

ASSESSMENT OF EXISTING AND POTENTIAL OFF-FARM EMPLOYMENT ACTIVITIES

Tourism Development and Off-farm Employment Activities

In the last one and a half decades, trekking tourism has emerged as a major form of tourism in certain hill and mountain regions of Nepal. Annapurna, Sagarmatha, and Langtang are some of the prominent destinations for trekking tourists. The Annapurna trek is by far the most popular trek and receives about two-thirds of the total trekking tourists (Table 4.1). It should be noted that not all of the trekkers with permits to the Annapurna Region reach Jomsom.

Jomsom-Marpha is one of the most popular tourist destinations along the Annapurna trekking route. The chief attractions are natural beauty and the unique culture, society, and lifestyle of the people. The topography, which provides immense natural diversity in rapid succession, the monastries (*ghomba*), holy shrines, and temples like Muktinath are other attractions. Interestingly, many of the tourists interviewed along the trek were found to be second or third time trekkers.

Tourism and off-farm employment activities in Marpha-Jomsom have been developing in an integrated fashion. The growth in tourism has provided the impetus for the local people to invest in new economic activities. With the opening of new activities, the area has witnessed a notable change in its occupational and employment structure as well as in income over the years.

Table: 4.1 Tourist Arrivals in Nepal and the Number of Trekking Permits Issued 1986-1990

Years	Total Number of Tourists	No. of Trekking Permits Issued	No. of Trekking Permits Issued for the Annapurna Area	No. of Trekking Tourists Recorded in Jomsom
1986	223,331	49,579 (22)	33,629 (67.8)	NA
1987	248,080	47,275 (19)	30,914 (65.4)	NA
1988	265,943	61,273 (23)	37,902 (61.9)	9,649
1989	239,945	60,858 (23)	36,484 (59.9)	11,179
1990	254,885	NA	NA	9,548

Note: Figures in parentheses in column three are percentages of the total tourist arrivals in the country and those in column four denote the per cent of trekkers with permits for the Annapurna Region.

Source: APROSC (1991) and the District Police Office, Mustang.

Tourism: Implications and Linkages

Tourism as an activity influences and is influenced by a number of factors: the quality of the environment, nature of the resource base, land use and farming system, mobility of the population, opportunities for employment, and so on.

The environmental implications of tourism, particularly on forest resources, are important in the Marpha-Jomsom area. The forest ecosystem of the area has been severely damaged to meet the fuelwood demands of hotels and lodges. Construction of government buildings and hotels/lodges also contribute to the depletion of nearby forests. As a result, all kinds of forest products are becoming scarce. The effects of deforestation are: (i) increased amount of time for fetching fuelwood and fodder; (ii) decline in the practice of compost-making and its use in the fields; (iii) low yields and productivity of crops due to loss in soil fertility; increased incidences of gully formation; (iv) and soil erosion along village slopes and on farmland.

About two decades ago, villagers in Jomsom had no problem in getting forest products. These were easily obtained from the forest above Thini village which is within an hour's walk. Reaching a forest now takes up to a day. About 25 years' back there was only one buffalo shed in Ghodepani (en route to Jomsom). Today, there are more than 35 lodges in Ghodepani, a ridge that was once covered by dense rhododendron forests (TRN Jan. 24, 1992). Between Tukuiche and Jomsom there were forests with a variety of tree species such as juniper, cypress, and pine (Randhawa and Singh 1964). At present one can hardly believe that these areas were once green.

Another important change brought about by tourism is in land use practices. Key informants reported that changes have been manifest in the conversion of agricultural lands into orchards for fruit and vegetable production and in a decline in forest land, agricultural land, and pastureland. In Marpha and Jomsom VDCs about 70 per cent of the households use part of their agricultural lands for fruit and vegetable production. In Thini village of Jomsom VDC some households with tourism-related occupations have rented out their land.

The employment effects of tourism in Marpha-Jomsom are both directly and indirectly manifest. The benefits of direct employment are enjoyed by all the households operating hotels/lodges and small enterprises that produce woollen goods such as scarves, caps, and carpets and households engaged in retail trade and shopkeeping. The benefits of indirect employment are manifest in fruit and vegetable production and marketing, *jhopa* and mule transportation, construction, repair and maintenance work, as well as regular/seasonal jobs in hotels/lodges. However, local employment for porters, cooks, kitchen boys, guides, and support staff employed by tourist agencies is almost non-existent as these are hired either from Kathmandu or Pokhara.

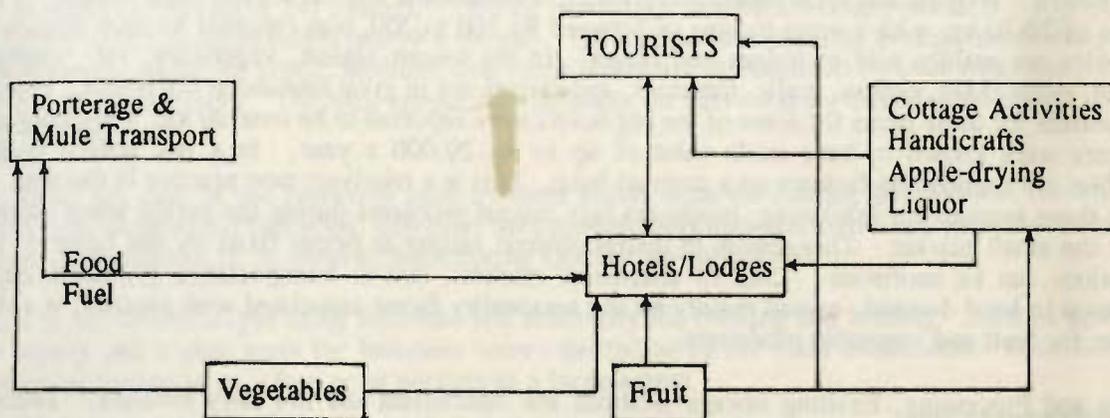
The income effects of tourism are also direct and indirect. Direct income is accrued mostly by hotel owners, shopkeepers, and fruit and vegetable sellers. Indirectly, the local producers/farmers are benefitted because of the opportunity of disposing of all kinds of farm produce in the local market; not possible until about two decades ago. In the absence of tourism, these people, particularly the entrepreneur class, would have migrated to the urban areas. Although seasonal migration is a traditional phenomenon for the rural communities, it is uncommon among entrepreneurs and businessmen who are operating tourism-related OFEAs. In fact, anecdotal evidence suggests that some entrepreneurs who had migrated out of the region in the past are now returning.

Major Off-farm Activities in Jomsom-Marpha

Almost all off-farm activities that have developed in the Jomsom-Marpha area have come about as a result of the growth in tourism in the area. The figure below provides a simplified picture of the major link between off-farm activities and tourism in the Jomsom-Marpha area. With this in mind, some of the major off-farm activities namely, fruit and vegetable production, hotel/lodge businesses, cottage industries, and transportation will be analysed.

Most of the OFEAs in Jomsom-Marpha are run in a closed system because of the constraints imposed by lack of transport, remoteness, little interregional trade and links with major market centres, and almost no investment from outside entrepreneurs.

Link Between Off-farm Activities and Tourism



Important and common features of OFEAs in Jomsom-Marpha are their informal nature and seasonality. The informal nature of activities is manifest in terms of voluntary work contributed by family members, an undefined scope of production and employment of the household members, traditional entrepreneurship, and single-owner operations. Similarly, resources such as family labour, fuelwood, and forest products, which are used heavily in operating off-farm activities, are hardly accounted for as costs in economic terms. This conceals the real economic picture in terms of the contribution of off-farm activities to household income vis-a-vis employment. Because of these inherent features most of the OFEAs do not expand to the extent of their full potential, and the scales of investment and operation are not always determined by their economic viability.

Fruit and Vegetable Production

The total production of fruits in Mustang was estimated at over 1,000 mt in the year 1990/91. Apples alone accounted for about 70 per cent of this figure. Similarly, about 700 mt of vegetables were produced of which cabbage accounted for nearly 60 per cent. Fruit and vegetables are mainly produced along the trekking route and at market centres, viz., Kagbeni, Jomsom, Marpha, Tukuiche, and Ghodepani, where lodges/hotels operate.

Marpha and Jomsom VDCs have developed as major pockets of fruit and vegetable production in Mustang over the last two decades. The establishment of Marpha Horticultural Farm in 1966 has been instrumental in encouraging the local people to grow fruit and vegetables. The farm, since its inception, has been involved in the extension of horticulture, processing of fruit and vegetables, and conducting refresher training courses for farmers. Further impetus to the farm's activities has been provided by increasing tourism and the operation of hotels/lodges locally.

A wide variety of fruit and vegetables is produced in Marpha and Jomsom. Fruits grown include apples, apricots, peaches, walnuts, grapes, and almonds. Important vegetables are potatoes, carrots, cabbages, radishes, cauliflowers, garlic, and tomatoes, and these are in great demand from local hotels/lodges. In the two VDCs, 70 per cent of the sample households had fruit orchards. Nearly two-thirds of these households sold some of the fruit. About 58 per cent of those growing vegetable reported variable sales. The reported average annual earnings from fruit and vegetables by these sample household were Rs 5,252 and Rs 1,936 respectively. Medium and large farm household categories make the largest sales.

Employment Implications. Fruit orchards and vegetable farms are managed by household members themselves. This generates additional employment. Weeding, manuring, compost-making, irrigation, pruning, harvesting, storage, and marketing of products are the major activities. Apples are the fruits which generate extended periods of employment because of the labour needed for storage and marketing. All these activities are undertaken by family members and the costs incurred are nominal.

As many as 15 to 20 households in Jomsom VDC were found to be engaged in the sale of apples at the airport and along the main trails. Such sales last until the stocks are finished and may even extend up to six months. Tourists and local passengers flying to Pokhara and beyond are the main buyers. A daily average of 20-30 kg, with a gross income of between Rs 200 to 300, was reported by such households. Vegetables are mainly sold to lodges and hotels. In the tourist season, vegetables, viz., cabbages, potatoes, swiss chard, onions, garlic, tomatoes, and carrots are in great demand at the hotels. The daily requirements for these items for some of the big hotels were reported to be over 20 kg. Large vegetable producers were known to have made sales of up to Rs 20,000 a year. In a few hotels, seasonal vegetables are supplied by farmers on a contract basis. This is a relatively new practice in the area. But despite these avenues for marketing, producers face crucial problems during the period when there is a glut in the small market. This results in distress/forced selling at prices fixed by the buyers. Price fluctuations can be enormous. Lack of alternative markets, due to transportation problems and the fluctuation in local demand, caused mainly by the seasonality factor associated with tourism, is a major problem for fruit and vegetable producers.

Storage and Processing. Existing storage facilities are insufficient and not fully efficient. There are altogether 16 privately-owned cold storages in the two VDCs. These are constructed through indigenous technology and have an average capacity of 5 to 10 mt. The total storage capacity is 85 mt. A flow of running cold water is maintained in the storage through numerous open channels along a slightly sloping floor. Apples are stacked in wooden cases above the floor. Such storage facilities are difficult to construct, and producers who do not have enough quantity to store, or who have no permanent water supply, hardly can afford to build such storage facilities. In the absence of storage facilities, either in one's own house or on rent, the small producers have no option but to go for quick sales. Oftentimes this results in heavy losses due to rotting of the unsold stock.

Appropriate storage and processing technology could have a significant impact in encouraging farmers to increase production. Apple peeling and drying is relatively a recent phenomenon which provides the farmers several advantages over fresh selling.

Institutional Support. In 1990/91, the local ADB/N, and Nepal Bank Ltd. extended credit to about 15 fruit and vegetable growers in Jomsom and Marpha VDCs, amounting to about Rs 300,000. However, credit facilities to farmers are far from adequate. Also, most farmers are hardly contacted by extension workers. Consequently, farmers, in general, lack the minimum skills and knowhow in weeding, irrigation, manuring, pruning, thinning, harvesting, and storing. Such ignorance, in turn, adversely affects the quality and quantity of their produce. Better packaging and appropriate storage technology are also lacking.

Hotel/Lodge Businesses

In Jomsom and Marpha villages, the hotel business has been expanding rapidly, with about two to three new establishments coming into operation each year. The number of hotels/lodges operated under THAM's (Trekking and Hotel Association of Mustang) registration is now 14 in Marpha and 13 in Jomsom. It was learned that an equal number of hotels are also run without signboards and registration.

Hotels and lodges play a crucial role in enhancing local production, consumption, transportation, income, and employment of the people in Marpha and Jomsom. Hotel and lodge operations have enhanced women's role and involvement as decision-makers in the household.

Hotel Capacity and Facilities. There is a wide range in the capacity as well as the facilities of hotels in Jomsom and Marpha. The capacity ranges from two rooms to 10 rooms, with four to over 15 beds. Although hotel facilities, such as beds, showers, and toilets, are known to be relatively better in Jomsom and Marpha, tourists felt the need for improvement.

A number of hotels in Marpha and Jomsom are not officially registered. Non-registration of these hotels has encouraged hotel owners to evade tax payment to the Government. According to the Tourism Office in Jomsom, the hotels in the area do not meet minimum requirements for registration as tourist standard hotels, although some of them are fairly good.

Energy Requirements and Availability. Firewood is the major source of energy in the hotels and lodges. Hotel owners in Jomsom and Marpha estimate the average fuelwood requirements as follows: 600 kg per month in small hotels (about 2-4 rooms); 1,050 kg per month in medium hotels (about 5-7 rooms); and 1,800 kg per month in large hotels (above 8 rooms). Taking this quantity as an average norm, the annual fuelwood requirements for small, medium, and large hotels are estimated to be over five, nine, and 16 mt per month respectively. The total annual requirements for fuelwood by these hotels alone comes to around 260 mt.

About 30-40 per cent of the fuelwood used by these hotels went for heating and the rest for cooking. The daily requirements for fuelwood, however, vary considerably between tourist and non-tourist seasons. Fuelwood consumption is, in general, high during October through April.

It is rare to see hotels/lodges using kerosene and electricity for cooking and heating. Lack of sufficient power supply and higher costs for kerosene were reported to be the main constraints. Moreover, the perception of fuelwood as a free good persists to a large extent.

Use of substitute energy at an increased cost may, however, not be a serious problem. These costs can be easily transferred to the tourists who seemed to show serious concern for environmental protection (based on the opinions of some tourists interviewed) of the area. Use of kerosene and electric heaters, both for cooking and heating, could easily lessen the use of fuelwood by hotels/lodges to a considerable extent.

Organisation and Management. Hotels/lodges in Jomsom-Marpha are exclusively owned and run by the *Thakalis*, an ethnic group native to the area who are traditionally known for their skills in entrepreneurship. All those who are in the hotel/lodge business are from the area and have taken up this occupation after assessing opportunities arising from the growth of tourism.

Hotel management here is still traditional in style, irrespective of the scale of operations. Hotel owners, male or female - usually the latter-are active in day to day management, cooking, and cash handling. Men usually work both in the hotel and outside and travel frequently for the procurement of goods. Sons/daughters and in-laws also are usually involved fully or partially in the business. The extent of involvement depends upon the intensity of the business and on an individual's profession. For instance, many school-going sons/daughters of hotel owners work partially in the hotel in their free time. A few hotels employ one to two persons, preferably teenagers, for work such as dishwashing, sweeping, cleaning, laundry, and fetching water. Employing outsiders in managerial positions is virtually unknown. Very few hotels employ outsiders for cooking and services. There were only three such hotels in Jomsom.

In spite of traditional organisation and management practices, the level of efficiency in the hotels was reported by tourists to be relatively satisfactory. The hotels' efficiency, measured in terms of tourist satisfaction with regard to the prices they paid, the quality of food and services, and the sanitation and hygiene in the hotels, was considered to be fair, although scope existed for improvement.

Trekking Hotel Association Mustang (THAM). The establishment of THAM in 1987 by the hotel owners of the Mustang District is a significant milestone in the hotel business in the area. Ever since its establishment, THAM has made efforts to promote and standardise the services and facilities of hotels. Some achievements have been in the areas described below.

Training and Skill Development: Two training programmes, one in 1989 and the other in 1991 were organised with the support of the Hotel Association of Nepal (HAN) and the ILO respectively at the request of THAM. Both training programmes, conducted locally, were concentrated on food preparation, hygiene and sanitation, and better service to the tourists. Over 60 persons were trained.

Quality Control and Pricing: THAM has also made efforts to ensure quality standardisation and maintenance of the hotels' facilities, including food. Rates for all kinds of food and services have also been fixed. The hotel owners are also required to have the minimum facilities stated, although many of them are not able to comply fully with the stated norms.

Availability of Support Services. The development of the hotel business in Jomsom-Marpha has been the response of the private sector to growing tourism in the area. Hotel owners suggested that institutional support is needed in the following areas:

- institutional credit/loans for the improvement of hotel conditions;
- institutional support for skill development to the local people for hotel management, as well as for repair and maintenance of water and bathroom systems, solar heating systems, and also for the installation of new facilities;
- registration of hotels by the tourism office, allowing time for the owners to institute improvements; and
- installation of effective communication systems such as telephones, faxes, and telexes.

Employment Benefits. Unlike most other places, local people in Mustang control the hotel business. The hotels and lodges are run mostly by household members. The investment, size, and scale of operations are therefore determined by the family. On an average, a tourist hotel employs four to six family members and one to two outsiders, mostly from the area. While family members are responsible for internal operations and management, the outsiders assist the family in chores such as fetching water and fuelwood and cleaning. The indirect employment opportunities result from the following:

- the production and marketing of fruits and vegetables-vegetable requirements are purchased from local producers;
- labour demand for portering, construction, repair, and maintenance in the hotels- this provides frequent employment to local carpenters, blacksmiths, and skilled and semi-skilled labourers; and
- hotels/lodges contribute to increased demands for the transportation of goods and commodities, giving rise to the increased operations of mule and other pack animal transport systems- over 90 per cent of the foodstuff required by the hotels is transported by mules.

The lodge and hotel business is important in terms of earning and value-added. Food constitutes one of the major items of tourist expenditure. Local produce, mainly potatoes, garlic, onions, and apples account for a significant proportion of food items.

Interviews in some hotels revealed the following:

i) monthly seasonal earnings (Oct,Nov/March, April)	Rs 10,250
ii) monthly off- seasonal earnings	Rs 2,875, and
iii) average annual earnings	Rs 63,000.

Note: Figures represent gross earnings and are believed to be underestimated. Also the cost of family labour and management, as well as of fuelwood used for operating the business, are not taken into account.

Cottage Industries

A list from the office of District Cottage Industries shows 39 different industries registered in the district. Jomsom and Marpha VDCs have 27 cottage enterprises. Broadly these industries are classified as:

- woollen weaving (carpets and woollen blankets - *radi* and *pakhi*),
- distilling,
- milling,

- bakeries,
- carpentry,
- smithing/utensil-making,
- apple peeling, drying, and marketing,
- sewing and knitting, and
- others (incense sticks, liquor-making, etc).

Discussions with local informants and some industry owners revealed that less than half of the registered industries were in operation. The others have either closed down or never existed, although they are shown in official records. In some cases, new industries had come into operation and the traditional ones; viz, carpet and *radi/ pakhi* weaving had closed down. Distilleries, apple peeling, and drying, milling, and baking are new activities. Only a limited number of cottage industries are operating in the study area. A few of these are discussed below.

Carpet Weaving. The study area has traditionally been known for woollen handicrafts. However, in recent years these enterprises, have not been able to evolve as viable commercial ventures, although at the national level commercial production of carpets for export has grown significantly. The woollen goods here are meant for domestic use and have virtually no share in the export market. Enquiries with local informants and entrepreneurs revealed a number of bottlenecks in the carpet and woollen weaving sector.

- i) **Opening of Competitive Markets:** The development of other markets, such as Kathmandu and Pokhara, as major carpet production centres in the country has contributed to a depression in the production of carpets in the hills and mountains. Village-level enterprises are not integrated with the country's major carpet production centre, and the Government has no plans to develop a link between village-based carpet producers and the urban centres.

Specific problems faced by carpet and other weaving enterprises are: i) lack of quality raw materials and ready markets; ii) low quality of finished products compared to those in urban areas such as Kathmandu and Pokhara; iii) high cost of skilled labour as well as a high opportunity cost for family members; and iv) lack of institutional support for the promotion of these enterprises (loans, technology, and knowhow).

- ii) **Costs of Production:** Costs of production for all kinds of woollen goods are higher in the study area for various reasons: a) higher cost of employing skilled manpower; b) higher transport costs for marketing the produce; and c) higher investment costs for large-sized looms.
- iii) **Technology and Skills:** Production of woollen goods in the area is based on traditional technology and skills. The old weaving technology results in low quality finished products which are less appealing and attractive to buyers. It was observed that the best quality carpets that were used by some local people were brought from outside.

Woollen-Shawl Industry (Pashmina Udyog): An Attempt that Failed. Mr. Chhatra Bahadur Thakali, a middle-aged entrepreneur, first set up a weaving loom in his house in Jomsom. The investment cost incurred was Rs 15,000, both for loom and raw materials, and this was supported by the Small Area Development Project (SADP). Thinking that he would employ local weavers, he installed a loom which could also be used for cotton weaving. The industry, however, failed to operate satisfactorily and was shut down within three years. During the three years, his recorded production was: cotton sarees - 70 pieces, bed sheets - 35 pieces, coarse cloth - 200 metres, pashmina-65 pieces. Mr. Thakali mentioned three basic problems: i) the lack of skilled manpower (weavers) locally; ii) low domestic demand for the products; and iii) high costs of transport and marketing. Mr. Thakali, however, asserts that this kind of industry could flourish if institutional support (training in skill development, loans, and marketing arrangements) were provided.

Most of the woollen goods produced in the area are for domestic use. Out of the 54 households surveyed in two VDCs, more than 50 per cent had traditional looms. About 20 per cent of the households surveyed were operating the looms. On an average, each household produced 10 small carpets in one year (an average household earning of about Rs 2,330). About 154 persons were reported to be employed (part-time) in the production of woollen carpets in the sample households.

Employment and income from carpets and other woollen goods were not found to be significant in the surveyed villages. All activities such as spinning, dyeing, designing, and weaving are performed by women. Weaving is considered to be a secondary occupation and is carried out during the non-agricultural season.

Unless institutional support is provided cottage industries like carpet weaving will gradually disappear from areas such as Jomsom.

Apple Peeling and Drying It was only after the establishment of the Mustang Agricultural Farm in 1966 that apples were introduced into the area. By the year 1978, the farm had distributed 82,299 fruit grafts and 35,000 fruit trees which were in good condition (JADP 1979). Apple plantations in Marpha and Jomsom are now a common feature. There are hardly any households that do not have some fruit-bearing apple trees.

Out of an estimated production of 743 mt of apples in 1989/90 (Bagbani News 1990) in the district, nearly 70 per cent were consumed or sold in outside markets in various forms such as brandy, apple juice, dried apples, and fresh sales. Dried apples, which are an innovation in the area, accounted for a mere two per cent of the total apple production. However, farmers are being encouraged to expand the production of dried apples. At present 35-40 households in Marpha and seven to 10 households in Jomsom are engaged in the production of dried apples.

Apple drying is based on a simple technology which offers definite advantages to the farmers, especially to those apple producers who have no storage facilities and who are forced to sell their produce at very low prices. Farmers are now relieved of these problems because of the possibility of drying apples. The apparent benefits are outlined in the following points.

- i) Drying apples reduces their weight by 90 per cent, but adds to their value (10 kg of fresh apples cost Rs 80, while the same apples when dried would fetch between Rs 140 to 160).
- ii) Storage is easy and long lasting.
- iii) Employment is generated for an extended period of time to farm families, particularly to women.

The skills and technology needed for drying apples are simple. They are i) apple peeling machines, ii) simple solar or electric driers, and iii) plastic materials for packaging. A more modern peeling machine (now available to five households in Jomsom-Marpha) is more efficient than the local peeling machines.

Dried Apple Production: A Successful Venture. Mr. C.B. Thakali, after failing to run a woollen shawl (pashmina) industry, switched over to the production of dried apples some three years ago. With 84 fruit-bearing plants, his apple production was estimated to be nearly four tons in the survey year. He plans to sell about two to three tons fresh and one to one and half tons dry. He seems to be a better innovator than others in adopting new technologies. He has an imported peeling machine, a solar drier (made locally by bringing materials and a technician from Butwal), and also a local drier and in-house hanging trays. He has employed one local person especially to handle his apple business and pays a monthly salary plus food. Some of his dried apples are sold loose locally. The price is Rs 140 per kg loose and Rs 160 per kg in packets. His profit (excluding the cash expenses) alone was estimated at Rs 11,000 from a total investment of Rs 12,000. In addition to this profit, the wastages (inner part of the apple and the skin) are used either to feed animals or brew beer. He suggests the need for institutional efforts to provide apple-peeling machines and simple training to farmers, particularly in the Jomsom-Marpha outreach where apple sales are a crucial problem.

Prospects of increasing the production of dried apples appear promising from the point of view of its basic advantages such as simple technology, high value-added, long storage possibilities, employment generation, easy transportation, and marketing in distant markets. Until now, production of dried apples has been confined to limited households and marketing opportunities have not been explored in potential distant markets.

Institutional Support. At present there is no institutional support provided to entrepreneurs for this activity. Institutional support is particularly important in areas north of Jomsom village where the marketing of fresh apples has been a problem. According to local farmers, institutional support packages should consist of: i) providing apple-peeler machines to each interested household on loan; ii) short training programmes on processing and packing; and iii) marketing arrangements for the sale of produce.

Metal Utensils

The metal utensil industry (MUI) is emerging as a commercial enterprise, particularly in Marpha VDC of Mustang District. All the registered utensil industries are located in Marpha. There are a few which are not registered. The growth in metal utensil industries is basically a result of three factors: (i) the increased income level of local people leading to a greater demand for metal utensils; (ii) the *Thakali* culture in which utensils are collected for decoration; and (iii) tourism development.

Types of Metal Product. Metal work is, by tradition, the profession of the blacksmith caste. Traditionally they make all kinds of household and farm implements and tools such as *khukuris*, axes, sickles, and spades. In addition to these tools and implements, these caste groups have been increasingly involved in making different kinds of metal utensil. These include a wide range of gift and decoration items; viz. copper buckets, bronze vases, and plates.

Metal Utensil Industry: A Typical Case. Mr. Ratna B. Bishwakarma of Marpha village is involved in making traditional iron tools and implements. About eight years ago he started running his enterprise in an organised manner. To expand production, he borrowed Rs 20,000 from the local ADB/N in 1988/89 which he repaid within a short period of about two years. His annual production record is given below.

Items

i)	Copper Baskets/Buckets	100 pieces-price per piece Rs	350-500
ii)	Copper- <i>Makal</i> ¹	50 pieces- " " "	600-800
iii)	Copper flower vessels	60 pieces- " " "	600-900
iv)	Aluminium utensils	25 pieces- " " "	60-130
v)	Copper/Bronze Jars- <i>Gagro</i> ²	60 pieces- " " "	400-800

Making these utensils is a recent development. Mr. Ratna Bahadur employs three to six persons daily for about six months depending upon the volume of demand. Marketing was not reported to be a problem, as his products are in demand locally. He also exports some of his products to outside markets, including Kathmandu. He estimated his annual profit at about Rs 40,000.

Employment Patterns. The manufacturing of metal utensils is a household enterprise, particularly for the blacksmiths engaged in it. This household level enterprise employs all the skilled and semi-skilled family members and a few outsiders from the same profession. The daily wage rate for outsiders is Rs 100 without meals and some 75 persons make their living out of such employment. This group of people also has a migratory tradition. For about half a year, beginning from December to June, these people migrate to the middle hills; viz., Pokhara, Butwal, and Syangja; where they settle temporarily and travel to different markets to dispose of their unsold goods.

1. *makal* - brazier
2. *gagro* - pitchers

The following details were obtained regarding the raw materials needed for a typical metal utensil industry.

Raw Materials/Inputs Requirements	Annual (Kg)	Price	Source of Procurement
i) Copper	200	200	Pokhara, Kathmandu, Butwal
ii) Bronze	100	190	Butwal
iii) Aluminium	100	160	Birgunj
iv) Charcoal	2000	-	Locally
v) Electricity (Rs)	800		Locally

Transportation and Marketing. Transportation, of both raw materials and finished products, is often a problem. Transport costs were reported to be Rs 12/ kg by aeroplane and Rs 10 kg by mule. Higher transport costs raise the price of finished goods. Procuring raw materials in the desired quantities and qualities is a problem for most entrepreneurs. This may involve travel to Indian markets which is even more time-consuming and expensive. An important input which is increasingly difficult to procure is charcoal which has to be prepared by burning firewood. Charcoal contributes to forest depletion and the loss of forests, in turn, makes charcoal expensive.

Since domestic demand is difficult to forecast there is always some stock that has to be marketed in distant markets which sometimes take 1 to 2 weeks to reach. An interview with a metal utensil industrialist showed the market for finished goods as follows:

i) local market	60%,
ii) tourist/officials	20%, and
iii) outside markets	20%.

A simple analysis of the metal utensil industry shows a relatively small share of value-added. The main raw materials have to be procured from outside and incur high transport costs. It is only local inputs which really add to the value of the final product. A rough estimate indicates that some 20 to 30 per cent of value-added in the metal utensil industry is comprised of the price of skills, organisational efficiency, and the normal profit margin of the entrepreneurs.

Mule Transportation

Lack of a motorable road has made the study area dependable on other means of transport; mainly mules, donkeys, and porters. Air transport is prohibitive in terms of cost. *Jhopa* and horses are also used for local transportation.

Official records put the number of mules at 1,863 head in Mustang District (District Veterinary Office 1991); but the local mule operators estimate the figure to be over 3,000. In Jomsom and Marpha VDCs the official record puts this figure at 31 and 790 respectively; but the actual number in Jomsom is believed to be at least more than double this figure.

All kinds of goods and commodities are transported by mule. They operate in herds of about 20-30. Each herd is jointly owned and operated by three to four different owners. Because of the economy of scale, mule operation requires a minimum of seven to eight head for commercial transportation. The average number per owner is therefore between seven to 10 head. Broadly, mule transportation is of two types; i) keeper-operated mules, and ii) owner-operated mules. In the first case, the owner hires a keeper to look after and operate the mules. In the second case, operation is directed by the owners. Mule caravans operate between Pokhara and the interior parts of Mustang District all year round except on rainy days. In other cases mules are used for local transport for about half a year (June/July - Nov/Dec). In other months the mules are used to transport goods in to the interior areas of neighbouring districts; viz., Baglung, Lamjung, Tanahu, and Syangja.

Mule Operations: Implications and Linkages. The main porter trail in Mustang District runs south from the border with Tibet via-Mustang, Kagbeni, Jomsom, Dana, and then either to Pokhara or south via Beni to Baglung and then to the Terai (Wolf 1968). However, the condition of trails at present is much better than was the case one or two decades back, and this is largely because of tourism. These developments within the district have made mule transport an indispensable operation and it is unlikely that any transport system (with the exception of a road) would completely replace it in the foreseeable future.

The implications of mule transportation are diverse in the local economy and environment. The study area is a food deficit area and food imports will continue to rise to meet the demand. Similarly, demand for agricultural inputs (chemical fertilizer, seeds, etc) and consumption items, both for tourists and local people, is increasing each year. Also mule transportation plays a role in the marketing of local produce. The other equally important effect of mule transportation is on the environment, particularly in terms of the overgrazing of pasturelands.

The operation of mule caravans between Mustang and Pokhara can contribute to the marketing of apples and other local products. Recently transportation of apples by mule was tested as a new transport technology by using different packing materials; viz, jute bags, wooden boxes, and card boxes fitted in a frame of high density polythene pipe. The findings pertaining to the damage of apples in different packing systems were: 7.5 per cent in polythene pipe-framed wooden boxes, 30.5 per cent in plain wooden boxes, and a high of 90.2 per cent in jute bags (Bagbani Sandesh 1990).

Employment and Income. The operation of mules is taken purely as an economic activity in the region. Mule owners estimated that over 400 persons are presently directly employed in mule transportation. The employees are usually the salaried keepers whose main work is driving the mules and taking care of them. The keepers are all local people because the work demands special skills and knowhow with which outsiders are not familiar. The entire process of mule transportation needs specialised skills at every stage of packaging, weight balancing, saddling, feeding, driving, loading, and unloading.

The indirect benefits of mule operating can be assessed in terms of market centres that have developed along the mule transport route. They have contributed to the operation of a number of hotels/lodge in as many as eight to 10 centres on a 150 km long trail from Pokhara to Muktinath. Besides, the equipment for mule transport; viz., frame sacks, are made by local people from locally available materials.

Mule Transportation: A Typical Case. Income from the operation of mule caravans is lucrative. Mr. Raju Bhattachan with seven mules compared mule caravan operation to a lottery saying that the business yields a net profit of Rs 30,000 to 50,000 per year and thus recovers the investment over a two to three year period. But if a mule dies, which at present costs Rs 20,000 to 25,000, the owner might lose the profit and, if more than one dies, the business would go bankrupt. An average-sized mule caravan incurs about Rs 1,40,000 as investment and Rs 30,000 as operational costs. The average annual earnings are about Rs 40,000.

Institutional Support for Mule Operations. The major form of institutional support to this activity is the provision of loans. In the year 1990/91 alone, the local Nepal Bank Ltd. provided loans of Rs 1,447,000 to 22 households in five VDCs to purchase mules. Of this amount, over two-thirds went to 15 families in Jomsom and Marpha. The average amount of each loan extended for mule purchases was Rs 70,000 and it was learned that demand is rising annually.

Other Potential Off-farm Activities

Tourism and off-farm activities in Jomsom-Marpha are interrelated in such a way that neither can be promoted in isolation. Most of the off-farm activities that have emerged in Jomsom and Marpha are

either directly tourism-induced, such as hotels/lodges, and businesses, or have indirect links with tourism such as mule transportation, utensil making, fruit and vegetable production, processing, and marketing. In addition to the expansion of these activities a few other activities show definite potential for development in the Jomsom-Marpha area. These are described in the following passages.

Seed Multiplication

A potential area for development is the multiplication of flower and vegetable seeds for sale in the national and international markets. Recent initiatives introduced by a Japanese expert in this direction show a great deal of promise. The prospects in this area can be better evaluated in the next few years when the results of ongoing experiments become known.

Poultry and Pig Raising

Development of poultry and piggeries as an integral part of the village farming system holds considerable promise in the area. Lack of these activities has meant that livestock and poultry products such as chickens, eggs, and meat have to be procured from Pokhara, by incurring heavy transport costs. CARE/Nepal's experience in poultry development in the area shows a survival rate of 81 per cent for the 306 one-day chickens distributed. There is also overwhelming demand for poultry on the part of farmers, and CARE has plans to distribute some 5,000 layers this year and install an incubating plant (of a 2,500 to 5,000 chicken-hatching capacity) locally. Pig-raising is not commonly practised but there have been some endeavours in this direction. Pig-raising currently being carried out on an experimental basis by a Japanese expert can be a guide to future development potentials.

Renting Facilities

Shops for renting equipment and providing logistics for trekkers and mountaineers (including laundry and repair facilities) are other economic activities that have definite prospects in the area.

Cheese Production

In view of the demand for cheese and other milk products by tourists, a potential activity could be the processing of yak milk into cheese. However, the environmental implications of this activity need to be assessed. Local informants also indicated that there was scope for collecting, processing, and trading in hides and skins of animals.