

Issues and Options for Marginal Farms in the Hindu Kush Himalayas: A Study in Himachal Pradesh (India)

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Introduction

With the increasing problems of population pressure, soil erosion, and degradation in Himachal Pradesh, the management of marginal farms and lands has gained in importance. There has been an increase in the proportion of marginal farms, defined as holdings of less than one ha, from 58% of all farms in 1970-71 to 64% 20 years later.

This study evaluated livelihood strategies based on fruit and off-season farming and highlighted the issues and options for the development of marginal farmers in the state. Apples and off-season vegetable production were selected as two viable options for marginal farms and were analysed in detail. The study confined itself to activities that have been commercialised in the state. These can form the basis for diversifying production activities on marginal farms with an eye to commercialisation.

Himachal Pradesh can be divided into four agro-climatic zones. In Zone I (low-hills), where agro-climatic conditions are sub-tropical, most activities are not very profitable. In Zones II (mid-hills) and III (high-hill temperate wet), activities like fruit, off-season vegetables, floriculture, and mushroom production are highly profitable. Zone IV (high-hill temperate wet) can be commercially exploited for off-season vegetables and seed potato production. Zones II and III have seen the most diversification and commercialisation. From these agro-climatic zones, one district was selected for each activity. The district Shimla was selected for apple production and off-season vegetable production. The study pertains to the calendar year 2000.

Vegetable system

Despite the area's being quite progressive and well known for vegetable production, the productivity of different crops was generally below the experimental yield obtained on research farms. The yield gap was 5.3% for tomatoes, the main vegetable crop of the area. The pattern of input use for the tomato crop is quite close to the recommended level of inputs, resulting in tomato productivity that is close to the experimental level. There were substantial differences, however, between the experimental and farmers' field-level productivity in the cases of other crops. The highest gap observed was for French beans, 78% lower because this crop is grown as an intercrop with maize. The gap for peas was 67%. The productivity gaps for other vegetable crops ranged from 30 to 40%.

Fruit System

The main emphasis in the fruit growing area has been on apple production. Other crops are not significant, and on many farms a complete monoculture of apples has been the result. This, combined with factors like agro-climatic conditions, has resulted in substantially

lower productivity. The lowest gap between farm and experimental productivity was for maize – 23% lower. In other crops it varied between 50 and 70%. No values are available for the experimental yield of apples and hence no gaps could be calculated, but horticulturists say that the present yield is very low and can be increased by at least 50% to 60% with proper pre-harvest management of the crop.

Economics of Crop Cultivation

The emergence of the present livelihood strategy of the area is an outcome of various factors. Among these, profitability is the main consideration.

Returns from crops in the vegetable system

The highest net returns (\$2766/ha) are obtained from cultivation of tomatoes, followed by cauliflower and cabbage. These returns appear to be quite high, but when the actual cropping patterns are factored in, net returns are reduced to \$593/ha, with an input:output ratio of 2.63. Each dollar invested on the farm gives a return of 2.63 dollars. Theoretically, the present cropping pattern on a hypothetical farm of one hectare would yield a net profit of \$1602.

Returns from crops in the fruit system

The net returns realised on the farms in the fruit growing area are very meagre except for apples and potatoes. The net return from maize is only \$79/ha, and from wheat and barley a mere \$4 and \$18, respectively. These low returns are more than offset by the returns from apple and potato cultivation, which yield net returns of \$2497 and \$516 per ha respectively, with input:output ratios of 1:3.7 and 1:1.6. Apple is the main source of income. The total net returns per farm on the apple farms are \$1344/ha, with a very high input:output ratio of 3.7. Theoretically, the present cropping pattern on a hypothetical farm of one hectare would yield a net profit of \$1793, a substantial income.

It appears that the farmers are enjoying good returns in both the areas. This is true, if a comparison is made with the other areas of the state lying in other agro-climatic zones or even with many pockets of the same zone. Despite this, there still is scope for increasing the net returns by improving the productivity of the crops grown.

Development of Horticultural Infrastructure

In the growth and marketing of agriculture/horticultural commodities, development of infrastructure is essential. In this context, the state took a number of policy initiatives for the development of infrastructure related to horticulture. These can be broadly divided into three categories: production facilities, dispersal facilities, and institutional facilities.

Production facilities

The state has set up 113 nurseries to supply fruit plants of different varieties, and 736 private nurseries are also registered for this purpose. A network of 209 distribution centres under the control of the Department of Horticulture, HPMC, Himachal Pradesh Agro-Industries Corporation, and Himachal Pradesh Marketing Federation (HIMFED) supplies

insecticides and pesticides to farmers. Fertilisers are supplied from various outlets by the Primary Agricultural Cooperative Societies (PACS), Department of Agriculture and Horticulture, and others at subsidised rates.

Dispersal facilities

The state has set up five cold storage units with a capacity of 8000 tonnes within the state, and three with a capacity of 8256 tonnes outside the state. At present there are four grading houses with a capacity of 15,000 tonnes, and five grading-cum-packing houses with a capacity of 5000 tonnes. Processing plants with a capacity of 40,000 tonnes have also been set up in the state.

Institutional support

The Himachal Pradesh Marketing Corporation (HPMC) was established in 1975 to provide facilities like cash marketing advances, packing material (cash/kind), forwarding assistance, transit warehouses, cold storage facilities, market intelligence, and so on. A corrugated fibreboard carton manufacturing plant has been set up at Gumma in Shimla district. The rate of subsidy under the scheme for incentives to weaker sections varies from 25% for small farmers and 33.3% for marginal farmers, to 50% for scheduled caste/scheduled tribe farmers, farmers in backward areas, and IRDP farmers for fruit plantations. The maximum subsidy is \$67 per family.

Vegetable Development Programmes

As for other crops, incentives are available for the purchase of inputs for vegetables. Under the scheme, a 50% subsidy is available on the purchase of all inputs other than fertilisers, to the members of scheduled castes, scheduled tribes, families identified under the Integrated Rural Development Programme, and those located in backward areas. A subsidy of 33% is available to marginal and small farmers. The subsidy varies between 25 and 75% depending upon the scheme, target group, and the area of operation.

Programmes and schemes like the 'Intensification of Vegetable Cultivation through Project Approach', 'Production and Supply of Vegetable Seeds' (Central Sector Scheme), 'Foundation and Certified Seed Production of Vegetables' (Central Sector Scheme), and so on are available for the development of vegetable cultivation in the state. Other schemes cater to all field crops without making any distinction for vegetables. Such schemes include the Minikit Programme and the Scheme for Green Houses and Training.

Issues in Apple and Vegetable Production

The following issues and comparative advantages for apples and vegetable production emerged from the study.

Labour

Apples and off-season vegetables are labour-intensive crops. The scarcity of labour constrains the extension of apple and vegetable cultivation to additional lands. The technical nature of production and marketing makes the availability of skilled manpower mandatory. It is not only the quantity of labour that matters, the quality aspect is equally important.

Capital and credit requirements

The capital requirement for both these crops is significantly higher than for other field crops. Vegetable farmers often resort to borrowing from non-institutional sources, as the procedure for lending in banks is quite long and cumbersome. In the case of apple, capital requirements are fulfilled from both institutional and non-institutional sources.

Inputs

Farmers with insufficient capital are forced to use lower than the recommended levels of inputs. Many times this also happens as a result of due to ignorance. Another factor is the low availability of such inputs.

Extension services

Although there are various agencies involved in extension services, many farmers do not have access to their services. Those who have received some training complain that there is almost no follow-up.

Marketing

The marketing of apples and vegetables is a highly technical and risky task, especially during periods of bumper production. The effect of bumper production of vegetable is seen immediately in the next production season in the form of lower area allocation. But, this is not the case for apple, whose area allocation cannot be altered so quickly.

Market intelligence

Many of the risks of marketing can be avoided if appropriate market intelligence is available. The quality of the market intelligence is inadequate in various respects: it can be late or misleading and is also not available for many markets. Thus, the farmer has no other option but to send his produce to the conventional market.

Women's participation

Despite the high involvement of women as labour, their role in the decision-making is slight. They have very little role in marketing produce.

Risk and uncertainty

Apples and vegetables, being perishable products, have an inherent risk associated with their production. The changing weather cycle, and incidence of disease, and infections can result in lower than normal yields. Marketing risk arises out of the ever-changing scenarios at the market, poor infrastructure, and substandard packing and grading.

Favourable Factors and Advantages

The following factors have been identified as instrumental in making apple and off-season vegetable production successful.

Agro-climatic compatibility

One of the main reasons for the success of these activities has been their compatibility with the agro-climatic conditions. In other words, the niche provided by such conditions has been successfully tapped and put to the benefit of a large number of farmers.

Efficient use of land resources

The land resources of the fruit growers are larger, and they have made more comprehensive use of land. It is possible to use land not suitable for crop cultivation as apple orchards. This was seen in both the areas. Although farmers with orchards have made more rigorous use of land, they have a tendency towards monoculture as the apple orchards replace most of the field crops.

Profitability

Apple and off-season vegetable cultivation could not have formed the main livelihood strategies of the farmers in many parts of the state, had they not been associated with a high level of profitability compared to traditional field and other crops. Profitability motivated the farmers to adopt these activities.

Crop productivity

The use of inputs was observed to be below the recommended levels and this led to lower productivity of vegetable and other crops. However, the productivity of tomato, the main crop, was almost equal to the recommended level.

Literacy

Although initially the spread of activities was mainly due to agro-climatic compatibility and profitability, the real spread and refinement in production and marketing techniques came with the increase of literacy rates in these areas.

Infrastructure

The development of infrastructure, especially in the form of rural roads, along with the spread of these activities, played a very crucial role. The successful adoption of these activities is largely a result of road infrastructure development in the state.

Policy initiatives

Cherishing the dream of making the state the apple state of India has led to very favourable policy initiatives for development.

Markets and demand

These activities were able to become the main livelihood strategies of some areas because of the availability of well-established markets. This played a crucial role in the initial stages, and its importance has not diminished despite the fact that distant markets are also being exploited and farmers have started using the Internet for the sale of apples. The commodities produced are in perennial demand in the state as well as in other parts of the country. At present, the demand is met by other hill states like Jammu & Kashmir and Uttaranchal, but there is still a market for Himachal produce.