CHAPTER 2

The Economic Scene

The Diyargaon economy, like that of most of the Karnali Zone, is a highly complex subsistence system. While it is dominated by an annual cycle of farming punctuated by transhumance, its paucity in terms of size and production makes it necessary for most households to supplement it through a number of other non-agrarian pursuits within their immediate environs and farther afield. Some of them are highly demanding of the inhabitants' traditional capacity for enterprise, wit, charm, and craftiness, if not also exacting in terms of sheer physical endurance.

Agriculture

The quest for extending their meagre holdings over the years has brought the people of Diyargaon to higher and remoter elevations from the village. Their farming land today is of two major kinds, the first consists of the irrigated paddy lands generally called *khet* (irrigated rice land) but locally referred to as *jyula* and the unirrigated land generally known as *pakho* and locally called *bhuwa*. The second category is the *lekali bhuwa* (more frequently called only *lekali*), i.e.,

bhuwa on the *lek* or high cliffs which are situated at an elevation of half an hour's climb or more from the village.

The *jyula* is the most preferred of all lands and consists of three kinds, namely, the standard *jyula* called *jawadi* where the two-crop cycle, mostly of paddy and barley, is grown (barley is *jau* in Nepali; hence *jawadi*), the *chyute* where only one good crop of paddy a year is grown because of mountain shade on the winter barley, and the *seem*, i.e., swampy land, which also gives only one good crop of paddy a year.

Bhuwa, or more appropriately *ghaderi bhuwa*, i.e., the *bhuwa* where the homestead is located, is the next preferred; it is unirrigated land in which a fairly large assortment of crops, such as barley, wheat, maize, millet, and beans, are grown. But if irrigation water were to be available, this land could be converted into *jyula* to grow the preferred crop, i.e., paddy.

In recent times, much of the *bhuwa* has been converted into paddy fields, and the consequent shortfall in non-paddy crops has been made up by expanding the *lekali* holdings at higher elevations where all lands are unirrigated and produce only one crop a year because of the prolonged cold.

As with the *jyula*, there is a great variation in the productivity of the *lekali bhuwa* depending upon its distance from the village. Where it is a manageable distance of an hour or so, cattle can be brought from the village for extended durations for fertilising the field, and this ensures cultivation every year of a combination of different crops such as barley, wheat, potatoes, beans, and gourd, with the first three being given priority.

Land Distribution

Two adverse attributes of land ownership in Diyargaon are that, first, it is extremely meagre in terms of its total availability and that, secondly, its distribution is highly skewed and largely follows the traditional caste-based social order. According to the local system of ranking the relative economic status of households, they are divided into three categories and the primary indicator used is the frequency in daily consumption of rice.

According to them, people of the highest status consume rice as their staple every alternate meal for six months, followed by another six months of one rice meal alternated by four meals of wheat, barley, or millet bread. In contrast, people of the second highest status alternate their one meal of rice by three meals of bread for two months to be followed by four or five days of bread eating, in between which they have one meal of rice. For the rest of the people in the village it is only during the big festivals that they can eat rice, except, of course, for the able-bodied *kamsel* ploughmen who are given a good meal of rice by the *chokha* each morning on ploughing days.

While these criteria do not tell us very much about the amount of land owned, they do indicate the *jyula* ownership status which is the prime indicator of the relative economic standing of a household in the community.

Based on this criterion of status ranking, the distribution of the forty-two households included in the sample in terms of their land ownership status, land cultivation, leasing-out and leasing-in, are given in the following table (Tables 2,3, and 4). The tables are given separately for each category of land and a cumulative table has been included at the end.

In the first of the preceding tables on the distribution of *jyula* based on class categories, it is to be noted that the ownership of the *jyula* or the paddy land is disproportionately distributed among the three class categories. Whereas, the class A category represents only 17.3 per cent of the population, it owns 47 per cent of the land and operates 38.3 per cent of it with most of the difference being leased out to *kamsel* labourers who mainly plough for them in *lagitya* or *haligado* relationships. This is evident from the fact that the C class category, which consists mostly of *kamsel* households (19 out of 22 households) and represents 43.9 per cent of the population, owns only 8.4 per cent of the *jyula* and operates 16.6 per cent of it with half of it being leased in from the *chokha lagi*. Except for the small proportion whose usufruct has been given from *lagi* to *lagitya* in-kind payment, most *jyula* land is owner-cultivated, simply because the holdings are very small. The per capita ownership of even the highest category is only 4.5 *muri* (1 *muri* = 0.013 ha), which is less than one-eighteenth of a hectare, and the average per capita ownership for the entire sample is 1.7 *muri* which translates into around a forty-fifth of a hectare.

Table 2: Distribution of *Jyula* Based on Class Categories

			*Jyula (Muri)**						
Class categories	No. of households	Population (%)	Total owned (%)	Per capita	Owner cultivated	Leased out	Leased in	Total operated (%)	Per capita
A	6	41 (17.3)	185 (47.0)	4.5	141.75	43.25	4	145.75 (38.3%)	3.6
B	14	92 (38.8)	176 (44.7)	1.9	166.00	10.00	5.5	171.5 (45.1%)	1.7
C	22	104 (43.9)	33 (8.4)	0.3	31.00	2.00	32	63.00 (16.6%)	0.6
	42	237 (100.0)	394 (100.1)	1.7	338.75	55.25	41.5	380.25 (100.0)	91.6

Source: Field Study

* *Muri* = 0.013 ha; 1 ha = 78.6 *muri*

Table 3: Distribution of *Bhuwa* Based on Class Categories

			Bhuwa (Ha)*						
Class categories	No. of households	Population (%)	Total owned (%)	Per capita	Owner cultivated	Leased out	Leased in	Total operated (%)	Per capita
A	6	41 (17.3)	32 (37.2)	0.8	31.5	0.5	-	31.5 (37.1%)	0.5
B	14	92 (38.8)	33.6 (39.0)	0.4	31.1	2.5	-	31.1 (36.7%)	0.3
C	22	104 (43.9)	20.5 (23.8)	0.2	20	0.5	2.25	22.25 (26.2%)	0.2
	42	237 (100.0)	86.1 (100)	0.4	82.6	3.5	2.25	84.85 (100.0)	0.4

Source: Field Study

* one *hal* = apprx. 0.08ha, i.e., 1ha=13.1 *hal*

Table 4: Distribution of *Lekali Bhuwa* Based on Class Categories

			Bhuwa (Ha)*							
Class categories	No. of households	Population (%)	Total owned (%)	Per capita	Owner cultivated	Leased out	Leased in	Fallow	Total operated (%)	Per capita
A	6	41 (17.3)	51.5 (28.2)	1.3	37	12	2.5	2.5	39.5 (26.6)	1
B	14	92 (38.8)	75.5 (41.3)	0.8	67.75	4.2	-	3.5	67.75 (45.6)	0.7
C	22	104 (43.9)	55.7 (30.5)	0.5	40.2	12.5	1	3.0	41.2 (27.8)	0.4
	42	237 (100)	186.7 (100)	0.8	144.95	28.7	3.5	9.0	184.45 (100)	0.6

Source: Field study

* one *hal* = apprx. 0.08, i.e., 1 ha = 13.1 *hal*

As seen in Table No. 3, which gives the distribution of ownership of *bhuwa* or unirrigated village land, here also the per capita distribution is very meagre (0.8 *hal* or one-sixteenth of a hectare for the highest category and 0.4 *hal* or one thirty-third of one ha), and most of this is owner-cultivated. *Bhuwa* land is not popular as payment in-kind to the *lagitya* or *haligado*.

Table 5 shows the distribution of the *lekali bhuwa* and presents a slightly different picture in that the contrast in the proportion of *lekali* owned by different categories is less pronounced, and in that the 43.9 per cent of the people representing the lowest class category own 30.5 per cent of the land. However, in absolute terms, the per capita ownership remains quite meagre at an average of 0.8 *hal* or one-sixteenth of a hectare.

However, two points are worth noting. Firstly, both the highest and lowest categories have leased out 12 and 12.5 *hal* of *lekali* respectively, but for different reasons. In the case of the top category, the *lekali*, which, as stated earlier, could be located at a distance of anywhere up to three hours' climbing distance from the village, have been leased out on a share-cropping basis to *ista* at higher elevations closer to the land because of the shortage of manpower in the owner's household. But, in the case of the latter category, all of the 12.5 *hal* belong to the *Damai* and have been mortgaged to the highland villagers indicating their state of indebtedness. Secondly, a few *hal* have been left fallow or uncultivated for want of sufficient labour in the owner's household, but each one of them has an agenda to work on them in the near future.

The following Table 5 gives a consolidated picture of the total land ownership and land-operating status of the sample households in Diyargaon which allows for some inter-category comparisons in terms of the kind and proportion of land owned and cultivated. Table 5 reveals a few important characteristics of the distribution of agricultural land among different classes of Diyargaon households. While the disproportionate distribution of land among different classes is evident in all categories of land ownership, the contrast, as stated earlier, is increasingly less pronounced with the deterioration in the kind of land. For the local people, *jyula* is the preferred kind of agricultural land followed by *ghaderi bhuwa* or *bhuwa*. *Lekali* is much more demanding in terms of logistics and is, therefore, resorted to only as a source of supplementary produce.

Table 5: Consolidated Table Showing Total Owned and Total Operated Status of *Jyula*, *Bhuwa*, and *Lekali* Based on Class Categories

Class categories	No. of households	Population (%)	*Jyula (Muri)*				*Bhuwa (Muri)*[a]				*Lekali (Muri)*[a]				Total *(Muri)*			
			1[b] (%)	2[b] (%)	3[b] (%)	4[b]	1 (%)	2	3 (%)	4	1 (%)	2	3 (%)	4	1 (%)	2	3 (%)	4
A	6	41 (17.3)	185 (47)	4.5	145.75 (38.3)	3.6	192.00 (37.2)	4.8	189.00 (37.1)	4.8	309.00 (28.2)	7.8	237.00 (26.6)	6	686.00 (34.2)	16.7	571.75 (32.1)	13.9
B	14	92 (38.8)	176 (44.7)	1.9	171.5 (45.1)	1.7	201.6 (39.0)	2.4	186.6 (36.7)	1.8	453.00 (41.3)	4.8	406.5 (45.6)	4.2	830.6 (41.4)	9.0	764.6 (43.0)	8.3
C	22	104 (43.9)	33 (8.4)	0.3	63.0 (16.6)	0.6	123.0 (23.8)	1.2	133.5 (26.2)	1.2	334.2 (30.5)	3	247.2 (27.8)	2.4	490.2 (24.4)	4.7	443.7 (24.9)	4.3
	42	237 (100)	394 (100.1)	1.7	380.25 (100)	1.6	516.6 (100)	2.4	509.1 (100)	2.4	1096.2 (100)	4.8	890.7 (100)	3.6	2006.8 (100)	8.5	1780.05 (100)	7.5

a) *hal* converted into *muri* by multiplying *hal* by 6 based on the local reckoning that a pair of bullocks can plough in a day one *ropani*, i.e., 4 *muri* of *Jyula* or one *hal* of *Bhuwa*, the soil in the latter being 1.5 times softer to plough than the compacted soil of the former.

b) 1 = Total owned; 2 = per capita of 1; 3 = Total operated; 4 = per capita of 3.

Source: Tables 2-4.

.t is said that people do not cultivate *lekali* any more than they really need to, and this does seem to be borne out by the relative proportion of different kinds of land held by different classes of people. For instance, whereas class A households own 47 per cent of all *jyula*, the proportion is 37.2 per cent in the case of *bhuwa*, and only 28.2 per cent for *lekali*. In contrast, however, class C households, which represent 43.9 per cent of the sample population, own only 8.4 per cent of the *jyula*, and the proportion jumps to 23.8 per cent in the case of *bhuwa* and to 30.5 per cent in the case of *lekali*. From this point of view, although the per capita distribution of *lekali* ownership too remains highly skewed in favour of the class A households (7.8 *muri* per capita as against 3 *muri* per capita for class C), nonetheless, this category of land does seem to provide considerable respite to the poorest households in the community.

Although *lekali* seems to be poor man's land in Diyargaon, it is not quite so. Even after all categories of land are put together, the per capita ownership of class C households is a meagre 4.7 *muri* which is almost one-seventeenth of a hectare. Even the highest category is far less impressive when their holdings are calculated in terms of hectares; the per capita ownership of 16.7 *muri*, after all, is not more than one-fifth of a hectare and less than the national per capita cultivated land of 0.24 ha in 1990 (World Bank 1990: 23).

Furthermore, Table 6 further shows that dependence on *lekali* is as pronounced also for the higher caste people in the village. The two higher castes, which together represent 46.4 per cent of the sample population, have holdings of which 50.8 per cent consist of *lekali* land. This, however, is even more aggravated in the case of the *kamsel* who have 63.5 per cent of their holdings on *lekali*.

Another interesting point to note in Table 5 is that there is also a high degree of intra-high caste difference in the ownership of land. While the per capita *jyula* holding of the members of the *Bahun bado* is 3.8 *muri*, that of the Jachauri is only 2.1 *muri*. The contrast is similar in the case of *bhuwa* also, with 4.1 *muri* per capita for the *Bahun bado* and 2.1 for Jachauri. However, the Jachauri villagers have a per capita *lekali* of 8.0 *muri* in contrast to that of 5.2 for the *Bahun bado*.

Table 6: Owned and Operated Land Based on Caste Division as Reflected by the *Bado*

Castes	No. of HHD	Popul-ation	*Jyula (Muri)*				*Bhuwa (Muri)*5[a]				*Lekhali (Muri)*[a]				Total			
			1[b]	2[b]	3[b]	4[b]	1	2	3	4	1	2	3	4	1	2	3	4
Higher Caste *Bahun Bado*	10	61	230	3.8	189.5	3.1	249	4.1	234	3.8	315	5.2	268.5	4.4	794	13	692	11.3
Jachauri *Bado*	8	49	103	2.1	97.75	2.0	105	2.1	102	2.1	393	8.0	315	6.4	601	12.3	514.75	10.5
Sub Total (%)	18	110 (46.4)	333 (23.9)	3.0	287.25 (23.8)	2.6	354 (25.4)	3.2	336 (27.8)	3.1	708 (50.8)	6.4	583.5 (48.4)	5.3	1395 (100.1)	12.7	1206.75 (100)	11.0
kamsel Kami	9	52	47.5	0.9	54	1.0	69.6	1.3	69.6	1.3	171	3.3	162.0	3.1	288.1	5.5	285.6	5.5
Damai	6	30	9.7	0.3	9	0.3	61.5	2.0	58.5	1.9	159	5.3	81.0	2.7	230	7.7	148.5	4.9
Sarki	9	45	4.0	0.1	19	0.4	31.5	0.7	45.0	1.0	58.5	1.3	64.5	1.4	94	2.1	128.5	2.9
Sub Total (%)	24	127 (53.6)	61 (10)	0.5	82 (14.6)	0.6	162.6 (26.6)	1.3	137.1 (30.8)	1.4	388.5 (63.5)	3.1	307.5 (54.7)	2.4	612.1 (100.1)	4.8	562.6 (100.1)	4.4
Total	42	237 (100)	394 (19.6)	1.7	369.25 (20.9)	1.6	516.6 (25.7)	2.2	509.1 (28.8)	2.1	1096.5 (54.6)	4.6	891 (50.4)	3.8	2007.1 (99.9)	8.5	1769.35 (100.1)	7.5

a) *Bhuwa* and *Lekhali* multiplied by 6 to convert it into as in Table 5.
b) 1 = Total owned; 2 = per capita; 3 = Total operated; 4 = Per capita.

Source: Field data.

Similarly, in the case of the *kamsel*, the intra-*kamsel* difference in ownership is immense. The *Kami*, by far the most "prosperous" of the *kamsel*, have a per capita *jyula* ownership of 0.9 *muri* in contrast to the 0.1 of the *Sarki*, the poorest. This difference between the two groups also holds in the case of total per capita land owned as well as total per capita land operated, which amounts to 5.5 *muri* and 2.1 *muri* and 5.5 *muri* and 2.9 *muri* respectively. In the case of the *Damai*, however, total land owned per capita is higher than the other two groups with 7.7 *muri* (mostly accounted for by ownership of *lekali* which is 5.3 *muri* per capita), but their total operated holdings are only 4.9 *muri* per capita because of the extensive mortgaging and the resultant alienation of the usufruct of their *lekali* land.

Ownership Changes Between 1970 to 1990

Table 7 provides some insight into the changes that have taken place in the twenty years between 1970 and 1990 among the *chokha* population of *Bahun* and Jachauri *bado*. The data for 1970 comes from the *Thakuri* sample (21 households, cluster sample) from the *Bahun* and Jachauri *bado* in the previous study (Shrestha 1971) and are compared with 18 households of the same *bado* included in the sample of the present study. The table shows, firstly, some upward mobility in the population with only 12.7 per cent in the C category instead of 23.5 per cent as in the previous sample. Secondly, the ownership of all kinds of agricultural land has increased between 1970 to 1990. The average per capita ownership has gone up for *jyula* from 2.8 *muri* to 3.0 *muri*, for *bhuwa* from 1.6 to 3.2 *muri*, and for *lekali* from 4.0 to 6.4 *muri* and the total per capita holdings have risen from 8.4 *muri* in 1970 to 12.7 *muri* in 1990.

In the case of *jyula* ownership of class A households also, the decline from 5.9 to 4.5 is more apparent than real, because, in the previous sample, the A category included one household that owned 148 *muri* of *jyula*, which represented more than 64 per cent of the then total *jyula* land (230.5 *muri*). While that particular household too has increased its ownership of *jyula* in the last two decades, the present sample includes only a small portion of its landholding, including *jyula* that belongs to a section of the joint family which now lives separately from that household during the year. The comparison, thus, excludes the major portion of the original estate. Given this context, even *jyula* ownership has, indeed, increased.

Table 7: Comparison of Land Ownership between 1970 and 1990 among the Sample Population of the Jachauri and *Bahun Bado*

Class category	No. of Households		Population		*Jyula (Muri)*				*Bhuwa (Muri)**				*Lekhali (Muri)**				Total			
	1970	1990	1970 (%)	1990 (%)	1970 (%)	p/c	1990 (%)	p/c	1970 (%)	p/c	1990 (%)	p/c	1970 (%)	p/c	1990 (%)	p/c	1970 (%)	p/c	1990 (%)	p/c
A (%)	4	6	39 (33.9)	41 (37.3)	230.5 (70.2) (42.0)	5.9	185 (55.6) (27.0)	4.5	120 (66.1) (21.9)	3.1	192 (54.2) (28.0)	4.8	198 (43.1) (36.1)	5.1	309 (43.6) (45.0)	7.5	548.5 (56.6) (100)	14.1	686 (49.2) (100)	16.7
B (%)	10	9	49 (42.6)	55 (50.0)	79.5 (24.2) (25.5)	1.6	143.5 (43.1) (22.9)	2.6	55.5 (30.6) (17.8)	1.1	156 (44.1) (24.9)	2.8	177 (38.6) (56.7)	3.6	327 (46.2) (52.2)	5.9	312.5 (32.2) (100)	6.4	626.5 (44.9) (100)	11.4
C (%)	7	3	27 (23.5)	14 (12.7)	18.5 (5.6) (17.1)	0.7	4.5 (1.4) (5.5)	0.3	6.0 (3.3) (5.5)	0.2	6.0 (1.7) (7.3)	0.4	84.0 (18.3) (77.4)	3.1	72.0 (10.2) (87.3)	5.1	108.5 (11.2) (100)	4.0	82.5 (5.9) (100.1)	5.9
Total	21	18	115 (100)	110 (110)	328.5 (100) (33.9)	2.8	333 (100.1) (23.9)	3.0	181.5 (100) (18.7)	1.6	354 (100) (25.4)	3.2	459 (100) (50.8)	4.0	708 (100) (50.8)	6.4	969 (100) (100)	8.4	1395 (100) (100.1)	12.7

Sources: Shrestha 1971: 29; Field Study.

* *Bhuwa* and *Lekali hal* measures converted into *muri* by multiplying them by six as in Table 5.

One more striking aspect in this change, however, is that despite the all-round increment recorded in the ownership of land, the inter-class differences have persisted. The members of B group only have, however, recorded proportionately larger increments than their more and less fortunate neighbours. The per capita ownership for all kinds of land for them has increased from 6.4 *muri* to 11.4 *muri*, an increment of 78 per cent in the last two decades.

Some Important Factors in the Dynamics of Land Distribution

The history of agriculture here, particularly that of land distribution, has all along been a dynamic process conditioned both by tradition and by the need to respond to the forces of change. The fact that the agricultural land distribution among different caste groups has been uneven and skewed has its roots in manifold aspects of the historical processes. For instance, the *Thakuri* of the Jachauri *bado* traditionally enjoyed the status of being royal descendants of the Jalandhar kings and shunned agriculture and agricultural land as being too menial and relied more on taxes and tributes. However, subsequent State interventions alienated them from this privilege. The Jachauri *Thakuri* today are not known for having large estates.

In contrast, the *Bahun* immigrants from Dailekh came here several generations ago fully prepared for agriculture, along with the *Kami* ploughmen who accompanied them, to benefit from what Barry Bishop called the *Brahman-Thakuri* consortium mentioned earlier.

The *kamsel* on the other hand were traditionally inspired and guided by the Varna philosophy of Hinduism which defined their role as rendering service to their twice-born masters in return for the latters' taking care of all their material needs. The *Damai* did not plough, played music, and stitched clothes and were by tradition assigned the menial role of being receivers of largesse from their masters. Hence the difference in the land ownership status between *kamsel* groups. While the tradition of showering bounty or taking care of their needs tapered off long ago, the *kamsel* never had any power nor the will to seek access to agricultural lands of their own and, therefore, today suffer under this legacy of orthodox Hinduism.

Based on archeological finds of the remains of terracing and dwelling structures at higher altitudes, it is further believed that expansion of

the population and the resultant inroads into highland farming alternated with Malthusian interventions and abandonment of those farms. Most people know about the decline in population from the cholera epidemic of 1975 B.S. (1981 A.D.) and the consequent reverting to nature of their once cultivated land. But, with the subsequent increase in population, the highland farms were again visited, initially for potatoes and pasture, but gradually leading to an expansion of farming activities, which were intensified during the three-year long drought from 1965 to 1968 A.D.

In Diyargaon the population continues to increase, and with it the need for expanding holdings which becomes progressively less possible in the vicinity of the village and, therefore, has to be undertaken more and more in the *lekali* context. Since paddy is an export crop and, therefore, a cash earner, the emphasis on *jyula* land acquisition is immense. With increasing irrigation facilities, *bhuwa* land, wherever possible, is converted into *jyula*, and this resultant shortfall in *bhuwa* and the crops thereof is made up by expanding holdings in the highlands. Thus, the *lekali* today bear the entire brunt, felling of trees and clearing of forestland are now common sights in the farther reaches of Diyargaon.

However, it is still far from being a free-for-all. The only outcome of the land reform introduced here 24 years ago was that all landowners had to declare the extent of their ownership, including that of *lekali* lands. The villagers, in turn, included in this statement as wide a perimeter as possible, whether cultivated or under forest, at that time. Thus, all cultivable forest land has a titled owner. Undeclared forest land can be tampered with only with the connivance of government officials, and only very few in the village have the necessary skill, influence, and resources to accomplish that. The limits to the extension of holdings, therefore, are approaching rather rapidly.

Today keen competition for land is one of the facts of life in which the poor are yielding their place to the rich. There are no holds barred: e.g., outright purchase, mortgage, deceit, short-changing, eviction, or even appropriation of government land with the collusion of revenue officials. While there are some sixteen households without any *jyula* ownership - an indication of the state of being destitute - three families dominate the village landholding scene. It is said that, of the entire *jyula* lands held by the villagers, three families alone are in possession of 40 per cent of them and that land also happens to be some of the

best in quality in the whole village. Prices of *jyula* land have gone up (Rs 10,000/*muri* on the average), thus effectively precluding the less fortunate competitors. A few builder *Kami* are an exception and are buying some land from *chokha* in the village or elsewhere from the money they made building new houses in the area. While it has been only a sporadic phenomenon, it has certainly unleashed an outcry among the *chokha* in the village that times are bad and that *dum*[2] are turning into *chokha* and *chokha* into *dum*.

With a large number of sons in the family, a rich man's penchant for more land becomes even more intensified in his bid to make their future as secure as possible. With increasingly limited possibilities for substantial expansion of holdings in the village, the arena for this competition has since shifted to the *lekali* lands in recent times. With little room left for forest lands to be brought under the plough, the *lekali* lands are now bought and sold.

There are already a number of families for whom the *lekali* lands represent their entire year's supply of food. It has only been the lack of a drinking water source anywhere near their highland farms that has coninued to keep them in Diyargaon. Otherwise, a new settlement would have come up in the highlands long ago. And some of the villagers are seriously working to get some government assistance for the supply of drinking water there.

However, as ruthless as the competition may be, there are some lands that they keep protected as grasslands in the vicinity of the village. Much of the fodder supply during the winter months comes from them. Some areas of land, such as the one on the ridge immediately above the village, are protected not only for the grass but also to prevent the possible onslaught of muddy water gushing down to the village during monsoon. Although the land-hungry *Kami* have been desperately after this fallow land, located so attractively near the village (and they could not care less about what happens to their *chokha* neighbours), the rich and the powerful in the village have so far succeeded in holding them in abeyance.

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[2] a more derogatory term than *kamsel*.

Crop Production

Agriculture in Jumla, as it is practised today, has been the result of a continuous process of evolution over the centuries, and this has been characterised by selective adaptation in the context of its geographical, topographical, and climatic specificities. As mentioned earlier, given the rigour imposed by natural conditions, some practices are highly unique to the region, and the entire range of human activities, organisation, and movements is orchestrated to meet their specific requirements and to attain a most efficient and impressive performance in the face of these highly constraining limitations.

Crops and Their Rotation

Paddy is the most valuable of all crops as it is the most desired staple, the highest yielding, a cash earner as an export commodity, and an important status symbol, while other major crops in order of importance are barley, wheat, finger-millet, potatoes, beans, and maize. Other crops grown are common millet (*chino*), Italian millet (*kaguno*), soyabeans, gourd, and radishes. Buckwheat (*phapar*) is also grown but in increasingly limited quantities because of the extended restrictions imposed by the Forest Department and the nearby Rara Wild Life Sanctuary on the slashing and burning of the forest which is preferable for this crop. Table 8 gives an overview of the calendar and variety of crops grown on different kinds of land cultivated by the people.

Given the paucity of agricultural land, on the one hand, and its diversity, on the other, the cultivation of the wide variety of crops is the result of an orchestra perfected over centuries. Of the three kinds of *jyula* land in the village, namely, *chyute*, *seem*, and *jawad*, only one crop of paddy is grown in the first two, for reasons explained earlier, and is transplanted by the 7th or 8th of *Jestha* which ensures its ripening by harvest time in early *Kartik*.

In *jawad*, cultivation of paddy closely follows that of barley, which is harvested around the middle of *Jestha*, and people pray for overcast skies at night during September and October to ensure the ripening of the paddy crop. Manuring and ploughing follow instantly in order to sow barley by the 1st to the 10th of *Mangsir*.

Table 8: Annual Calendar of Major Crops on Different Kinds of Diyargaon Land

Type of land	Major crops		Baisakh	Jestha	Ashar	Shrawan	Bhadra	Aswin	Kartik	Mangsir	Poush	Magh	Fagun	Chaitra
Jyula	Paddy	In *Jawad*		P	W1	W2			H					
		In *Seem & Chyut*		P	W1	W2			H					
	Barley			H						P				
	Finger-millet	Following fallow	P		W1	W2		H						
		Following wheat			P	W1	W2	H						
	Wheat				H				P	P				
Ghaderi	Barley			H						P				
	Wheat				H					P				
	Finger-millet	Following fallow	P	W1	W2	W3		H						
		Following barley		P	W1	W2		H						
		Following wheat			P	W1	W2	H						
	Beans	Following barley		P	P	W1			H					
		Following wheat			P	W1			H					
	Common Millet	Following barley		P	W1	W2		H						
		Following wheat			P	W1	W2	H						
Lekali	Barley				H			P						
	Wheat				H			P						
	Maize		W1		W2			H	H					P
	Potatoes								H					P
	Beans	Following wheat												P
		Following fallow												P
	Buck-wheat			P				H						

P = Planting; W1 = First Weeding; W2 = Second Weeding; W3 = Third Weeding; H = Harvest

Note: The location of the abbreviation in the columns indicate the approxiamte time in the month when the task is undertaken.

While people greatly prefer wheat to barley, it does not mature by 12th to 20th *Jestha* to allow for the paddy crop to follow. Therefore, wheat is separately planted on *jawad* in *Kartik* and is harvested in *Ashar* and finger millet seedlings are transplanted soon afterwards.

The decision as to the combination of crops grown on different plots of land is governed by two considerations. The first is the household's need for different kinds of foodgrain. For example, if the household is short on *ghaderi* land, the need for finger millet forces it to allocate some *jyula* land for it rather than for paddy.

Secondly, any given plot has to go through a cycle of different crops in the interest of its fertility. For example, it is believed that once finger millet is grown on *jyula*, there will be less weeds in the ensuing paddy crop.

Forced Germination of Paddy Seeds

Since agriculture, especially with regard to paddy, seeks to maximise the utilisation of a limited number of warm days, forced germination of paddy seeds has traditionally been a part of the local agricultural technology. A rather strongly held local belief has it that if a villager does not return from his winter migration on or before the 12th of *Chaitra*, his last rites may as well be performed because he certainly must be dead since he could not make it to plant paddy. It is very important that the villagers begin their paddy seed preparation on that day by putting them in a sack which is left in the river to soak for four days.

On the 16th of *Chaitra*, the seeds are spread out and left to dry in the sun for three hours on a woollen blanket. The seeds are then spread out on the pre-heated kitchen floor in the warmest compartment of the house. The seeds are covered with small pine branches or birch leaves. Ten or twelve layers of clothes are then spread over them on which people sleep for two days to provide extra heat. Every morning water is sprinkled over the seeds. Because of the steam that builds up inside, the seeds germinate during the two days, and people refrain from sleeping on them at this stage.

After two more days on the kitchen floor, on the 20th of *Chaitra*, the germinated seeds are taken to the specially prepared seedbed, called *bennu*, located in the middle of the village and are evenly broadcast on it so that the seeds land the right end up.

Ghaderi Crops

In *ghaderi bhuwa*, or commonly only *ghaderi*, the post-winter agricultural season begins in *Chaitra* with the ploughing of the land that has been left fallow since last *Kartik* for millet to be sown in *Baisakh*.

The rest of the *ghaderi* would have barley and wheat crops on them which were sown in *Mangsir* and harvested in the months of *Jestha* and *Ashar* respectively. Barley is followed by common millet or beans or finger millet in *Jestha* and wheat is followed by common millet, finger millet, or beans in *Ashar*.

While millet needs weeding three times during the months of *Baisakh*, *Jestha*, and *Ashar*, common millet requires two weedings and beans only one. Finger millet and common millet are harvested in the month of *Aswin* and beans in *Kartik*.

As stated earlier, the choice of crops is governed by the food needs of individual households (for example, in the case of the choice between planting millet or beans or common millet in *Jestha*), and each plot of *ghaderi*, like *jyula*, goes through a well-calculated pattern of crop rotation. Where the land has been left fallow for sowing finger millet in *Baisakh*, its harvest in *Aswin* is followed by the sowing of barley or wheat in *Mangsir*, which, in turn, is harvested in *Jestha* or *Ashar*, as stated above, to be followed by beans. Following the bean harvest in *Kartik*, the land is kept fallow for almost six months and finger millet is planted again in *Baisakh*. Since wheat is known to severely deplete the fertility of the soil, it is necessarily followed by the cultivation of beans which have nitrogen-fixing properties.

However, if, after planting wheat, snowfall is delayed, its ripening is prolonged to the same extent making it too late to plant beans which then makes it necessary for the land to be left fallow for finger millet in *Baisakh*.

Lekali Crops

On the *lekali* lands the entire range of *ghaderi* crops plus maize and potatoes are grown, but the timings are different because of the longer time they take to ripen at that altitude.Here maize, potatoes, and beans are planted in the month of *Chaitra* and generally harvested in the month of *Kartik* involving a period of seven months. But where beans follow wheat, they are planted in *Ashar* and harvested in *Kartik* too.

Similarly, barley and wheat are sown in the month of *Aswin* and are harvested after ten months (in *Ashar*). On the lands close to the *lekali* home, where better fertilisation is possible because of the stationing of the cattle, beans, potatoes, and vegetable crops, such as pumpkins and radishes, are grown. Cultivation of potatoes and maize is followed by wheat which benefits from the resulting looseness of the soil.

Furthermore, where the land is not very fertile, a three-year cycle of crop rotation, based on one crop year of barley followed by another crop year of potatoes and, lastly, by a third crop year of beans, is also observed. Lands in a worse condition are used for a year of one crop followed by another year of fallow.

However, there are a number of household-specific variables that govern the pattern of crop rotation, including the decision to leave a plot of land fallow. If a household can provide sufficient manure, or has a meagre holding, or is sufficiently industrious, it tends to go in for farming the *lekali* lands every year, whereas others can afford the luxury of leaving it fallow.

Crop Protection

Since the months of *Chaitra* and *Baisakh* are lean months, the community employs two able-bodied men in the village to protect the barley crop from possible trespassers, e.g., women who enter the fields for the purpose of cutting grass. If possible, they also pluck the just ripening barley grains, dehusk it by rubbing it between their palms, and eat it with salt which they smuggle in with them. So two watchmen called *narala* keep roaming around the fields and are paid at the rate of four *mana* (2.2 litres) from every landowner, irrespective of the size of his holdings.

Production and Productivity

The evolution of agricultural technology in Jumla over the centuries has resulted in its sharp fine-tuning to the region's climatic and topographical specificities. Thus the individual's choices of crops and crop rotation are governed by a number of considerations, such as altitude, aspect, slope, irrigation possibilities, distance, manuring possibilities, labour availability, and qualities of different agricultural fields. Village farmlands, particularly paddy land, receive extremely high doses of farmyard manure made from dried pine needles or a special grass called *pire*, both of which are used as bedding for cattle. One source in the government agricultural office in Jumla estimates that one hectare of paddy field receives around 24 tonnes of the fertiliser, far in excess of the required 12 to 14 tonnes. In Diyargaon, one *muri* of *jyula* normally receives some 20 *doko* of manure for paddy which, with an estimate of 25kg per *doko*, amounts to about 40 MT per hectare.

While production is often erratic, conditioned by such factors as rainfall, snowfall, frost, hail, pests, diseases, and wild animals, the productivity of some crops in Diyargaon is generally very high. It is estimated that one *muri* of paddy land (1ha = 78.6 *muri*) generally yields between four-fifths of a quintal to one quintal of paddy, which amounts to a yield level of 6.3 to 7.9MT per hectare. This is several times more than the national average of 2.41 MT in 1990/91 (Ministry of Finance 1991:31). Bishop too has made a high estimate of paddy yields (in the range of 750 to 8,750kg per hectare for the Karnali Zone as a whole [Bishop 1990: 236]). Table 9 gives a comparative picture of the yield rates for major crops in the village, the Karnali Zone, and the country.

The productivity of crops is generally quite erratic, especially on the *lekali* lands, and the occasional ravagings of wild animals like bears, monkeys, and wild boars make the situation worse. However, on the *jyula* land in the village, to which maximum care is given in terms of manuring and irrigation, the yield levels for all the crops, namely, paddy, barley, finger-millet, and wheat, remain extraordinarily high.

Food Sufficiency, Borrowing, Purchase, and Export

The skewed distribution of agricultural land has a direct bearing on the food sufficiency and export potential of individual households in

the village. The food sufficiency status of the 42 sample households is as follows (Table 10).

Table 9: Comparative Yield Rates of Important Food Crops (MT/ha)

Diyargaon[a]				Karnali Zone[b]		National Average (1990/91)[c]
Food Crops	*Jyula*	*Ghaderi*	*Lekhali*	Range (kg)	Average (kg)	
Paddy	7.1	-	-	750-8750	2120	2.41
Barley	3.9	2.6	2.6	200-4350	1450	0.94
Wheat	-	0.9	0.4	320-5600	1730	1.41
Maize	-	-	0.7	190-2940	1170	1.62
Finger millet	7.8	1.3	0.9	260-5600	2050	1.17
Common millet	-	0.6	0.3	150-4480	990	NA
Beans	-	1.3	1.3	70-2210	700	NA
Potatoes	-	-	3.9	150-4600	1190	8.76
Buckwheat	-	-	1.3	-	-	NA

Source: a) Field data
b) Bishop 1990: 236 (the data were for 1970)
c) Ministry of Agriculture data for the year.

Table 10: Sufficiency of Household Food Production in Terms of the Number of Months

Bado	12 months or more	Over 6 months	Less than 6 months	Total no. of households in sample
Bahun	7	3	-	10
Jachauri	4	2	2	8
Kami	1	3	5	9
Damai	-	6	-	6
Sarki	-	4	5	9
Total	12	18	12	42

Source: Field Study

Of the 42 households only about a fourth of them produce sufficiently for the year round. Most households have to supplement their production from other sources, namely, by buying, borrowing, through migration, or a combination thereof.

While the paddy crop is either personally consumed or exported out of the village through *Mugali* traders (i.e., traders from the Mugu village in Mugu district) for sale in Nepal or export to Tibet, most grains locally bought or borrowed are barley, millet, maize, or buckwheat.

Cash incomes for buying foodgrains come mostly from trading or external employment. Occupational caste households also derive cash incomes from their specialisation, e.g., the *Kami* profession of house-building and manufacturing wooden storage bins, or the *Sarki* occupation of levelling the rainfed *ghaderi* land into *jyula* etc.

Most occupational caste households are also the beneficiaries of additional supplies from the grain payments that they traditionally and regularly receive from their *lagi* households after the winter and summer harvests. As stated earlier, each *chokha* household maintains at least one *Kami*, one *Sarki*, one *Damai*, and one *Sunar* household as their *lagitya*, and the men and women members of these groups render occupational service and a few days of labour during each agricultural operation to the former. In return, they receive seasonal payments, the quantity of which depends on the size of the *lagi* landholding and its labour requirements.

Additionally, in order to help meet the continuing gap in their supplies, most *kamsel* households also resort to distress borrowing of small quantities of foodgrains from a number of *chokha* households, mostly during the four lean months from January to April, as advance wage payments for the labour that they would render them during the next planting season in May-June. It is said that men from such households are physically torn apart at the hands of the *chokha* lenders who compete to lay claim to their labour to meet urgent labour needs during paddy transplantation. Poor *chokha* households in the village also borrow foodgrains during the lean months but manage to pay back in-kind. They too contribute labour as "help" to the lenders.

Export of foodgrain takes place through outright sale for cash by eleven households in the village (five are included in the sample). Further, these households and many more also export grain through

barter in exchange for necessary articles like woollen shawls, red pepper, or salt that the *Mugali* regularly bring to the village. While paddy, rice, or common millet are used for barter or sale to the *Mugali*, other foodgrains, also exported from the village, are barley, finger millet, and maize.

In order to alleviate the seasonal food shortage for the poor, a local leader persuaded the Nepal Food Corporation Office in Jumla to open a depot in Diyargaon in 1986/87 to locally procure foodgrains after the harvest and sell them to the poor during the lean months of March and April. The first year, only 14 quintals were purchased. The following year, the purchase increased to 78 quintals. But approval from higher authorities to release the paddy came only in September. By that time the poor had access to other foodgrains and it was no longer necessary that year. So it was later sold to the *Mugali* for export.

By the third year, the buying and selling responsibility was given to the local Cooperative Society. By that time the local people had figured out a method of benefitting from this facility. Individuals who sold the paddy to it did so in marked sacks and used the cash to engage in seasonal trading during winter. Upon their return in March-April they bought the same sacks back again. Thus, the system, instead of providing relief to the poor, degenerated into a kind of banking operation for the more fortunate in the village.

In 1989, no grain was sold to the cooperative, because the local traders did not need any cash for trade as a result of the Indian embargo against the movement of people and goods across their border with Nepal.

While the programme is no longer operational, the only contribution it made to the place was the introduction of the metric system of kilogrammes and quintals to the area, which the local people accepted after some persuasion.

The depot, though short-lived in the village, showed that paddy export from the village has been tied to the resilience of the traditional channels of barter and sale with the *Mugali* of the north. They provided a set of services that the depot or the cooperative obviously could not, including sale on credit. Even when cash sales were made to the *Mugali*, it was a transaction based on the long-standing

institution of *ista* affinity in which the considerations of comparative gain and loss were not compromised by the cordiality involved in the relationship.

In 1990, there was a scarcity of foodgrains in the district headquarters, because of the suspension of the heavily subsidised foodgrain supplies flown in from Nepalganj at a cost of Rs 33/Kg for transportation alone (as against the total price of Rs 34/kg paid for Sinja rice). Although the flight was later partially resumed, the Sinja Valley, including Diyargaon, always reputed as an important granary in the Karnali Zone, became a major supplier and the *Mugali* remained a major conduit.

To summarise, it should be noted that, whereas the per capita holding of cultivated land is very low, its ill effects are partially offset by the extreme care and diligence with which the people apply themselves to agriculture in order to achieve one of the highest productivity rates in the country. The existing export potential, coupled with the foodgrain savings resulting from seasonal exodus and limited food intake by the numerous poor people in the village, is the result of this industriousness.

Innovations, Constraints, and Priorities

Although the government agricultural centre in Jumla was established more than 20 years ago (1970), its contribution to the improvement of local agriculture is negligible. Although it undertakes trial tests for seeds and methods developed elsewhere, these attempts suffer from their incapacity to meet the highly specific requirements of agriculture in Jumla where temperature remains the single greatest limiting factor. Given the successful evolution of traditional agriculture in Jumla, its productivity levels are far more than those of the varieties intended for extension by the centre.

As stated earlier, the local paddy in the Sinja Valley has a productivity level which is far in excess of the reported yield rate of the *Rodini* variety of paddy (three mt/ha) released by the centre.

Similar has been the experience with the so-called improved wheat. While the villagers would prefer to grow wheat in place of barley on *jyula* land, the "improved" variety - e.g., RR21 in the past - has not been suitable for cultivation even on unirrigated land, because it matures late and does not leave enough time for the bean crop to

follow. (Beans must ripen before the onset of frost in *Kartik*). "Development" potatoes too were rejected outright because they were not thought to be tasty.

While insecticides have not been made available, whichever heavily-subsidised chemical fertilisers (particularly urea) are available are used for paddy. However, application has decreased drastically in recent times because it severely affects the yield of the ensuing barley crop.

Agricultural implements continue to remain traditional. The only change in the last two decades has been the substitution of brittle wooden plough tips (traditionally provided to the villagers in bunches by their highland *Khasa* neighbours and by *ista*) by iron tips which a blacksmith in a neighbouring village manufactures for them from iron brought all the way from Nepalganj and India.

The villagers also ridicule the other practices promoted by the government's agricultural extension office. Whereas the latter advocates the merits of making farmyard manure in a pit and turning it over and over again until it has fully composted, its feasibility is questioned altogether when fertiliser needs exceed hundreds and hundreds of *doko* (*doko* = 25 kg approx.) of compost.

Similarly, the villagers are also instructed in seed selection, but they have very little time for this activity in their agricultural calendar, especially when they use seeds in very large quantities.

In essence, agricultural development efforts in Jumla, particularly in cereal crops, suffer from a lack of ability to address the specific natural and other conditions of the region. This has been the result of what Jodha et al. (1992:9) have observed to be "*development strategies for mountain agriculture [which] are simply extensions of generalised approaches that have been designed for non-mountain areas*".

Horticultural Development

However, apples and walnuts present a different story. Whereas walnuts have been known to the local people for a long time, apples were introduced here also many years ago by villagers returning from places like Nainital and Kashmir in India. With the establishment of

the Remote Area Development Programme by the Government in the mid-sixties, the region made a lot of progress in the cultivation of apples, although initially the extension of this programme was brought about by deducting the price of the apple saplings that were to be sold to the farmers from the monthly salaries of Junior Technical Assistants (JTA), hence pressuring them to put pressure on the farmers to cultivate apples.

While the seventies saw an enormous spurt in the planting of apple trees, the villagers had second thoughts about expanded cultivation because of the lack of markets. A mature tree is said to bear a thousand fruits and the limited markets that exist in the tiny district headquarters and its adjoining airstrip are quickly glutted with the produce. By directive of the King, it was arranged that, for a few years, the charter flights carrying rice to the area should bring apples to Nepalgunj on the return flight. While this provided some kind of market for local produce, it was a far cry from the potential that Jumla represented.

Over the years the local people realised that it was more profitable to grow millet and wheat than the perishable apples, and, as a result, hundreds of plants in Diyargaon alone were replaced by cereal crops. Apple trees were simply neglected or not replaced when they became old and diseased. Table 11 shows the present distribution of apple trees in the village.

Table 11: Apple Tree Ownership

Bado	Sample households	No. of households owning apple trees	No of trees owned	
			Village	Highlands
1. *Bahun*	10	9	67	18
2. Jachauri	8	6	-	89
3. *Od (Kami)*	9	5	6	2
4. *Sarki*	9	3	3	9
5. *Damai*	6	-	-	-
Total	42	23	77	118

Source: Field Study.

Since not everyone in the village grows apples, they are planted in fields close to the house to prevent the fruit from being stolen by children or even by older people. Given the pattern of settlement, many households do not have much land around the homestead for this purpose. Even where a tree or two could be accommodated, it is not worth the effort, given the large number of neighbours willing to make themselves welcome to the fruit.

Besides, most smallholders, of whom there are many, cannot afford to have apple trees because their cultivation excludes the cultivation of the cereal crops necessary for subsistence.

Nevertheless, the villagers are still quite optimistic about the advent of a road to Jumla and the prospects of their capitalising on this immense potentiality. Since it takes a few years for the trees to bear fruit, there are already some who have gone in for large-scale plantations on upland fields, hoping that, by the time they mature, a road will have been built. It is said that in 1990-91, there was a demand for 14,000 saplings from the district agricultural office and the government horticultural farms could provide 8,000 only. The rest were imported from farms elsewhere.

Walnuts

Given the unsuccessful experience with apple growing, the villagers are now turning to walnuts. These are found to be more suitable to the roadless conditions in Jumla. Although it takes ten years for a tree to mature and bear fruit, the walnuts are not perishable like apples, have more value for their bulk (two to three to a rupee in contrast to the same rate for the much heavier apples), and are therefore more easily exportable. Table 12 gives the current distribution of walnut trees in the sample households of Diyargaon.

While households of all castes grow walnuts, the table fails to reflect the extent of the increasing priority given to this crop in recent times. Because of high mortality and the frequent theft of saplings from the distant highland fields, the villagers have already lost a large number. For instance, one household lost 29 out of 30 trees planted through mortality and theft, and another household had only three or four surviving out of 30 planted. One Jachauri household has only one left out of 25 planted. Despite these setbacks, the interest in walnuts continues to grow.

Table 12: Walnut Tree Ownership

Bado	Sample households	No of households owning walnut trees	No of trees owned in	
			villages	highlands
1. *Bahun*	10	6	6	7
2. Jachauri	8	8	4	14
3. *Od (Kami)*	9	5	10	2
4. *Sarki*	9	2	-	15
5. *Damai*	6	5	1	8
Total	42	26	21	46

Source: Field Study

Agricultural Labour

Agriculture in Jumla consists of an ongoing exercise in the optimisation of four major factors, namely, temperature, labour, water, and manure, in the context of the very limited availability of cultivable land. While in the *lekali* highlands, low temperatures, lack of water, and distance from the village prevent a more intensive use of agricultural land, the village lands, primarily the *jyula*, receive extremely high inputs of all these ingredients leading to, as stated earlier, one of the highest rates of productivity in the country.

Furthermore, of the four factors, the most elastic is labour. Thus every effort is made to maximise labour inputs not only through direct application in activities such as ploughing, planting, etc. but also through using labour to produce more manure, more water for irrigation, etc so that the limited land responds with increased yields. For instance, every possible opportunity is seized to convert rainfed land (*bhuwa*) into irrigated land (*jyula*) by extending irrigation facilities and levelling terraces which, as shown above, results in significant increases in land productivity.

Labour Requirements

A great variation exists in the amount of labour required by paddy and finger millet on the one hand and the rest of the crops on the other.

For paddy, even without counting the labour involved in the preparation and cultivation of seedlings, around thirty person-days on an average are required to plant, weed, harvest, process, and store the crop in a four *muri* area (approximately one twentieth of a hectare) which, like a *hal*, takes one pair of bullocks a day to plough and is, therefore, considered as a work unit for planting operations. The major labour-demanding activities in paddy cultivation are the transplanting of seedlings (eight women labourers) and the two weeding operations which together could require between four to twenty female labourers, the well-irrigated and, therefore, softer fields requiring less.

This calculation, however, excludes the time spent on transporting the heavy doses of compost (80 *doko*, or baskets, of approximately 25 kg each, for the four *muri* area) which varies with distance from the field, but which would, on an average, require around six woman-days.

This computation also excludes the number of days (or more appropriately nights) spent by the youngsters and men of the household on continuously irrigating the paddy fields and guarding the water flow. Fist fights often ensue to prevent neighbours from diverting water to their own fields. Paddy cultivation, thus, is the most demanding in terms of labour requirements and could not possibly be sustained without the high yield rates from the crop.

Finger millet, comparatively, has some labour-saving advantages because seeds are broadcast (when they are planted early) and the irrigation needs are less. However, its weeding operations require high labour inputs (eight to 10 women in one weeding session for one *hal*) and this can be even more depending upon the amount of weeds in the field. More than 30, mostly woman-days are required for different operations between planting and harvesting and storage which, as with paddy, excludes the time spent on manuring.

Barley and wheat, in contrast, are more convenient crops because the first requires no weeding and the second rarely requires it. Beans too require only one weeding session involving around four women for one *hal*. Maize and potatoes are double cropped and the two weeding sessions for maize involve about eight persons altogether. Around four persons are required for harvesting maize from one *hal* and two for cutting the stalks for fodder. Two pairs of bullocks are needed to harvest potatoes from one *hal*, around three persons to collect them, and the same number of men to porter them to the village.

Labour Mobilisation and Wages

In most agricultural operations, such as planting, weeding, and harvesting, there are economies of scale involved in that people performing different tasks have to be teamed up, e.g., a pair of bullocks to plough four *muri* of rice field and a ploughman and eight women to transplant the seedlings. In order to achieve this optimisation, additional labour from other households, for which appropriate institutional arrangements exist in the village, is mobilised.

The *Parma* System. The most universal system of labour mobilisation is the ubiquitous institution of *parma* under which labour is exchanged between different households in the village, including across caste boundaries, for all kinds of labour needs such as planting, weeding, harvesting, ploughing (including bullocks for men), carrying manure, and threshing. Day-time meals are mostly provided by the host, although the labourer sometimes brings her own. No wages are involved.

Kamsel Labour. While the *kamsel* population in Diyargaon outnumbers the *chokha*, because of their meagre holdings, they represent the biggest labour force for *chokha* households and two major institutional mechanisms exist for their mobilisation.

Lagitya Labour. The *lagi-lagitya* system mentioned earlier is a major source of *kamsel* labour for *chokha* households. Each *chokha* household maintains at least one *lagitya* from the *Kami*, *Sarki*, and *Damai* households, and some also maintain a *Sunar* (goldsmith) and less frequently a *Lohar* (blacksmith), both of whom have the same caste status as the *Kami*.

Under this arrangement, a *kamsel lagitya* not only renders to his *chokha lagi* the products and services of his caste occupation, as and when necessary, but he also customarily contributes around six days of labour for different agricultural operations, primarily in planting, weeding, harvesting, and portering (harvest). While the *lagitya* men mostly engage in ploughing, the *Damai* men traditionally refrain from ploughing for others, to the considerable consternation of the labour-hungry, rich *chokha* households.

While maintaining *lagitya* for their occupational services has always been a part of the orthodox Hindu caste system, in Jumla it also

provides a more assured supply of much-needed agricultural labour to the *lagi* households. Therefore, the richer *chokha* households often retain a larger number of *kamsel* households in *lagitya* relationships and also use many of them for more extended periods than the normal six days mentioned above.

The *Lagi-lagitya* Population. Table 13 gives an idea of the extent of the *lagi-lagitya* involvement in the sample households included in the study.

The table shows that the *chokha* households retain more than one *lagitya* household from each of the *kamsel* castes and that, concomitantly, the *kamsel* households too maintain more than one *chokha* household as *lagi*. The table also shows that because of the internal ranking of the *kamsel*, the *Damai*, the lowest of the three, have *lagi* also among the *Kami*, who are superior. While the *Kami* have precedence also over the *Sarki*, the difference in their mutual status is less pronounced and, therefore, the two exchange occupational services through barter of labour and do not mutually entertain a *lagi-lagitya* relationship. However, one *Kami* respondent has reported two households of his own caste as *lagi*, because of the land he has received from them to cultivate in return for the labour he renders them.

Table 13: No. of *Lagi-lagitya* Households in Diyargaon

Bado	Sample house-holds	*Lagitya* Households					*Lagi* in the Village		Out-side
		Kami	*Sarki*	*Damai*	*Sunar*	*Lohar*	*Chokha*	*Kami*	
Chokha: Bahun	10	25	18	10	7	-	Not applicable		
Chokha: Jachauri	8	20	8	10	7	2	Not applicable		
Kamsel: Kami	9	----------					21	2	2
Kamsel: Sarki	9	----------					29	-	9
Kamsel: Damai	6	----------					48	24*	508

Source: Field data.
*(including 6 *Bitulo* households)

Furthermore, the *Damai* whose men, as mentioned above, refrain from ploughing for others have retained a huge number of *lagi* in other, mostly outlying, *Khas* villages where they go for a few weeks in the year and render service as tailors and minstrels. While the *Kami* and *Sarki* too have a few *lagi* in these villages, their preoccupation in their own village leaves them little time for serving a more geographically extended clientele.

Lagitya Remuneration

The *lagitya* households are not paid a daily wage but instead receive *khalo* payments following different harvests. These normally consist of a *supo* (a bamboo sieve, oval-shaped on the holder's end and rectangular on the other, which is used for winnowing or otherwise as a container to move grains and estimated to measure five *pathi*) each of barley, wheat, and buckwheat and an *ungalo* (an embrace with both hands) of paddy on the straw estimated to measure about a *supo* or five *pathi* after threshing. *Lagitya* engaged for more extended services receive commensurately higher levels of payment. Similarly, there are those like the *Lohar*, as shown in the previous table, who render only occupational services and, therefore, are paid a daily wage instead of *khalo*.

All *lagitya* are held in relatively higher esteem and are dealt with with greater sympathy and consideration than a *dhagre* or a simple labourer. A *lagitya* thus receives from his *lagi* households an *ex gratia* gift of a *pathi* of paddy on each festive occasion, e.g., *Maghe Sankranti* (first day of *Magh*), *Shrawan Sankranti* (first day of *Shrawan*), and the greatest of festivals, *Dasain*. They also receive a *pathi* of paddy in *Chaitra* for paddy seedlings.

Frequently, the *lagitya* rendering extended services are also leased out some paddy land (about one to one and half *muri*) which they cultivate for themselves in addition to the normal *khalo* they receive. They are also often the beneficiaries of the used clothing of the *lagi* men and women, of additional assistance for marriages in *lagitya* households, and of gifts on similar occasions in *lagi* households. The *lagi* profess that the *lagitya* are almost like the members of their own households and, therefore, have to be treated and assisted as such.

The *Haligado* Arrangement. However, there are a number of richer households which need an even more extended and assured supply of labour for their farm operations. A contractual arrangement, called *haligado*, is entered into between a *chokha* household and an able-bodied and hardworking *Kami* or *Sarki* man with the former giving a parcel of *jyula* land to the latter in exchange for the labour of the *kamsel* man and his wife for different operations with all agricultural crops. The size of the *haligado* land, thus leased out, again depends on the farm size and labour requirements of the *chokha* household and ranges from one to four *muri* in Diyargaon.

The larger the size of the *haligado* land, the more exclusive the contribution of labour by the *haligado* (kamsel). The *haligado* who has received four *muri* of *jyula* land contributes, between himself and his wife, about 27 days of labour for all types of agricultural operation in relation to all the crops grown in the village and on *lekali* holdings. Since agricultural activities are undertaken simultaneously by all the village households, a *haligado*, or even a more involved *lagitya*, has little time to work for other households in the village. However, in order to assure that the labour supply is as little interrupted as possible by his commitments elsewhere, at the time of need, *kamsel* households with large numbers of sons are preferred as *haligado*.

As in other cases, three meals are provided to them on working days. The *haligado* man receives a good meal of rice in the morning of the day of ploughing, followed by four *roti* (roasted barley bread) as the day-time meal and two *mana* of barley flour in the evening. The females receive five *roti* in the morning (which are provided in advance by the employing *chokha* the previous night), three *roti* for the day-time meal, and two *mana* of flour in the evening.

However, the relative largesse of the *chokha* households is in evidence in other occasional payments, which are more inflated than those given to other *lagitya*. For instance, where others receive only one *pathi* in *Chaitra*, a *haligado* rendering the aforesaid services receives four. The same proportion is true for other occasional payments too, including inflated *khalo* payments and small portions of other crops like beans, millet, etc. A parcel of *lekali* land is also occasionally leased to him on which he plants maize and potatoes.

Other gifts of clothing, and grain too, accompany the *haligado* relationship in an expanded form, including providing additional food

when a son is born to the *haligado* or an interest-free loan to pay the bride price in case the *haligado* or his son abducts another's wife.

While the system of intercaste relationships in Diyargaon, as elsewhere in the Karnali Zone, is based on the orthodox Hindu practice of caste segregation and occupational specialisation, the imperatives of intensive agriculture have further strengthened it in a manner leading to the maximum mobilisation of *kamsel* labour.

Given the traditionally skewed distribution of land in favour of the *chokha*, the savings generated remain with the *chokha*, and what most *kamsel* households receive from them is only a subsistence ration which often has to be supplemented by borrowing food grains from them during the lean months from *Magh* through *Baisakh* against the labour they promise to supply during the ensuing agricultural operations. In the winter of 1991, the *Sarki* and *Damai* were the most prolific borrowers, accounting for 43 and 78 such transactions, each of them representing little more than the amount of daily wages they received in paddy or barley flour.

So much are the *kamsel* used to such a state of dependence on the *chokha* that they see no problem in having a lot of children. They reason that, whereas the females will be married off or elope, the boys will grow to work on *chokha* land, and this will ensure them of the necessary subsistence. For the *kamsel*, the *chokha* households are their basic property which are received in inheritance, divided between brothers, and, sometimes, even bestowed as dowry to a daughter in marriage.

Female Labour

The major brunt of agricultural labour in Jumla rests on its female population. As stated in the earlier section of this report, the traditional division of functions between the sexes places the responsibility for food security squarely in the province of women, and this ranks them amongst the hardest working women in the world. The female members of even the richest households in the village can hardly be distinguished from their counterparts in the poorest households in terms of the amount of work they do. What visible difference does exist is limited to the contents and quality of their attire.

There are hardly any days or any time of the year when women have free time. The local belief has it that it is highly inauspicious to have women sitting idle, and every woman takes this quite seriously, especially when she is living with her mother-in-law. This is taken to such extremes that, in one case, a daughter-in-law in one of the richest households in the village, in a state of advanced pregnancy, gave birth to her third child only minutes after she had returned home with other family women with a huge load of grass fodder in the evening. A general calendar of female activities throughout the year is given in Table 14.

Although this calendar shows the intensity and variety of the household and agriculture-related tasks performed by women in the village, this happens to be a man-made calendar and, therefore, is by no means a complete record of the full range of tasks shouldered by women.

A day in the life of a woman in Diyargaon begins early in the morning, sweeping the floors and preparing the food for the cattle and other livestock, feeding them grass, and milking the cows and buffaloes. The cattle have to be seen off to the pastures above the village.

The cattle shed has to be cleaned, the dung and soiled bedding brought to the courtyard for composting, and new bedding of dried pine needles spread for another four days. No sooner are these tasks done than carrying manure to the fields begins, while other women attend to preparing meals in the kitchen.

Women serve food to household members as well as to the labourers hired for the day for ploughing. Oil, too, has to be pressed from different kinds of seeds including those of gourd. A sour dish has to be prepared from fruits collected from the forest. They wash clothes and the floors of the house. Rice has to be pounded quite regularly. For this, paddy too has to be regularly dried. Utensils have to be cleaned morning and evening. And, of course, they have to also look after their children.

Women, therefore, play the major role in the planning and management of agriculture in Jumla, providing the most labour in the process. While men hang around loitering or playing cards, the women are working every waking moment of the day.

Table 14: Calendar of Women's Activities

Areas of work	*Baisakh*	*Jestha*	*Ashadh*	*Shrawan*	*Bhadra*	*Aswin*	*Kartik*	*Mangsir*	*Poush*	*Magh*	*Fagun*	*Chaitra*
House-hold work	Bring food grains to water mill; manure prepara-tion	Weed chillies & vegetables	Weed paddy & millet	Weed chillies, potatoes, & maize	Foodgrain to water-mill; fodder cutting for buffalo	Harvest chillies	Make *badi* (a food); dry chillies	Make manure; thresh & screen millet	Cut fire-wood; pound rice; make manure	Pound rice; shovel snow; feed cattle	Pound rice; carry manure	Pound rice; carry manure
Jyula	Transport manure to *Jyula*	Harvest & carry barley; plant paddy & finger millet	Weed paddy & finger-millet	Second weeding of paddy & millet	Weed paddy & millet	Cut grass on the paddy terrace wall	Harvest paddy; cut straw; thresh paddy	plant wheat; break sods	-	-	Carry manure	Carry manure
Ghaderi	Weed wheat; make manure	Plant millet; weed maize, potatoes	Plant chillies; weed millet	Weed maize	-	Harvest millet; cut stalk; porter millet	Harvest beans; plant wheat	Plant wheat; break sods	-	-	Carry manure	Carry manure
Lekali	Plant maize, potatoes, beans; weed wheat, barley	Weed maize, potatoes, beans; cut firewood	Harvest potatoes, maize, beans; harvest and carry barley	Manure by bringing cattle from the village	Harvest beans	Harvest common millet, Italian millet, buck-wheat	Plant wheat; carry potatoes	Cut stalks, plant barley	-	-	Carry manure	Carry manure
Forest	Collect pine needles, bring firewood	-	Collect pine needles; bring firewood for *lekali*	Collect needles for *lekali*	Cut grass, firewood for *Poush* through *Baisakh*	Cut grass	-	Cut firewood; collect pine needles	Cut firewood	Cut firewood	Cut firewood	Cut firewood

Irrigation

Kumthi Management of Canals

The high productivity of *jyula* land in the village is critically supported by a meticulous system of irrigation which is serviced by two major canals originating from two different rivers. The older of the two is called the Jachauri *kulo* (or the Jachauri canal) after its creator, and it is supposed to date back to the ancient unidentifiable times of "the *Marulle* king". It has been sustained by a strong beneficiary-based, local institutional arrangement called *kumthi* (which has nothing to do with the English word "committee"), whose members are called *kumthel* and who are paid by the *jyula* owners receiving irrigation water.

While canals with an abundant water supply are not managed by a *kumthi*, each canal requiring protection at the source and proper, equitable distribution from its network has a *kumthi* of its own. Each *kumthi* consists of between one to three able-bodied, hardworking, just and poor local men chosen, or reconfirmed, every year through informal consultation among the beneficiaries in the community.

The *kumthi* goes into action from the month of *Chaitra* when water is needed to irrigate paddy seedbeds. Only one person is sufficient to begin with, and this person is joined by one or two more in *Jestha* depending upon the rainfall and the expected quantity of water available at the source.

When an abundant quantity of water is available, the *kumthel* stand guard at the source, and the distribution of water in the village network is looked after by the villagers themselves. In practice this means water is sufficient for all the villagers in the quantity and at the time needed.

However, if the water is relatively scarce, it means stiffer competition for it at the source among the several different villages who share it. During such seasons, physical strength matters and, therefore, the villagers go there in sufficiently large numbers to deter any possible transgression by people from other villages, while the *kumthel* continue to distribute water equitably to the village.

The *kumthel*, for reasons beyond their control, are not always successful in achieving their egalitarian mandate. When the water is less than sufficient, people steal water during the night. Therefore, the *jyula* owners literally spend their entire nights in the field in order to make sure that their neighbours do not divert it to their own plots. Scuffles are not uncommon.

The *kumthel* work for a period of seven months from *Chaitra* through *Kartik* and are paid at the rate of four *mana* (1 *mana* = 0.568 litres) per *muri* of land. The *kumthel* on an average make about eight *khal* (1 *khal* = 45.44 litres) in a year.

As mentioned earlier, since irrigation is crucial for maintaining *jyula* productivity, the maintenance of the existing canals and their extension, wherever possible, are undertaken on a priority basis. Each year, labour is mobilised at the rate of one person per household to go to the source of the canal and clean it to facilitate a smooth flow of water. Capital improvements are undertaken to strengthen and stabilise the canal bunds.

The construction of a new canal, which was initially undertaken in 2032 B.S. (1975 A.D.) with a small grant of Rs. 7,000 from the then District *panchayat*, was completed with financial resources mobilised from the owners of the command area; initially at the rate of 35 rupees per *muri* which later increased to 40, then to 50, and then 60 before the project was finally completed.

Credit

There is great deal of debt in Diyargaon, but each group is in debt for different reasons and with different lenders. Table 15 gives the extent of debt among the sample households.

It should be noted in this table that the loans taken by the *chokha* households of *Bahun* and *Jachauri badɔ* are fewer in number and larger in average size, while the *kamsel* households of *Od*, *Sarki*, and *Damai badɔ* are relatively more numerous and smaller in size.

Table 15: Extent of Debt

Bado	No. of households in sample	No. of indebted households	No. of outstanding debts	Total amount (Rs)	Amount per debt (Rs)
Bahun	10	7	14	92000	6571
Jachauri	8	3	3	7630	2543
Od	9	5	14	19020	1359
Sarki	9	6	12	14000	1167
Damai	6	6	51	112487	2206
Total	42	27	94	245137	2608

Purpose

The cause of this difference is to be found generally in the purpose of and source of these credits. While the *chokha* households generally borrow for purposes of capital investment, mostly for buying land, further lending, or investing in the house, although not exclusively so, the *kamsel* households borrow primarily for consumption, e.g., buying foodgrains and clothes, treatment of illnesses, celebrating a festival or marriage, or even paying a bride price. Capital investments, such as buying land or bullocks or cows or fodder, are undertaken by them, but only rarely. Many loans are taken to pay off old debts.

It is because of this emphasis on consumption that the *kamsel* debts are smaller and more numerous. Most debts are of one thousand rupees or less. There are also a number of *kamsel* debts that they have inherited from their deceased fathers, and the *chokha* lenders are in no hurry to call them in because they are also useful as a way of keeping the debtor *kamsel* beholden to them.

These credits, however, largely exclude the many short-term loans taken by villagers who seasonally migrate to trade or work in India. These are paid back to the lender almost immediately upon the borrower's return.

Sources of Credit and the Small Farmers' Development Project (SFDP)

There exists a definite difference in pattern regarding the sources of credit between the richer *chokha* and poorer *kamsel* households. While

the richest of the households, around half a dozen of them, desist from taking any loans even from the cheapest source, namely, the Small Farmers' Development Project (SFDP); the middle ranking households, mostly belonging to *chokha* groups, use this source frequently in order to obtain loans, technically and ostensibly for the prescribed purposes of agricultural development, e.g., cattle husbandry, horse and mule breeding, sheep and goat rearing, potato growing, or cottage industries. However, in effect, such loans are used mainly for buying land, investing in profitable ventures such as buying and selling horses, or for further lending to poorer people whose access to SFDP is limited or non-existent.

However, not all *chokha* loans come from this source only. They also borrow from sources in the village or outside. For instance, of the 14 loans of the seven borrowing households in the *Bahun bado*, only six loans belonging to an equal number of households, representing a sum of 61 thousand (or 66.3 per cent of the total debt in that group), came from SFDP sources. Five loans came from other villages. But all the three loans of the Jachauri households came from SFDP sources.

For most *kamsel* households, however, the sources of credit are local lenders inside and outside the village. Of the 77 different outstanding loans of the three groups, only five came from SFDP, four of which were taken to pay off the old debts to the local lenders and those from adjoining villages. Often, as mentioned above, the *chokha* borrowers from SFDP are lenders to the small-time *kamsel* borrowers.

According to SFDP policy, potential borrowers are to be organised into groups of small farmers and loans are to be made to members on the recommendations of these groups. The groups are expected to assess the credit needs of individual members for the agricultural development venture that each one wants to undertake and to recommend to the Project Office accordingly. Therefore, loans are extended to the applicants based on group liability. This means that, if the borrower defaults on repayment, no further loans are made to any member of the group and that the defaulted loan itself has to be repaid by the rest of the members collectively.

In Diyargaon, while two such groups are said to exist, they do so only on paper to facilitate the funnelling of loans to individual applicants who are dealt with directly by project officials, for they all know that the loans are not used for the stated purposes.

Collateral

SFDP loans need collateral (exclusively land deeds). Given the skewed distribution of agricultural land, it is the *chokha* households that naturally have more land deeds than their *kamsel* counterparts.

Most local moneylenders give large loans ranging from two to 11 thousand rupees; loans are given also against the mortgage of land, primarily highly-valued paddy land. Often, a *kamsel* obtains a large loan of a couple of thousand rupees against a mortgage of the paddy land of his *chokha lagi* who has given him the right of usufruct in return for services as his *haligado*. Since this ties him down to the *chokha* household irrevocably, it means an assured labour supply for the latter and is, therefore, quite acceptable to him.

A *kamsel* also receives a loan against assurance that he will work for the *chokha* lender to level the latter's *ghaderi* into *jyula* at some future date. But most small loans are given against promissory notes made out by the lender on which the illiterate borrowers merely place their thumb prints.

Interest Rates

The SFDP loans are relatively much cheaper and are available at an interest rate of 18 per cent, per year for the most popular livestock loans. But, for the remainder of the loans in the village, it is a lenders' market, and the interest rates charged range anywhere from 40 per cent to 100 per cent depending upon the degree of desperation of the borrower. To make it look less severe (and actually more profitable), the duration of the loan is often six months, and the interest is 50 per cent of the principal. Thus a thousand rupees earn an interest of 500 rupees in six months, after which the unpaid interest begins to compound.

Given the fact that many of these loans are intended for tiding over crises like food needs, sickness in the family, payment of bride price, and etc, the borrowers are often quite desperate. It is so much worse if the borrower happens to be poor and has many unpaid loans. These factors give him a very low credit rating in the community.

It is basically the meagre size of *kamsel* holdings, combined with their traditional dependance on the *chokha* households, that make them prolific and desperate borrowers. Although they try to juggle their way through different loans by using a recent one to pay off an old one, it is basically a balancing act that results in a quagmire. Thus, they are naturally prone to defaulting on loans, and the lenders are quick to compound the interest until the problem is solved by putting up a parcel of the borrower's land for sale, usually to one of the lenders.

Presently, it is the *Damai* more than any other *kamsel* who are going through this ordeal. Four *Damai* households have already migrated to India, resulting primarily from this sustained exploitation coupled with their traditional abhorrence of ploughing for others.

The *Sarki* have been through this ordeal already. Today, many of the *Sarki*, having sold off their traditional places of residence long ago, have built houses, on a plot of land that belongs to a rich man in the village on whom they are completely dependent, knowing that they can be evicted any time.

All able-bodied *Sarki* today are fully occupied in *haligado* relationships with *chokha* overlords. While this provides them with very useful security, they have, however, forfeited their liberty to migrate from the village to India for long periods of time, which a number of *Damai* and *Kami* men do. They know that being absent at the time of ploughing means losing the *haligado* land which is often the primary source of their sustenance. A number of them have, in recent times, tried to improve their economic condition by taking up the building trade that traditionally belonged to the *Od Kami*.

Many *kamsel* are today wary of taking loans in the village because, it often happens, that there is a great deal of dishonesty on the part of the lenders. They claim that if one borrows 500 rupees, the loan is compounded to four to five thousand rupees in a year or two. The trap is set in more than one way: not only by way of inflated interest rates but also by entering higher, fictitious figures in the promissory note to which the desperate and illiterate borrower innocently and hastily affixes his thumb print. There are a number of loans that are quite small - e.g., four "*mohar*" (i.e., fifty paisa coins) borrowed during the father's time in one case - but which continue to be held by the lender because they can be used against the borrower at any time.

Rendering a *kamsel* indebted is almost a sport for the rich *chokha* because the aftermath is so very rewarding for the latter. So, with the advent of festivals like *Dasain* or *Shrawan Sankranti* (the first day of *Shrawan*), the *chokha* tends to invite the *kamsel* over and entice him with an offer of a loan to celebrate them. The *kamsel* too, on his part, has been traditionally incapable of resisting this temptation and falls into the trap. The money is instantly given, but the paper is made out only some days later after the money has been spent. The obsession for lending is so intense that, in one case, a *chokha*, for want of ready cash, lent a *kamsel* one of his golden ornaments at an interest of 200 rupees for six months. The latter in order to generate the cash he needed, mortgaged this with somebody else and again had to pay interest to him.

Often moneylenders can be quite atrocious in their dealings with borrowers. They just walk into a defaulter's house and pick up any piece of movable property, such as a cow, a goat, a chicken, a new piece of clothing, or a utensil, in lieu of the alleged arrears in interest. So hard has such demeanour been on the indebted that a lender, who may charge the same inflated 50 per cent in interest, will still be held in much higher esteem than others if he does not exact payment immediately after the lapse of the stipulated duration of the credit.

Given such a situation of "saturation indebtedness", a SFDP official has maintained that, unless the local people are liberated from the all-pervasive shackles of such indebtedness, SFDP's credit programme stands little chance of making any dent on the problems of poverty in the village.

As a means of bracing themselves against *chokha* oppression, some semblance of *kamsel* solidarity is visible. There are a number of loans made by one *Sarki* to another, ranging between 50 rupees to 200, for which no interest is expected because of fellow feeling. But this is far from being a universal phenomenon.

Livestock

As indicated earlier, livestock constitute a major component of agriculture in Jumla, both as sources of traction power and manure, as well as for products such as wool, meat, milk and milk products, cash income through sale, and also as a means of transportation for high altitude dwellers.

Types and Numbers of Livestock

While there are sub-regional specificities in the kind of livestock preferred, such as *yak*, *nak*, and *jhopa* (cross-breed of *yak* or *nak* with common cattle) among the *Mugali* and similar border people and sheep and goats among the *Khas* (also called *Pawai* by the *Jyulels* or the inhabitants of *Jyula*), at higher altitudes, cattle, buffaloes, horses, sheep, and goats are generally popular among people in the river valleys. In recent times, mules have also become increasingly popular as a beast of burden for the commercial transport of goods, particularly from the southern market town of Surkhet to Jumla.

In Diyargaon, the sample households owned 82 cows, 36 calves, 53 bullocks, 19 male calves, five buffaloes, eight horses, and 42 goats. Of these the cows and female calves together totalled 118 and the bullocks (including the male calves) 72, which comes to an average of 2.8 cows and 1.7 bulls per household.

As in land distribution, there exists an acute disparity, based on caste status, in the ownership of livestock. The eighteen *chokha* households (or 42 per cent of the sample) owned 59 cows, 12 male-calves, 22 calves, 43 bullocks, four buffaloes, seven horses, and 42 goats, which constituted 72, 61, 81, 63, 80, 87.5, and 100 per cent respectively of the total number in the sample. This results in a larger per household distribution of livestock in which the cows account for 4.5 head and bulls three head per household among the *chokha* population, in contrast to 1.5 cows and 0.7 bulls per household for the *kamsel*.

Changes in Livestock Ownership

There has not been a perceptible change in the ownership of livestock in the last two decades in Diyargaon. In 1970, the sample of 21 *chokha* households mentioned earlier had between them a total of 112 cows and 48 bulls of all ages, of which one exceptionally large household alone owned 55 and nine of them respectively. Thus, while the per household distribution of cows and bullocks was 5.3 head of cows and 2.3 head of bulls, the average ownership was 2.8 head of cows and two head of bulls per household when the large household was excluded from the computation.

Other livestock consisted of nine female buffaloes owned by four households, 11 horses with three households, and nine sheep and 17 goats with four households.

The comparison can be seen in Table 16.

Table 16: Comparative Livestock Ownership in Diyargaon

Livestock	1990		1970	
	42 households			
	No	heads/ household		
Cows (including calves)	118	2.8		
Bulls (including calves)	72	1.7		
Horses	8			
Buffaloes	5			
Goats	42 (owned by 2 households only)			
	18 households		21 households	
			No	heads/hhd
Cows	81	4.5	112	5.3
Bulls	48	3.0	48	2.3

Source: 1991 data based on field survey.
1970 data based on Shrestha (1971: 50-51).

These data, however, conceal the fact that, in the past, some households were much better off pastorally than at present. For instance, in the 1970 sample, the aforementioned rich household owned an even larger herd estimated to consist of 160 to 170 cows, 13 buffaloes, 20 to 25 mares, and 240 sheep which had to use a much wider range of habitats than those in their immediate vicinity. Much of the herd was wintered in the warm pastures and forests of Bajura district to the south-west of Jumla in the winter, and the animals were brought to a number of rich highland pastures in Jumla district during the summer.

But, with the increase in population and expansion of cultivation in Bajura, the pastures and forests were appropriated by the local people, to the detriment of the seasonal visitors from Jumla. Likewise, closer to home, the establishment of the Rara Wildlife Sanctuary was followed by the closure of important pastures such as Lumkad, Chuchemara, Gorseen, and Dunela in the higher reaches of Jumla. As a direct consequence of these major upheavals, the cattle population declined drastically. The same household today cannot boast of more than 21 cows and bulls, two buffaloes, two mares, and four goats; the latter being given for share-cropping to their *ista* in adjacent *Khas* (*Pawai*) villages.

The people in highland villages were even harder hit because of the greater role that pastoralism played in their household economy. It is said that they too sold off parts of their herds and used the proceeds to buy land in and around the Surkhet Valley down south.

Even food habits have changed. Whereas, in the past, some men in the richer households drank only *khah* (a milk product made by boiling around eight litres of milk in an earthen pot into a concentrated preparation of about one litre), nowadays even buttermilk has become a cherished delicacy for them.

Seasonal Movement of Livestock

Given the nature of the habitat, the local people have to move the livestock through different high altitude pastures during the summer and autumn months, although they are now more distant and qualitatively inferior to those that came under the Rara Wildlife Sanctuary.

Horses and cattle are taken to graze in different meadows, the latter in places closer to the village because bullocks are regularly needed to plough the fields there and in the uplands. While most goats are given to the *Pawai* in higher settlements to graze with larger flocks, the pattern for them is the same as that of the cattle.

After the paddy harvest in mid-*Kartik*, the horses and cattle are brought back to the village. But in *Poush*, they are again brought to graze away from the cold wind along the Sinja River to the sunny and warmer south-facing slopes of the adjoining mountains where there is also a more plentiful supply of grass fodder.

Around mid-*Chaitra*, when agricultural activities begin to increase with the preparation of paddy seeds, both cattle and horses leave the village and move through a number of near and distant pastures until mid-*Kartik*. Because of the closure of important pastures by the wildlife park, people now keep their livestock in smaller pastures for more extended periods, a month instead of the five days that they used to keep them for in the past. The chart on the following page gives an idea about the present and past patterns of movement of Diyargaon livestock.

The usufruct of different pastures had been traditionally linked to different villages in the valley, and they did not trespass on each other's territory. But with the dislocations caused by the establishment of the Park, some pastures, like Chhala Chaur for instance, are now more crowded. Even scuffles have been known to occur between the traditional users and new intruders, leading to reconciliations based on the appreciation by the former of the latters' plight and on the condition that the latters' herds must be constantly watched and kept separate by shepherds.

Changes in Organisation of Pasturing

In the past, when the cattle population was large, a traditional institutional mechanism called *saundi* was used. Under this arrangement, flock owners went to the pastures in small groups of three or four people, or sometimes even more. Some *saundi* were bigger than others and they handled varying numbers of livestock. One such *saundi* of Diyargaon had four members and had more than three hundred cows and some fifteen buffaloes. Each member of the *saundi* took turns to porter milk products, mainly ghee and *galim* (cream for making ghee), to the *saundi* households in the village to bring back salt for the animals. Milk was too bulky to handle over that distance.

Following the drastic reduction in the livestock population, people say that the word *saundi* is no longer a part of the local vocabulary. Now it has been replaced by another arrangement called *naso*, meaning giving and holding in trust. Under this arrangement, the households with only a few cattle entrust them to one with a relatively larger herd which takes them to pasture along with its own animals. While this is a gesture of goodwill and friendship on the latter's part, the former too compensates by visiting the pasture occasionally with salt for all the animals or food for the host household.

Table 17: Calendar of Movement of the Diyargaon Livestock

Type of livestock	*Baisakh*	*Jeshtha*	*Ashadh*	*Shrawan*	*Bhadra*	*Aswin*	*Kartik*	*Mangsir*	*Poush*	*Magh/Fagun*	*Chaitra*
	Names of pastures used for different months, parentheses indicate distance in hours										
Horses	Close to home, Thapla, Sera (<1)	Chhala chaur (>5)	Jaljala, Majh Patan, Mathi Patan (>6)	Dayapi (>2 *days*)	Dayapi	Thapla, Bnaodar Badimeli, *Mool*; (1-2)	Thapala, Bnaodar, Badimeli, *Mool*; and *Jyula* i.e., village paddy fields after 15 Kartik	*Jyula* in the village	Like in *Aswin*	Grazing in village fields or stall-fed in the village	Chaukhy Jila-Chaur (1)
Cattle	Salima-lagna, Tallo Badimeli (1)	Melapani Gani, Syala and Kurila Chaur (1-2)	Goruodar, Mere & Gani (1-2)	Thula Kharka, Goruodar, Pachhai-gad (2-3)	Mauri Bheed, Syala, Mere, Sera, Syalakot, Gani, Pachhaigad	"	"	"	"	"	Mere, Thapla, Baondar,
During the pre-sanctuary days											
Horses	"	Chhala Chaur	Jaljala, Dunela, Gorseen, Chuchumare	Dayapi, Dunela, Gorseen, Chuchu-mare	Dunela, Chuchu-mare, Rota	"	"	"	"	"	"
Cattle	"	"	"	(Except Dayapi)	"	"	"	"	"	"	"

Forces of Change Affecting Pastoralism

Although the establishment of the wildlife park and the expansion of cultivation in the lower reaches have adversely affected livestock farming in the villages of Jumla, it does not tell the whole story. Two modern forces have also played a role.

Traditionally, the extended family structure of the well-to-do *chokha* households assigned different roles to different sons according to birth order. While the first son was expected to act as a *thalu*, that is, to visit courts and other government officers in Jumla and to write legal papers, the youngest assisted the father in the management of the farm. Thus, it was the task of the middle son to attend to the livestock farming, and this involved living away from home for extended periods of time.

With the increased accessibility of educational facilities it was no longer acceptable to the middle son that he went to live in the wilderness while his brothers attended school.

Secondly, with the expansion of trade between the southern towns and the Karnali hinterland, the people realised that this pursuit was more profitable than herding cattle in remote pastures. Thus, combined with the closure of good pastures and changes in the value system in favour of education, a shift in the economy brought about a rather accelerated decline in the livestock population of Diyargaon.

It is also said that the loss of good pastures and of the especially nutritious *buki* grass have badly affected the health of the cattle population leading to a decrease in its numbers, forcing the diversification of economic pursuits.

Managing Fodder for Wintering the Livestock

As mentioned earlier, the livestock spend most of the winter months between *Kartik* through *Chaitra* in the village or in the pastures in its vicinity. While they are left to graze on open spaces, they are also fed on fodder grass cut from the mountain sides surrounding the village and stored by the women during the two months before the onset of winter. This, therefore, involves the protection of the grassy slopes from premature encroachment from humans and animals. For this

purpose, a special local official, also called a *naralo*, as in the case of barley crops, is appointed to regulate the movement of livestock to keep them away from these grasses from the first of *Shrawan* to the end of *Bhadra* every year. This system will be further discussed under the chapter on forestry.

Unlike the forest area, these grassy slopes are not openly accessible to all. Locally, these sites are called *mela*, which is a generic term used to denote either work or holdings, and each of these sites is privately owned by the households. While rich households also have larger tracts of *mela* in the village, the Jachauri households are said to own more than most households because of their traditional emphasis on hunting, primarily the once highly lucrative trade of ensnaring and training falcons and selling them in the markets of the then undivided India. The pursuit of this trade requires holding a title to the mountain sites where the birds of prey can be ensnared.

Those who traditionally do not own such *mela*, like the *Od Kami*, get what little supply of grass they need from that growing on the communally-owned open spaces on the ridge adjoining the village to the north.