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## Food Security Situation Analysis of Freed-Bonded Labourers (Mukta Kamaiya) in Nepal

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**Abstract-** This study was carried out with the objective to assess food security situation of Mukta Kamaiyas (former agriculture bonded-labourers) and to know their strategies to cope the food deficit. Two village development committees (VDCs), namely Kohalpur in Banke and Kalika in Bardiya districts respectively were purposively selected for the study. A random household survey with semi-structured questionnaire was carried out in 120 households thus each VDC having 60 households. The questionnaire consisted of basic household sojourn and food production situation. Simultaneously, focus group discussion (FGD) and Key Informant Interview were also made during the field survey. Only 4% households were food self-sufficient whilst the larger proportions (> 75% households) had less than three months food self-sufficiency. About 36% households were unable to meet the minimum daily calorie requirement (2,144 kcal/person/day) recommended for the terai region of Nepal. The food self-insufficiency was more severe in Kohalpur due to smaller land size, and due to rather larger family size and more dependent family members than Kalika VDC, but, food security situation was slightly better than Kalika due to the trade based entitlements (wage labour and business opportunities etc). Wage labour is the most prominent source of income for securing household's food demand in Mukta Kamaiyas. It was further supported by the other strategies like cash loan, food borrowing, cutting of meal, less preferred food eating and so on. So, improving labour productivity through skill development and employment generation and enterprising would help to promote income generation activities and to improve food security situation as well in long term. While in short term off-season vegetable farming, poultry and small livestock husbandry would be the better options for sustaining livelihood in the rural setting of Mukta Kamaiya villages.

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# Food Security Situation Analysis of Freed-Bonded Labourers (Mukta Kamaiya) in Nepal

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## 1. INTRODUCTION

Kamaiya system is a bonded labour system that existed in agriculture economy of western Nepal of Dang, Banke, Bardiya, Kailali and Kanchanpur districts. In the system, worker worked with verbal agreement with the landowners. The landowners were either descendent of Jamidars (landlords) or one who owned large size of land, while the Kamaiyas are usually the landless and poor peasants. Though, the contract was basically for one year, due to the lower wage payment, these Kamaiyas usually could not be able to feed their family (Sharma & Thakurathi, 1998; INSEC,

1992;) there by, indebted and bounded to work until the repayment of debt called Saunki. The repayment of saunki was almost impossible and, hence they fell into permanent debt bondage labour system for several years, and/ or even for generations due to poverty. With debt bondage, it became extremely exploitative bondage labour system where labourers were even sold from one landlord to another indirectly.

With the great efforts of Kamaiya, civil society, and Non-Government Organization (NGOs), the Government of Nepal (GoN), declared the freedom of Kamaiya on July 17, 2000, and enforced law, "Kamaiya Labour (Prohibition) Act 2002" making Kamaiya system illegal throughout the country (GoN, 2002). Thereafter, Kamaiyas have been known as Mukta Kamaiyas. There are 32,509 Mukta Kamaiya households (HHs) identified by the GoN, of which 27,570 HHs are considered for rehabilitation since they did not have any land and house (MoLRM, 2009). By the end of June 2010; 20,652 Mukta Kamaiya households were rehabilitated. Land redistribution, house construction support and skill development are the major components of the rehabilitation programme. Public land is a prime source of redistribution. The rehabilitation programme was announced to complete by June 2009 but there were still 25% households remained to be rehabilitated. The distributed size of land was extremely small (0.013 ha to 0.17 ha /household) hence, there is no alternatives to Mukta Kamaiya except shifting their livelihood strategies. Majority of them were entered into the daily wage labour, share cropping and other off-farm activities.

Various studies (Joshi, 2006; Kvalbein, 2007; Bhatta, 2010) showed that the socio-economic condition of Mukta Kamaiya is better than the Kamaiya system but are still in extreme poverty, food insecurity and deplorable living condition. Food security was even viewed better in Kamaiya system as it was supplied by the landlords (MoLSW, 1985; MoL, 1995; Sharma and Thakurathi, 1998). Now they got freedom from the bonded labour system and have possibilities to enter into the labour market but it was still limited by the accessibility of their settlement and availability of works. There is a difficulty to get daily wage labour in rural areas except in peak rice transplanting and harvesting. Kvalbein (2007) argued that the labour wage of the labourer in their periphery was increased due to the bargaining capacity and their higher presence but income from the casual labour was highly volatile that affects their lives including food security.

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Similarly, large number of Mukta Kamaiya involved in the share cropping but it was also risky due to crop failure with several reasons that further affect households' food demand. Production from their own

small piece of land and share cropping is also viewed lower due to the limited capacities to buy agriculture inputs.

## II. CONCEPTUAL FRAMEWORK

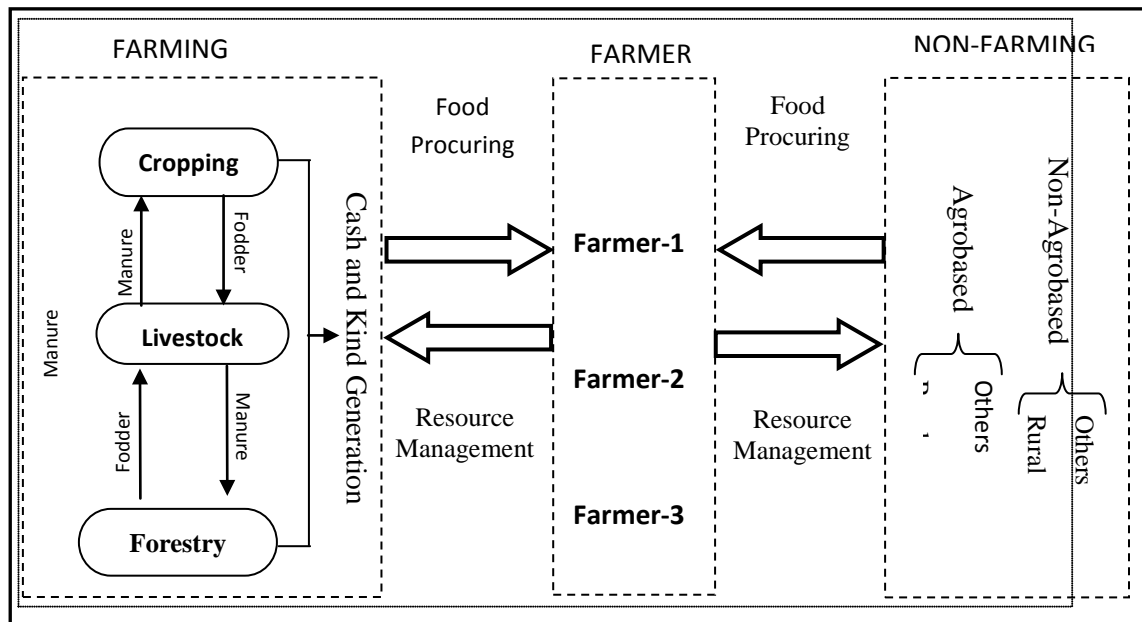


Figure 1 : The process of securing food in rural households (Maharjan, 2003)

The conceptual framework developed by Maharjan (2003) was used in this study as it was supposed applicable in food procuring phenomena in rural household's agrarian economy (see figure 1). This framework is equally suitable to analyze the food security of Mukta Kamaiya too.

The framework showed that the livelihood of rural people depends on farming and non-farming sectors. Forestry, livestock and cropping sectors of farming livelihood are interrelated and interdependent to each other. Forest provides fodder to the livestock and livestock provides manure to the crops and again crop provides fodder to livestock and livestock provides manure to the agriculture and forestry. Farmers manage these resources for procuring their food and shelter as a tradition in Nepal. Though Mukta Kamaiyas have extremely small size of own land they are also practicing share cropping agriculture. Rice and maize are the major crops grown by them. They also grow legumes (lentil, pea), oil seed crops (mustard) and vegetable crops. Livestock is another important component of farming in this community. Small livestock like poultry, goat and pig are more common. A pair of draught bullocks is also raised by the share cropper. Small livestock are source of cash income that they sell in difficult economic situation. Likewise, forestry is not only supplying the fodder to the livestock but also important source of timber for house construction, wild food and vegetable crops including fishing and hunting.

The next important sector is off-farm where large numbers of Mukta Kamaiyas are dependent due to the small size of land holding. Non-farm sector comprised of both agro- and non-agro based in rural and peri-urban areas. Majority of the Mukta Kamaiyas are depending on wage labour where unskilled wage labour constitutes the overwhelmingly large proportion. Skill development trainings are provided to increase the labour productivity and employment generation. Unskilled wage labour mostly involved in agriculture activities and infrastructure construction works and seasonal migration to India too. Similarly, skilled labour involved carpentry, masonry, house wiring, cycle repairing, tractor driving etc. Few youths are also employed in salaried job in army, police in government agencies and field level staff in NGOs. It is new initiation that some people started to go abroad in Gulf countries like Saudi Arab, Qatar and Malaysia for foreign employment. Enterprises based employments are initiated in restaurant, petty vendor, retail shops where as some group based enterprises are also initiated in the area.

## III. RESEARCH HYPOTHESES

This field survey was conducted with the following main hypotheses:

- Food security situation might be affected by the site of rehabilitation and ownership of the physical assets among the Mukta Kamaiyas.

- Household food self sufficiency situation might have forced the Mukta kamaiyas to adapt to other income opportunities.

#### IV. METHODOLOGY

##### a) Site selection

Mukta Kamaiya are living in five districts- Dang, Banke, Bardiya, Kailali and Kanchanpur of mid and far-west development region of Nepal. Among the five Mukta Kamaiya districts, Banke and Bardiya districts were selected for this study (Fig. 2). The reason behind this was that Banke district has an old city namely Nepalgunj as one of the largest cities in the mid and far-western development region of Nepal that provides opportunity of wage labour. Bardiya district was selected because of the highest numbers of Mukta Kamaiya (44.60%), and is the least developed among the five Mukta Kamaiya districts (UNDP, 1998). It also allows making comparison between two spatially different districts. These two districts constitute 52% of Mukta Kamaiya households. One Village Development Committee (VDC) from each district was selected. Kohalpur VDC of Banke and Kalika VDC of Bardiya districts were purposively selected (see Fig. 3 and 4) for the study based on the highest number of Mukta Kamaiya household. Large numbers of Mukta Kamaiya (43.5% of considered for rehabilitation) are living in the market center of Kohalpur VDC. The Mukta Kamaiya of Kohalpur of Banke has easy access to labour market and other income generation opportunities. In case of Bardiya, the Kalika VDC has second highest number of Mukta Kamaiya. However, it is going to be soon the largest because of Mukta Kamaiyas are still being rehabilitated due to the availability of government land (fallow land of Cotton Development Board, Nepal).

The field survey was carried out during August-September, 2010. The study was primarily based on

qualitative study however; it was supported by quantitative data through the simple statistical tools. The source of data was both primary and secondary. Primary data were collected from the stratified random sampling of households. Face-to face semi-structured questionnaire interview was undertaken as majority of respondents face difficulties in writing and also for timely completion of survey. Focus Group Discussion (FGD), non-participant observation and in-depth interview were also carried out side by side during the field study.

##### b) Sample size and sampling units

Household (HH) was the basic unit of study. Sixty households were randomly selected from each VDC, comprising all together 120 households covered under the study. Within the VDC, there are more than one Mukta Kamaiya settlements. There are three settlements (Loknagar, Ektanagar and Shantinagar) in Kohalpur VDC of Banke and four settlements (Tesanpur, Jantanagar, Prabhunagar and Shaktinagar) in Kalika VDC of Bardiya. Therefore, HHs were selected from every settlement. It was tried to cover all four categories (red, blue, yellow and white cards holding) Mukta Kamaiya. It was also considered to cover all social groups (Tharu, Pahadi and Madheshi) for the survey. The sample constituted 7% Mukta Kamaiya households of Kohalpur VDC and 11% of Kalika VDC. Overall, 9% of the Mukta Kamaiya households were under the study.

##### c) Data entry and analysis

The data analysed with using the descriptive statistics like frequencies, mean, and percentage. t-test and Chi-square test were used for testing differences among the households and between the two studied VDCs and the level of significance was set at  $P < 0.10$  with using Microsoft Excel and SPSS (version 17). As a supplement to the primary data, several published and unpublished secondary data from difference sources were collected and used in the study.

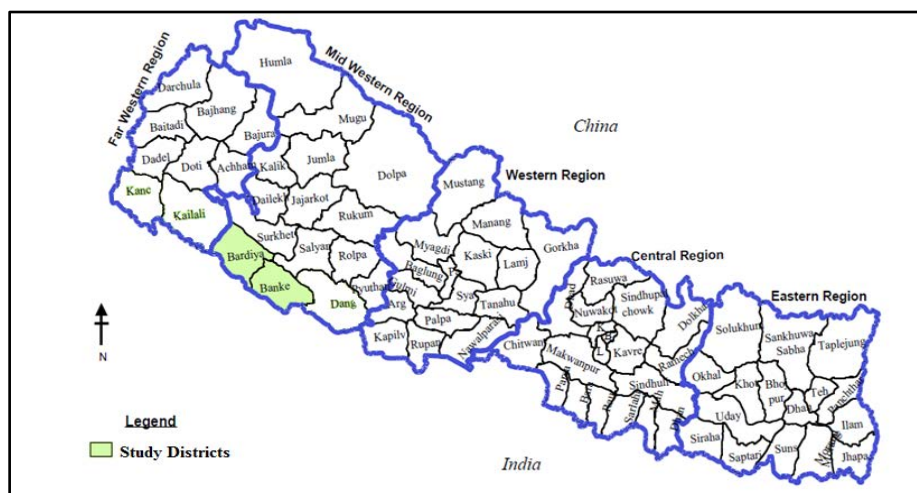


Figure 2 : Map of Nepal Showing the study sites (districts)



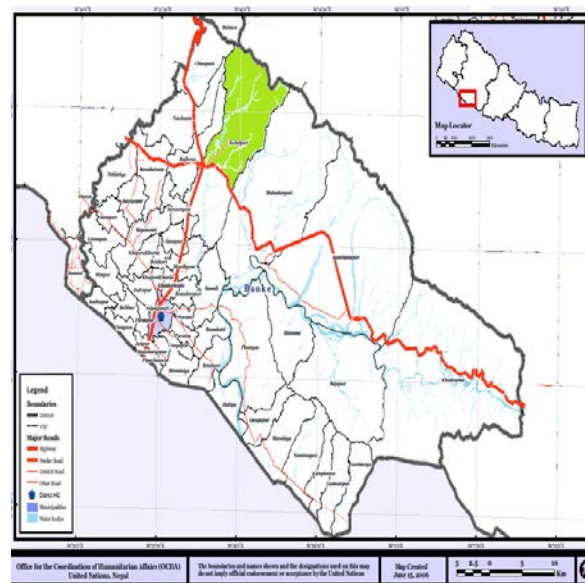


Figure 3 : Map of Banke district showing Kohalpur VDC

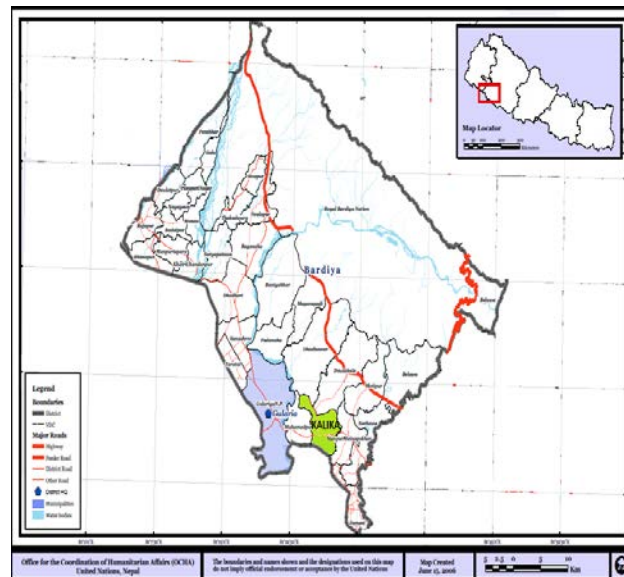


Figure 4 : Map of Bardiya district showing Kalika VDC

Food security in household level is assessed based on their daily calorie intake. Calorie content of individual food items consumed by household is calculated through conversion factors. Total calorie requirement of each household is obtained by minimum calorie requirement multiplied by the number of adult equivalent (AE) of household members. Similarly, average calorie intake of food secure and insecure household is calculated by simply taking calorie intake of households. In strict sense food self-sufficiency is the total calorie available for consumption to households from their own farm production. Food sufficiency does not ensure the nutritional fulfillment for the given period of time.

## V. RESULTS AND DISCUSSION

### a) Socioeconomic characteristics

Average family size of the sampled households (HHs) was 6.5 which is higher than the national average (5.45 /HH) in both cases and higher than district average in case of Kohalpur VDC but it was slightly smaller than the district average in case of Kalika VDC (see table 1). The district average family size is 5.74 in Banke and 6.42 in Bardiya (CBS, 2005; CBS, 2007). The family size in this study was similar across the survey sites. Overall family size in terms of AE was 5.60 which was 5.89 in Kohalpur and 5.31 in Kalika. For this research family size is categorized into three groups. The Majority of the Mukta Kamaiya (53.3% HHs) has

small and medium (40% HHs) and very few (6.7% HHs) large family size (see table 1).

The dependency ratio in terms of both age and economic activities was less than 1 but the dependency in terms of economically active member was slightly higher than the category of age. It reflects the unavailability of job and increasing consensus on child labour. The family size and dependency was found higher in Mukta Kamaiya of Kohalpur than the Kalika VDC.

Household head (HHs) represents the chief person in a household who plays decisive role in family. Nepal still has dominant patriarchal structure of family where women are less privileged. It was found that approximately one-fifth (21.7%) of houses were headed by female, whilst it was 7% higher for Kalika than in Kohalpur. This figure is higher than the national average i.e. 14.99 (UNFPA, 2002). Age of the HHH is also important in terms of maturity and having experience to manage the household activities. Average age of the HHH was found 40 years, and it varies slightly between two VDCs.

Education is the crucial factor for development of any society. Large number of household head were illiterate (45%) and about 29% have only informal education and. Those who were educated are limited to primary education (18%) (table1). Illiteracy is considered as one of the root cause of underdevelopment of Tharu in general and particularly in Mukta Kamaiya. Education is the recent initiative in Mukta Kamaiya after their freedom. So most of them have received primary and lower secondary level education. The illiteracy was quite prevalent during Kamaiya system. It was very high (more than 75%) since they did not have chance to go school and informal night class due the work (INSEC, 1992; Sharma & Thakurathi, 1998). A recent study by Bhatta (2010) showed that literacy was 46% in Mukta Kamaiya of Bardiya district. Likewise, a study conducted by Joshi (2006) in Dhangadhi municipality of Kailali showed 58% literacy.

Primary occupation is the major occupation in terms of devolution of time and the proportion of income. From table 1, majority of HHH's primary occupation was daily wage labour (46.7%), followed by farming (40.0%) and others. Casual wage labour was the dominant occupation in Kohalpur, whereas farming in case of Kalika VDC. It is likely that the reason of higher number of HH involved in wage labour in Kohalpur due to access to the physical labour in the nearby cities. Being at the heart of Kohalpur market centre. As compared to the Kalika VDC (far from the district head quarter approx. 7 km) and market centre (approx. 4 km). In addition, there were no industries which can provide employment to the Mukta Kamaiya. Therefore, there is less opportunity to get daily wage labour and a large number of HHs (47%) obviously forced to have farming occupation. The findings are

supported by Kvalbein (2007) who found casual labour as a dominant occupation followed by share cropping in Mukta Kamaiya. Apart from this, few households (13%) were also involved in small and petty vending business, salaried job and abroad job including seasonal migration in India. The detail of the socioeconomic characteristics of the households has been presented in Table 1.



Table 1 : Major Socio-economic description of sampled household in the study VDCs

Attributes	Kohalpur	Kalika	Overall (n=120)	P-value
Average family size per HH	6.85	6.15	6.50	0.258
Average family size per HH-Adult	5.89	5.31	5.60	0.243
Family size by category				
Small (<5)	30 (50.0)	35 (58.3)	64 (53.3)	0.573
Medium (5 to 10)	25 (41.7)	22 (36.7)	48 (40.0)	
Large (> 10)	5 (8.3)	3 (5.0)	8 (6.7)	
Dependency ratio				
Average dependency ratio per HH by Age	0.43	0.40	0.42	0.656
Average dependency ratio per HH by	0.95	0.88	0.91	0.684
Sex of the HHH				
Male	49 (81.7)	45 (75.0)	94 (78.3)	0.375
Female	11 (18.3)	15 (25.0)	26 (21.7)	
Average age of HHH (years)	41	38	40	0.154
Education of HHH				
Illiterate	31 (51.7)	22 (36.7)	53 (44.2)	0.091
Informal	16 (26.7)	18 (30.0)	34 (28.3)	
Primary (up to grade 5)	9 (15.0)	12 (20.0)	21 (17.5)	
Lower Secondary (5 to 8 grade)	2 (3.3)	1 (1.7)	3 (2.5)	
Secondary (9 to 10 grade)	1 (1.7)	5 (8.3)	6 (5.0)	
Higher Secondary (10+2 or equivalent)	1 (1.7)	1 (1.7)	2 (1.7)	
Bachelor Degree and above	0 (0.0)	1 (1.7)	1 (0.8)	
Primary occupation of HHH				
Daily wage labour	34 (56.7)	22 (36.7)	56 (46.7)	
Farming	20 (33.3)	28 (46.7)	48 (40.0)	0.091
Business/Enterprise	5 (8.3)	4 (6.7)	9 (7.5)	
Salaried job in Nepal	0 (0.0)	3 (5.0)	3 (2.5)	
Working abroad including in India	1 (1.7)	3 (5.0)	4 (3.3)	

Note: Values in parentheses indicated percentage respondents.

#### b) Resource Distribution and Ownership

Physical assets like land, house and livestock are important household resource endowments in agrarian based economy. When Kamaiya declared freedom, most of them did not have their own land and house. According to the government statistics 85% (27,570 HHs) did not have land and house (MoLRM, 2009) hence, government has started land distribution and house construction programme from 2002 (MoLRM, 2009). In studied households, 89% has received land from the government's redistributive land reform programme, whereas 11% households are still waiting for a piece of land (Table 7). The average size of land received by individual household was small in size (i.e. 0.088 ha). A larger proportion (47% HHs) of Mukta Kamaiya have 2-5 kattha sized land or even less than 1 kattha (38% HHs). The size of distributed land was significantly smaller in Kohalpur (0.9 Kahhta. HH) as compared to Kalika VDC (4.36 Kattha. HH). More than

75% of HHs in Kohalpur had 1-2 kattha land whereas 93% HHs in Kalika had 2-5 kattha land. The variation in land holding is due to the government policy of land redistribution based on the economic value and accessibility of distributed land. The Government of Nepal has decided a maximum of 0.5 kattha in the market center, 1 kattha in municipality and adjacent to highway and 5 kattha in rural areas to each household (MoLRM, 2009).

Table 2 : Physical assets with Mukta Kamaiya household in the survey sites

Physical Asset	Kohalpur	Kalika	Overall	P-value
<i>Land ownership</i>				
No. of HH having land	50 (83.3)	57 (95.0)	107 (89.2)	P<0.05
No. of HH without land	10 (16.6)	3 (5.07)	13 (10.8)	
Land holding by category	0.9	4.36	2.63	P<0.001
No land	10 (16.7)	3 (5.0)	13 (10.8)	
<1 kattha	46 (76.7)	0 (0.0)	46 (38.3)	P<0.001
1-2 kattha	2 (3.3)	1 (1.7)	3 (2.5)	
>2-5 kattha	0 (0.0)	56 (93.3)	56 (46.7)	
> 5 kattha	2 (3.3)	0 (0.0)	2 (1.7)	
HH involved in Share cropping	18 (30.0)	11 (18.3)	29 (24.2)	0.136
<i>Type of house</i>				
Temporary (hut/mud)	58 (96.7)	45 (75.0)	103 (85.8)	P<0.01
Concrete with cemented tile	2 (3.3)	15 (25.0)	17 (14.2)	
Average Livestock holding per HH (LSU)	1.32	1.91	1.62	0.093
<i>Livestock holding by category</i>				
No livestock	18 (30.0)	2 (3.3)	20 (16.7)	P<0.001
Small (< 5 LSU)	37 (61.7)	55 (91.7)	92 (76.7)	
Medium (5-10 LSU)	5 (8.3)	3 (5.0)	8 (6.7)	

Note: Values in parenthesis indicated percentage respondents.

The distributed land to them is just sufficient to make house and kitchen gardening. That is why majority of Mukta Kamaiya are shifting their occupation from farming to casual labour and other off-farm activities. But middle aged people (generally more than 45 years) are still interested in farming since they have spent their whole life in agriculture. It is reflected by involvement of Mukta Kamaiya in share cropping. It was found that 24% HHs involved in share cropping and the percentage was higher in Kohalpur than in Kalika. Total 30% households in Kohalpur and 18% HHs in Kalika were involved in this profession as their major source of livelihood. In the share cropping, produce is equally distributed between the share cropper and the landowner, whilst the landowners share all the inputs except the labour. The structure and condition of house was found also very poor. 86% of Mukta Kamaiyas have temporary-types houses. Rest of the households (14%) have concrete house roofed with cemented tiles. Nearly, all the Mukta Kamaiyas (97%) have temporary-types houses in Kohalpur whereas it was three quarter (75%) in Kalika. The temporary type of house is made of wood and thatched with grasses. Seriously speaking, the huts are small and are in poor condition. The general size of temporary hut was 1.5-2 meter height with 5-10 meter width that hardly protects from heavy rain.

Though, livestock are important assets for farming and poor community, 1/5th of the household did not have any livestock. Those who had livestock, mostly small livestock like poultry, goat and pig and small in

size (less than 5 LSU ) Table. Not surprisingly, 77% household had medium herd size (5-10 LSU). Most of the households were keeping pig as it is culturally important in Tharu community. Mukta Kamaiya of Kalika VDC was keeping significantly higher number of livestock than the Kohalpur VDC (table 2). The higher number of livestock per household in Kalika was due to the rural based economy, i.e. farming rather than casual labour, that needs livestock for draft.

#### c) Sources of income of Mukta Kamaiyas

As discussed earlier, Mukta Kamaiyas have small size of land holding and it pushed them towards wage labour, mostly unskilled one. Nearly, all households are involved in farming and wage labour activities. An average annual income (cash and non-cash) per household was nearly NRs. 100 thousand and it was significantly higher in Kohalpur (NRs. 110,024/HH/annum) compared to Kalika (NRs. 86,685/HH/annum) (see table 3). Wage labour is the most prominent source of income contributing 68% of the total income (see table 4). Average household earning from wage labour was significantly higher (NRs. 94,949) in Kohalpur than in Kalika (NRs. 49,586). It is due to the location specific advantage that regular availability of work, higher payment rate, regular income are possible (like rickshaw pulling) than the Kalika.

The second most important source of income was farming. Even though having small size of landholding, almost all households were involved in



negligible (12%). There is good potentiality of small livestock (like goat) raising in rural setting of Kalika and off-seasonal high-value crops (HVC) farming in Kohalpur through land leasing and cooperative farming.

*Table 3: Gross Annual Income (Cash and Non-cash) per HH by Source (NRs)<sup>1</sup>*

Source of Income	Kohalpur (n=60)		Kalika (n=60)		Overall (n=120)		P-value
		Income		Income		Income	
Farming	55 (91.7)	8,087	60 (100.0)	15,311	115 (95.8)	11,856	P<0.01
Wage labour	55 (91.7)	94,949	57 (95.0)	49,586	112 (93.3)	71,863	P<0.001
Business	5 (8.3)	38,100	6 (6.7)	24,000	9 (7.5)	37,167	0.704
Remittance	1 (1.7)	204,000	5 (8.3)	156,800	6 (5.0)	164,667	0.151
Salaried job	7 (11.7)	38,286	7 (11.7)	75,429	14 (11.7)	37,714	0.966
Govt. welfare	3 (5.0)	8,000	0 (0.0)	0	3 (2.5)	8,000	0.1003
Total	60 (100)	110,024	60 (100)	86,685	120 (100)	98,354	0.041

<sup>1</sup>Figures in parentheses indicated percentage respondents.

Salaried job and remittance stands as 3<sup>rd</sup> and 4<sup>th</sup> important source of income respectively in both VDCs, but it does not differ significantly. The

contribution of salaried job was 8% in Kohalpur and 10% in Kalika. n. Only six people were employed in Gulf countries (Saudi Arabia and Qatar), but it contributed as a 4<sup>th</sup> important source of income in monetary value.

*Table 4: Contribution of different income source in total income of Mukta Kamaiya<sup>1</sup>*

Sector	Kohalpur	in %	Kalika	in %	Total	in %
Farming	444,759	6.7	918,657	17.7	1,363,416	11.6
Wage labour	5,222,195	79.1	2,826,417	54.3	8,048,612	68.2
Business	190,500	2.9	144,000	2.8	334,500	2.8
Remittance	204,000	3.1	784,000	15.1	988,000	8.4
Salaried job	516,000	7.8	528,000	10.2	1,044,000	8.8
Government welfare	24,000	0.4	0	0.0	24,000	0.2
Total	6,601,454	100	5,201,074	100.0	11,802,528	100.0

<sup>1</sup> Total income expressed in Nepalese Rupees (NPR; 1 USD=95 NPR).

#### *d) Food Self-sufficiency and Food Security situation of Mukta Kamaiya*

Food self-sufficiency of sampled households across the VDCs was found very critical. Average food self-sufficiency was only for three months (see table 5). The food self-insufficiency was more severe in Kohalpur that was sufficient only for two months, whereas it was for four months in Kalika. Only 6% of HHs were food self-sufficient. More than 75% of HHs had only three month food self-sufficiency. Severity of food self-insufficiency is more pronounced in Kohalpur that 62% HHs have less than one month food self-sufficiency. The higher food self-sufficiency in Kalika is due to relatively larger size of land (4.36 kattha/HH) whereas it was only 0.9 kattha per HH in Kohalpur. In fact, most of the Mukta Kamaiyas have food deficit throughout the year.

However, the situation is more chronic during the end of the rainy season, July-August. The reason for chronic food deficit during this period is due to the less availability of work, reduced working condition in rainy season, and falling sick.

Food security situation of the households is described in table 5, and coping strategies in table 6. Food security is one of the major determinants of health condition and poverty. If people have food to eat, they remain free from hunger, malnutrition and other diseases. Food self-sufficiency and food security are two different things. According to the World Food Summit (1996), food security exists when all people, at all times, have physical and economic access to enough, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy lifestyle. Whereas food self-sufficiency is the condition of food availability to consume from own production.

Table 5: Food Self-sufficiency and Food Security Scenario of Sampled Households

Parameter	Kohalpur (n=60)	Kalika (n=60)	Overall (n=120)	P-value <sup>1</sup>
Average food-self-sufficiency per HH	2.3	3.9	3.1	P<0.01
Food self-sufficiency in month (no. of HH)				
< 1 month	37 (61.7)	3 (5.0)	40 (33.3)	
1- 3 months	14 (23.3)	38 (63.3)	52 (43.3)	
4-6 months	6 (10.0)	11 (18.3)	17 (14.2)	P<0.001
7 -9 months	2 (3.3)	2 (3.3)	4 (3.3)	
10 - 12 months	1 (1.7)	6 (10.0)	7 (5.8)	
No. of HHs meeting minimum daily Calorie requirement#				
Food secure HHs	39 (65)	38 (63.3)	77 (64.2)	0.849
Food insecure HHs	21 (35)	22 (36.7)	43 (35.8)	
Average Cal/AE/day				
Food secure HHs	3,063.7	3,105.1	3,083.0	0.651
Food insecure HHs	1,159.2	1,569.9	1,357.3	0.558
P-value <sup>2</sup>	P<0.001	P<0.001 P<0.001	P<0.001 P<0.001	P<0.001

# Minimum daily calorie requirement for the terai is 2144/AE/day (Subedi, 2003).

1 P value for comparison of two VDCs set by T test.

2 P value for comparison of the parameters set by T test within the set of parameters.

It does not mean that all food self-sufficient households were in food secure and vice-versa. Food self-insufficient household may also fulfil their daily calorie demand by trade based entitlements (buying and exchange). In contrary to the food self-sufficiency, the food security was found better in Kohalpur than the Kalika. About 65% HHs in Kohalpur were food secure whereas it was 63% in Kalika. The comparatively better food security in Kohalpur is due to the fulfilment of food items from other sources of income, mostly wage labour. It should be kept in mind that the income from wage labour is uncertain and volatile due to temporarily availability and seasonal nature of most of the wage labour work. Among the food secure households, the average calorie intake was about 3,000 KCal/person/day and it was slightly higher in Kalika. Food insecure households have almost two times lesser calorie intake (1,357 KCal/AE/day) as compared to food secure households; the case was even severe in Kohalpur VDC. The minimum calorie requirement in terai region of Nepal is 2,144 KCal/AE/day. Similar finding was also reported by Joshi (2006) who conducted his study in 60 HHs of Tharu Mukta Kamaiya in Dhangadhi municipality of Kailali and found none of the households had more than six months food self-sufficiency.

## VI. HOUSEHOLD FOOD DEFICIT COPING STRATEGIES

More than 90% households under this study did not produce enough food for their household's demand. Households vulnerable to food deficit adopted different strategies to reduce risks and upon availability of

internal resources as well as access to the external resources. Households were found adopting multiple strategies to cope with the food self-insufficiency and food insecurity situation (see table 6). The food self-insufficient households procured food items both by production and trade-based entitlements. The food insecure households were 36%. The food self-insufficient households were procuring food for sufficiency rather than the caloric food security. The most prevalent way to cope food self- insufficiency was wage labour (68%), followed by cash loan (22%), less eating (20%), less preferred food eating (18%), food borrowing (17%) and other sources like salaried jobs and enterprises (22%).

**Table 6 :** Response of different coping strategies adopted to overcome food self-insufficiency<sup>1,2</sup>

Coping strategies (no. of HH)	Kohalpur (n= 58)	Kalika (n= 57)	Overall (n= 115)	P-value
Wage labour	49 (81.7)	32 (53.3)	81 (67.5)	P<0.01
Cash loan	3 (5.0)	23 (38.3)	26 (21.7)	P<0.001
Less eating	10 (16.7)	14 (23.3)	24 (20.0)	0.334
Less preferred food	7 (11.7)	15 (25.3)	22 (18.3)	P<0.10
Food borrowing	15 (25.0)	5 (8.3)	20 (16.7)	P<0.05
Others (job, enterprise)	3 (5.0)	23 (38.3)	26 (21.7)	P<0.001
P-value	P<0.001	P<0.001	P<0.001	

<sup>1</sup> Figures in parentheses indicated percentage respondents.

<sup>2</sup> Total sum of the response is not equal to the total no. of households due to multiple responses

#### a) Working as a daily wage labour

As it is already mentioned that the largest share of annual income of Mukta Kamaiya was from wage labour hence, working as a wage labour was the most widely adopted livelihood strategies due to the extremely small size of land holding and limited skill based employment and enterprising. Wage labour

includes causal agriculture works during the agriculture season and off-farm works like infrastructure construction, rickshaw pulling, working in hotel and restaurants and domestic servant even child labour as Kamlahri. Working as agriculture labourers was widely existed in the studied area due to rural agriculture based economy.

**Table 7 :** Disaggregation of wage based labour to cope food insecurity<sup>1</sup>

Types of wage	Kohalpur (n=60)	Kalika (n=60)	Total
Skilled	10 (20.41)	5 (15.63)	15 (18.52)
Unskilled	26 (53.06)	7 (21.88)	33 (40.74)
India	12 (24.49)	15 (46.88)	27 (33.33)
Abroad	1 (2.04)	5 (15.63)	6 (7.41)

<sup>1</sup> Figures in parentheses indicated percentage respondents.

This study showed that 68% households were managing their food deficit through wage labour. The dependency on wage labour to cope with food deficit was significantly higher in Kohalpur (82%) than Kalika (53%) (table 6). Wage labour includes both skill and unskilled, but the latter was found more dominant. Apart from this, all wage labourers were unskilled based including seasonal casual paid agriculture and off-farm work in India. Mostly male member of household seasonally move to India in search of wage labour mostly when agriculture related labour are in less demand within the country. The other most striking fact was that still 11% Mukta Kamaiya were sending their children to work as a Kamlahri (domestic servant, data not presented here) in city household dwellers. There were 8% children working as Kamlahri in the studied village. Skilled wage labour includes carpentry, masonry, plumbing, driving etc. Likewise, unskilled labourers involve any sort of farming and off-farm based activities including rickshaw pulling.

#### b) Cash and Food borrowing

The second most practiced way to cope with food deficit in households across the VDCs was cash loan. The cash loan was taken from saving groups,

employers, relatives, neighbours, friends and local money lenders. Overall, 22% of households were found taking cash loan for buying food. It was significantly higher in Kalika (38%) compared to Kohalpur (5%) (table 6). Nowadays, most of the Mukta Kamaiyas are organized in the groups and one of the most important functions of group is saving and credit. The settlement of Kalika VDC of Bardiya is older than the Kohalpur, Banke hence, Mukta Kamaiya in Kalika VDC thus can be said better organized than in the Kohalpur. There was two cooperatives in Kalika, one in Tesanpur village and next one in Jantanagar. But in Kohalpur no cooperative was found however, they are organized in the group and most of the groups were not properly functioning.

Table 8 : Coping strategies of food insecure households through cash borrowing<sup>1</sup>

Source of loan	Kohalpur	Interest rate	Kalika	Interest rate	Overall
Group saving	1 (33.33)	36	11 (47.83)	36-60	12 (52.17)
Relatives/Friends	0 (0.00)	-	4 (17.39)	0	4 (15.38)
Retail food shop	1 (33.33)	0	0 (0.00)	-	1 (3.85)
Employer	1 (33.33)	0	2 (8.70)	0	3 (11.54)
Local money lenders	0 (0.00)	-	6 (26.08)	60	6 (23.08)

<sup>1</sup> Figures in parentheses indicated percentage respondents.

Households taking cash loan from different sources has been presented in table 8. Few households were also taking loan from relatives/friends/neighbours, employers and Shopkeepers. These types of loan were mostly without interest however, there might be interest in the prevailing village rule (24-36%) in case of relative and friends too. But in the studied households, there was no interest in this type of loan and seems as purposive borrowing only. They repaid back the loan by doing wage labour to the loan provider or paid cash back after earning. The lenders who provided loan were mostly the local farmers, land owners etc. They provided not only cash loan, but also food grains as a loan to the workers. This system secures the agriculture labourers to the employers during the peak agriculture seasons like rice transplanting and harvesting. It was benefiting to both employers and Mukta Kamaiya too. The other sorts of loan taken by the household were from the local money lenders. It was found only in case of Kalika where they charged up to 60% interest rate on principal.

Food exchange and food borrowing is the traditional system of managing food basket and food shortage in rural farming community of Nepal. Barter system still exists in the Tharu and Mukta Kamaiya society too. However, the food production in Mukta Kamaiya is very minimal due to the small land holding size hence, barter system and food borrowing might not be prevalent to such extent. Food borrowing was only for short period of temporal arrangement mostly from neighbours and relatives. It was found that 17% households were borrowing food. The percentage of food borrowing families were significantly higher (3 times higher i.e. 25%) in Kohalpur than in the Kalika (table 6). It was due to the fact that settlement in Kohalpur is still in land redistribution process and majority of them did not produce crops in their land.

#### c) Less eating and less preferred food

Similarly, less eating and consuming less preferred food were other ways to cope with food deficit by the Mukta Kamaiya. Less eating was very less frequently practiced by the households. The adults (parents) were the ones who used to eat less in the family. Similarly, eating less preferred food (mostly low quality rice, rice kanika viz. broken rice), maize and wheat to some extent was most commonly practiced by them.

#### d) Other coping strategies (Job and Enterprises)

There were several other food coping strategies in the Mukta Kamaiya households but these are limited to few households. Salaried jobs were the most reliable source to buy varieties of food items in food deficit period. The family members of Mukta Kamaiya were particularly employed in government security forces (military, police), NGO in field level staffs and some private companies. The jobs provided by NGOs are time bounded for short period of time. Apart from these, small enterprises and petty business were also adapted by the Mukta Kamaiyas. The small enterprises those have been commonly used to adapt by the Mukta Kamaiyas were mostly retail shops, restaurants, meat shops etc. The profits from the enterprises were marginal due to the limited capital investments. The petty business like buying and selling of livestock and agriculture products and selling in the local haatbazar and district headquarter was also found when they faced food shortage. It also reduced the economic shock to the involved households. In the studied households 22% households were found involved in salaried jobs and enterprises/business to cope food deficiency and it was significantly higher in case of Kalika (38%) compared to Kohalpur (5%) (table 6).

## VII. CONCLUSIONS AND RECOMMENDATIONS

Mukta Kamaiyas have been liberated from generations of bonded agriculture labour system in Nepal. They are solely from the Tharu ethnic group of terai region of Nepal who reclaimed and civilized the area. Their liberation has passed more than one decade but still some one quarter of Mukta Kamaiyas are awaiting for government rehabilitation programme like land redistribution and house construction support.

Due to the lengthy rehabilitation process and extremely small size of land owned by the Mukta Kamaiyas, the overall socio-economic situation, the Mukta Kamaiyas are still poor and stagnant in the development path. It is further aggravated by large family size, higher dependency and illiteracy. Large numbers of households are having limited income generating opportunities. As a result, food self-insufficiency and thus the food insecurity is more prevalent in the Mukta Kamaiyas. The food self-sufficiency was hardly for three months and it was more



severe to more than three quarters of households. The small land size had forced larger proportion of the families to adapt the off-farm activities to cope the food insecurity across the two VDCs. The calorie intake of food insecure households was quite below (1,357 Kcal/person/day) as prescribed for the region (2,144 Kcal/person/day). The depth of food insecurity was more acute in Kohalpur, Banke. The households adopt different coping strategies in food deficit condition like wage labour, borrowing cash and food, less eating and eating of less preferred food items, and salaried jobs and enterprising. Occasionally, they also sell small livestock to reduce economic shocks. Casual wage labour was the mainstay of their livelihood and coping to food insecurity but the income from this was uncertain due to seasonal availability of agriculture wage labour and limited opportunities of other off-farm sectors. Seeing the opportunities to improve the labour productivity and employment promotion, provision of skill development and enterprise development trainings are amply needed. So there is space for stakeholders to cautiously tackle with these challenges. The next policy implication for improving the food security in the Mukta Kamaia would be off-season vegetable farming in settlements near by the market/ peri-urban in private lands and co-operative farming. Similarly, in the rural areas like Kalika, livestock (goat, poultry, cattle and buffalo etc.) might be the viable enterprises both for income generation and food security. Finally, nutritional education programmes to the Mukta Kamaiyas would be additionally beneficial to improve the food behaviour and food choices in future.

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- in any length of time within a year (Shrestha, 2003). Students, domestic chores, child care, collection of wood and drinking water etc. are not considered as economic activities (NLFS, 2009).
8. Illiterate means who can read, write and do simple calculation.
  9. Informal education: Education received apart from the formal school education system. Literacy class during night and off-working period is significant in Nepal.
  10. Dependency Ratio by Age group is the number of children (below the age 16) plus elder (above the age 60) divided by the number of people aged between 16 to 60 years.
  11. Dependency ration by economic activities is the number of economically non-active member divided by number of economically active members. Age group above 10 years involved in income generation except student, domestic chores etc. are considered as economic activities.
  12. LSU is aggregates of different types of livestock kept at household in standard unit calculated by using conversion table.

#### End Notes

1. VDC is the lowest administrative unit in Nepal. Each VDC has nine wards, and in one ward there may be one or more than one settlement.
2. Government of Nepal in 2000 categorized Mukta Kamaiya into four categories based on the ownership of land and houses. The first category is red card holders who did not have any land and house. The second group is blue card holders who have did not have formal registered land but having their own house. Third one is yellow who have land less than two kattha and their own house and fourth category is white card holder who have land more than 2 kattha and their own house. Government has targeted to rehabilitated the red and blue card holding Mukta Kamaiya household under the Mukta kamaiya rehabilitation programme (MoLRM, 2009).
3. Tharu are one of the indigenous ethnic groups of terai region of Nepal. The vast majority of freed bonded labourers are from this group.
4. People of hill origin in Nepal who usually speak Nepali language.
5. Nepalese people immigrated from India in terai region of Nepal and who speaks Hindi and their own language.
6. AE is aggregate measures of family size that standardize consumption unit within the household taking age, and sex of household measures into account.
7. Dependency ratio by Economic Activities is the ratio of economically non-active members to economically active members (involved in any sorts of income generating activities) above 10 years age



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