Peanut Cultivation and Consumption in Nepal: A Social and Cultural Perspective

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Shambhu Kattel, Ram B. Chhetri, and Sanjaya Dhakal
Department of Sociology/Anthropology
Tribhuvan University, Kirtipur, Kathmandu, Nepal

In Collaboration with

Department of Anthropology
University of Georgia
Athens, Georgia, U.S.A.

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Ram B. Chhetri
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Peanut Cultivation and Consumption in Nepal: A Social and Cultural Perspective

Shambhu P. Kattel, Ram B. Chhetri and Sanjaya Dhakal[1]
Tribhuban University, Kathmandu Nepal

Abstract

Peanut has been cultivated in many districts in the Hills as well as the Tarai region of Nepal for many years. Many caste/ethnic groups are involved in the cultivation, trade and processing of peanuts in the country. However, peanuts are consumed as snack food only by people of various socio-economic background in the country. This study looks into the cultivation practices, trade and consumption of peanuts in Nepal.

Farmers are growing peanuts in marginal lands as a cash crop. They sell their products to the middle-men, traders, or even to the consumers directly. Roasted peanuts as snack-food is becoming popular among youths in urban areas as well as among school children. Peanut processing units in Kathmandu were found to be responsive to the taste of the consumers and are therefore doing well. But, the peanut-butter factories that are newly established in Kathmandu valley are finding that they have to learn more in order to compete in the market.

Hardly any research had looked into the social and cultural aspects of peanut cultivation and consumption in Nepal. This study makes a beginning by reviewing some pertinent issues. More in-depth studies will be needed to understand the role of peanuts in the social and cultural aspects of food system among different groups of people in Nepal.

[1] Shambhu P. Kattel (Part time Lecturer), Ram B. Chhetri (Reader, Anthropology), and Sanjaya Dhakal (Student), Tribhuvan University, Kathmandu, Nepal.

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Glossary of Nepali/Local Terms

Nepali Terms	Meaning
Badam	Peanut (also generic term for nuts)
Bari	Un-irrigated/Dry land/farm; rain-fed farmland
Barkhe Bali	Crops grown during rainy season (Barkha= Rainy season; Bali= Crop)
Dalla Fornu	Break blocks of soil (Dalla= blocks; Fornu= to break)
Dalmoth	Mix of fried and salted nuts, pulses, etc.
Dalo	Bamboo basket (also used by Hawkers to carry peanuts)
Fariah (Tarai)	Petty traders involved in buying and selling goods
Ghiyu	Clarified butter
Golo	Round
Hiunde Bali	Crops grown during winter season (Hiund= Winter)
Jhusille	Caterpillar (from Jhusil Kira= Caterpillar insect; Jhus= hair; Kira= insect)
Kanchhi Badam	A name given to peanuts from Trisuli in Nuwakot district
Khaja	Snack
Khannu	To dig or harvest (i.e., crops like peanuts, potatoes); Weeding
Khet	Irrigated land/farm
Lai	Blackish bugs which attack green leaves (of crops)
Lamo	Long
Lau Ayo Badam	Hey, the peanuts have come!
Lidko	Wooden plainer used to level the fields after ploughing
Mamphuli, Mumphali	Peanuts (common terms in Tarai languages)
Nanglo	Winnowing tray made of bamboo, Sieve
Pahenle	One that makes yellow (Pahenlo= Yellow)
Parma	Mutual labor exchange
Pasal	Shop
Raikar	Land tenure prevalent in Nepal—owners pay tax and can transfer ownership
Rato	Red (Rato Lamo= Peanuts with red and long nuts)
Sano Jhyange	Having/With a small bush (Sano= small)
Seto	White (Seto Golo= peanuts with white and round nuts)
Sindure	Like the Sindur color; Sindur= vermilion
Sitan	Any relish/food dish consumed in order to make the main food dish tasty
Sthaaniya jaat	Local variety
Thela	Cart used as a mobile shop (generally pushed by humans)
Thople	With spots
Thulo Jhyange	Having/With a big bush (Thulo= big; Jhyang= bush)

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General Introduction

Peanut or groundnut is commonly known as *Badam* in Nepal. Among the people in Tarai, it is also known as *Mamphuli* or *Mumphali*. Some people also call it "*time-pass*" (a slang used to indicate that cracking and consuming roasted peanut is a way to kill time) indicating that people would consume roasted peanuts (with shell) bought from a hawker while waiting for someone or for something. Peanuts are not among the main food items in any parts of Nepal. In fact, until recently, peanuts were not processed to produce oil or any kind of food. Drying the harvest in the sun and roasting the peanuts (with shell) for consumption with roasted maize was only a common practice in rural Nepal.

But now a days a number of small factories like Aditi in Kathmandu are processing and packaging peanuts in a fairly large scale (see Annex I for details on peanut processing enterprises). Their peanuts can be bought in supermarkets in Kathmandu or in shops around the country's urban areas mainly—in plastic packages of various sizes from those containing 50 grams and up to 2 kilograms. Similarly, some other food-processing factories are producing simple peanut cakes, *Dalmoth* (a kind of spicy food prepare by mixing fried peanuts, lentils, etc., with a flavor of salt and spices). But, otherwise, peanut has been consumed traditionally by roasting (husked or un-husked) since the beginning of peanut cultivation in Nepal.

Roasted peanut is a popular snack plus 'time-pass' item among youth—and students in particular. This may be the reason why the vendors of all types—the *Dalo* hawkers, *Thela-walas* and the *Nanglo pasals* visit or stay around schools, colleges and such other areas where there tends to be a concentration of youngsters in order to sell their Badam during the winter months. Roasted peanut seems to be available mainly during the winter months--November to February.

Within the last two decades, peanut has been grown extensively by farmers in parts of Nepal as a cash crop when its demand as an oil seed increased gradually. The credit for introducing and promoting peanut as an oil seed crop in Nepal goes to Nepal Agriculture Research Council (hereafter called NARC). Their extension programs have been promoting peanuts production by providing improved varieties of seeds to the farmers along with other support services. Thus, *Badam* today is a cash crop, which was cultivated only for local/home consumption until 20-25 years ago.

1. History and Production trends

There is no information or record which could enable us to make a definite statement as to when and where peanut was first introduced in Nepal. Similarly, how or through what medium peanut reached Nepal from its origin in America is not known. Even NARC (with a mandate to conduct research on farm, crops, etc., in the country) does not have any information to indicate when peanuts cultivation began in Nepal. Elderly people in the villages told us that peanut arrived in Nepal from India—with Nepali men who were travelling between India and Nepal for employment and the Indian nationals who came to work in Nepal's Tarai villages (and people in NARC concur that these must have been the medium responsible for introducing peanuts in the country). But neither the elderly villagers nor the people in the NARC office were able to speculate when the crop must have been adopted by Nepali farmers. Elderly villagers note that this crop can be grown in marginal lands also and with much less inputs than what is required for many other crops—and that must have been one of the reasons for the initial adoption.

Indian researchers, Sinha and Bhagat (1988) write that groundnut was accepted by Indians as a vegetable-oil crop by the middle to the late nineteenth century, and has since then occupied the top rank among the oil seed crops grown in the country. Talking about how ground nut arrived in India, they write that peanuts reached East Asia first from South America. And from there, it came to India—entering the country through the east coast of Madras along with the Spaniards. However, the exact time and place of groundnut introduction in India as a farm crop and its subsequent dispersal is also not clear yet and perhaps this is an issue for agricultural historians to pursue. The fact that peanut came to Indian sub-continent with the Spanish people would allow us to tentatively conclude that peanut must have certainly entered Nepal through our Tarai in the hand of migrant farmers.

Peanuts seem to have been cultivated mainly in the hill areas of Nepal. As a crop that could be grown in marginal land, the hill farmers must have been attracted to it while the Tarai farmers may have been reluctant to adopt it in their alluvial wet-land farms where rice paddy—the cereal given the highest value by farmers and consumers in Nepal—could be grown. Peanut is also not grown in the mountain areas Nepal—may be the cold climate there is not suited for its cultivation.

Today, some of the Tarai districts like Siraha, Dhanusa, Sarlahi, Nawalparasi and Banke are among the largest producers of peanut in Nepal. The adoption of peanut as a cash crop by Tarai farmers is said to be due to its demand as an oil seed by the vegetable oil factories which sprung up in different parts of the country within the last 15-20 years. Among the hill districts which stand out as the main suppliers of peanut to the markets in Nepal are Panchthar, Dhankuta, Shankhuwasabha, Nuwakot, Achham and Dang (see Map 1). According to the records available at NARC, peanut was cultivated in kitchen gardens only until not long ago. But, today about 10000 ha of land in Nepal is reported to be under peanut production every year (see Mishra, [2057 BS] 2000:111)[2]. Farmers (based on their

[2] According to Mishra (1999), the average yield of peanut in Nepal is 900 to 1000 kg per ha (with shell). Given this, the annual peanut production in Nepal can be estimated to be 6,300,000 to 7,000,000 kg. Another paper

experience) now say that peanut crops seem to do better in dry and sandy to red soil which is less suitable for many other regular crops. They also report that no irrigation is required or done for this crop. Thus it is cultivated in the marginal lands like un-irrigated sandy plots close to the riverbank in the Tarai also. Of course, peanut is grown by farmers in many other hill districts in small scale mainly for local consumption.

As indicated above, the demand for peanut has been growing during the past 10-15 years only. Several factors seem to be responsible for this. To begin with, peanut has remained one of the eight oilseed crops put under the mandate of National Oilseeds Development Program which has been in operation for more than 25 years by now (see Mishra, 2000: 108-109)[3]. Besides, in 1980, the Shanti Banaspati Ghiyu Factory, Nepal was established. This factory inspired farmers to grow peanuts on a larger scale and in order to do that, it also was providing improved variety seeds and technical support to the peanut farmers in the Tarai. Today, NARC is also providing hybrid seeds of peanut and farm technology when the crop has been recognized as a valuable source of protein as well as oil (Mishra et. al., 2000). General use of peanut is also increasing day by day and it is becoming popular among the youths. A number of Nepali airlines also serve small packages of peanuts (packaged within the country) as in-flight snacks on their domestic flights. Due to the above mentioned reasons farmers as well as users believed that production of peanut has increased more than four times now in comparison to the last fifteen years. Nowadays, *Kanchibadam* of Trishuli (Nuwakot district) is familiar name among the users in Kathmandu—and it is liked for its good taste. People associate it with its yellowish red color—a color it gets from the soil where it is grown. But production of Trishuli is unable to fulfill the demand of *Kanchhi Badam* even in the Kathmandu valley. Therefore, the businessmen are frying peanuts of Tarai in red soil and in order to give it a look resembling the real *Kanchhi Badam* (see Photo). The businessmen we met in Kathmandu acknowledge that they have been able to earn profit this way.

More recently, Barahatwa of Sarlahi district has been producing larger quantity of peanut and this place is now identified as one of the main peanut cultivation sites of Nepal. About 1000 ha of land in Sarlahi district is said to have been devoted to peanut cultivation (see Map 1 which shows the main peanut production districts in the Nepal).

2. Production Zones

Nepal can be divided into three physiographic belts running from east to west, i.e., Mountain, Hill and Tarai. Peanut cultivation is not practiced in the mountainous areas in Nepal. It is mainly grown by farmers in the Hill and Tarai. In this section we provide an over view of peanut cultivation in the country on the basis of ecological/physiographic zones and development regions.

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claims that "the area under this crop is about 1000 hectare with the productivity of 1000 kg/ha" (Mishra et. al., 2000:112).

[3] The eight oilseed crops within National Oilseed Development Program's mandate are *Tori* (Toria/rapseed), *Sarson* (rapseed), *Rayo* (mustard), *Teel* (sesame), *Badam* (peanut), *Alas* (linseed), *Jhuseteel/Philunge* (niger), *Suryamukhi* (sunflower) [see Mishra, 2000:109).

Hill Region: Hill region consist of about 42 percent of the total land area of the country. In the past only the farmers in the hills were cultivating peanuts. It appears that peanut was first adopted by farmers in the hills and it is said that until 20-25 years ago, it was cultivated in the hills only. The hill districts where peanut cultivation is considered significant today are: Panchthar, Dhankuta, Shankhuwasabha in the Eastern Development region, Nuwakot, Dhading and Makawanpur in the Central Development Region, Dang in the Mid Western Development Region and Achham in the Far Western Development Region (see Map 1). Of course, peanut is grown in other districts also in small amount—mainly for home consumption/use. Farmers in Nepal consider marginal lands with red soil in the slopes and sandy soil along the river banks as suitable places for peanut cultivation. It is mainly cultivated in dry lands—i.e., farms that are not under irrigation. Besides, farmers have come to believe that peanut crop does better in places with warmer climate. This may be the reason why farmers tend to grow peanuts in the lands that are located in warmer south facing slopes or lands which get good exposure to sunlight.

Peanut and its peanut-based products (like peanut butter, cookies, oil, etc.) have not been part of regular diet in the rural areas of Nepal. In the urban areas like Kathmandu, Pokhara, Biratnagar, Butwal, etc., also peanut in consumed only occasionally as a mix with other snack food items—mostly after it is roasted or deep-fried. Peanut butter, cookies with peanuts, roasted and spiced peanuts, etc., are some of the items that are becoming available in the supermarkets these days.

Tarai Region: Tarai belt of Nepal is the piedmont plain—running from east to west to the south of the Churia range. This belt has a tropical climate and most of the agricultural lands here have access to irrigation. Tarai could be considered as the "rice bowl" of the country. Tarai region covers 23 percent of the total land area of Nepal.

Some areas within Tarai also have dry farm lands (i.e., no access to irrigation) and thus those areas seem to have adopted a number of crops that do not require irrigation. Some of the dry land crops grown in the Tarai are "cash crops" like sugarcane, peanuts, sesame, lentils, ginger, etc.

Within the past two decades or so, farmers in some Tarai districts seem to be attracted to peanut cultivation in response to the growing demand for the nuts by some newly established vegetable Ghee Factories in the region. Besides, peanut is gaining popularity as a tasty and nutritious (considered rich in protein) snack food among the youths and school/college students. Today, Sunsari, Siraha, Mahottari, Dhanusha, Sarlahi, Nawalparansi and Banke districts are producing peanuts in large scale. Among these Sarlahi ranks first by supplying more than 60 percent of the total production of peanuts[4].

Farmers say that peanuts do better in dry land and therefore it is cultivated in sandy soils or in unirrigated areas preferably where the soil is reddish in color. In Tarai, farmers are cultivating either peanuts or sugarcane in such their dry-land farms in recent years. The

[4] According to one officer interviewed by the research team at the Seed Research Program of NARC at Nawalpur of Sarlahi district, the estimated area under peanut in some selected districts was: Sarlahi-1000ha, Nuwakot-500ha, Mahottari-300ha, Dhanusha-300ha, Dhankuta-200ha, Nawalparasi-200ha, and Banke-100ha (Personal communication with Mr. B.P. Chaudhari).

proportion of the land to be brought under each of these cash crops is normally decided by farmers periodically on the basis of the going price of the product. According to the studies carried out by NARC peanuts in Tarai can produce 800 to 1000 Kg per hectare if it is cultivated by hybrid seeds and fertilizers.

3. Production

A. Seasons

Normally, peanuts are cultivated as a *Barkhe Bali* (i.e., Rainy-season crop) but it can also be grown two times in a year—once in the rainy season and then in the winter (*Hiunde Bali*= Winter crop)[5]. In the hill region some farmers are cultivating it as a summer crop whereas others are cultivating it in spring. Peanut seeds are sown from the end of April to June and harvested during late August to October. In Tarai, people do not cultivate peanuts in winter because the season is too cold for peanuts. Generally, farmers sow peanuts in May and June and harvest after three to five months. It takes about one month for drying and then farmers bring the harvest to markets.

Most of the farmers who cultivate peanuts for home use are producing 'local varieties' because of the availability of seed in the village itself. Farmers do not have names for most of the species. All they would say is that they have been growing a '*sthaaniya jaat*' (i.e., local variety) of peanut for many years because 'it' is suited to the local soil and climatic conditions.

In contrast, those farmers who have adopted peanuts as a cash crop in response to the growing demand from *Ghiyu* (clarified butter) factories and as promoted by NARC, are familiar with the names of the 'improved varieties of peanuts'. But it is interesting to note that the farmers have given names (to the peanut varieties) that make sense to themselves, like *Thulo Jhyange (Thulo=Big, Jhyang=bush/plant)* and *Sano Jhyange (Sano=Small).* On the basis of the description of the two types of plants given by the farmers, we understood that *Thulo Jhyange* has a runner type plant and tends to spread over an area while *Sano Jhyage* plant is a bunch type. Land preparation, sowing and weeding methods are the same for both species. According to the farmers, *Thulo Jhyange* type peanut takes longer to mature, has larger pods, larger seeds and it flowers in the branches and sub-branches only. The other type of peanuts has shorter maturity period and also has smaller pods and seeds. Table 1 summarizes the farming calendar for peanuts in Nepal's Tarai and the Hills.

[5] Farmers in Nepal have a tradition of distinguishing crops as *Barkhe Bali*, i.e., rainy-season crop and *Hiunde Bali*, i.e., winter crop. That is, they recognize two main farming seasons in a calendar year. The *Barkhe Balis* are those grown between April/May to September/October—thus coinciding with the period of monsoon in the region, while the *Hiunde Balis* are those grown between October/November to February/March.

Table 1: Farming Practices for Peanuts in the Tarai and Hills of Nepal

Land preparation	Sowing	Weeding	Application of Manure	Harvesting
Tarai				
February, March and April	May- June	After one month of sowing	- Nitrogen, Phosphorus and Potash are spread after preparing the land. - Urea is needed after one week of weeding	August to September
Hills				
January and February	March-April	After one month of sowing	- Compost is used during land preparation. - Urea may be used (seldom) after weeding	August to October

Source: Field Survey 2001

Generally the farmers in the Tarai grow peanuts under or along with (inter-crop) other crops like maize, wheat and potatoes. The planting time in the Hills is reported to be earlier than in the Tarai. The Hill farmers also grow peanuts under or together with crops like wheat, potatoes, lentils and mustard. A noticeable difference is in the use of manure: the Hill farmers say that they hardly use the chemical fertilizers while those in the Tarai report that they use chemical fertilizers in most of the cases in order to get good harvest. The hill farmers mostly use compost in the beginning and may use some chemical fertilizer soon after weeding if it was felt as necessary. This difference between the Hills and the Tarai may be explained in terms of the absence external agencies in the Hills and their presence in the Tarai (e.g. extension agents from NARC and the *Ghiyu* Factories).

B. Seed Sources and Varieties

Farmers informed that they generally select and store seeds from their own harvest. Most of the Hill farmers who are cultivating peanuts for their home use generally grow the local varieties. Their method of seed selection was explained to us as: "When the crop is ready for harvest you have to select some healthy looking plants, uproot/harvest them separately, dry the nuts and store them with shell in dry containers/place in your house" (farmers in Barahatwa of Sarlahi district). Those farmers in the Tarai as well as the Hills who grow peanuts mainly as a cash crop (i.e., for the market) reported that they buy improved variety peanut seeds from the market. Many of the latter type of farmers also tend to store seeds from their own harvest. NARC has also been a source of seed for the high yield varieties and they would supply the seeds to any farmer who is eager to adopt their 'improved seeds'. As noted above, some varieties of peanuts are certified by NARC as giving high yield per unit of cultivated land, having good taste and also as suited to the conditions in Nepal. Table 2 shows such varieties, their maturity time and average yield per hectare of farmland.

Of the four varieties of peanuts listed in Table 2, B-4 is generally prescribed for the lowlands whereas the other three (*Janak, Jyoti, and Jayanti*) are considered suitable for the Hills and inner Tarai region.

Table 2: High Yield Varieties of Peanuts Promoted by NARC with Average Production/ha (with shell)

Varieties	Type	Maturity Period (in days)	Production/ha
B-4	Virginia bunch	130 to 140	1500 to 2000 Kg.
Janak	Virginia semi spreading	140 to 150	2000 to 2500 Kg.
Jyoti or A. H.-144	Virginia bunch	135 to 140	2000 Kg.
Jayanti or I.CG.S. (E)– 56	Spanish bunch	110 to 115	2200 Kg.

Source: NARC, 2002.

As noted already, there may be different varieties of peanuts grown in different parts of the country (e.g., *Kanchhi Badam*) for generations now. To begin with, each of these must have come from outside Nepal. But, what is interesting to find now is that farmers regard any varieties other than those promoted by NARC as 'local varieties' just because they have been growing such types of peanuts for a long time by now. The practice of cultivating peanuts in the Tarai is new and as mentioned above, *Shanti Banaspati Ghiyu Factory* is responsible in some ways for arousing the interest among Tarai farmers towards growing peanuts as a cash crop. This enterprise is said to have supplied peanut seeds to farmers (about 20 years ago) in selected districts like Siraha, Dhanusha, Parsa and Nawal Parasi in order to ensure a good supply of peanut as raw material for the factory. According to the farmers, the seed that was provided by the factory at that time was only a local variety peanut seed brought from the market across the border in India. Today, most of the farmers in the Tarai who are cultivating peanuts for market use the improved varieties that are being promoted by NARC. It should be acknowledged that NARC (besides the factories that provide a ready market for the peanut harvest every year) has also been playing important role in increasing peanut production in the country by investing their resources (research funds) in developing and spreading the hybrid varieties of peanuts.

C. Production practices

Land preparation and sowing: According to the farmers interviewed by the study team, peanut cultivation requires hard work and a considerable attention once it is adopted as one of the main crops. They claim to plough and harrow the fields a number of times in order to make the soil soft and loose. Thus land preparation begins in January for the Hill farmers and in February for those in the Tarai (see Table 1). Those farmers who grow peanuts in smaller amounts for home/local consumption use spades or other locally available farm tools for preparing the land. The seeding is generally done in lines (about 12-18 inches apart) with furrows in between. When peanut is inter-cropped with crops like maize, spades are used to dig holes inside the maize field for seeding. But when peanut is grown as a main crop, the seeding method used is the same as that used for maize in Nepal. Generally a person (a woman in most cases) with a bag of seeds walks behind the plough-man and drops the seeds on the furrows.

The shells are removed only at the time of sowing. The nut seeds are dropped one per hole (while planting inside maize crop) or one at a time (while following the plough). The distance between seeds is generally about 40 to 50 cm. The distances between the plants are

adjusted at the time weeding by placing heaps of loose soil around each of the plants. The distance between rows is about 25 cm. Farmers say that the seeds should not be covered with thick layer of soil. This is a general practice followed by the farmers. On an average 100 to 120 Kg peanuts (with shells) seed is needed for one hectare. Sometimes, farmers also sprinkle kerosene in the seed nuts before seeding with the belief that this saves the seed from attack by white grub, ants and other insects during germination.

Seed treatment and spacing: Farmers are, simply, following their traditional ways of seed treatment. Only the better and big pod plants that are not affected by pests are collected for the seed. Normally, the farmers dry the peanut pods in the sun until the nuts inside shake well. Any cracked or broken pods are removed. Thereafter, they store the dried peanuts in jute sacks with the mouths tied sown with strings. Most of the farmers in Tarai mix some *Nimpati* (leaves of Neem plant: *Azadirachta indica*) with the seeds in such storage sacks. They say that this saves the seeds from attacks by insects. Farmers report that the storage place should be dry and airy—so that the seeds do not become damp. Some farmers in the Tarai are also using chemicals in as recommended by the extension agents in order to save the stored seeds from damage by insects.

Cultural practices: The peanut cropping system including crop rotations is different in different regions. Farmers in the Hills may cultivate peanuts under maize plants (i.e., inter-cropping) while this is not a common practice in the Tarai. Normally, peanut crops become ready for harvesting in four to four and half months (May to September) in the Tarai whereas it takes more time in the Hills. Table 3 shows the cropping system including crop rotation in relation to peanut cultivation in the Tarai and the Hills of Nepal.

Table 3: Cropping Cycles in Relation to Peanuts in the Hills and Tarai

Regions	Cropping cycle	Remarks
Hill	Peanuts (May/June to September/October) and potato, wheat, buckwheat, barley, etc. (September/October to February/March)	Inter cropping inside maize is also a common practice
Tarai	Peanuts (May/June to August/September) and wheat, potato, mustard, etc. (September/October to February/March)	Those not interested in peanuts plant sugarcane

Source: Field Survey, 2001.

Inter-cropping: Inter-cropping is a common traditional practice among farmers in the Hills of Nepal. They generally grow soybean, peanuts, beans, etc., under maize or other crops. They argue that when you have less land such practices maximize the use of land, reduce weed and increase productivity per unit of land. In some parts of Nepal, peanuts are also inter-cropped with sesame and sorghum. But the Tarai farmers do not generally follow the inter-cropping practices with peanuts.

Weeding: Farmers are of the opinion that regular weeding is necessary in order to get a good harvest of peanuts. As mentioned already, the distance between plants are also adjusted during the first weeding which takes place after one month of sowing. Weeding is repeated as necessary. Sometimes, fertilizers including urea (in Tarai) is applied during the first

weeding (see Table 1). Only those farmers who produce peanuts as a cash crop (for the market) in larger amounts and have access to cash are able to use chemical fertilizers regularly for this purpose.

Irrigation: Studies on peanut cultivation in other parts of the world indicate that irrigation is commonly applied to peanut crops (see Palomar, 1988, Jia and Nazarea, 1999). However, in Nepal, farmers do not irrigate peanut. As noted above, farmers think that peanuts can be grown easily in non-irrigated lands. Perhaps the farmers have not felt the need for irrigating peanut crops because they grow it during the rainy season (thus no need for irrigation).

Seedbed preparation: As mentioned above the land is ploughed a number of times until the soil is made loose and soft when peanut is grown as a main crop. In between each ploughing, they break the blocks of soil (called *Dalla Fornu*) and also run a *Lidko* (a wooden plainer on which the plough-man rides while it is drawn by a pair of oxen) in order to make the soil fine and loose. Any rocks found in the farm are also removed. Farmers may also spread some manure/compost during land preparation. Some farmers also create heaps around plants and furrows between rows when they do the first weeding.

Equipment Used: Except in Tarai where tractors may be used for ploughing, peanut growers in Nepal use traditional farm implements. The main equipment/farm implements used are wooden plough (drawn by a pair of oxen or he-buffaloes), harrow, plainer in preparing land. Rakes, spade, shovel, sickle and *Pasni* (small weeding equipment) are the other implements and these are used while weeding or harvesting.

Sowing is done manually in Tarai as well as in the Hills of Nepal. Sowing is accomplished either by following plough (dropping single seed on the furrow at a reasonable distance) or by dropping seeds in the holes prepared for that purpose by using a spade or a metal rod. As indicated above, in both methods seeds are covered with a thin layer (3 to 6 cm) of soft moist soil. Farmers prefer to do the planting in the early morning hours and the reason they forward for this is that the moisture content is much better in the soil in the morning and this helps get a germination result.

After sowing peanut seed farmers say that they have to guard the farm in order to protect the seeds until they germinate. Birds (mainly crows) can cause depredation during the daytime and bats during the night. Farmers also place a number of scare-crows at various points in the farm.

Fertilizer Use: NARC recommends the use of 20 Kg Nitrogen, 40 Kg Phosphorus and 20 Kg Potassium per hectare land allocated for growing peanuts. Some varieties, which have comparatively big plants and give big pods needed additional Sulfur and Calcium too. Similarly, Risobium N. C. 92 organic manure is also prescribed (for each ha of land under peanut, 7-10 kg of dust diluted in water and small quantities applied on each plant) for peanut cultivation.

When farmers are growing peanut on their own (i.e., not being promoted by NARC), generally they use dung or compost as manure. The extent of the use of chemical fertilizers in peanut farming is not known because there is no data available on this so far. Besides,

peanut farming on a larger scale seems to be a recent phenomenon in Nepal. Only large farmers are able to use chemical fertilizers and pesticides.

Harvesting: Farmers say that harvesting has to be done at the right time—premature harvesting result in low quality of nuts and delayed harvesting may cause rotting and germination in the field itself. Farmers decide the harvesting time by looking at the plant of peanuts and they say that when the nuts are ready for harvesting the plants become dry. Harvesting is done by pulling the plants as well as by digging—thus known in Nepali language as *Badam Khanne* (*Khannu*=to dig). Upon being asked to specify the criteria used to determine when the peanut harvest is ready farmers listed the following indicators:

- Plants of peanuts should be allow and dry,
- Maturity date of peanuts (110 to 150 days) should be considered,
- Nuts inside the pods should be hard.

D. Pests and Diseases

D.1. In the Field

Various insects and diseases are disturbing the plants of peanuts in the field. The main diseases commonly recognized by the farmers are *Lai* (bugs covering the leaves) and *Pahele*[6] (leaves turning yellowing or having yellow spots). Besides, some other diseases are also known to occur.

Leaf rust: A kind of fungus attacks the leaves. Initially the rust begins on the underside of the leaves and gradually spreads to the visible upper parts. Generally this disease attacks the crop during dry season—when the peanut plants are also quite mature.

Yellow spots on leaves: It is known as *Pahenle* in Nepali. It is a kind of diseases which makes leaves yellow and gradually kills the plants. This disease is also said to attack peanut plants in their mature stage and thus reduce the yield significantly.

Insects: Besides the above mentioned diseases various types of insects (micro-organisms) like dark-green dots maker on young leaves, yellow spots maker on leaves, etc., also affect the peanuts plants. Farmers do not consider this as a major problem since they have been able to treat their crops with pesticides made available or prescribed by NARC.

***Insects, Birds and Animals*—**Birds and wild animals may also damage peanut crops. White ants and white grubs are commonly recognized insects that destroy the nuts before they are ready for harvest. Similarly rats, porcupines and monkeys among the wild animals and bats and crows among the birds causing crop depredation. Thus farmers say that they have to be watchful all the time in order ensure that they do not lose a significant proportion of their crops to attacks by insects, birds and wild animals.

[6] As anthropologists, we were only able to gather local names for the insects and diseases (listed in this document). Determining scientific names or identification of the insects and diseases recognized by peanut farmers will have to be done later.

The peanut farmers in the field told us that most of them have not used pesticides so far in order to treat the diseases/problems. They reported an interesting strategy in stead. If they begin to see diseases in the peanut crops planted in a particular field, they would not use that particular field for peanut for at least a couple of years after that. They tend to plant peanuts by rotation in different plots. We should note that this strategy would be available only to those farmers who have larger land holdings. Those with smaller holdings reported that they stop growing peanuts for a couple of years after they see the diseases.

NARC has identified some diseases and insects and also recommended some pesticides for the treatment of such problems.

- Some diseases like *afalrot, crownrot, stemrot, podrot* are transmitted from the seeds and soils and attack the plants and nuts which results in reduced production of peanuts. They recommend the use of Thairam and Weviston directly on the seeds while sowing.
- Some diseases like *early-thople, late-thople*, (*thople* =spots) and *Sindure* are transmitted from the soil and/or air and can affect 50 to 70 percent of the plant if they occur in the crop in any year. Spraying of Weviston and Chlorothalonil (we were not able to find out the chemical generic names for these) on the plants is recommended as soon as the problems arise.
- A virus like the bud-necrosis, which transmits through virus vector insects, is a danger for peanut plants. It attacks the buds of the plants and any kind of pesticide can be used to treat the virus.
- White ants and white grubs are recognized insects that disturbed roots and nuts of the peanut plants. The recommended treatment from NARC has been to use Aldren and Chlorodane on the soil during land preparation or to use Chloropiriphus directly on the seed just before sowing.
- Similarly, some types of larva (*Jhusile*—i.e., caterpillars, and *Surtiko* lavre—i.e., one that is commonly seen in tobacco plants) also eat leaves of the peanut plants. Spraying the plants with Indosulphan mixed in water is recommended.

As noted above, farmers claim that they have not used many pesticides so far. Only some of the large-scale farmers reported that they are using seed treatment chemicals during sowing/planting and some other recommended pesticides as and when needed.

Weeds: Farmers consider weeds also as 'enemies' of their crops. The main weeds found in peanut farms are said to be *Bethu* (*Chenopodium album*), *Banso* (*E. gangetica, E. tenela & E. uniloides*) and other ground grasses. According to the farmers these weeds also grow in soft and loose soils and therefore compete with peanut plants for nutrients. Thus regular weeding is considered important in order to get a good harvest of peanuts.

D. 2. Pests in the Storage

Generally, farmers do not want to buy peanut-seeds every year. Therefore, they select the best pods from the best plants in any given year, dry them and store the seeds for the coming year. Rats are the only pests known to cause damage to the peanut seeds in the storage.

Considering this, farmers try to store peanut seeds in open places (but in the house) considered to be safe from attacks by rats. It is equally important to keep the seeds dry—i.e., save them from the dampness that can easily destroy the seeds. Farmers do not recognized any other disease and pests that would damage their peanut seeds.

Businessmen who buy large amounts of peanuts during the season for making peanuts cakes, or packaging salted peanuts, etc., are also concerned that rats destroy a lot of their peanuts. As they sell most of their peanuts within 5-6 months after buying, they have no knowledge of any other factors including diseases destroying peanuts in the storage. They too concur that it is absolutely necessary to keep the peanut storage moisture free.

3. Post Production Practices

A. Storage and Processing

Storage: Generally, farmers do not store peanuts because they are able to sell most of it soon after the harvest. In some cases the farmers would have received advance payments of cash for the peanuts from petty traders who collect peanuts and supply them to the factories or other businessmen. Except in the case of those who sell peanuts to the *Ghiyu* making factories, farmers know little about what all is made from peanuts. It is estimated that more than 80 percent of the total production of peanuts is used in roasted form sold by vendors of all kind during the winter months. This may be the reason why farmers have not thought much about storage of peanuts except for seeds—which normally is not in large quantity.

According to the people in business—those involved in roasting and selling peanuts, peanut cookies and peanut butter factories—they too sell or use most of the peanuts they buy every season within 5-6 months. For many of them, peanut-business is only a seasonal business—they do other things the rest of the year.

Until now no government facility or a cooperative has been developed among the farmers in relation to peanut production, storage or processing in the country. Those who are storing peanuts in large scale are doing so on individual basis. They use plastic and jute sacks for the purpose.

Trishuli region of Nuwakot and Barhathwa area of Sarlahi are known as the main peanut producers and suppliers in the country today. However, even NARC, the only agriculture promotion institution of government, has provided limited physical facilities related supports (storage, processing plants, etc.) to the farmers in these areas also. It has been mostly providing suggestions, high yield variety seeds, extension services, pesticides, etc. in selected areas[7] but not in the whole country.

[7] NARC has established some field offices in the country and it has been providing the above mentioned services in the regions. Kathmanu office is providing such services to the Trishuli farmers and Nawalpur office is providing services to the farmers of Barahathwa.

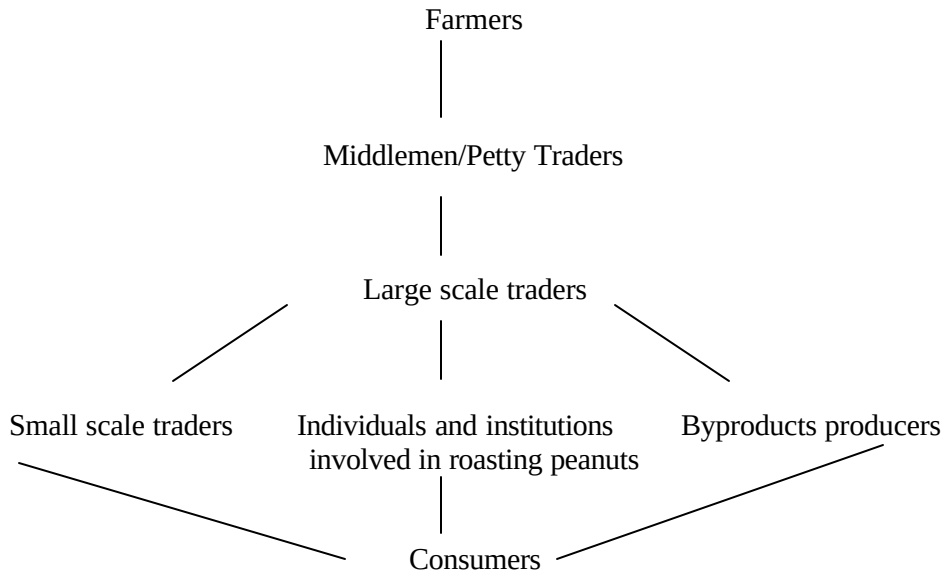
Processing: According to the farmers of Barahathwa, Shanti Banaspati Ghiyu Factory introduced peanut cultivation in the area about 20 years ago and motivated the farmers to grow peanuts by making the seeds available. However, the farmers reported that the factory never came back to collect peanuts from their village. On the basis of a quick survey we found that there were four agro-product based food factories and some dried peanut packaging units in Kathmandu. Some of these are also producing peanut-cookies, packages of roasted peanuts (unshelled) and *Dalmoth.* Peanut cookies are made with a mix of peanut flour (suggesting that peanut is also milled to produce flour) with other ingredients.

The main processing work with peanuts involves drying the nuts. As soon as the peanuts are harvested, farmers in Sarlahi reported that even the roofs of the houses are rented for use as peanut drying spaces. So, even those who do not grow peanuts can make money during peanut harvesting season by renting out their flat roof tops for the purpose of drying newly harvested peanuts.

B. Distribution and Marketing

Nepalese farmers are producing 1500 to 2500 Kg of peanuts per ha of farm land brought under peanut cultivation. Rainfall, diseases and insects are the main factors that determine the productivity of peanuts in any given year. According to the farmers of Tarai, they are bringing the seeds of peanuts from nearby markets of India sometimes. They are not sure whether peanuts grown in Nepal are sold in the Indian markets also. Figure 1 shows the prevailing peanuts production and distribution system in the country.

Figure 1: Peanut Marketing System in Nepal



Main markets of peanuts are Kathmandu, Narayanghat, Biratnagar, Pokhara, Birganj and the other urban areas of the country. It is estimated that about 80 percent of the total peanuts produced in Nepal in a season is consumed in roasted form (with shells)—sold by small vendors throughout the country. Only about 20 percent of the total production is used by other peanut or peanut product based factories.

As shown in Figure 1 the middlemen who are known as petty traders (*Fariha* in Tarai language) are involved in collecting peanuts directly from the farmers. These traders then sell the peanuts to large-scale businessmen (stock traders of peanuts) in the area (see Annex II for details on peanut stock traders in Kathmandu). The stock traders dry the peanuts first and pack in sacks containing 50 kg each and supply it to the retailers as per demand. It was found that the stock traders involved in peanut collection at Barahathwa also had storehouses in Kathmandu as well as other important urban centers. Most of the other enterprises get their supply of peanuts from such stock traders only. The small vendors in particular, who are involved in roasting and selling shelled peanuts by visiting different places, are normally buying peanuts from such stock traders almost on a day to day basis. Some entrepreneurs (individuals and groups of few individuals) have established peanut roasting units in Kathmandu. They tend to rent a couple of rooms (used as storage and office) and some space on the back of a house where large roasting pans would be set up (see Photo). It was found that some of these units pour ochre color (red clay mixed in water) water over the peanuts in order to give them the look of *Kanchhi Badam* grown in Trisuli where the soil tends to be red clayey (see Photo). The other enterprises (i.e., those who make peanut cookies, *Dalmoth*, etc.) also buy peanuts mainly from the stock traders.

There seems to have been no studies undertaken in Nepal so far with a view to find out the contribution of peanuts on the food system of its people. Also, there is no literature to tell us about the volume of peanut traded in the country over the years. A quick visit to any of the supermarkets in Kathmandu would indicate that Nepal has been importing peanuts at least during the past few years. But how much is imported annually is not known perhaps because the peanuts enter from India under the category of "various snack food items". Our discussions with some villagers and peanut traders revealed that most of the farmers in the Hill districts grow peanuts mainly for home or local consumption. Few districts are producing peanuts for the markets within the last decade or so.

C. Preparation and Consumption

As noted already, the contribution of peanuts in the food system in rural areas is little understood in Nepal. In rural areas people would normally consume small amounts of roasted peanuts (in the form of *Sitan (Nepali)* = meaning a substance consumed with any of the main food items in order to enhance the taste of that food—condiment) with roasted maize. So, people in Nepal would not be consuming peanuts as main *Khaja* dish (i.e., snacks or break fast) but would take it as a condiment. Consuming roasted (with shells) peanuts by itself has been a practice in the urban areas—and hawkers would be frequenting schools, colleges or public places repeating loudly '*Lau Ayo Badam*' (Peanuts have come!) every couple of minutes as they move around.

Photo 1: Small shops by the roadside sell peanuts along with other snack-food items

Photo 2: Some hawkers carry peanuts in *Dalo* (bamboo basket) and visit public places in order to reach the consumers

Photo 3: A woman is roasting peanuts. She would use the tin container as a measure to sell peanuts

Photo 4: Men and women are sorting and mixing peanuts at a processing unit in Kathmandu

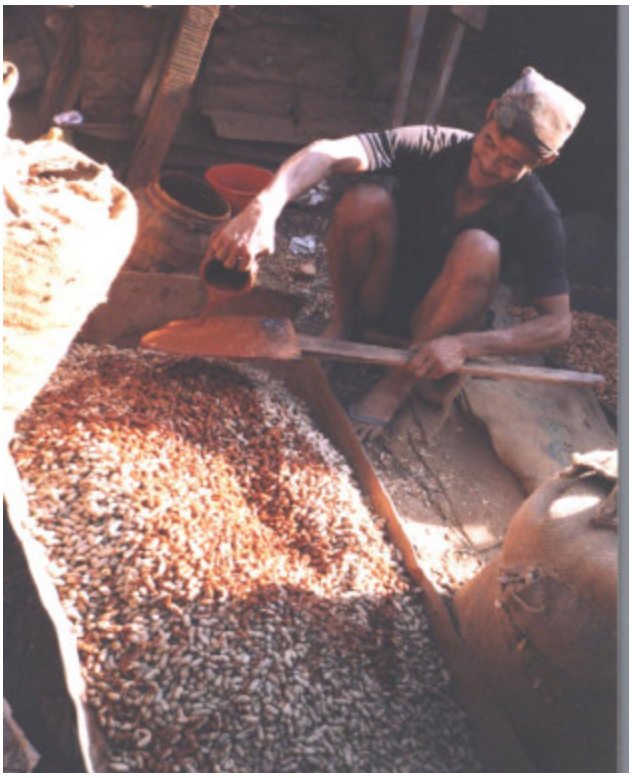


Photo 5: Red clay is used to color peanuts from Tarai to obtain *Kanchi badam's* appearance

Photo 6: Men are roasting peanuts after the red color was added to the shells

Some traders are earning income by adopting peanut buying and selling as a seasonal occupation every year. Besides, some agro-products enterprises and shops are earning profits selling varieties of products of peanuts in the cities these days. One popular snack item has been *Dalmoth* which contains deep fried and salted lentils, peanuts and some other beans.

Two types of peanut cookies are available in the market. One is known as *Mamfuli*-Biscuit with crunchy nuts coated with a sugary wheat flour paste (after boiling the wheat flour and sugar in water until it forms a thick slurry, it is poured into the round moulds while adding deep fried peanuts. The mix is allowed to dry until it gets crunchy). The other kind is like cookies and it is prepared with a mix of peanut flour, wheat flour and sugar baked in the oven. Peanuts are also available now in the market in plastic pouches (plain, salted). Restaurants and bars have also started serving salted peanuts with cocktails and drinks.

According to NARC publications (Sharma, 1994 [2051 BS], NARC, 2000), peanuts can be used for extracting oil. It was estimated that Nepal spent 532.9 million rupees in purchasing oil from outside in 1991 alone. The people in NARC say that about 25% of the total vegetable oil demand in Nepal can be met from peanut oil alone but none has been produced so far. This is an estimate based on the fact that only about 10,000 ha of farm land is devoted to peanut cultivation in Nepal per season in a year. They argue that peanut cultivation can be expanded and along with it the other potential benefits from peanut can also be tapped. Further research and appropriate agricultural policies would be needed for this.

5. Socio-economic profile of local population and peanut producers

The information about the type of people who are involved in peanut cultivation in different parts of the country—i.e., their caste/ethnic background as well as social and economic features—is not available. In fact, very little is known about peanut farmer in the country. Some reasonable speculations can be made with regard to the caste/ethnic background of peanut cultivators in the districts. Table 4 gives a general idea about this based on the information about the caste/ethnic groups represented by farmers in the districts in question.

Table 4: Caste/Ethnic Groups in Peanut cultivating Districts

Districts	**Geographic Region**	**Caste/Ethnic groups**
Panchathar	Hill	Limbu, Brahmin, Chhetri and others
Dhankuta	Hill	Rai, Limbu, Brahmin, Chhetri
Sankhuwasabha	Hill	Rai, Chhetri and Brahmin
Nuwakot	Hill	Brahmin, Chhetri and Tamang
Achham	Hill	Chhetri, Brahmin and others
Dang	Tarai	Tharu, Brahmin and Chhetri
Siraha	Tarai	Tharu, Yadav and other Tara people
Dhanusha	Tarai	Various caste/ethnic groups of Tarai
Sarlahi	Tarai	Various caste/ethic groups of Tarai
Mahottari	Tarai	Yadav, Brahman, Kuswaha, and other Tarai people
Nawalparasi	Tarai	Various caste/ethnic groups of Tarai and Hill migrants
Banke	Tarai	Tahrus and Hill migrants

Source: Field survey 2001. Note: These are the districts that were reported to have significant area under peanut crops in recent years.

From the information summarized in Table 4, it can be said that different caste/ethnic groups are involved in peanut cultivation in Nepal. Peanut is grown in the Hills as well as the Tarai areas of the country and this crop has not been adopted by farmers in the mountainous areas of Nepal. The population distribution in selected peanut growing district and density of population is shown in Table 5.

Table 5: Total Population and Density in Peanut Growing Districts (1991 Census)

District	**Total population**	**Population density (per square Km)**
Panchathar	175206	141
Dhankutta	146386	164
Sankhuwasabha	141903	41
Nowakot	245206	219
Achham	198188	118
Dang	354413	120
Siraha	460746	388
Dhanusha	543672	461
Sarlahi	492798	391
Mahottari	440146	439
Nawalparasi	436217	202
Banke	285604	122

Source: Central Bureau of Statistics, 1991

Only 9.2 percent of the total population in Nepal lives in urban areas as per the 1991 census. This means most of the peanut cultivators must be living in the rural areas because urban dwellers hardly get involved in farming activities in Nepal these days (with the exception of the Jyapu—a Newar group of farmers in Kathmandu valley). Of the fourteen peanut producing districts only Nuwakot and Sarlahi are known to produce substantial amount of peanut at present. These two districts are supplying peanuts throughout the country. Sarlahi alone is said to sell more than 2000 sacks (1sack contains 50 kg of nuts). There are some traders who collect peanuts from different parts of Tarai every year (see Table 6).

Table 6: Peanut Traders in Barahathwa, Sarlahi and their Annual Collection

Name of collection center	**Collection/year (in Sacks)**
Surendra-Birendra grain collection	10,000
Sitaram grain collection	5,000
Sanjaya grain collection	3,000
Badami grain collection	1,500
Others (No names)	2000

Source: Field Survey, 2001. 1 sack = 50 kg nuts without shell

Besides these collectors in the Tarai, there are many other stock traders of peanuts in the country. In Kathmandu valley alone there are at least five stock traders who buy peanuts from different parts of Nepal as well as from India and supply/sell the same to various retailers and peanut processing enterprises (see Annex I and II for details on the stock traders and peanut processing enterprises in Kathmandu valley).

5.1. Ethnic groups and their relationship to agriculture

Most of the Nepali farmers are subsistence oriented. Therefore, their first priority in most cases is to produce what they need in order to survive. When they produce some cash crops, that too is often done to obtain cash needed to buy other essential supplies from the market such as salt, oil, spices, clothes, pots, etc. Thus most of the farmers who are producing peanuts in various parts of Nepal are doing so for local/home consumption. Only some farmers in Nuwakot and Sarlahi seem to have adopted peanut as a cash crop on a larger scale than elsewhere in the country. This may expand as the demand for peanut keeps going up.

It could be said that Hill peoples like Limbus, Rais, Tamangs, Brahmins and Chhetris are multi-crop cultivators (because they tend to grow many types of crops at the same time) whereas the Tharus and other people in the Tarai are predominantly rice cultivators.

Farmers in the Hills with the exception of those in Nuwakot, Dhankuta and Panchthar districts (all caste/ethnic groups) are said to produce peanuts mainly for local/home use. But the story is different in the Tarai. For instance, we found out during our field visit to Sarlahi district that most of the farmers there who own more than two hectares of farmland were growing peanuts for the market. That is, most of the peanut cultivators in Tarai seem to be commercially oriented.

Farmers from the Hills as well as the Tarai told us that decision about what to plant, in what amount, etc., is normally made at the household-level. A factor that influences the decision was reported as the price of the peanuts in the market the previous year. For example, Siyasaran Yadav of Barahathwa had cultivated peanuts in 2 ha of farmland in the year 2000 but did not get a good price for his crop that year. He thus decided to allocate only one hectare of land for peanut cultivation in 2001.

5.2. Land Tenure System and its relation to peanut cultivation

Most of the farmland in Nepal today is under *Raikar* tenure. Under this system of land tenure in Nepal, theoretically the government owns the land while individuals use it and also can sell or pass it on to their heirs. Individuals pay land tax regularly. Most of the farmers in Nepal are cultivating all kinds of crops including peanuts on this type of land. There is no sharecropping of peanuts in the Hills. We did find that some farmers were sharecropping peanuts also in the Tarai (e.g., in Barahathwa of Sarlahi district).

In hilly region, farmers generally tend to have different types of fields for different crops. They reserve irrigated *Khet* for growing cereal crops like rice, wheat and maize while unirrigated *Bari* lands are allocated for cultivating maize, millet, potato and mustard. Farmers also use Bari lands to grow other crops like sesame, yams, lentils, peanuts, etc.

Farmers in Tarai also do not grow peanuts in any kind of farmland. As in the Hills, they do their peanut cultivation in lands where irrigation is not possible. According to the farmers of Barahathwa they are growing peanuts today in the farmlands where they would be growing

sugarcane, maize, mustard, lentils etc. (all of which are considered as not requiring irrigation).

5.3. Labor Structure in peanut farming

Depending on family farm labor is a common practice among peanut cultivating farmers in Nepal. The farmers in the Hills in particular may also be engaged in village level *Parma*—i.e., mutual exchange labor—in carrying various farming works. These days, some farmers in the Hills may employ paid labors also at the time of sowing, weeding and harvesting. In Tarai, the *Parma* system does not seem to be in practice. Thus, here the farmers depend on casual wage labors when any type of farm work needs to be accomplished within a given period of time. That is, use of wage laborers has been a common practice in Tarai among larger farmers. Many of them would employ paid labors for most of the agricultural activities including land preparation, sowing, weeding and harvesting of peanuts. According to the farmers, there is no clear cut division of labor between males and females in most types of works. However, males are responsible for plouging whereas mainly females do weeding. Both males and females share responsibilities while sowing peanuts. Sometimes, children also assist their parents in sowing and weeding activities. Harvesting of peanuts, which is generally known as *Badam Khannu* (i.e., to dig out peanuts) is done together by men, women and children.

5.4. Financial resources

Most of the farmers in the Hills of Nepal may not have non-farm income. They tend to sell some of their surplus products or their cash crops (like peanuts) in order to obtain cash income needed to buy day to day household needs like salt, spices, etc. Today, due to the availability of market for most of the farm products, villagers would be making cash incomes by selling fruits (orange, peers, guava, etc), vegetables (potato, radish, spinach, cauliflower, etc.), and even livestock (goats, fowls, etc.). Farmers in places like Trishuli have adopted peanut farming as a cash earning activity.

In the Tarai, the main cash crops of the peanut producing districts are peanuts, potatoes, and sugarcane. Farmers say that they became interested in peanut cultivation because it fetches a good income and also is a relatively easy crop to grow. According to the farmers of Barahathwa, every now and then they compare the price or benefits of peanuts and sugarcane and then decide which crop to plant. Labor availability in the village is also a main concern since many people now tend to remain away from their homes in search of off farm works (i.e., a regular income) because farm work pays only during certain months every year. Many village youths from the Hills as well as the Tarai seem to be going even as far as to the Gulf countries in recent years in search of income earning opportunities.

Both Tarai and Hill farmers who are involved in peanut cultivation during the last few years are happy that the price of peanuts in the market is gradually going up. Thus, they say more

and more farmers may adopt peanut farming. Major expenses in peanut farming involve buying of seeds (one time in the beginning), land preparation, and purchase of chemical fertilizers and pesticides (in Tarai only so far).

The main problems cited by farmers today are the lack of cooperatives and access to (seasonal) credit for undertaking farm work. People estimate that about 80 percent of the farmers depend on village money lenders who tend to charge an exorbitant rate of interest on the loans. They say that obtaining loan from formal financial institutions including Agricultural Development Banks is not easy—the cumbersome bureaucratic process involved in securing a loan (besides having a land for mortgaging) makes them reluctant to go to the Banks for loans. Thus they end up borrowing money from the informal sector including money lenders and petty traders who may charge very high rates of interest on the loan (sometimes up to 60%).

6. Peanut Research and Development

Hardly any research focused on the socio-economic aspect of peanut cultivation in Nepal until now. NARC has undertaken some technical research/studies intended to identify or develop high yield varieties of peanuts suitable for different geographical regions of Nepal. Their attention does not seem to have been drawn to determine what varieties are already there, how they are doing, where they came from, etc. So far NARC has been able to promote a few improved varieties of peanuts (see Table 2), the use of chemical fertilizers and pesticides. There is a 12-page booklet published recently by NARC called *Badam Kheti* (Mishra 1999) written in Nepali language. Beyond this, no work has been done in relation to peanut cultivation, its use in local food system, any cultural and social aspect of peanut farming and use, and so on. Future research can only fill this knowledge gap in this area.

Annex I: Peanut Processing Enterprises in Kathmandu: A Brief Introduction

A number of peanut processing enterprises are emerging in Nepal today. A brief profile of selected factories/processing units is provided which could be useful for future researchers on the subject.

1. Kathmandu Agro-Products (Aditi): This plant is located in Satungal of Kathmandu. It was established in 1998 and currently it employs 15 people (including one technician who is from India). Its peanuts are sold under the brand name of *Aditi.*

This plant buys about 3 tons of raw peanuts (without shell) in a year from a stock trader in Balaju and supplies in packages of various sizes about 80-90 kg of roasted peanuts daily under the brand name *Aditi.* Their products can be bought in supermarkets like Gemini, Namaste, Bluebird, etc.

Besides supplying roasted peanuts, this enterprise also produces potato chips, *dalmoth*, etc. Roasted peanuts consist of about 50% of their total food products in terms of their annual monetary transaction.

2. Ganapati Food Products: It was established in 1999 and is located in Kuleswor, Kathmandu. It employs 6 people. This enterprise buys 2500 kg of raw peanuts (without shell) from a wholesaler in Kalimati. Peanut products occupy about 10% of their total food products.

3. Rameshwor Food Processing: This enterprise is located in Balaju. It was set up in 1997 and currently it employs 8 people. It buys 2000 kg of raw peanuts (without shell) in a year and sells all of it as fried peanuts. Its market seems to be Balaju and some surrounding areas. They also produce other snack foods like roasted cashew nuts, potato chips, *dalmoth*, etc. Peanut products represents about 20% of their total food products in a year.

4. Peanut Butter Factories: Three peanut-butter factories were found operating in Kathmandu valley. These are: a) N. Stone Bee Concern; b) WEAN Cooperative; and c) Healthy Food Products.

N. Stone Bee Concern is located in Sat Dobato of Lalitpur. When it was established in 1993, it was mainly involved in sericulture. But from the year 2000, it has been selling peanut-butter besides honey. Mr. Prem Singh who is the owner of this enterprise informed that he buys 60-80 kg of peanut (without shell) from Kalimati every month and produces two types of peanut-butter, viz., Plain Peanut-butter and Honey Peanut-butter. WEAN Cooperative is located in Kupondole, Lalitpur also while Healthy Food Products is located in Baluwatar-4 in Kathmandu. The Nepali peanut butter enterprises are finding it difficult to compete in the market in Kathmandu with peanut butter that is imported from US, Holland, India etc. The Nepali peanut butter remains less popular among the expatriate consumers in Kathmandu because of a thin layer of oil that is seen the top in the containers.

Annex II: Peanut Stock-Traders in Nepal: Trade Patterns

There are a number of enterprises involved in buying and selling of peanuts in Nepal. According to some of the people met by the research team, their sources of peanuts are the petty traders in various districts of Nepal. They also obtain their supply of peanut from India. A short profile of some of the major stock traders of peanuts in Kathmandu is given below.

1. Sherchan Brothers (Balaju): Sherchan Brothers have been in peanut buying and selling business for about thirty years by now. They are involved in trading *pashmina* products, wheat flour, and many other products. This is perhaps the only wholesaler which buys and sells peanuts throughout the year. According to Mr. Tanka Sherchan who runs the business at present, this enterprise buys and sells more than 2000 tons of peanuts (shell less) in a year in places like Kathmandu, Lalitpur, Bhaktapur, Narayangadh, Birgunj, etc. They buy peanuts mainly from from India (Orissa, Gujrat, and Madhya Pradesh). According to Mr. Sherchan the peanuts produced in Nepal is sold mainly with shell and since his company does not have a shell-removing device, they can not buy local peanuts. They supply peanuts to Aditi, Joshi Dalmoth company, Rameswor Food Processing, etc. According to Mr. Sherchan, his company buys peanuts for little over Rs. 40/kg and makes about 2% profit from the sale. He reckons two types of peanuts, viz., *Seto Golo* (white and round pods) and *Rato Lamo* (red and longer pods). According to him, the red peanuts cost/fetch Rs. 2-3/kg more than the white type.

2. Bansal Enterprises, Kalimati: Although Bansal Enterprise is also a big wholesaler of peanuts, it does not engage itself in this business as regularly as the Sherchan Brothers. If they see prospects for profit any time, they would buy 500 to 600 tons of peanuts from India and supply the same to the retailers and peanut processing enterprises like N. Stone Bee Concern. According to Mr. Tolaram Bansal, the regular business of his company is to trade in coconut, spices, pulses, etc., for which there is a well established market in Nepal.

3. Sonu Traders, Kalimati: This enterprise is similar to Bansal in its nature as well as business strategy. They take about 100-150 tons of peanuts from India in a year and sell the same to the retailers in Nepal.

4. Gupta Stores, Kalimati: They have been in this business for about ten years. They too trade more regularly in other items like cardamom, cinnamon, coconuts, etc. They buy about 100-150 tons of peanuts from India and supply the same to retailers in Nepal.

5. Pashupati Trading, Kalimati: This is another wholesaler of peanuts in Kathmandu. They buy 150-200 tons of peanuts from India every year. Besides supplying peanuts to the retailers in Kathmandu, they themselves are also involved in selling peanuts as retailers.

References

Central Bureau of Statistics (CBS) 1997. *Population Monograph of Nepal*. Kathmandu: CBS

Jia, L., and V. Nazarea, 1999. *Commercialization, Local knowledge, and gender Roles in Sustainable Agriculture—A Comparative Study of the Peanut Production in Two Villages in China*. Georgia: Department of Anthropology, University of Georgia.

Mishra, B., 1999 [2056 BS]. *Badam Kheti (Peanut Farming)*. Sarlahi: NARC, Oil Seed Research Program, Nawalpur (Text in Nepali Language).

Mishra, B., 2000 [2057 BS]. "Oilseed Research and Development Strategy in Nepal", pp. 108-111, In *Proceedings of 22nd National Summer Crops Workshop (Grain Legumes and Oil Seeds)*. Khumaltar, Lalitpur: Nepal Agricultural Research Council.

Mishra, B., T.B. Ghimire, B.P. Chaudhary, L.S. Karki, K.B. Bhandari (2000). "Varietal Investigation Work on Groundnut (Arachis hepogaea) (1999-2000)", pp. 112-115, In *Proceedings of 22nd National Summer Crops Workshop (Grain Legumes and Oil Seeds)*. Khumaltar, Lalitpur: Nepal Agricultural Research Council.

NARC, 2000. *Proceedings of 22nd National Summer Crops Workshop (Grain Legumes and Oil Seeds)*. Khumaltar, Lalitpur: Nepal Agricultural Research Council.

Palomar, M., K., 1998. *Peanut in the Philippine Food System: A Macro Study*. Georgia: Department of Anthropology, University of Georgia.

Piniero, Maricel C. and Virginia Nazarea, 1999. *Cultural Dimension of Peanut Production in the Philippine Food System: A Comparative Study of Two Communities in Leyte, Philippines*. Athens, Georgia: Department of Anthropology, University of Georgia.

Sharma, Buddhi Prakash, 1994. *Badamko Unnat Utpadan Pravidhi (Improved Farming Techniques for Peanuts)*. Kathmandu: ICRISAT and NARC (Text in Nepali Language).

Sinha, P. K. and N.R. Bhagat, 1988. "Origin and History of Peanut Cultivation." In P. S. Reddy (edt), G*roundnut*. New Delhi: Indian Council of Agricultural Research.