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Introduction to Farming Systems in Nepal :Case Study of Land Utilization of Newar People, Kathmandu District

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1. The diversity of Nepal's agriculture

Nepal, a country extending from east to west with an area of 141,181 square kilometers and with a population of 18 million, has a very diverse geographical feature. There is a great difference in altitude of the land which gives the varied climates — Tarai which is the southern flat region is subtropical; the middle hilly region which ranges from 300 to 1,500 meters above sea level mixes in subtropical, warm, and cool temperate; the Himalayas in the north is subarctic and frigid. Therefore agriculture which is one of the key industries of Nepal, accounting for a 58 percent share of the gross domestic product (GDP), has various features. The country is geographically divided into the eastern, the central, the western, the mid-western and the far western regions, each of which consists of the Tarai, where generally known as commercial rice farming, the hilly region, and the mountainous region. About 90 percent of population depend upon agriculture, which mostly practice the traditional system.

In addition, Nepalese people contains a variety of races, which have own religions such as Buddhism and Hinduism, bringing up different farming

systems. The religion of most of the people in Nepal is Hinduism and therefore their society is divided into four castes – Brahman which is the priestly caste; Kshetri, the warriors; Vaishya, the workers; Sudra, the lower castes. In religion Hindu people accounts for slightly more than half of the total population of the country. In particular, Brahman and Kshetri are the main castes which form a major share of the population, and take the initiative in politics, economy, administration, and military affairs, even now. Therefore, it may be extremely difficult and there may be no sense to describe the agriculture system representing all caste / ethnic groups of Nepal, which contains all sorts of factors such as races, mother tongue, religions, castes, and climatic and geographical conditions mentioned above.

2. Profile of the field survey – the Sankhu in the Kathmandu Basin

The surveyed field, Sankhu, located at the end of the Kathmandu Basin, about 20 kilometers to the east of Kathmandu, is thorough a farm village, where the inner town along the old main road to Tibet prospering from trade. It is also locates near Mt. Nagarkot that is a world-famous mountain resort in a hilly region about 1,200 meters in altitude, surrounded by the many mountains.

Most of the people living in Sankhu are Newars, who are also a major proportion of the population of Kathmandu City. The Nepalese consists of a variety of races as mentioned above, almost all of which are Indo-Aryan and Tibet-Burman, that is, the immigrant races. The Newar people, however, is considered as the only native people of Kathmandu formerly called Nepal, and has been living mainly in urban areas such as Kathmandu engaged in business since old times as merchants, export traders, various kinds of artisans, and so on. They have also been engaged in agriculture, and even now they are often farmers concurrently involved in business as a major or minor source of income. In the Kathmandu Basin, they are full-time farmers for the most part, but they are often part-time farmers involved in business with such a historical background of being engaged in trading from old days.

A Newar usually has a relatively large family, some members of which are engaged in farming. In particular, women have many daily agricultural tasks, and therefore Newar women are regarded as hard workers. For ploughing fields, some Newars utilize water buffaloes in these days, but in general, they use uniquely shaped hoes with a short handle suitable for terraced fields composed of small pieces of sloping land. Their terraced fields are mostly dispersed to several spots. The area of cultivated land per agricultural household in Sankhu is 0.41 hectares on the average, whereas it is 1.12 hectares on the national average. Therefore, they strive to utilize the land during the whole year whenever it is made possible by such multiple cropping as semiannual, double, and triple cropping.

In Nepal, a 50 percent of all agricultural households own only 0.15 hectares of cultivated land on the average. On the other hand, only 7 percent of all agricultural households own 3.0 hectares or more of cultivated land, accounting for a 47 percent share of the total cultivated land (as of 1981/ 1982). Although the Land Act, a new land system was introduced in 1964, it can be said that a major proportion of the land is still owned by a small number of large farmers. The ratio of population to the area of cultivated land is also high in Sankhu. Newars live in three-to-five-storied brick-built row houses in close clusters. It may be thought that this form of residence makes it possible for a large number of the people to live in a relatively small area of land, making the ratio of population to the area of cultivated land even higher. About 22 percent area of cultivated land is said to be irrigated in the central hilly region. Also in Sankhu, rainwater is mainly utilized. The main crops are rice, wheat, potato, vegetables, and fruits are increasingly grown as economic crops on these days.

3. A case of land utilization in surveyed agricultural households

The Nepalese land ownership system has been complicated since old

times, being the greatest factor hindering the national collection of land taxes. After the abolishment of Birta in 1959, the land ownership of the Royal Family was set, and furthermore the institution of the Land Act had been established in 1964, the farmland reform was finally implemented.

The old land ownership, for example, Zamindari which is the land ownership and tax collecting system since the feudal age in Tarai, and Kipat which is the land disposal rights held by the landowners mainly in the eastern hilly and mountainous regions, had been abolished, and tenants had been guaranteed in cultivated land. Consequently, Raikar, the national land tax system, and Guthi, the land ownership rights held by the organizations in relation to religion, charity, and society made up of groups of the same origin in many cases, have only been recognized. Restrictions on land ownership are enforced region by region as follows:

Up to 25 Bighas (16.6 hectares) per household in the Tarai region

Up to 80 Ropanis (4.0 hectares) per household in the hilly region

Up to 50 Ropanis (2.5 hectares) per household in the Kathmandu Valley

Tenantry is also restricted as follows:

Up to 4 Bighas (2.6 hectares) per household in the Tarai region

Up to 20 Ropanis (1.0 hectare) per household in the hilly and mountainous region

Up to 10 Ropanis (0.5 hectares) per household in the Kathmandu Valley

However, due to the lack of whole land registration and the traditional practice of the conventional land system, the farmland reform does not fulfill its function even now.

We have surveyed about fifty agricultural households in this year, only one case of all household is described in this paper because of limited space. The only example is Mrs. Krishna Maya Shrestha, the head of the family, and is 70 years old woman living with her unmarried first daughter of 45 years old, the fourth daughter of 28 years old, and a grandson of 9 years old whose

mother lives outside Sankhu. Her husband died twenty-five years ago and her second and third daughters are married and live apart. The eldest daughter works mainly in daily farming with the assistance of her mother.

This household operate 6.5 Ropanis (0.325 hectares) of cultivated land where they rent in two places — 5.0 Ropanis in one place and 1.5 in the other. While this household is not landowner, she thinks she has her property jointly with about 60 relatives. It has not been divided among them since the death of her husband's grandfather, probably because there have always been too many potential heirs to divide it. In the Newar society, property is usually divided only among the sons, but there can be a case where an unmarried daughter inherit equally as to the sons. Therefore, her eldest daughter expects that she has the right because she is his great-granddaughter and single.

There are relatively many single women in the Newar society, as been seen in this survey. It is not only the actual marriage is less attractive than religious marriage with God at a tender age which have been considered the only legitimate marriage. The marriage between different castes is not allowed even now, but also they can not help remaining unmarried to look after the mother and take care of family.

The land utilization of this household is illustrated in Figure 1, where the following four annual planting orders are represented:

- ① common rice — winter potatoes (red)
- ② common rice — autumn potatoes (red) — winter potatoes (red)
- ③ common rice — autumn wheat
- ④ medium rice — winter potatoes (red)

The blanks in the figure stand for fallow. They leave land fallow with the intention of maintaining soil fertility in some cases, but usually cannot avoid doing so in order to make such preparations for rice cropping as making dikes and ploughing. It is possible to cultivate other crops as soon as they have reaped rice though some preparations are needed. However, There are some cases where lack of sufficient labor compel farmers to leave land fallow for a

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
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(5 Ropanis)

① →	Potato(Red)	fallow	Rice(Mansuli)	fallow	Pot. →
②	Potato(Red)	fallow	Rice(Mansuli)	Potato(Red)	

(1.5 Ropanis)

③ →	Wheat	fal.	Rice(Mansuli)	Wheat →	
④	Potato(Red)	fal.	Rice(Mansuli)	Potato(Red)	fallow

Fig.1 Land Utilization in a case of the farmer researched.

long time, as seen in ①. This household is rather short of agricultural labor of family members, which may be illustrated by the fact that they have no choice but cropping wheat as represented in ③, although they would like to crop red potato which is more profitable.

The fields they cultivate are fairly irrigable, but they do not crop rice earlier which could be cropped by using irrigation. This household usually make seedling beds after mid-June when the monsoon get full-scale, plant rice in July and reap rice in mid-October after the monsoon stops, which is the same cultivation type as the rain fed areas elsewhere. Therefore, they can not raise the second crop of rice and two- or three- crop system. This is because water is not enough for irrigation in some years. It is said that some people dispute with neighbors over the allocation of irrigation water especially in the dry season. It is also said that the water was barely enough in this dry season.

This household crops only Mansuli which is a common variety of rice. It was made by crossing Japonica- and Indica-types of rice, and is thought to taste better but have less resistance to disease than the native species. In spite of its growing period of 165 days from July to November which is the longest term of all the varieties in Nepal, it has only the average level of yield. However, it is the most popular variety in Nepal, because Mansuli has a long culm which is by far the tallest, 140 centimeters in this district. Because of the shortage of chemical fertilizer, varieties with a long culm has been favorite to make composts by rice straw since old times. It may be thought as one of rational technique of management for small farmers without capital to plant such varieties of rice as Mansuli exclusively.

Figure 2 illustrates the 5.0 cultivated Ropanis (0.25 hectares), one of the two rented spots of land. It is composed of terraced fields facing south, where the upper fields are rather large while the lower the smaller.

In the Kathmandu Basin, which has finely grained clayey soil with poor drainage in general, potatoes, grown in the dry season, are raised in fields with tall dikes 30 to 50 centimeters in height, 25 to 30 centimeters in breadth and 5 to 10 meters in length, through the bottoms of which water is let flow. They grow exclusively wheat after rice in the lower, smaller fields, where only

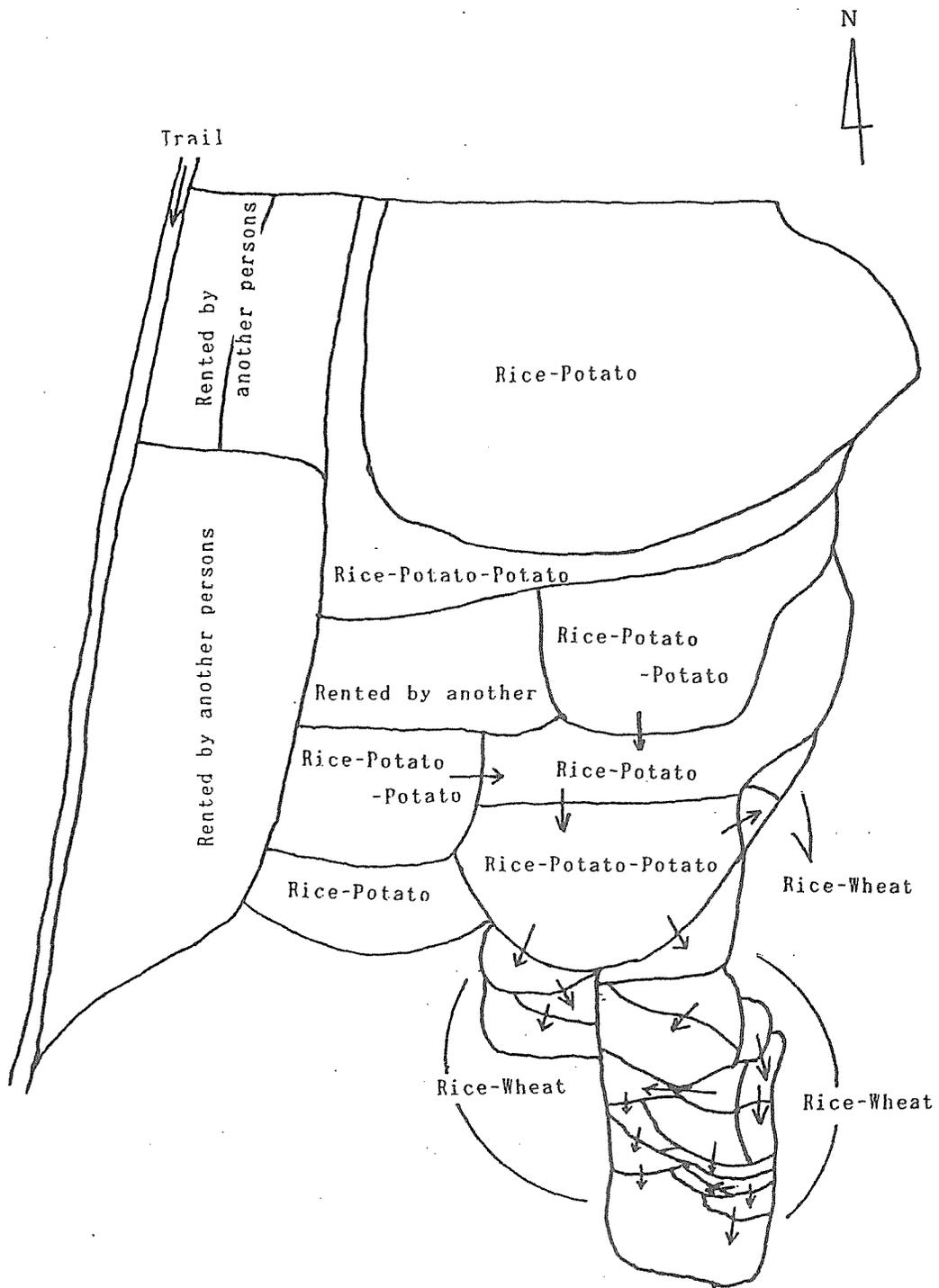


Fig. 2. Figure of fields (5 Ropanis).

a few dikes could be inefficiently made, while it is solely in the upper, larger fields that they grow potatoes once or twice after rice, which is a more profitable cropping.

There is a trail of irrigation water in the west. Water is drawn from the trail only through a sluice gate, and then the fields are irrigated from plot to plot over-levée, as indicated by arrows. All the fields along the irrigation trail are rented not by Krishna Maya Shrestha but by other farmers. Therefore, the fields rented by her are all irrigated drawing water from others' fields, which may lead to disputes over the allocation of irrigation water in some years, as stated above.

The northernmost, largest field is intended to be returned to the owner to suit his convenience after tenant have harvested double cropping, rice-potato, and so she cannot operate there triple cropping a year such as rice-potato-potato. It is not clear and needs to be further researched whether such a lease form within a limited period in a year is a traditional practice or a special case and why it was adopted.

Figure 3 illustrates the 2.0 cultivated Ropanis, one of the lands owned by another farmer, placing very near the Sali-Nadi River and having all field same level. Such field is very convenient for water usage and well working, and sustainable land utilization, so it's high productivity. Land utilization of rice-potato-potato is very profitable system. Therefore, it seem to be important that farmer have flat fields and convenient fields to use water rather than having fields only larger size.

4. The conditions of development of the land utilization in Sankhu

The cultivated land in the Sankhu district in the Kathmandu Basin consists of terraced fields on the hillsides, which are intricately distributed in irregular shapes, as illustrated in Figure 2. The illustrated area is the lower part of the hillside near the level ground, so the fields halfway up and around the top of the hill are sloping more and being smaller which tend to be supplied with less water drawn from streams. However, they make the best

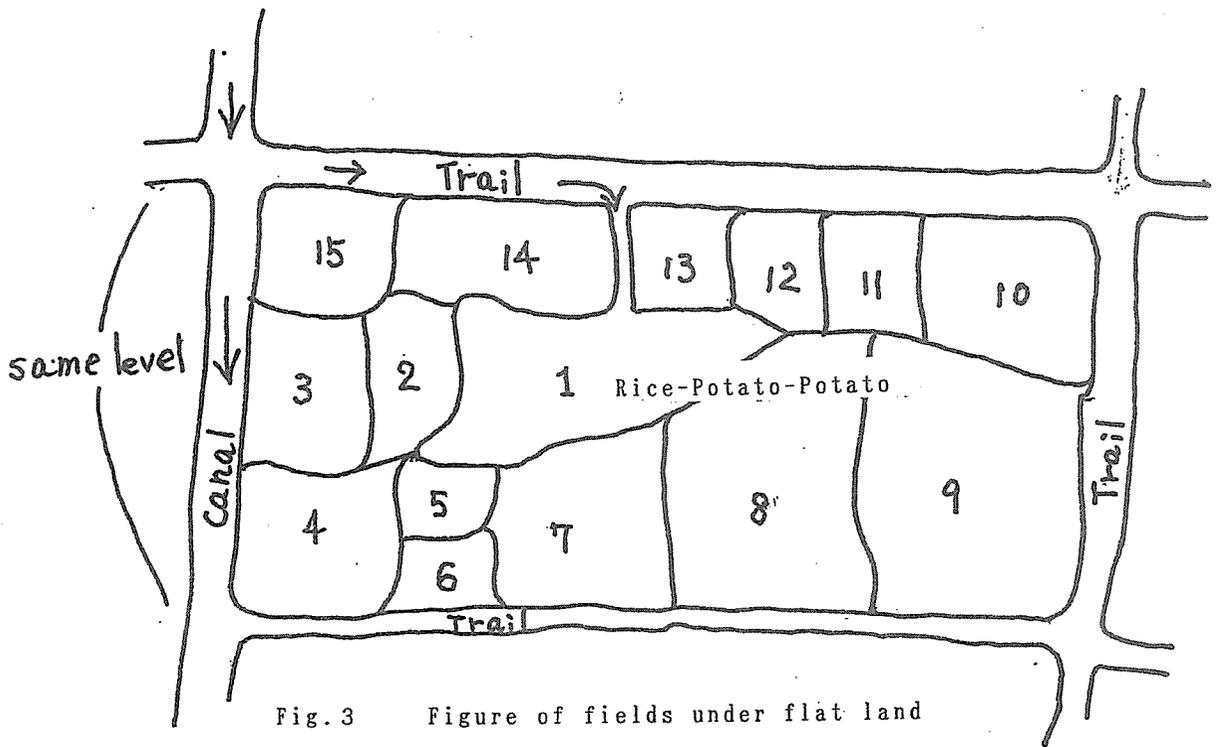


Fig. 3 Figure of fields under flat land

of the water by drawing it through a network of many ditches.

The fields cultivated by each household usually lie scattered in several places. Most of the households practice renting in land from others while some of their rented out land is simultaneously. This is because the land ownership and land utilization systems have been continued in a complicated manner since old times in spite of the farmland reform in 1964.

There are a tendency of farmers with land operated largely and with capital strength who can hire rather many farmhands, to operate with more favorable fields conditions such as a better supply of water, a shorter distance from home, and a larger area of plot. And it can be said that full-time farmers tend to own or to cultivate land with relatively favorable conditions.

According to the actual state of affairs in land utilization as mentioned above, the conditions of development of agriculture in Sankhu are as follows:

- ① Effective use of the water including that drawn from streams.
- ② Maintenance of the quality and the quantity of compost, and for that the selection of new varieties and the introduction of livestock such as water buffaloes.
- ③ In addition to ②, the introduction of such profitable crops as potatoes and fruits, and the spread of the raising skills of cropping techniques.
- ④ Improvement in the matters relating to the access to the market such as storage and transportation: the improvement of roads, for instance, which is a matter of great importance.
- ⑤ Improvement in the matters relating to the basic conditions of land utilization such as the rental period of a short-term rental of land.
- ⑥ Large-scale irrigation facilities are not always thought effective one, and a network of small-scale irrigation may be rather more practical.

This paper is based on a survey of Sankhu, a farm village in the Kathmandu Basin. It can be considered, however, that the above conditions of development of agriculture are also true of other districts in the Kathmandu Basin to a certain degree, although it is need to say that the conditions of agricultural villages and agriculture in this districts are very

different each other, so it requires researching and analyzing with great circumspection.

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Phot.1 Terraced fields



Phot.2 Flat fields surrounded by trail



Phot.3 Field of winter potato



Phot.4 Kalimati Fruits and Vegetable Wholesale Market