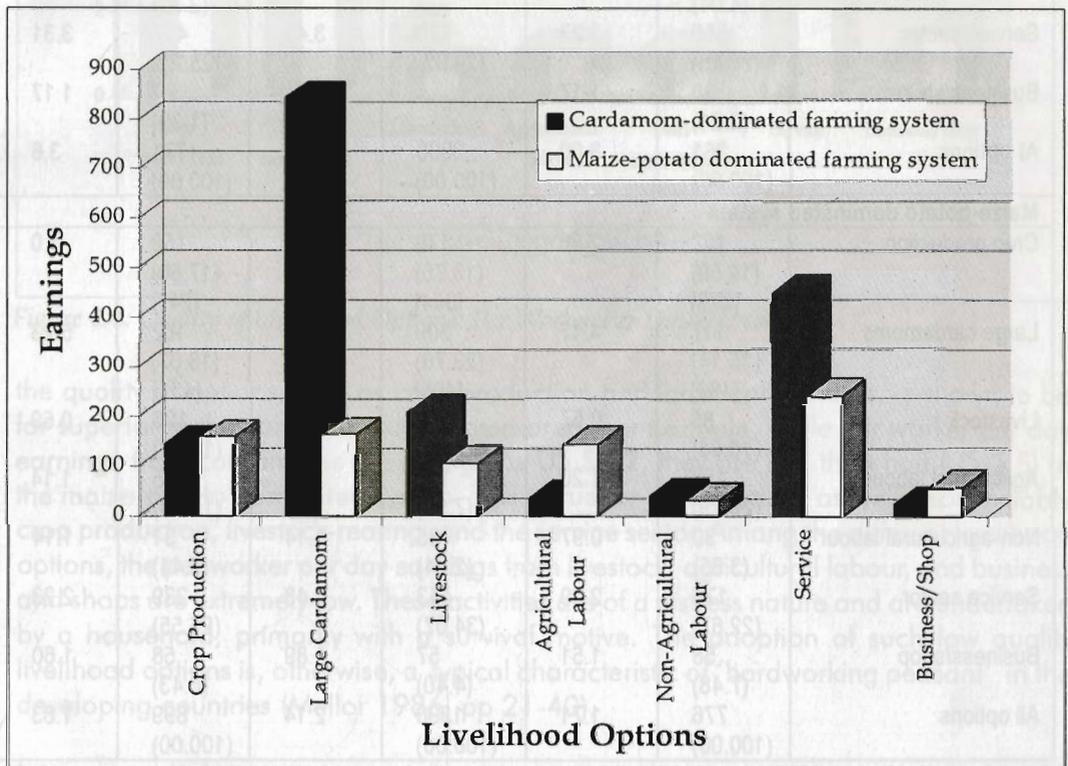


Figure 4.3: Quality of Livelihood Options: Per Household Earnings (US \$)

However, it may be argued that the household income alone, without taking cognizance of the number of employment days, fails to truly reflect the quality of different livelihood options. Hence, to measure the quality of a particular option, both the number of employment days and household income need to be considered. One such measure, which takes into account both the amount of employment and income, is per worker per day earnings. Guided by per worker per day earnings (Table 4.9 and Figure 4.4),

Table 4.9: Earnings from Different Livelihood Options (US \$)

Livelihood options	Small Farmers		Large Farmers		All Farmers	
	PH	PW/D	PH	PW/D	PH	PW/D
Cardamon-dominated system						
Crop production	104 (7.64) [122]	1.63	265 (8.83) [158]	2.63	144 (8.13) [137]	1.97
Large cardamoms	619 (45.48) [658]	13	1632 (54.43) [763]	10.71	872 (49.25) [666]	11.94
Livestock	149 (10.94)	1.29	381 (12.72)	2.6	207 (11.70)	1.69
Agricultural labour	48 (3.53)	1.14	-	-	36 (2.03)	1.11
Non-agricultural labour	55 (4.04)	1.14	-	-	41 (2.32)	1.11
Service sector	356 (26.16)	3.23	720 (24.02)	3.43	447 (25.25)	3.31
Business/shop	30 (2.21)	1.17	-	-	24 (1.32)	1.17
All options	361 (100.00)	3.00	2998 (100.00)	4.92	1771 (100.00)	3.6
Maize-potato dominated system						
Crop production	152 (19.59) [223]	2.86	178 (13.75) [344]	3.2	158 (17.60) [247]	3.0
Large cardamoms	117 (15.14) [489]	4.17	309 (23.76) [405]	7.71	162 (18.07) [451]	5.23
Livestock	85 (10.98)	0.57	175 (13.46)	0.97	106 (11.83)	0.69
Agricultural labour	158 (20.29)	1.20	103 (7.92)	1.11	145 (16.08)	1.14
Non-agricultural labour	30 (3.85)	0.97	35 (2.64)	1.14	31 (3.44)	1.14
Service sector	176 (22.67)	2.09	443 (34.07)	2.43	239 (26.55)	2.23
Business/shop	58 (7.48)	1.51	57 (4.40)	1.89	58 (6.43)	1.60
All options	776 (100.00)	1.71	1300 (100.00)	2.14	899 (100.00)	1.83

Source: Field Survey 1996

- Note:
1. Figures in parentheses are percentages
 2. Figures in square brackets are net income per hectare
 3. PH = per household; PW/D = per worker per day earnings

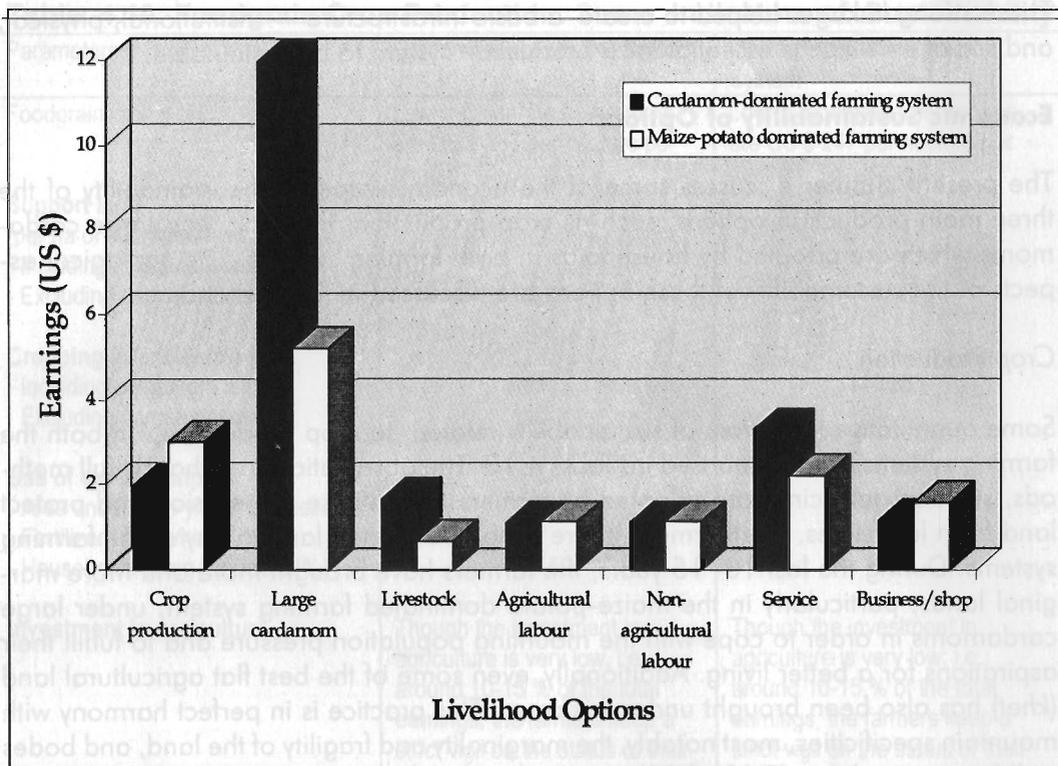


Figure 4.4: Quality of Livelihood Options: Per Worker Per Day Earnings

the quality of options, such as crop production and large cardamoms, is shown to be far superior in the cardamom dominated area. For example, while per worker per day earnings from cardamoms are as high as US \$ 12, they are less than half (US \$ 5) in the maize-potato dominated system. This is true for other options as well, most notably crop production, livestock-rearing, and the service sector. Among the different livelihood options, the per worker per day earnings from livestock, agricultural labour, and business and shops are extremely low. These activities are of a distress nature and are undertaken by a household, primarily with a survival motive. The adoption of such low quality livelihood options is, otherwise, a typical characteristic of 'hardworking peasant' in the developing countries (Mellor 1986, pp 21-40).

Inter-system Linkages

The study findings suggest that large cardamoms as a production option do not have much of an inter-system linkage due to their special attributes, which are low-volume, high-value, non-perishability; less infrastructure intensive, very good shelf life, negligible use of external inputs, and so on. While these attributes qualify large cardamoms as a livelihood option which is more sustainable, its contribution to the whole production system's diversity and resilience is not so pronounced. This is in contrast to the tremendous amount of inter-systemic and intersectoral linkages, both backwards and forwards, which were generated by the spread of apple cultivation in the state of Himachal Pradesh.

These strong linkages helped to create a basic infrastructure — institutional, physical, and social — which is essential for a production system to be sustainable.

Economic Sustainability of Options

The present chapter discusses some of the economic aspects of sustainability of the three main production options, such as crop production, livestock, and large cardamoms which are adopted by households in both farming systems. The ecological aspects of the sustainability of these options are discussed in the next chapter.

Crop Production

Some quantitative indicators of sustainability related to crop production, in both the farming systems are summarised in Table 4.10. The observations are that skilful methods, such as terracing, are adopted by farmers to minimise soil erosion and protect land from landslides. Furthermore, there is no abandoned land in any of the farming systems. During the last 10- 15 years, the farmers have brought more and more marginal lands, particularly in the maize-potato dominated farming system, under large cardamoms in order to cope with the mounting population pressure and to fulfill their aspirations for a better living. Additionally, even some of the best flat agricultural land (*khet*) has also been brought under this crop. This practice is in perfect harmony with mountain specificities, most notably, the marginality and fragility of the land, and bodes well for sustainability (Table 4.10).

Livestock

Some aspects of the livestock option which impinge directly on the natural resource base have been given in Table 4.11. A few comments are in order. First, while both grazing and stall feeding are practised in the cardamom-dominated system, in the maize-potato dominated system the animals are completely stall-fed, suggesting positive implications for sustainability. Second, the dependence of households on the forest for fodder and fuel is very high in the latter farming system than compared to the former. In the cardamom-dominated farming system, the households meet their fodder requirements from their own land. In fact, people in the cardamom-dominated areas have adjusted themselves fully to the cessation of access to forest fodder about fifteen years back. They reduced the number of animals and replaced cattle with goats and pigs, which require less grass, in order to overcome the fodder, and fuel problem.

Large Cardamom

Table 4.12 presents the sustainability implications of large cardamom as a production option. This production option is perfectly compatible with the mountain specificities of Sikkim and fulfills the necessary and sufficient conditions to be sustainable.

Table 4.10: Foodgrain Crop Production: Some Indicators of Sustainability

Parameters	Cardamom-dominated System	Maize-potato dominated System
Foodgrain crop yields	Low to moderate (net returns are US \$ 137 per hectare per annum)	Low to moderate (net returns are US \$ 247 per hectare per annum)
Support land (per ha of cultivated land)		
- Including cardamom land	2.57	2.25
- Excluding cardamom land	0.71	1.68
Cropping intensity (%)		
- Including cardamom land	101	140.30
- Excluding cardamom land	140	160
Use of external inputs		
- Area under high-yielding varieties	Nil	Nil
- Fertilizers (N kg/ha)	7	1.23
- Households using fertilizers (%)	77.50	5.88
Investment in agriculture	Though the investment in agriculture is very low, i.e., around 10-15 % of the total earnings, the farmers keep a strict vigil on the status of their land. They take immediate measures if any type of land degradation, e.g., landslides, takes place.	Though the investment in agriculture is very low, i.e., around 10-15 % of the total earnings, the farmers keep a strict vigil on the status of their land. They take immediate measures if any type of land degradation, e.g., landslides, takes place.
Abandoned land	Nil	Nil
Extension of cultivation on to marginal lands during the last 10 – 15 years	Nil	Marginal lands have been cultivated with large cardamoms.

Source: Field Survey 1996

Quality of Life of Farm Families

Other quantitative indicators related to both the crop production and livestock options and which have direct implications on sustainability are described in Table 4.13.

It is clearly shown that the quality of life enjoyed by households in the cardamom-dominated farming system is far superior to that enjoyed by their counterparts in the maize-potato dominated system. For example, both the household and per capita expenditures on superior grains, fruits and vegetables, clothing, and so on are much higher in the cardamom-dominated system (Tables 4.14 and 4.15). The per capita expenditure on education in the cardamom-dominated farming system is nearly five times higher than in the maize-potato dominated farming system (Table 4.14). Most of the families from the cardamom system have sent their children to Gangtok, Darjeeling,

Table: 4.11: Livestock : Some Indicators of Sustainability

Parameters	Cardamom-dominated System	Maize-potato Dominated System
Feeding practices	Grazing-cum Stall Feeding	Stall feeding
Fodder requirements (kg/day)	40	65
Fodder requirements met from the forests (%)	No dependence on forests	50-60
Households depending on forests (%)	No dependence on forests. Deficit households meet fodder needs from within the community, i.e., from fellow villagers	63
Response of community to declining access to forests for fodder	<i>Gaucharan</i> forests were taken over by the government in 1981 for replantation. This affected the community's access to fodder. The community responded to this in three ways: (i) reduced the number of animals (ii) some resorted to the practice of transhumance (iii) replaced cattle with goats and pigs, which require less fodder	Free access to forest fodder

Source: Field Survey 1996

The food habits of the people in the maize-dominated farming system have drastically changed in recent years. Though the farming system continues to be dominated by maize and potatoes, maize is no longer the staple diet of the people. Practically all households have switched over to rice, though the rice eaten by them is of poor quality. The people stopped eating maize about ten years ago. The factors which led to this change are: firstly, decline in the productivity of maize and secondly, an increase in both off-farm and on-farm employment opportunities. While more off-farm jobs became available in public works and government-sponsored programmes, the on-farm employment opportunities received a boost with the spread of the cultivation of large cardamoms. Thirdly, in recent years, the price of cardamoms has increased rapidly, and this has led to an increase in the incomes of the people. There is a saying in the area that if one has four kg of cardamoms, one can buy 40 kilogrammes of rice. Fourthly, the availability of rice, both through the public distribution system and in the open market, improved due to better infrastructural facilities such as roads. Fifthly, local people used to take maize in the form of a porridge meal and not as flour. The task of making maize flour is very tough and demanding.

Table 4.12: Large Cardamom: Some Aspects of Sustainability/ Unsustainability

Positive implications for sustainability	Factors threatening sustainability	Needed development interventions
<p>Indigenous plant, therefore perfectly compatible with mountain specificities such as marginality, fragility, diversity, and niche - Promotes natural resource conservation</p> <p>Low-volume high-value non-perishable cash crop: net return ranges from US \$ 714 to US \$ 857 per hectare</p>	<p>Rapid spread of viral diseases like <i>phurkey</i> and <i>chirkey</i>, thus effecting the yield negatively</p> <p>Over age of the plantations</p>	<p>Need to evolve disease-resistant varieties</p> <p>Develop disease control methods</p>
<p>Good shelf life quality and does not require immediate marketing</p> <p>Negligible dependence on external inputs: only gunny-bags are required</p>	<p>Lack of appropriate and sound institutional back-up to sustain the system - such as R&D, extension network, and marketing</p>	<p>Require immediate attention to control disease by strengthening the extension network to transfer the available know-how to the farmers</p> <p>Scope for investing in the market which is largely controlled by private traders</p>
<p>Less infrastructure (like roads) - intensive: compatible with the inaccessibility attribute of the mountains</p> <p>Employment promoting: minimum 80-100 days of employment are generated on one ha of cardamom land</p> <p>Fuelwood requirement is 350kg of raw wood to cure 100kg of cardamoms</p> <p>The fuelwood requirement is met from the system and a continuous process of thinning of trees goes on.</p> <p>Large cardamom enjoys almost an ensured buoyancy of demand and a re-munerative price. This is due to the fact that nearly 80% of the total world production is produced by the state.</p> <p>Very easy to propagate and multiply</p> <p>Numerous ecological/environmental benefits</p>		<p>Encourage the farmers to switch over to other high-value cash crops such as floriculture and off-season vegetables</p> <p>Promote native handicrafts in order to reduce the excessive dependence of people on large cardamoms</p>

Table 4.13: General Indicators of the Resource Base and Use

Parameters	Cardamom-Dominated System	Maize-potato Dominated System
Time devoted to fetching fuel and fodder	No dependence on forests	Takes 3 to 4 hours compared to 1 to 2 hours ten years ago
Fuelwood consumption	518kg per month; 100% requirements met from farmers own land	527kg per month : 90% of the demand is met from the forests
Water in natural sources	60% of the respondents are of the opinion that the level of water from natural sources has gone down. Households are unanimous in attributing this decline to the commercial deforestation carried out by the government .	63% of the respondents feel that the water level in the natural sources has gone down. According to a few informed persons, the water level has gone down by 30 to 40% compared to 10-15 years ago. This decline is mainly attributed to commercial deforestation carried out by the government.
Frequency and intensity of landslides	There is no perceptible increase in the frequency and the intensity of landslides in the study area.	There is no perceptible increase in the frequency and the intensity of landslides in the study area.
Crop diversity	The decline in crop diversity is not so marked.	The diversity of crops grown has decreased. About 10-12 years ago 10 to 15 crops used to be grown compared to 3 to 4 grown today.
Symptoms/manifestations of global warming	The effect is not felt clearly in the area, perhaps because it has always been a cardamom dominated area.	The local informed people point out the effect of the change in climate. According to them the effect is clearly seen in the case of crops such as ginger, broom grass, soya beans (local variety), and some pulses. These crops were earlier grown only at lower elevations, but now, are also being grown at higher elevations.
Social and cultural values	There has not been any significant change in the cultural and social values of the society. For example, the dress, the institution of marriage, and food habits continue to be, largely, the same as they were 20 to 30 years ago. This could be attributed to the fact that the culture, customs, and traditions of the people evolved along with the large cardamom.	These values have not been affected much. Social and cultural institutions such as <i>parma</i> (exchange of labour) are still in vogue. The food habits of the people have, however, changed drastically during the last ten years.

Source: Field Survey 1996

Table 4.14: Indicators of the Quality of Life of the People

Particulars	Unit	Cardamom-Dominated System			Maize-potato Dominated System		
		Small	Large	All HH	Small	Large	All HH
Expenditure on superior grains	US \$	241 (40)	334 (47)	264 (38)	113 (20)	204 (24)	135 (22)
Access to food	% of HHs	100	100	100	100	100	100
Expenditure on clothing	Us \$	112 (19)	159 (22)	124 (20)	86 (16)	133 (16)	97 (16)
Expenditure on education	US \$	84 (14)	169 (24)	105 (59)	44 (8)	171 (20)	74 (12)
Expenditure on milk and milk products	Us \$	130 (22)	188 (26)	145 (23)	111 (20)	139 (16)	117 (20)
Expenditure on fruits and vegetables	US \$	51 (9)	51 (7)	51 (8)	42 (8)	56 (7)	45 (7)
Expenditure on health	US \$	14 (2)	20 (2)	12 (2)	12 (2)	15 (2)	13 (2)
Value of residential housing	US \$	2487	4714	3044	1042	2000	1268
Literacy	per cent	26.60	36.67	29.52	23.46	34.02	26.96
Percentage of households in debt	per cent	10.00	-	7.5	20	-	15.68
Access to safe drinking water	per cent	100	100	100	100	100	100
Access to electricity	per cent	100	100	100	100	100	100
Access to clean lavatories	per cent	30	60	37.5	50	70	47.06
Households below poverty line	per cent	-	-	-	15.38	16.67	23.52
Degree of desperation	-	Nil	Nil	Nil	Nil	Nil	Nil
Operation of social sanctions	-	Strong	Strong	Strong	Strong	Strong	Strong

Source : Field Survey 1996

Note : 1. Figures in parentheses denote per capita expenditure
2. HHs = households

Table 4.15: Consumption Pattern of Sample Households (US\$/per HH /pa)

Particulars	Large Cardamom-dominated System			Maize-potato Dominated System		
	Small	Large	All	Small	Large	All
A. Food						
Rice	241 (24.08)	334 (21.20)	264 (23.06)	113 (16.50)	204 (18.05)	135 (17.09)
Maize	-	-	-	27 (3.94)	43 (3.80)	31 (3.92)
Pulse	33 (3.30)	65 (4.12)	41 (3.58)	13 (1.90)	25 (2.21)	16 (2.03)
Oil & Ghee	30 (2.99)	68 (4.32)	40 (3.49)	24 (3.50)	41 (3.62)	28 (3.54)
Milk/milk Products	130 (12.99)	188 (11.94)	145 (12.66)	111 (16.20)	139 (12.30)	117 (14.81)
Meat & Eggs	69 (6.89)	88 (5.59)	74 (6.46)	50 (7.30)	68 (6.02)	54 (6.84)
Locally made Wine	72 (7.19)	149 (9.46)	91 (7.95)	27 (3.94)	43 (3.81)	31 (3.92)
Beverages	18 (1.80)	22 (1.46)	19 (1.66)	19 (2.77)	21 (1.86)	19 (2.40)
Fruits & Vegetables	51 (5.09)	51 (3.24)	51 (4.45)	42 (6.13)	56 (4.96)	45 (5.70)
Miscellaneous	31 (3.10)	36 (2.29)	32 (2.79)	31 (4.53)	36 (3.19)	33 (4.18)
Total food expenditure	675 (67.41)	1002 (63.62)	757 (66.11)	457 (66.71)	676 (59.82)	509 (64.43)
B. Non-food grain						
Clothing	112 (11.19)	159 (10.09)	124 (10.83)	86 (12.55)	133 (11.77)	97 (12.28)
Education	84 (8.39)	169 (10.73)	105 (9.17)	44 (6.42)	171 (15.13)	74 (9.37)
Health	14 (1.40)	20 (1.27)	15 (1.31)	12 (1.75)	15 (1.33)	13 (1.65)
Transport	35 (3.50)	78 (4.95)	46 (4.02)	22 (3.21)	40 (3.54)	26 (3.29)
Social Ceremonies	43 (4.30)	98 (6.22)	57 (4.98)	29 (4.23)	55 (4.87)	35 (4.43)
Miscellaneous	38 (3.80)	49 (3.12)	41 (3.58)	35 (5.11)	40 (3.54)	36 (4.55)
Total non-food expenditure	326 (32.59)	573 (36.38)	388 (33.89)	228 (33.29)	454 (40.18)	281 (35.57)
Total food & non-food expenditures	1001 (100.00)	1575 (100.00)	1145 (100.00)	685 (100.00)	1130 (100.00)	790 (100.00)

Source: Field Survey 1996

Note: Figures in parentheses are percentages

and other cities for education. Furthermore, while around one-fourth of the households are below poverty line in the maize-potato dominated system, there is no incidence of poverty in the other system. The quality of life in both areas is, however, equally high in terms of the very low degree of desperation and operation of social institutions; both areas are very rich in terms of their cultural values. Despite the fact that people in the cardamom dominated areas are economically much better-off, their traditions and cultures, such as dress, marriage, cooperation among the people, food habits, and so on, are still intact. This is in contrast to other transformed areas, e.g., Himachal Pradesh, where economic prosperity has dealt a severe blow to these values (Sharma 1996, pp 54-55). The reason perhaps lies in the fact that the cultural values and ethos of the people evolved concomitantly with the domestication of large cardamom.

Equity Concerns of Existing Farming Systems

The information derived from different indicators of equity for both farming systems, given in Table 4.16, is mixed. For example, the income distribution (measured by the Gini ratio) is more unequally distributed in the cardamom-dominated farming system than in the maize-potato dominated farming system. Nevertheless, the distribution of land, both owned and operated, is more skewed in the maize-potato dominated system. The low incidence of inequality in land distribution in the cardamom-dominated farming system could be attributed to their being a relatively homogeneous community

Table 4.16: Indicators of the State of Equity between the Two Farming Systems

Particulars	Unit	Cardamom-dominated System	Maize-potato Dominated System
Male wages	US \$	1.14	1.14
Female wages	US \$	1.00	1.14
Income distribution	Gini ratio	0.4617	0.3280
Distribution of owned land	Gini ratio	0.3673	0.4105
Distribution of operated land	Gini ratio	0.3000	0.3583
Female participation in household decisions	per cent	80	95
Sexual division of labour	-	Flexible: All activities, except ploughing and roofing of the house, are performed by both sexes	Flexible: All activities, except ploughing, wood cutting, and roofing of the house, are performed by both sexes
Females having secondary education	per cent	54.84	40
School-going children		100	100
Male	per cent	100	100
Female	per cent	100	100
Female illiteracy	per cent	40	44.93

Source: Field Survey 1996

