

Chapter 6

Socioeconomic and Environmental Implications of the Transformation

The mountain region has an acute shortage of employment opportunities, therefore the youth of this region have to migrate in large numbers in search of work. While vegetable farming for commercial purposes has impeded this process to some extent by creating more employment opportunities, particularly for men, it has also increased women's workloads, which were already considerably high. Therefore, women's involvement in other activities, such as animal husbandry, had to be reduced. Fodder is an important by-product of conventional crops, and its availability has declined drastically after commercialisation. This has also adversely affected animal husbandry and has increased dependency on the forest for fodder with adverse ecological repercussions. In this chapter an attempt has been made to look into these and related aspects of commercialisation.

I. Impact on Migration

Large-scale outmigration of youth in search of jobs is a unique feature of the Uttarakhand economy. Chand (1996, 179) identifies three stages in this migration process. The first stage was need-based migration, i.e., when youths from only those families that had insufficient land for family subsistence migrated in search of jobs. In the second stage, youths from families that had sufficient land began to migrate, leaving behind women and non-working members of the family. Remittances from migrants became the main source of subsistence for village families. Because of this, the economy of Uttarakhand is often termed a money-order economy. This second stage has also been termed as 'the stage of large-scale migration from the agricultural sector to the service sector'. The third stage of migration involved total family-based urban migration. In this stage, migrants shifted their families to urban areas with them. Bora (1996: 37) observed that the ratio of migrant male workers to the total male workforce was 49.8 per cent in his sample villages in the Pithoragarh and Tehri Districts of Uttarakhand.

The results of the present survey indicate that the commercialisation of agriculture has checked migration to a great extent. In total, 60 families were included in the survey. Of these, 45 persons had migrated in search of alternative jobs. Not all migrated out of distress and/or would have otherwise worked in agriculture. The educated ones particularly migrated for better prospects and would not have worked on farms if they had stayed behind. Therefore, for the present analysis we have considered only those migrants who are in 'menial jobs'.* Out of the 45 persons, 31 persons were engaged in 'menial services', and all were men. The effective rate of migration among male workers, considering only those in menial jobs calculated as a percentage of such migrants to total male workers of the village (including the migrants), was found to be 16.4 per cent (Table 6.1). In most cases, the migration was need-based, but, in some cases, it was also due to the demonstration effect. In a few instances, the migrants returned to their villages after a few years (See Box 5).

Table: 6.1: Outmigration from Garampani Area (Sample Survey)

1.	Total sample families	= 60
2.	Total population of the sample families (including migrants)	= 606
3.	Total population of the sample families residing in the village	= 531
4.	Total number of migrants	
	(i) Male	= 62
	(ii) Female	= 13
	(iii) Total	= 75
5.	Percentage of people migrated	= 12.4%
6.	Purpose of migration	
	(i) Menial jobs	= 31
	(ii) Other services	= 10
	(iii) Business	= 4
	(iv) Housewife	= 3
	(v) Education (and children)	= 27
7.	Total working population in the village (in sample families)	
	(i) Male	
	(ii) Female	= 166
	(iii) Total	= 158
		= 324
8.	Effective rate of migration among male workers	= 16.4%

Box 5 : Decision to Return

Dharmanand, of Falyani Village, tried his best to get a government job after his intermediate examination in 1982. He did not want to stay in the village and work as a vegetable grower. Inspired by many migrants of his acquaintance, he was enthusiastic and hopeful about his future when he left for Delhi in 1984. But things did not go according to his expectations. After many difficulties he got a job as a composer in a printing press. He was paid Rs 800 per month for working an eight-hour schedule. This was hardly adequate even for his own subsistence in Delhi. He had to share a small room with two other workers. The living conditions were quite unhygienic. He suffered from poor health. Finally, he realised that his calculations were wrong and he decided to go back to his village in 1989, after spending five years in Delhi.

Mr. Dharmanand is an enterprising farmer now. He shows great interest in new varieties of seeds and agricultural techniques. He was the first farmer in his village to adopt cauliflower and improved varieties of beans. He also experimented in cultivating cabbage.

Mr. Dharmanand is quite satisfied with his decision. Now he does not have to work under compulsion. His health has improved. He realises that if he had not taken this decision it would not have been possible to improve the standard of living of his family to its present level. "A wrong perception about urban life and jobs is the main cause of disappointment with vegetable farming among young boys," he feels. "Many of them decide to return after experiencing that life and correcting their perceptions."

II. Impact on Animal Husbandry

Animal husbandry has been affected by commercialisation of agriculture in two ways: (i) commercialisation increased women's workload, therefore, they have less time to care for their livestock, particularly for collection of fodder; and (ii) the availability of crop residues, which have been the biggest source of fodder in Uttarakhand, has drastically declined after commercialisation (Singh and Naik 1987⁶; Palani 1966: 347; Shah 1997: 49). Due to a sharp decrease in available cattle feed, the number of cattle per family has also decreased considerably. The average number of livestock per family is 5.84 (Table 6.2). A valid inter-area comparison of livestock size is not possible because animal husbandry has been affected adversely by large-scale outmigration in those mountain areas where commercial crops are not cultivated⁷. However, the inter-temporal comparison based on information derived from oral history of the Garampani area confirms the above hypothesis. About 40-50 years ago, per household average livestock holding was about 10-12, represented by seven to eight cows, two oxen, and one to two buffaloes. After commercialisation, the number of cattle decreased by half. Compared to cows, horses (mules) have become popular as they help transport vegetables.

Table 6.2: Average Livestock Holding Per Household in Garampani Area
(Based on Sample Survey)

S.N.	Particulars of Livestock	Average head of livestock (numbers per family)	Percentage of families actually keeping livestock
1.	Cow	0.92	62
2.	Ox	1.77	82
3.	Buffalo	1.77	98
4.	Horse/Mule	0.50	48
5.	Goat	0.88	18
	Total	5.84	100

Animal husbandry and farming in hill regions are complementary and closely interlinked. Since there has been a decline in the supply of organic manure due to the reduction in livestock holding sizes, the sustainability of the transformation process itself has been called into question.

III. Impact on the Environment

The interaction between the environment and vegetable farming is very complex and requires detailed research. The present study does not intend to bring out all of its aspects; however, two quick comments can be made on the basis of our observations.

⁶ According to Singh and Naik (1987, 223) paddy straw accounts for 10%, wheat straw for 12%, madua (coarse millet) and jhangora for 17% and 10%, and barley straw for 2% of total dry fodder production.

⁷ According to Shah (1997: 48) on an average each family in Khulgad, Almora district, keeps about 6.6 cattle units. Singh (1996: 115) estimates the average livestock holding size as 3 in Uttarakhand.

First, use of chemical fertilizers, fungicides, insecticides, and so on has increased very rapidly after commercialisation. This could yield the results desired to a limited extent but posed many environmental problems. Many farmers in the Garampani area have now realised that these chemicals are not suitable for dryland farming in mountain regions and are mainly responsible for the decline in soil fertility. Some scientists also endorse their views. According to one respondent, the use of insecticides has endangered the existence of useful insects such as bees. However, the use of these chemicals is still popular because the farmer realises good returns even if only in the short run. Therefore, natural agricultural techniques should be developed and popularised.

Second, reduction in the availability of crop residues for cattle feed has led to more dependence on the forests for fodder and a concomitant decrease of livestock holdings. This is not a desirable development in the light of the contracting forest area in the Himalayan region.

Table 6.2: Average Livestock Holdings per Household in Garampani Area (based on Sample Survey)

2.4.1.1	Portion of Fodder	Average head of livestock	Percentage of families actually rearing livestock
1. Cow	100%	1.5	100%
2. Ox	100%	1.5	100%
3. Buffalo	100%	1.5	100%
4. Goat	100%	1.5	100%
5. Pig	100%	1.5	100%
6. Poultry	100%	1.5	100%
7. Total	100%	1.5	100%