

# Rural Urban Agriculture Market System: Challenges and Opportunities A Case Study: Eastern Nepal



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### **Abstract :**

For Nepal, still surviving on agrarian economy, agriculture market between rural and urban areas serves as the main linkage that shapes socio economic and ecological dynamics of the nation. Addressing the rural urban linkages is necessary because the phenomenon of urbanization in the third world like Nepal has been inevitable but unplanned. Since 80% of people in Nepal are farmers, it is impossible to analyze the nature of socioeconomic processes of Nepal without linking these processes to the rural – urban interactions between these farmers and the urban population. Detailed analysis of rural urban market mechanisms showed that urban markets show the potentials for the development of rural areas in Nepal. Agriculture market is the main source of agriculture income for the farmers and provides a resort even to the marginal farmers when they need cash. However local, national and transnational forces like unequal landholding distribution, governmental policies that do not provide any economic incentives and competition with subsidized products from India do not support the benefit for small farmers.

Due to high investment and low returns, the agriculture market with the urban areas alone is not able to sustain farmers and compels them to look for the non-farm jobs and migrate in the urban areas, changing the ecological and sociological dynamics of both rural and urban areas. The phenomenon like migration exerts a pressure on the natural resource of the urban areas and the villages become dependent on the remittance economy of the migrants. These rural urban mechanisms are accelerated by adverse state policies and transnational trade agreements.

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## **Chapter 1**

### **Introduction and Background**

“In crisis”, “Doomed”, “Moving towards catastrophe/ collapse” are some of the phrases that are almost always associated with the word “Nepal”. It ranks 143 in UNDP's Human Development Index (HDI)<sup>1</sup> list out of a total of 175 countries (UNDP, 2003) and is one of the poorest countries in the world economically. Underlying Nepal's geographical, social and economical positions, there are different local, national and international factors that make it difficult for the nation to break its long ongoing poverty cycle. Since the bulk of the population in Nepal is farmers, it is impossible to analyze the nature of socioeconomic processes of Nepal without linking these processes to farmers and their involvement in the agriculture market system. Agriculture market system comprises of various rural-urban linkages and the multiple forces that affect it can sometimes extend beyond the national boundaries. Detailed analysis of market systems that takes into account:

- The pre existing socio economic condition of farmers,
- Production investment details,
- Different market mechanisms that spell out the rural urban relationships
- Understanding of state policies and
- Effects of relevant external (in case of Nepal Indian) market are necessary to fully understand the forces that influence small farmers in the agriculture market.

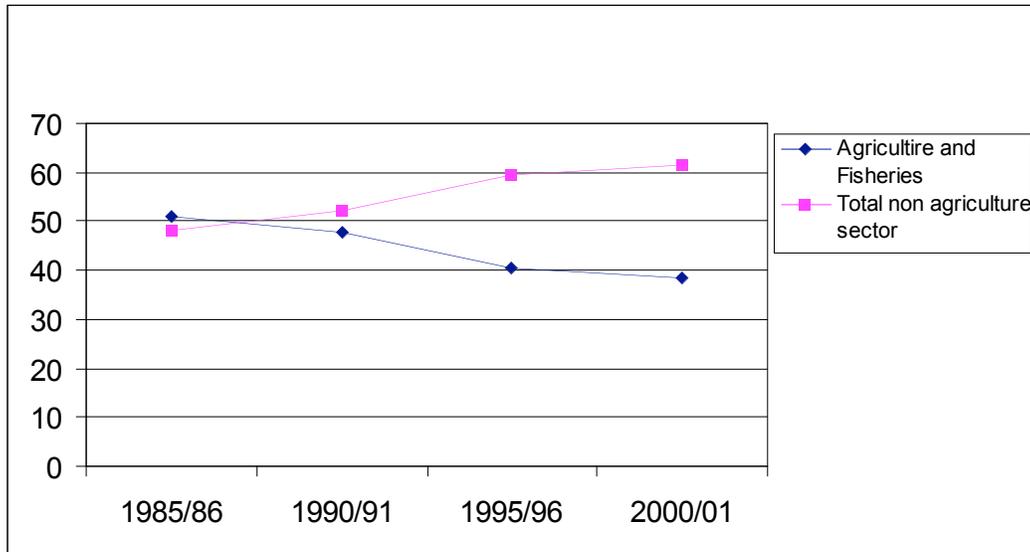
This paper is an attempt to understand the farmers in Nepal in the rural-urban market context and analyze major forces in the market system that influences their position in the agricultural market system. The interdependency between the urban areas and rural areas in the agricultural system are influenced by and exert influence on many socioeconomic and ecological dynamics on both rural and urban area. This paper, based on my findings and literature review, will specifically discuss what socio-economic effects do rural-urban agriculture market system have on the farmers. In addition it will also comment on the broad range of sociological and ecological effects that influence both rural and urban areas.

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<sup>1</sup> HDI measures achievements in terms of life expectancy, educational attainment and adjusted real income.

Nepal's population of about 20 million is still overwhelmingly rural, with 14% of the population classified as urban. The process of urbanization is increasing at a rapid rate and in less than 20 years, the GDP of predominantly non-agriculture activities like industries and service sectors have grown rapidly from 48% to 62% (Figure 1.1).

**Figure 1.1: Percentage contribution to GDP**



Source: Center Bureau of Statistics (CBS), Nepal, 2002

With the high industrial sectors, tourism business in the non-agriculture sector is growing; it is still the agriculture sector that is sustaining around 75% of population, which are classified as farmers. The rural households, especially depend mostly on agriculture for their income, most of which is retained for the domestic use. In fact only 40% of the total income is in the form of cash (Jerve, 2001). Many people are involved in subsistence farming only without any net agriculture income. Studies have shown that wage income accounts for 30% of the total rural income (ibid) and many rural households depend heavily on agricultural wage works, other manual jobs (ibid) and sometimes remittance (Seddon et al, 2002) money from migrant population to supplement their cultivation. A situation of scarcity of cultivable land compels farmers to look for other economic opportunities (Blaikie et al, 2002, Ives and Messerli, 1988). As many as 40% of farmers own less than 0.5 hectares of land (Center Bureau of Statistics (CBS), Nepal, 2002). Yet a large percentage of farmers are involved into the food markets and stand vulnerable to any fluctuations in the market. For some at the margin, even small

fluctuations in the market or crop damage in a single harvest can be a decisive factor for driving them away from farming to wage works, which exposes them to food insecurity risks.

The fact that the 50% of world's total population will be living in the urban areas by 2010 have catapulted the issues of rural urban linkages to the top concern of development as well as environmental projects. [Facilitating the rural urban linkages is one of the main agenda of United Nation Development program \(SAPPROS, 1998\) in Nepal and the state designed tenth five year plan has also expressed the need to facilitate those linkages \(CBS, 2001\).](#) The development trend of Nepal, like the rest of the third world shows increasing emphasis on commercialization of rural and periurban farming for the urban consumers (UNDP, 2000). The agriculture trade is supposed to help both the rural and urban population by meeting urban food demand and by generating income for the rural population. By creating the market for rural produces, urban areas are supposed to drive development in the rural areas and trickle down the economic opportunities. However, the economic benefits of the market system have been mixed. In some cases around the world, the market has served to increase the well being of farmers by improving economic conditions (Andreatta and Wickliffe, 2002; UNDP, 2000), while in others, it has displaced small farmers by giving rise to contract farms (Chambers and Conway, 1991;Heffren, 2002; Ellis and Sumberg, 1998). Technology input from the private and public sectors has been market based and mainly concentrated on rice, corn and wheat stimulating monoculture (Waibel and Schmidt, 2000). The use of high yielding varieties, fertilizer, and chemical pesticides has increased the production but has created well-known negative side effects on both the environment, and the health of farmers and consumers (Waibel and Schmidt, 2000). Hence it becomes very crucial to analyze the effects of the rural urban market system for farmers in a country like Nepal, given their conditions of harsh economic scarcity and survival strategies.

Nepal's geographical proximity with India and its socio economical ties with the big neighbor also have very significant impact on the agricultural systems, which can not be undermined. Some of the Indian policies like subsidies on agriculture inputs give rise to competitions in local markets for small farmers in Nepal that which determine their standing in the market economy. In addition, Nepal also imports all its agriculture inputs

like fertilizers and pesticides from there. Therefore any study of the system will not be complete without taking into account the Indian market and its influence.

Taking all these factors into account, this study will try to understand the rural urban market system in the villages and a major city of Eastern Nepal. Considering the several above-mentioned situations into account, this research will focus what socioeconomic effects do these rural urban agriculture market systems have on the farmers.

### **1.1 Study Area**

My research was concentrated on two villages namely Rangeli and Katahari and their urban market center Biratnagar. All these sites fall under the administrative boundary of Morang district in the eastern Terai region of Nepal, which is considered as the only region that has the surplus food<sup>2</sup>. The whole Terai is the “grain basket” of the nation that supplies major agricultural crops nationwide and Biratnagar is the main market zone in the Eastern Terai (SAPPROS, 1998). It gets major supply of its food, especially wheat and rice, from the surrounding villages (Pradhan, 2002). Small towns like Rangeli and Katahari that lie in close proximity to Biratnagar share an intricate relationship with it, which is underlined by complex local and extra-local factors.

Biratnagar, the second biggest city of Nepal has the population of around 166,674. It is a “semi-metropolitan<sup>3</sup>” city with urban facilities like road, electricity, hospitals, schools, colleges etc. The majority of people are involved in either business or farming and the percentage of people owning agricultural land is about 16% (CBS, 2001). Situated on the border of India, Biratnagar is an important trade center for Nepal and India and also forms an important urban market center for rural-urban market in Nepal.

Rangeli is a periurban town lying 24 kilometers east of Biratnagar region. The majority of the population here is involved in farming and the percentage of people owning agriculture land, according to government data, is about 33% (CBS, 2001). Also

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<sup>2</sup> Nepal is divided into three regions, namely Terai, Hills and Mountains. The flat Terai region is the most productive zone in the country and supplies food to the other regions.

<sup>3</sup> “Semi metropolitan” is the formal word used by the government. Kathmandu is the only “metropolitan” city. The designation is based on the urban facilities that these cities have.

situated on the open border between Nepal and India, Rangeli used to be a major trade point before the east-west highway was built. Though designated as a "village" under municipal government, Rangeli is relatively urban due to its locational advantage. It has a good road link with Birtanagar and good educational and tele-communication facility within the VDC. However, majority of the villagers are too poor to afford electricity and a vast percentage of people (70%) survive without basic necessities like pit latrines. It has, however one hospital within the VDC. With the total population of 14,951, Rangeli is divided into 8 wards. Rangeli functions as a small market center for its neighboring small villages and shares major trade relations with Biratnagar.

Katahari, joined to Biratnagar Sub metropolitan city in the eastern side, has total population of 18,782. The majority of the population is involved in farming and the percentage of farmers who own agricultural land is listed as 32% in the government document (CBS, 2001). However a significant bulk of population in Katahari rents land from other landowners and is involved in farming. It doesn't share an open border with India, but since it is next to Biratnagar, The nearest border point is just about half an hour ride. Like Rangeli, the majority of the people here have neither electricity nor the pit latrines, though electricity and telecommunication facilities exist within the VDC. Designated as the "vegetable pocket center by the government, Biratnagar is its major market. Katahari is divided into nine wards with population of roughly 2000 each.

## **1.2 Objectives**

To understand the pre-existing socio economic conditions of the farmers including the production details.

- To understand in detail the agriculture market mechanisms in Rangeli, Katahari and Biratnagar and analyze the rural and urban relationship
- To try to assess the migration pattern of farmers and understand its causes and implications.
- To understand the national and transnational policies that affect the farmers involved in rural urban agriculture market system.

## **Chapter 2** **Literature Review**

### **2.1 Rural Urban Interactions**

Much of the development debates of last four or five decades have been centered on changing the relationship between agriculture and industry, (the rural and the urban) and on the ‘correct allocation’ of the investment between two sectors (Tacoli, 1998). The policies favoring economical growth have often followed one of the two approaches. The first favors agricultural growth, which can then provide surplus for industrial and urban growth, where as the second approach argues that industrial and urban growths are prerequisites for a more modern and productive agriculture center .In the early 1950’s, development was conceptualized by increase in the size of domestic markets and the creation of inducements to invest. The modern sector would progressively encroach upon the traditional sector and the money economy over the subsistence or near subsistence (Tacoli, 1998). This idea of development through urbanization, based on assumption that innovation and modernization would trickle down to the rural areas (Tacoli, 1998) has pervaded economists’ and donors’ views for several decades and has decided the course of rural and urban development patterns in many countries. Lewis (1954) assumed that in the densely populated rural settlements in the third world, marginal productivity would be minimal and the transfer of labor from rural agriculture to the urban industries could be achieved without any change in production. However by the end of the decade, it became clear that job creation in the manufacturing sector was much lower than the expected and could not endure the fast growing urban populations (Tacoli, 1998).

Lipton, 1977, gave one of the theories in the rural urban context that was very provocative, in whose view the rural poor are dominated and exploited by powerful urban interests. With regard to the third world he wrote “ the rural sector contains most of the poverty and most of the low cost resources of potential advance: but the urban sector contains most of the articulateness organizations and power” (1977:13). Lipton’s argument highly criticized, especially for its exclusion of urban poor and rural rich, however provided a useful account of the relative flows of surpluses between rural and urban areas. More recently the attack on rent seeking, urban-based bureaucratic elites has been taken over by the neo classical economics and implemented through structural adjustment packages aiming to drastically reduce the role of the state.

Neo classical economics, underpinning IMF and World Bank reform of third world economies advocates rolled back governments and public sectors and competitive free markets determining the human capital formation, resource allocation and growth (Tacoli, 1998). Development strategies are export oriented and this, for many third world countries means export of primary commodities, including foodstuffs. It is expected that, once the distorted prices systems associated with the import substitution, industrialization and other urban biased state policies have been removed; the local agriculture production will expand (Tacoli, 1998; Corbridge, 1989). However for many small farmers, the structural adjustment has resulted in a price squeeze with the cost of agriculture inputs and consumer goods rising faster than the price of agricultures they produce (Tacoli, 1998). Government cutback in subsidies often means that only large scale farmers can buy inputs in bulk and sell in bulk to overcome high costs or can afford to sell their produce sometime after harvesting, thus benefiting from the seasonal fluctuation in price. Hence despite the goal of structural adjustment practices, the access to international markets has proved not to be equal for all producers.

A more recent and influential contribution to one positive view was the development of the concept of “urban functions in rural development” (Rondinelli and Ruddle, 1978; Belsky and Karaska, 1990) by creating small market centers. This model has been conveniently adopted by the international organizations like UNDP and UNICEF with many of their documents talking about the success of such small market centers.

Some literatures have focused on entirely different aspects of the rural and urban exploitation and benefit and profit sharing. They have questioned the credibility of the terms rural and urban, especially in some sub-Saharan countries (Ellis and Sumberg, 1998). Researchers like Veenhuizen try to draw attention to the largely ignored periurban agriculture systems. Problems in these periurban areas are mostly characterized by a lack of urban values such as lack of adequate infrastructure, services and regulations or the vanishing of ‘rural’ values like the high price of land, loss of fertile soil, proximity to core of urban area, social cohesion etc (Veenhuizen 2002). Yet their presence in the agricultural markets is very prominent (Veenhuizen, 2002). Since my research sites consists of peri-urban villages, it would be interesting learn the market mechanisms there

and leave it for later research to compare the results with market mechanisms in more remote villages.

The distinction between rural and urban territories is also insufficient to characterize some communities and overlooks the multi-layered connection between rural/periurban and urban areas. The distinction between many aspects of the rural and urban links are getting vague because of the mixed networks, for example, the maintenance of family networks across both the locations Berry (1989, 1993), the prevalence of split families in which different members take up different occupations in different locations (Livingstone, 1991; Jamal and Weeks, 1993; Heyer, 1996) and the tendency for even long-established urban households to keep a foothold in village society (Rempell and Lodbell, 1989; Pots and Mutambirwa, 1990). This might imply that rural and urban linkages may not always be tangible and the concept of rural vs. urban may not always be very clear. These linkages show the livelihoods of the urban poor and rural poor are interdependent, and flows of food and cash that occur between family members and resident of both locations. In addition the urban distribution of rural food supplies is itself a significant source of income in the urban informal sector, including the activity of markets, street stalls and street vending of prepared foods. (Hettige, 1990; Livingstone 1991). Moreover it is the urban jobs that are created in the production of agricultural implements, machinery and variable inputs (fertilizers and pesticides) and so on. On the face of the entire cross cutting factors between urban and rural areas, it is hard to determine whom the rural-urban market serves and who get exploited. Southall who has heavily criticized the emerging role of small cities consents that

“However, when there is a relatively egalitarian class structure and free access to land, and...where the stimulus to urban growth results in activity primarily by the people and for themselves...small scale urbanization may be beneficial locally.” (Southall, 1988: 5)

From the literatures, it is not really possible to determine how the agriculture markets are affecting farmers in various countries. The villages near Biratnagar have their own uniqueness, complexities and family networks that the generations of farmers have

maintained between the urban and peri-urban areas. The research will give an opportunity to study the details specific to the place and the culture and will throw light on what is working and what not for the better livelihood of farmers.

## **2.1 The Nature of Market Systems: Micro Level Geopolitics and Culture**

Urban, periurban and rural food production interact through both resource and output markets (Stren, 1986). In classic economic accounts of locations, these markets are mediated especially by transport costs and the value of land as a resource. (Ellis and Sumberg, 1998). The traditional theories talk about the economic rent and transportation rent relative to the distance from the urban centers and increasing towards it. However, real markets do not always follow the theoretical models and work differently from the competitive land, input and output markets of the location theory models. The institutional economics with its emphasis on transaction costs, imperfect information, and segmented markets is helpful in explaining many features in spread of farming in many African cities (Bardhan 1985; North, 1989; Harris et al, 1995 as cited in Ellis and Sumberg, 1998). The crucial features of competitive market model are that exchanges are replicable across geographic space and over time, under terms and conditions that are widely understood whenever and wherever they occur. By contrast, poorly functioning markets and non-market transactions are distinguished by non-replicable nature of transactions and are marked by unique and special conditions that occur in individual transactions. For the marketing system in Eastern Nepal near Biratnagar to be sustainable, the market model has to be competitive and have opportunities and advantage to farmers. Social scientists have been examining the ways to increase community support for local agriculture and local foods and to retard the loss of agriculture space and renew connection with the local agro-food system. An important part of this process is increasing interest in direct marketing, where farmers sell their products directly to consumers (Byczynski 2001). Quite opposed to that, industrialization, consolidation, and vertical integration of the agriculture and the food industry have transformed a local food system into one that is primarily global. (Bonnano et al. 1994; Goldschmidt 1947; Grey 2000; Mc Michael 1994) As a result there has been gradual increase in monoculture crop specialization and a reliance on transportation and other technologies, designed to

maximize profit with the movement of farm products. (Barlett 1993; Doyal 1985; Grey 2000; Mc Michael 1994). Some have argued that this shift has been made at the expense of small farmers, the taste of food, the integrity of the environment and the health of farmers, farm-workers and consumers (Andreatta 1998; Grey 2000) The purely economic policies, like cutting off the subsidies of farmers have found their way to the farmers of the third world region in Africa and South Asia and have very real local implications.

The simplest view of a direct marketing relationship is that consumers and farmers are motivated primarily by economic considerations, consumers seeking the lowest priced food and the farmers seeking the highest return on their labor and investment. If the market mechanisms occur through the ‘middlemen’, who are necessary in some circumstances, they share a portion of economical benefit too. However some market mechanisms do not serve the interests of all the parties and benefit one of the parties involved. My research will analyze how market system functions in eastern Nepal and whether the benefits are equally shared or not. The economics of the situations are, however, only a part of the story. Food choice and growing practices are highly dependent on cultural as well as economic factors (Andreatta and Wickliffe, 2002).

Besides the shift in agriculture patterns, the rural and urban labor markets gives rise to complicated effects of migration and a sense of good opportunities which is not always true (Alf Morten Jerve, 2000). As Weibel and Schmidt, 2000 write, “migration decisions are based on perceived costs and benefits with a strong tendency to overestimate the latter. One successful rural migrant visiting his former village will attract numerous others who have only a slight chance of achieving their desired level of economic success in the city.” Migration, from rural to urban area and from one country to another country, can be a means to many rural farmers to sustain their livelihoods. It is a significant linkage between the rural and urban areas that is connected with agriculture productivity, which subsequently affects the agriculture market. Linkages like these are the means through which people who live in rural areas obtain access to service facilities, infrastructure and production activities located in market town. Linkages describe the pattern of physical, economic, social and organizational interaction among market towns as well as those between market towns and rural areas surrounding them (Rondinelli, 1990).

There are several types of rural urban linkages. Rondinelli (1985) cites seven different types of linkages namely:

Physical or spatial linkages (road, water and air transport network, ecological interdependence)

- Economic linkages (market structure, raw material and intermediary good flow, backward and forward production linkages, sectoral and interregional commodity flow, cross linkage)
- Demographic or population movement linkage (migration, journey of work)
- Technological linkages (technology interdependencies, irrigation and telecommunication system)
- Service delivery linkages (credit/ financial and extension service network, education , health and other rural service delivery system etc)
- Social interaction linkages (visiting, kinship pattern, religious activities and social group interactions) and
- Political administrative and organizational linkages

By discussing the various forces involved in the market system, this paper will emphasize the economic, demographic and political linkages that are not only confined to the rural and urban area of Nepal but also are pertinent in the relationship between India and Nepal.

## **2.2 Trend of Urbanization in Nepal**

ICIMOD (2001) publication on the Markets Towns in the Hindu Kush Himalayas- Trends and Issues (se ref) gives historical perspective of the growth of urban towns in the region and their overall implication in the Hindukush region including Nepal. Manandhar et al in this book reveal that the existence of towns in the Kathmandu Valley dates back to the *Lichhavi period* (100 BC to 1000 AD). By the eleventh century, three principal settlements in the valley were being referred to as capital towns. Outside the valley, only a few settlements were mentioned as having had urban functions (GIC 1983).

Nepal was divided into small principalities during the medieval *Malla period* (1258-1768 AD). The capitals of these principalities were loosely nucleated settlements amongst scattered peasant homesteads. A few among these later developed into larger settlements with urban characteristics. The most important impulse for urban growth during this

period was the entrepot trade centered in the Kathmandu Valley. Some settlements along the trade route to Tibet also developed into market centers. However, localities away from trade routes did not develop into larger settlements because of the low agricultural production of the rural hinterland.

In the mid-eighteenth century, when the country was unified, there was an increase in the size of several existing settlements. New settlements were developed as a consequence of the institutional apparatus required locally collecting revenue and recruiting troops (Seddon et al. 1979). These settlements, which were initially created for fortification, later provided embryonic structures around which many small towns developed. They drew their inhabitants, not from the surrounding countryside but from more distant parts with the construction of transportation roads (Caplan 1975). However, there was little marketable agricultural surplus; so, many of these settlements could not grow and remained merely locations for the collection of revenue (Blaikie et al. 1977; Seddon et al. 1979).

Throughout the nineteenth century (Rana period), towns in the hills developed slowly. They remained centers for artisans, petty commodities, and craft production and trade. Most of the people permanently employed were state officials. Even indigenous petty commodity and craft production started to decline with the introduction of industrial goods from India by the early part of the twentieth century. In the process, hill towns ceased to be center of production and functioned merely as distribution centers for foreign goods.

The extension of the Indian railway network to the Nepalese border greatly affected the urban development process (Sharma 1989). Many of the palaces where the Indian railway reached later developed as significant urban centers. With the increasing trade relations with India in the 1920s, a number of towns developed at the railheads or break-of bulk points. These towns also facilitated the extension of the Indian influence, which was seen in the growth of towns in the foothills of the Terai.

The trends of urbanization after 1950 have been recognized officially. The census of 1952 listed 10 localities as 'towns' with populations of over 5,000. The Terai had five such settlements and the other five were in the Kathmandu Valley. Seven of the 10 urban places were really small towns with a population size of less than 20,000.

In 1961, a total of 16 towns were recorded, nine of these were in the Terai. Twelve of the 16 urban places had a population size of less than 20,000. The population in these 12 towns comprised about 29 percent of the total urban population. The 1971 census recorded again only 16 urban places, nine of which were in the small town category. About 22 percent of the urban population lived in towns with less than 20,000 people. In terms of the number of urban places, Nepal was predominantly a country of small towns until 1971.

In 1981, a total of 23 Nagar Panchayats (or municipalities) were recorded. Seven of the 23 urban centers belonged to the small town category but the proportion of urban population in these towns was less than 10 percent. Although the definition of urban places effectively excluded most small towns, the 1981 census showed that nearly 48 percent of the urban population was in towns with populations of between 20, 000 and 50,000. Most of these urban places were in the Terai.

**Table 2.1: Number of Town/Cities Town and Cities in Nepal during different Consensual Period**

Census Year	Number of Towns /Cities	Share of Urban Population		Population Growth Rate/Yr (%)	Remarks
		Population	Urban Pop. (%)		
1952/54	10	232,400	2.8	6.38	5 in Terai and 5 in Kathmandu Valley
1961	16	336,222	3.6	4.47	8 in Terai, 3 in Kathmandu valley and 5 in Hills
1971	16	461,938	4.0	3.18	
1981	23	956,721	6.4	7.28	14 in Terai, 3 in Kathmandu and 6 in the Hills
1991	33	1,695,719	9.2	5.90	20 in Terai, 3 in Kathmandu valley and 10 in Hills
2001	58	3,227,879	14.0	9.04	29 in Terai, 5 in Kathmandu Valley, 22 in the Hills and 2 in the Mountains

**Table 2.1: Number of Town/Cities Town and Cities in Nepal during different Consensual Period**

Source: Compiled from "A Compendium on Environmental Statistics 1998, Nepal, CBS 1998 and Population Census 2001.

The 1991 census recorded 33 places as urban; 9.2 percent of the total population. There were 14 small towns. Although many of these were small towns, the population figures were inflated to bring them to the urban category by substantial over-bounding. By now 58 areas are designated as urban which, has a combined population of about 3.2 million or 14 percent of the population, according to 2001 Census. The population

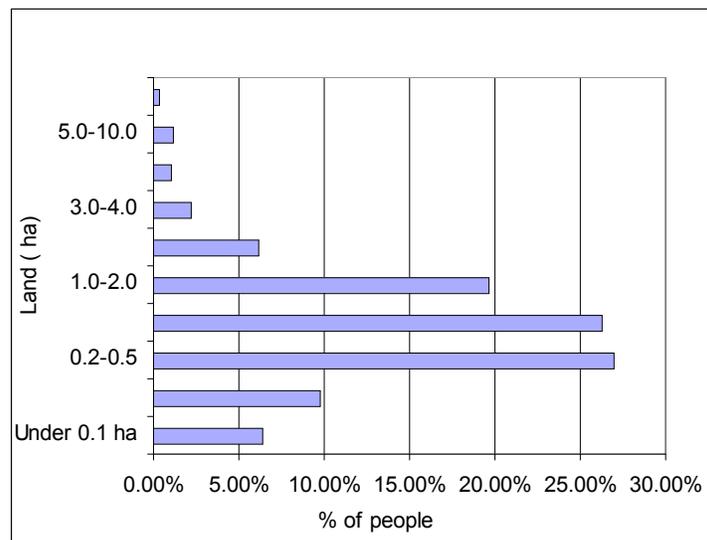
density of Nepal is really high at 154.48 people per square kilometer in an aggregate. For urban population however, it almost 6 times higher at 985.31 people per square kilometer (CBS, 2001).

The regional distribution of urban centers is quite uneven. Of the 58 centers, only two are in the mountains. Of the remaining 56, 27 are in the hills and 29 in the Terai. The distribution of urban centers suggests the relative development of facilities in these areas. Terai, especially the eastern part is considered richer in terms of its agriculture productivity, and is the only region capable of marketing its agricultural surplus. In contrast, the mountain and hills are the “food deficient” zones, which have to import food (APSD, 2002). However, this distinction is not clear-cut as there are many households that import food from India and also the Terai region imports food from India together with export.

### **2.3 Farmers in Nepal and their Involvement in Agriculture Market System**

The farmers, by far the largest sector of population in Nepal, although remarkably independent in terms of owning their own land, have become increasingly dependent upon the market system. (Blaikie et al, 1983,2000). About 17% of the land is cultivated in Nepal, around 33% of land is still forest and most of the rest is mountainous areas (CBS, 2001). Most of the farmers of Nepal have a very small landholding amounting to 0.96 hectares in average. Almost half of the landholdings are less than 0.5 hectares and almost 70% are below 1 hectare.

**Figure 2.1 Landholding capacities of farmers in Nepal**



Source: CBS, 2001

The landholding capacity however varies in different region, especially because of their political history of land grants (see .....). In the Terai the percentage of people owning more than 3 hectares of land is very little.

**Table 2.2: Landholding capacity in Nepal (with respect to regions)**

(in percent)

Region/holding	0-0.5 ha	0.5-3.0 ha	> 3.0 ha
Mountains	39.3 (13.8)	54.5 (56.7)	8.5 (36.7)
Hills	48.4 (15.9)	50.2 (68.6)	21. (15.3)
Terai	43.1 (21.1)	45.3 (65.9)	1.6 (13.0)
Nepal	43.8 (14.3)	51.5 (59.0)	4.7 (26.5)

Note: Figure in parenthesis is proportion of farmland

Source: CBS, 1993

As ADB noted, one of the prominent characteristics of small farmers of Nepal is the small landholding, together with the following factors

1. A high man-land ratio
2. Great disparity in land ownership
3. High, debilitating rentals
4. Declining forage base
5. Inadequate dissemination of new techniques
6. Ineffective extension services

7. Lack of timely availability of inputs
8. Weak institutional support for small farmers
9. Deteriorating environment
10. Declining soil fertility and reduced yields
11. Reduced availability of the full range of forest products.

These characteristics however vary in different places and are affected by different natural and socio-cultural factors. To these factors, must be added the increasing control of agricultural raw materials from across the open border with India, lack of input of institutional support structures, and especially a lack of demonstrable encouragement to and sincere appreciation and understanding of farmer-based solutions (Ives et al., 1992).

“It is necessary to draw on some work in Marxist tradition on non capitalist social formations in order to be able to construct a history of Nepal; for Nepal although affected in important ways by its incorporation with the world’s economy over the past two centuries nevertheless remains a predominantly non capitalist agrarian society with a distinctive internal dynamics” (Blaikie et al., 2002). Nepal, in this regard provides a somewhat unique agrarian society, which has consistently failed to emerge into a large-scale capitalist mode of production.

Blaikie et al. have divided production modes of Nepal into three categories, listed in table on next page. The modes of production have been divided based on following characters:

1. Social relations of production;
2. Relations to the market;
3. Use of surpluses;
4. Receipts of non-agricultural income.

**Table 2.3: Characteristics of forms of production**

<b>Characteristic forms of Production</b>	<b>Relations of Production</b>	<b>Relation to market</b>	<b>Use of surplus</b>
Peasant or domestic	Predominantly within household and between kin, Use of female and child labor. Reciprocal exchange of labor between households of broadly comparable economic	Formal, non-market patron-client relations with occupational castes (blacksmith, tailor, etc). Consumption requirements of items, which cannot be produced in the household	Surplus redistribution (gifts, un-recalled loans). Frequently households, current budgets balanced therefore no regularly produced surpluses and no continuous accumulations.

	standing.	purchased by small cash sales of surpluses. Something larger cash sales for anonymous market. Production levels related to consumption targets through price mechanisms.	
Semi-feudal	Particularistic. Tendency to have more “permanent” labor. Tenants and sharecroppers.	Sale of produce low per unit or production because of characteristic use of surplus. Consumption standards for owner of means of production often requires considerable purchases of status-conferring goods	Large surpluses of some households are distributed to kin, household servants, and sometimes village. Conspicuous consumption.
Capitalist	Casual labor for wages (payment for work done), or substitution by machinery under control of employer	Sale of produce to anonymous market. Production for exchange dissociated from consumption demands.	Reinvestment in productive capacity with or without rise in consumption

Source: Blaikie et al, 1980

The distinctions could still be made, with some alterations: semi- feudal relations are declining with time, there is more involvement of small farmers, especially those without any non agricultural income, and surpluses under almost all circumstances are sold to the market.

Though most of the farmers are involved in production for the market through a series of parallel case studies of specific commodities. They concluded that although a wide range of possibilities appeared to exist (the production of cattle and small stock for sale, ginger (both fresh and dried), tangerines, paddy, ghee (clarified butter), cardamom, and other products which enjoyed a comparative advantage over plains areas), very few offered opportunities for sustained accumulation and re-investment. Instead, they amounted to little more than an opportunity for petty commodity production, and provided small amounts of income mostly for direct consumption purposes (Blaikie et al, 2002).

## 2.4 Trade Relations Inside and Outside the Border

Though Nepal has trade relations with several other countries, the major trades, both import and export occurs between India and Nepal.

In 1995/96 Nepalese exports have increased by 6.7 percent as compared to previous year totaling at Rs 14,580.7 million. India accounted for 2990.4 million of the

total exports, an increase by 18.7 percent. Third country exports during the period increased by 19.5 percent to Rs 11,590.3 million. In the first nine months of FY 1995/96, Nepalese imports reached Rs. 54,952.6 million, a growth by 19.5 percent over the period of previous year. Imports from India increased by 27.3 percent to Rs 18927.9 million, While imports from third countries grew by 15.8 percent to reach Rs. 36024.7 million. In FY 1994/95, Trade deficit amounted to Rs 47,647.7 million. During the period net income of service amounted to Rs 23565.2 million and transfer net income amounted to Rs. 10708.8 million and current account deficit stood Rs 13,373.7 million. The deficit (net) of Rs. 4106.7 million. Eventually balance of payments deficit stood at Rs. 462.3 million.

**Table 2.4: Export Commodity**

	Country	Commodity	Value in '000 Rs.
Export	India	Pulses, Vegetable seeds, Large-cardamom, Ginger-Dry and Fresh Fruits and vegetables	650800.00
	Bangladesh	Tomatoes, Lentil, Fresh oranges, Fresh apples, Radish, Seeds.	886458.00
	Overseas	Dried mushrooms, lentil, Coffee, Coffee Beans, Black tea, Cardamom, Radish seeds, Niger seeds.	123621.00
Import	India	Pulses, Fruits, Milk powder, Tea, Sugar, Vegetables.	1293500.00
	Overseas	Coffee, Green tea, Processed fruits, green and Dried Ginger, Sunflower seeds, Lentil, Garlic, Dried onions, Dried peas, Pepper.	654132.00

Source: CBS, 2002

The following is the government figure of the trade with India that lists the increasing the trade deficit over the years.

**Table 2.5: Nepal's trade with India**

Figures in Million NRs						
	1996-97	1997-98	1998-99	1999-2000	2000-2001	2001-2002
Nepal's imports from India	24853.3	27331.0	32119.7	40928.4	45211.0	45364.5
<b>Nepal's exports to India</b>	5226.2	8794.4	12530.7	22618.2	26030.2	28864.9
<b>Trade balance</b>	-19627.1	-18536.6	-19589.0	-18439.4	-19180.8	-16499.6
<b>% Change</b>	-5.2%	-5.6%	5.7%	-5.9%	4.0%	-14.0%

Source: Nepal Rashtra Bank, 2002

While these figures suggest that there is an intricate dominance of imports from India, it does not give a complete picture, because it does not take into account the

significant trade that occurs illegally because of the open border. Ives and Messerli, 1988 also argue that the increasing control of agricultural raw materials from across the open border with India, deprives Nepal of potential industrial growth, as well as an extensive loss of revenue due to smuggling and illegal transfer of products. Blaikie et al. used the center and periphery concept as a part of the dependency theory to explain the relation between India and Nepal. These concepts were widely observed in the 1960's and 1970's to develop the phenomenon of exploitation and domination of underdeveloped countries. Applying it to the case of India and Nepal is possible, as long as it is recognized that the relationship is not simply between two spatially defined regions one dominating and exploiting the other, as the terms may imply, but between complex structures representing similar socio-cultural sharing but conflicting political and economic interests. These political and economical interests might be different not only between the 'center' and 'periphery' but within the center and the periphery as well.

While talking about the "dependency theory" and the attempt of political and economical hegemony by India, it is also important to discuss the source of stability that India provides to large sectors of Nepalese, especially the peasants. In total there are about a million (NLSS survey estimate) migrants from Nepal in India, working for cheap manual jobs. This is the figure of both seasonal and permanent migrants. The rural remittance helps to sustain many rural communities (Dixit Kunda, 1997, Seddon et al, 2002). Though not explored in depth by academicians, researchers and policy makers alike, the rural population of Nepal consists of "farmers", whose livelihoods are sustained by a wide variety of activities and income sources, many of them not only "off" their own plots but outside migration altogether (Seddon et al, 2002). Studies of far-western town, especially Bajhang has reinforced the fact that some villages do survive from the remittances. While the Nepal Living Standard Survey has reported that remittances report that the rural remittances now contribute to over 25% of the household income to nearly a quarter of all households, Seddon et al. have estimated that over 1 million Nepalis working abroad might be contributing about 15 and 20% of the Gross Domestic Product of the country.

The effect of this trade dependence and remittance flow from India helps shape a picture of rural Nepal. It helps to prevent chronic shortages of food security and gives a

way out and at the same time, with very little pay ensures that the poverty cycle perpetuates year after year.

## **2.5 The Rural Farmers and Urban Nobleman: History of Urban Rural Relations**

“The role of peasantry in the past political economy has been to provide the bulk of the surplus to the ruling aristocracy” (Blaikie et al, 1980). It is necessary to look at the past situation of the farmers and their relationship with the ruling classes to understand the dynamics between the state and the farmers. “Historically the role of the state in Nepal has been to maintain internal security and to appropriate, in the form of taxes, sufficient of the surplus produced by farmers and others, sufficient of the profits made by traders to assure the continuous prosperity of the ruling classes and maintain the minimum necessary state apparatus”(Blaikie et al, 1980)

Under the Ranas<sup>4</sup>, as under Shah kings of Gorkha before them, the superior amenities of Kathmandu and the primitive state of the rest of Nepal caused the ruling class of Nepal to adopt a mode of government which permitted them to remain in Kathmandu and enjoy its amenities, the practice which continues in the democratic Nepal even today (Blaikie et al, 2003). Though the resource distribution and rich poor gap has been a major problem of Nepal for decades,

“ The rulers were absentee landlords in the Terai, the income from whose forests and lands they derived through the intermediaries such as local landlords (jamindaars) They were also absent from the hills from where they drew manpower in the army. The provincial governors, revenue or judicial officials who represented the Kathmandu-based government, seldom came from the highest echelons of the aristocratic hierarchy. The hinterland was mainly assessed in terms of periphery. This divorce between center and periphery was not terminated even after the 1950 “revolution”(Malla and Rana, 1973)”

This division, if anything has increased dramatically over the years. While places like Kathmandu and Biratnagar is more or less a “modern” city, with internet café’s in every two blocks and international + national NGO’s at every third block, the rest of Nepal like Rangeli and Kalahari lag far behind, in “modernity” as well as affluence. Originally pre-eminent by virtue of its agricultural richness and its strategic position on

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<sup>4</sup> “Ranas” were the rulers in Nepal, for the period of 107 years, with passive monarch. The oligarchy of Rana regime ended in 1950 by people’s revolution, however all the power was controlled by the monarch in the partyless Panchayat era in 1960.

the long distance trade routes, Kathmandu became the center of wealth and power in Nepal through the location there of the central state apparatus and the government, by means of which the king and the ruling class were able to control the appropriation, distribution and allocation of such resources as were available to the state (Seddon et al, 1987).

In terms of development expenditures, both foreign based and domestic, a disproportionately large part of the total investments has gone to Kathmandu and surrounding areas and to a lesser extent to the Eastern Terai. This has created an economic heterogeneity in the country and a huge gap between the resources of rural and urban areas (Malla and Rana). Basic services like education, health care, toilets differ a lot in rural and urban areas. The rural and urban gap is very much visible in the comparative life styles of these areas. While people in the cities like Biratnagar and especially Kathmandu, enjoy better infrastructure, transportation and education facilities, and people in villages live without the basic daily needs. The numbers of households without toilets or pit latrines in Rangeli, for example is recorded as 57% of the total population and it is just twenty-four kilometers from the second biggest city.

This gap in the lifestyle and the feeling of “backwardness” and centralized national economy and politics alienates the farmers further from the sense of empowerment, authority and the voice in central level government (Gupta, 1989). This gap may also be the reason why none of the government’s programs and policies bears resemblance to the actual needs of the people.

## **Chapter 3 Methodology**

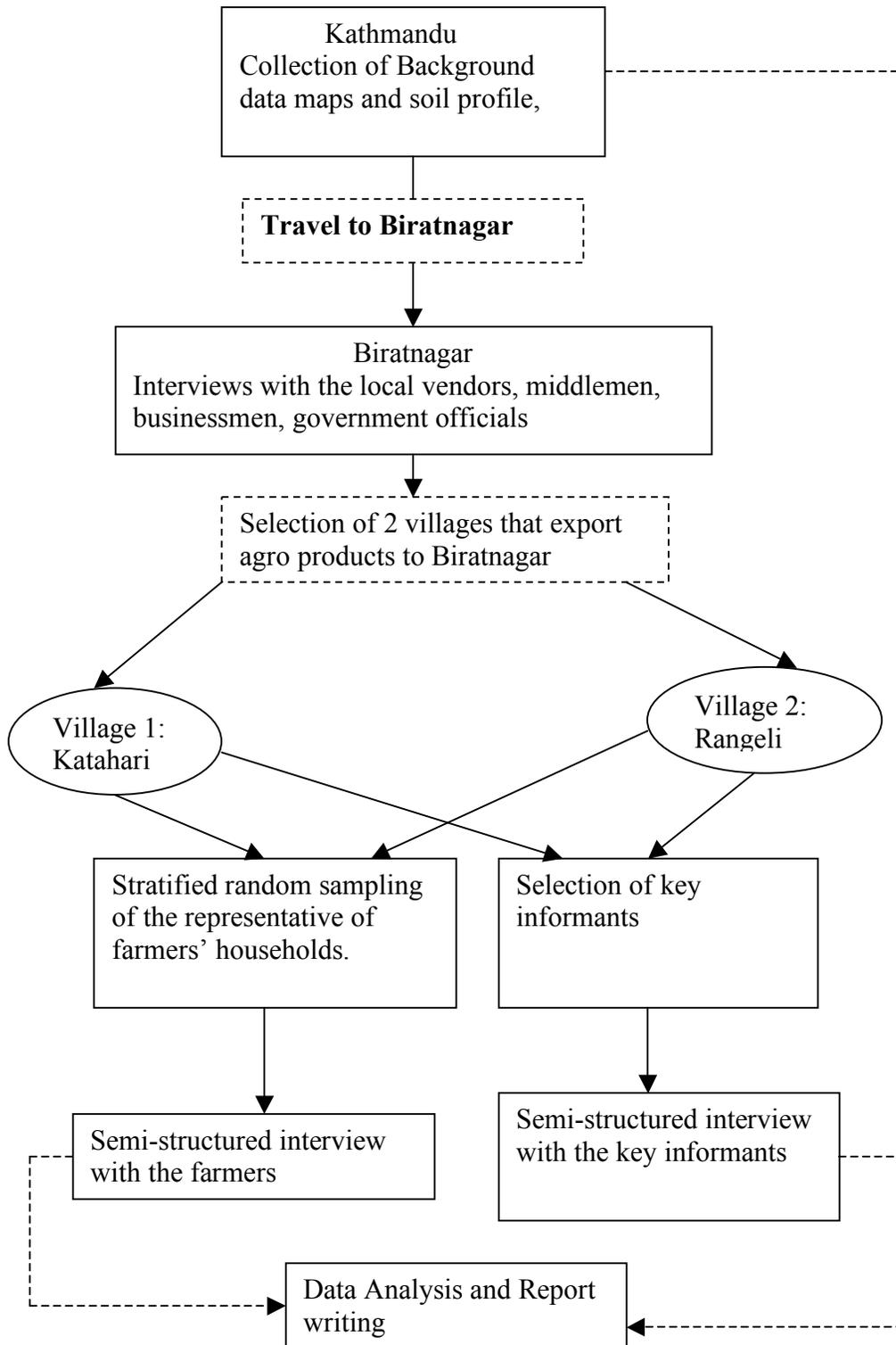
The steps followed for the research can be seen in the schematic diagram presented in Figure 1. The research is primarily explorative and hence it is mainly based on the semi-structured interviews with randomly selected sample of 96 farmers from Rangeli and 78 farmers from Katahari. The two villages namely Rangeli and Katahari were selected based on frequent agro-product flow between these periurban villages and Biratnagar. Rural Urban Partnership Project (RUPP) working with farmers for micro credit project helped in the identification of possible villages for the study and helped me in building contacts with some of the farmers from the two villages. Similarly 12 middlemen who were involved in selling rice, wheat and other agro-products to the urban businessmen and 6 involved in selling vegetables. 7 urban businessmen were interviewed from Biratnagar involved in the processing and marketing rice and wheat.

Informal interviews were conducted with different government officials in Biratnagar, Rangeli and Katahari. The list of the governmental officials interviewed will be provided in the annex.

### **3.1 Interviews**

Interviews with all the villagers were taken by a research and myself assistant hired from Birtanagar. Most of the interviews were taken in Nepali and some in local language, Maithili, which I could comprehend but couldn't speak. The interviewees too could understand Nepali in most of the circumstances.

**Figure 3.1: Schematic diagram of the methods of Field Research activities**



Using an ethnographic, exploratory framework, semi-structured questionnaires were made and revised several times during the research depending upon the interaction with the farmers and their responses. The inputs from the staff of RUPP also helped me to revise the questionnaires. For better statistical analysis questionnaire survey were also taken from a large numbers of farmers. Most of the conversations were an hour long or more and the questionnaires surveys took nearly half an hour. The interviews were taken mostly in farmers' houses and some in teashops and fields. The interviews were randomized by taking samples from every 6<sup>th</sup> or 7<sup>th</sup> household, according to the population of the ward. As mentioned earlier, Rangeli has 8 wards and Katahari has 9 wards. The population in each ward was roughly 2000 each. Some people were also interviewed in teashops where they gathered for the morning meals and also in the fields.

The interviews with the middlemen and urban businessmen did not follow any specific structures, though basic questions asked to them were similar. Those interviews did not follow any specific structures and were mostly open ended with some general and specific questions regarding their involvement in the market. Sample of such questions are also provided in the annex. The interviews with the government officials were taken for further insights, confirmation and background data.

The questionnaire lists and samples will be provided in the Annex.

### **3.2 Respondents Profile for farmers**

Most of the respondents were males with only 10.3% of female respondents. It was anticipated, as it was mostly male members of the family who dealt with the agricultural markets and traded the products. Though women were involved in primary local markets, they couldn't give the amounts of their income from selling various crops. The age of respondent was about 40 in general with most lying between 30 and 50. It was also anticipated for the similar reason as previous: it was mostly the responsible head of the family, either the father or the older sons who controlled the market systems. Among the respondents, 29.3% were illiterate, 21.3% were able to write and read and 32.2 % finished the secondary school. About 10% of the respondents were either studying in college or had finished college.

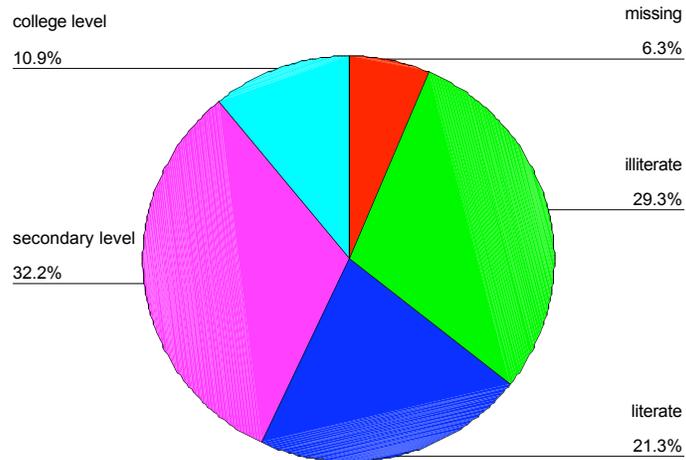
**Table 3.1 Age and family size of the respondent**

	Total (n)	Mean	Std. deviation	Minimum	Maximum
Age of the respondent	167	40.2	15.067	18	40
Family size	150	7.13	3.330	2	26

**Table 3.2 Gender of the respondent**

Gender	Frequency	Percent
Male	156	89.7
Female	18	10.3

**Figure 3.2: Education level of the respondents**



### 3.3 Secondary Data Sources

Secondary data were obtained from different governmental and non-governmental organizations working in Rangeli, Biratnagar and Kathmandu, which are listed in the appendix.

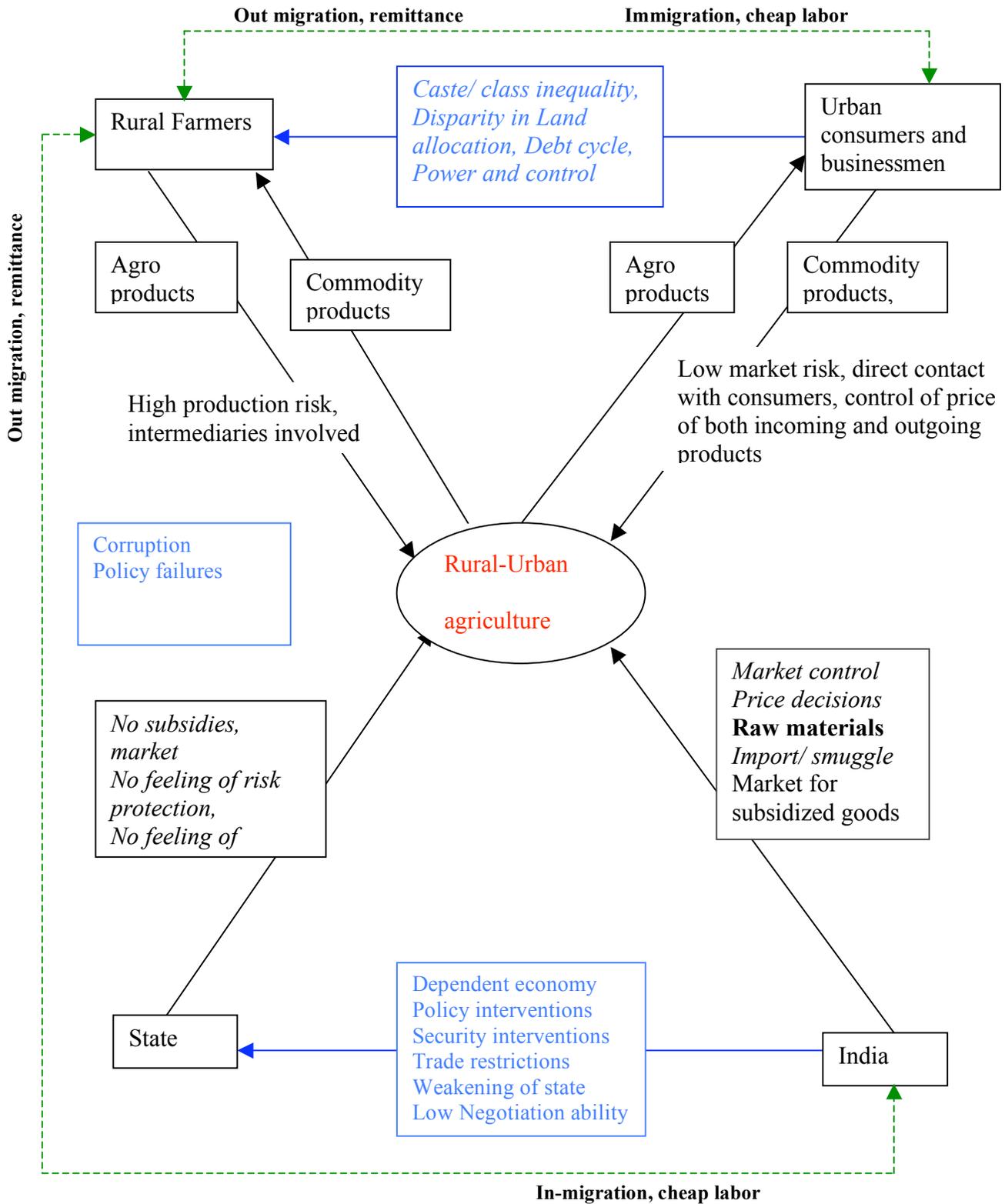
## **Chapter 4**

### **Results and Discussions**

The farmers of Rangeli and Katahari involved in the agricultural market system were affected by various interactions contingent to the market system. Alongside the land distribution, rural urban interactions and some inequalities in the market system, farmers shared an intricate relation with the policies of the state and with Indian policies. The geography of the country, without its access to sea has always played a great role in its trade relationships, structural change and has been a key factor in determining its relationship with the outside world.

The flow chart (Figure 4.1) might help to understand all the linkages that affect the market either directly or indirectly and exert an effect on the socio economic lives of the framers. The flowchart tries to show various complex interactions that bear effects on agriculture market systems. An average farmer in Rangeli and Katahari mentions all three forces namely urban businessmen, state heads and business relations with India while asked about the simple farming or marketing procedures. Urban centers and India not only provide the markets but also influence production by supplying necessary raw materials and equipments.

**Figure: 4.1 Flow chart showing complex interactions in rural-urban market system**



Source: Field study, 2003

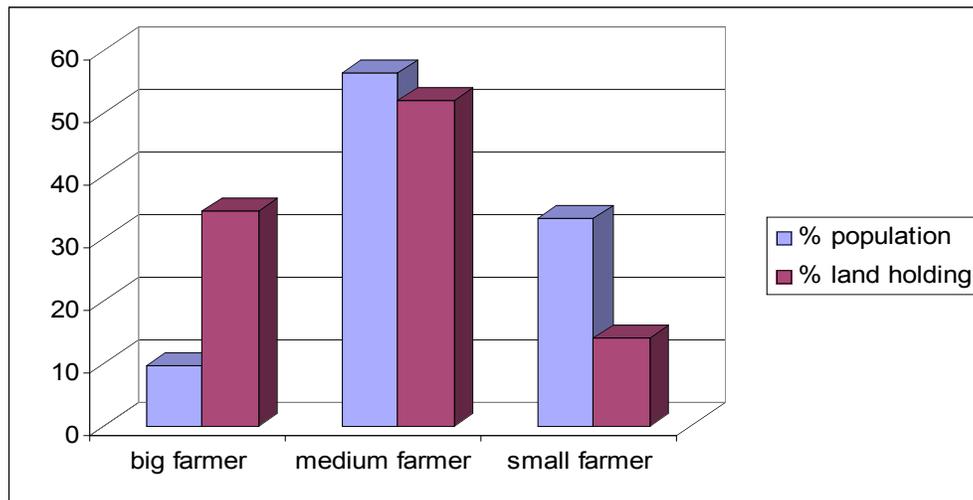
## 4.1 Existing Socio-economic conditions and determining factors at local level:

### 4.1.1. Landholding

At the local level, it was observed that landholding was the major factor that determined the socio economic status. It determined the types of cash- crop the farmers plant, proportion of food retained for self-use, their capacity to invest on the production and finally their agriculture income. Though here landholding is taken as a local factor, the land tenure and land distribution is of course based on the state history, policy and legislation. It has however very locally visible impacts that determine the daily lives of the rural farmers.

The landholding of farmers of Rangeli and Katahari averaged around 4 Bigha or 2.64 hectares, which seemed much higher than the national average of around 0.96 hectares. Around 32% of farmers also rent the land from the farmers, which was jointly calculated in the landholding. The land distribution was heavily skewed in favor of some big farmers, pulling the average landholding up to 4 bigha (80 Kattha), much higher than the national average of 0.96 hectares. The small farmers in average had 1.3 bigha of land. The top 9% of the farmers controlled about 34% of the land, while the lowest 33% controlled just 13.8% of the total land.

**Figure 4.1: Land distribution**



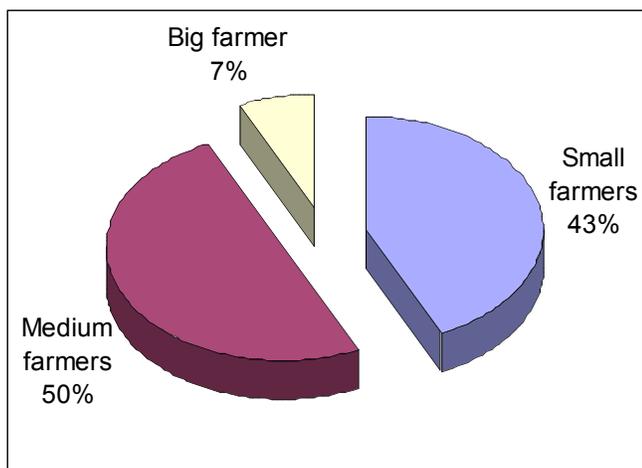
Source: Field study (2003)

For the convenience, according to the land holding the farmers have been categorized into three classes in this research:

- Small farmers: with landholding of 2 bigha<sup>5</sup> or less
- Medium farmers: with landholding of 2-10 bigha
- Big farmers: with landholding of more than 10 bigha.

The percentage of the farmers according to the landholding is given below:

**Figure: 4.2. Percentage of farmers according to land distribution in the sample villages**



#### 4.1.2. Production modes

The farmers of Rangeli and Kathahari didn't show any significant difference in the statistical tests<sup>6</sup> and hence will be addressed collectively as a group. The production and sale of the produce by most family of farmers in Rangeli and Kathahari are comprised of activities that demands some labor from the whole family. Almost everybody, except little children, worked in the farm or work for the farm directly (in the fields) or indirectly (buying raw materials, selling in local markets) among both small and big farmers. The average size of family of farmers is around 7. It should be taken as the size of either nucleus or joint family living in the same house and consequently sharing the outputs of farming.

- Majority of farmers in Rangeli and Kathahari are subsistence farmers, involved in growing rice and wheat, which is also used for self-consumption. Plantation of cash crops depended mainly on landholding and the ability to invest.

<sup>5</sup> 1 bigha = 20 Kattha = 0.66 hectares

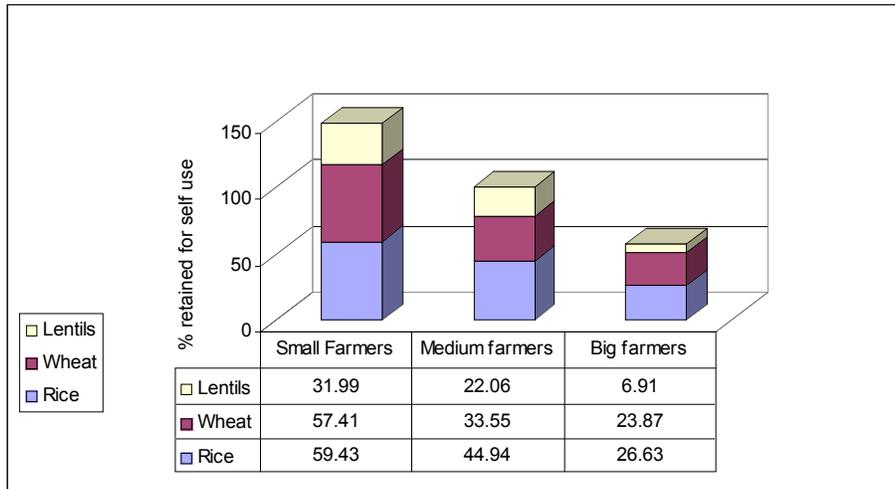
<sup>6</sup> Multivariate analysis was performed on the data which showed that there is no statistically significant difference between these two villages.

Landholding also determined the percentage of the subsistence crops retained for self-use and sold in the market.

The figure on next page gives the percentage of rice, wheat and lentils planted by farmers with different landholding.

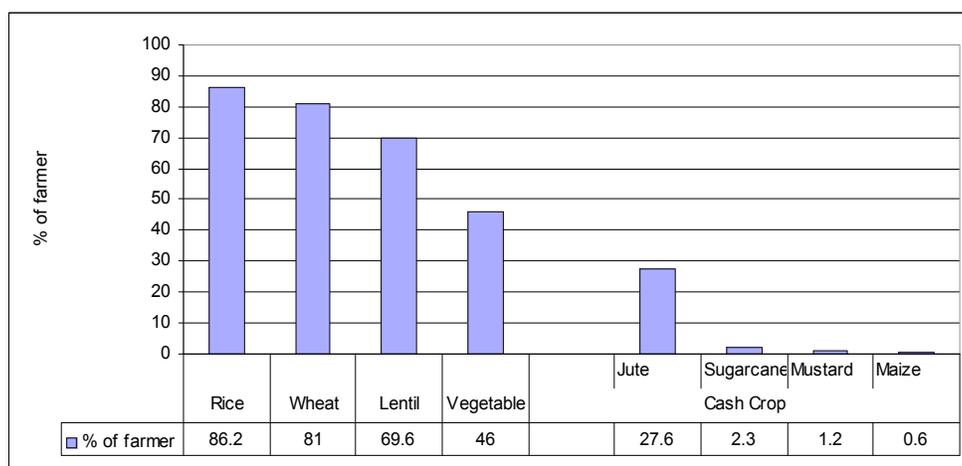
Small farmers plant vegetables for the commercial purpose. Some big landowners plant sugarcane in this area as major cash crops. Rice is normally planted as a single crop but wheat is grown together with legumes like lentils, displaying the indigenous knowledge acquired by age-old farming practices. Though maize is a very common crop in Terai, in my sample only 0.6% of the respondents planted it, the commonest reason being unsuitable soil for maize production.

**Figure 4.3: Proportion of subsistence crops retained for self-use**



Source: Field study (2003)

**Figure 4.4: Cropping Pattern**



Source: Field study (2003)

The production pattern is highly labor intensive and mostly uses traditional method of ploughing using bullocks. In contrast to that, the use of improved seeds for staple crops, especially wheat is very high. In the Terai region, the usage is highest (Table 4.1.) probably because it is the most productive region of the country.

**Table 4.1 Usage of local and improved seeds for rice, wheat and paddy cultivation**

	Rice (percentage)		Wheat (Percentage)		Maize (Percentage)	
	Improved	Local	Improved	Local	Improved	Local
Terai	83	17	99.87	0.13	95	5
Nepal	79.27	20.73	92.93	7.07	78.08	21.92

Source: Compiled from Statistical Information on Nepalese Agriculture, 2002

This finding differs from the finding of Blaikie et al. who said that the usage of improved seeds for improved seeds is very low, only around 10%. The cause of that might be the difference in definition of improved seeds. The respondents I interviewed said that they used “improved seeds” or “*unnat jaat*” which corroborated with the government’s term.

Similarly improved or hybrid seeds are used for vegetables, especially tomatoes and potatoes. The difference between using improved seeds for staple crops and for vegetables is significant because farmers normally don’t invest on improved seeds yearly for rice and wheat, while for vegetables seeds are big investments. While using improved seeds is basically an economical decision, some land was generally devoted to the rice of their choice, mostly Basmati based on its taste.

Ownership of machinery is very limited, though their use is quite frequent. Tractors are owned by less than 1% of all farms and pump sets by less than 3% in the research area. The ownership of machineries in Nepal differs a lot in various regions. A report of National Living Standard Survey, for example reported that in Western Terai, almost 10% of the farmers owned the pump sets. However, most farmers hire the machineries like pumps and tractors. Some farmers use both bullocks and tractor for ploughing. Tractor was thought more efficient but more expensive.

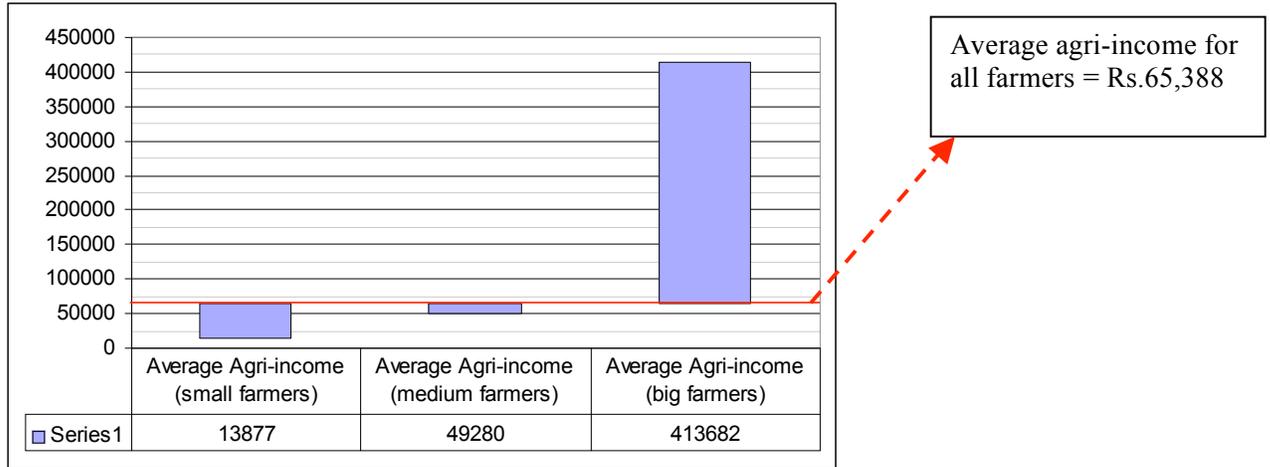
Fertilizer use on staple crops is much more common. Two-thirds of terai growers use fertilizer on paddy and wheat. More than 40% of eastern hill growers were using fertilizer on paddy, wheat and maize. The western hills had the least use, with about one-third of paddy growers and one-quarter of wheat growers putting fertilizer on their crop (NLSS, 1998). Chemical fertilizer appears to have become much more widely used in both the Terai and the hills, but not in such quantities as to be having a major impact, either positive (achieving maximum yields) or negative (risking ecological damage) (Balikie et al, 2002,). However the perception of farmers is totally different and 76% of the farmers feel that the soil quality has declined over the years, the primary reason being the necessity to add more fertilizers each year, thus increasing more investment without return (50%).

It has been reported that that commercialization in terms of outputs may actually have decreased in some parts of Nepal. And also “it is quite possible that increased use of fertilizer and improved seeds is not being financed by own-farm cash incomes but by remittances, and is being directed not at increased sales but at improved food security” (Blaikie et al, 2002, Seddon et al, 2002). Considering that many people have to buy food for subsistence, the use of remittance and non-farm incomes for farming input is a common occurrence in the villages of Nepal including Rangeli and Katahari.

#### **4.1.3. Income vs Expenditure**

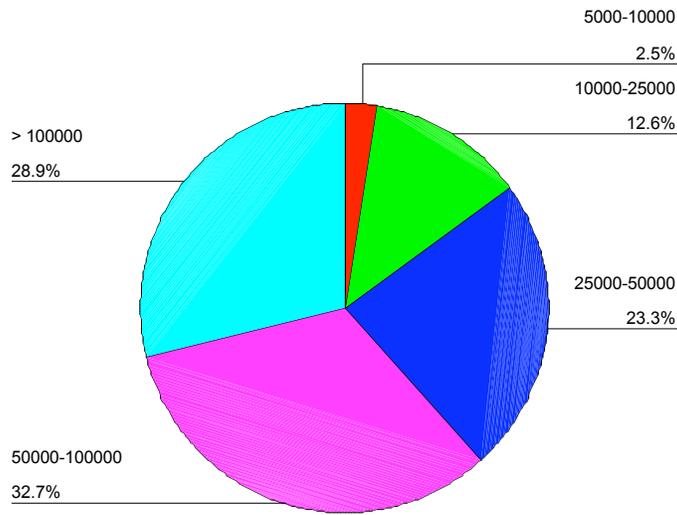
Agriculture Income was calculated by multiplying the amount of crops sold with their market price, for various types of crops. The figures below show the average income, which varies in almost exponential proportion from small to big farmers.

**Figure 4.5: Agricultural Income for farmers in sample villages**



Source: Field study (2003)

**Figure 4.6: Average Overall income for Farmers in sample villages**



Source: Field study (2003)

It is important here to note that though average annual gross income comes around NRS 65,000, the data is skewed by some of the big farmers that earn in millions per month. The agriculture income is the one single factor that can ultimately decide the fate of thousands of small farmers involved in agriculture. While it shows that the

agriculture income is high for the bigger farmers, the profit margin of about Rs. 4000 in the simple input- output model (investment subtracted from the total revenue by selling agro products) is misleading. It does not take into account either the repayment of land rent, loan and totally excludes the expenditures needed for the survival.

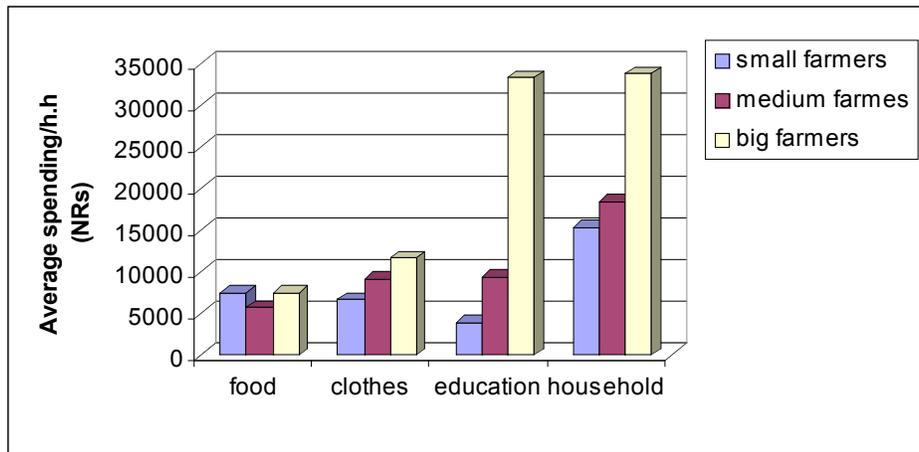
Land rent normally comes to around half of the harvest price, which is mostly paid by selling the harvest. Loan is also mostly repaid by selling the agriculture crops. Oftentimes, the small farmers cannot feed themselves round the year with what they produce, especially after selling a portion to repay the land rent and loan. So, more than 30% ended up buying food for survival, for much higher prices than they sold for. The other expenditures besides food are clothes, necessary household goods and education.

The figures representing the expenditures also showed marked distinction in expenditure practices of small and big farmers. While the expenditure in food and clothes didn't show that much difference, the expenditure in food and household varied by 1200%. While the small farmers spent 2500 per year in an average, the bigger farmers spent Rs. 35,000. The expenditures showed substantial economical linkage between rural and urban areas. Small and medium farmers sent their children to the public and private schools within the villages and that in turn gave employment to many people from villages as schoolteachers. However, the bigger farmers spent a lot in education, which mostly occurred outside the villages, either in Biratnagar, Kathmandu or abroad in India. Similarly, all the expenditures for household items like salt, sugar, fuel, necessary equipments for households and others went to the urban areas or India. Since the border was nearby, most of the residents did their household shopping across the border for "better choices and cheaper prices", especially the bigger farmers. The income and expenditure data show that it is only the big farmers that make a substantial income from the agricultural market system and that money goes to the urban areas. In contrast, a bulk of small farmer's income goes to the production investment.

One important issue that was apparent from expenditure breakdown was the money spent on food. The big farmers and small farmers spent equally on food, while the

medium farmers spent quite less. Most of the small farmers do not produce enough crops to sustain themselves. Most of the small farmers could be just subsistence farmers, because they produce no surplus. But they have to sell their products to repay the loans and meet the household costs that requires cash. Most of the time, they end up buying staple crops to sustain themselves.

**Figure 4.7 Average Expenditure of farmers**



Source: Field study (2003)

**Table 4.4: Average Spending**

Expenditure	Mean
Small Farmers	29583
Medium farmers	39487
Big farmers	72710

Source: Field study (2003)

#### 4.2 Market mechanisms

The marketing in Rangeli, Kathari to Biratnagar occurs in several layers and forms and can be discussed by using the following category given by SAPPROS, 1998:

1. Primary periodic markets or haats:
2. Intermediate markets (Between Rural and urban)
3. Tertiary markets (Urban)

#### **4.2.1. Primary markets or haats**

The primary markets exist at the village level where no physical structures (SAPPROS, 1998) and institutional structures exist to facilitate the marketing operation. The sellers are usually the village farmers who have very little agriculture surplus. The buyers are either the consumers (in case of haat) or the collection agents, who buy directly from the buyers.

In Biratnagar market region alone, there are more than 300 haats (SAPPROS, 1998) that operate at different days in a week, weekly or fortnightly. In Rangeli, while most of the haat observed were daily and lasted for more or less four hours (roughly from three till seven or till it is dark), in Katakari, the haats occurred in two different places on two days of a week: Thursdays and Saturdays. These local markets provide most important outlets for the agriculture products, like rice and vegetables, dairy products like milk and yogurt, and for some it is also a place to market Indian cosmetics and cheap Chinese electrical goods (Field survey, 2003). However, these local markets are most effective for buying and selling fresh and green vegetables.

The haat is important not only for its economic activities, but also for the opportunities of interactions directly with the consumers. Here farmers get to market their own products and control the pricing mechanisms. There isn't a single price for any product, however it is more or less decided collectively by the group of farmers involved in selling in a particular day. Haat seemed to be the most empowering experience for the farmers, where they could directly participate and influence/ determine the price for their products. In my interview, small farmers stated preference of haats over the bigger markets in urban areas, because of its proximity, less time and cost for transportation. In 'haat', though farmers directly participated in the market, nearly 30%-35% of the people involved in selling were the collection agents or middlemen and not the farmers. While farmers sold their products directly from the farms, some farmers come to haat, sold to such middlemen or intermediaries and went home instead of waiting for four hours and selling the price themselves. What separated the intermediate markets from these local haat markets was the availability of choice for the farmers to sell their products directly to consumers resulting into their ability to fix the price, even if they chose to sell them to the middlemen. As one farmer remarked " we know exactly how

much they (the middlemen) are making. It is fair enough: they have to live their life too. It saves us the trouble of waiting here for hours and hours”. She had farm works to attend in the meantime and her husband was still in the fields.

In Katahari, people have a choice to go to the urban Biratnagar and sell the vegetables in bigger central market called “Gujri” which occurs everyday. From Rangeli do not prefer to go there, because the price is same and it is almost three hours drive, so the transportation cost is high. Majority of the people state their preference for haat over Gujri’s because the haats are closer. However Gujri’s are good because they occur daily and sometimes offer better price depending on the products. It was interesting to observe that though the consumer price varied significantly in Katahari and Biratnagar, the price at which farmers sold (directly to consumers in Katahari and to the urban businessmen in Gujri) were not that much different. For example, while farmers sold tomatoes for Rs, 5 per kg in the haat, the maximum price they could get for them in the gudri was Rs. 4, however, the consumers would pay Rs. 7 per kg in the Gudri. Hence, the gudri didn’t provide any real economic opportunities for the people of Katahari. People who benefited from it were urban buyers who acted as middlemen here. Urban consumers also didn’t get any substantial benefit.

#### **4.2.1.1. Limitations of “haats” or the local market:**

Though the local markets provided good and opportunities for marketing their seasonal agriculture produce, haats had their own limitations too, for example: The haats didn’t have any infrastructure like storage facilities, shades and stalls for people to buy and sell. This makes it difficult for people to hold on to products like green vegetables for longer periods. Hence most of the farmers want to sell their products completely before going home. Some of the haat costumers I talked also waited till dusk to go to haat, so that they could get cheaper products.

Haats normally occur periodically in very small areas. Sometimes this limits the participation of both the farmers and customers from the areas that are little further up. The negative consequence of this for farmers is that the number of customers remains relatively fixed. So for farmers with more surpluses, oftentimes selling in local haats is not enough.

Haats are normally used for the agricultural products that do not need processing, like fresh vegetables and fruits. However, for the major crops that need to be processed like rice and wheat, the periodic markets or haats are not enough. In some places of Rangeli, haats are located in muddy little streets and all products are kept in unclean and unsanitary conditions.

#### **4.2.2. Intermediate markets / Secondary markets**

The usual way of selling major crops i.e. rice and wheat involves the wholesalers referred as “golawallah” or “kaatawallah” (gola= godown, kaata = scale). There are 7 “gola” in Katahari and 9 in Rangeli. These wholesalers are normally big farmers or landowners who then sell the products directly to the urban food processing industries. The average size of godown in the villages ranges from 2,000 Quintals to 5000 Quintals capacity. The *golawallahs* do not only buy the various agriculture products from farmers, but also provide them loans and storage. Cash loan is given to farmers usually at the time of plantation to meet the production investment, which is repaid by farmers in terms of crop, almost always rice. The rate for the crop is fixed before harvest by the golawallahs, which is lower than the market price. For farmers with surplus who don’t want to sell their crops immediately, the *golawallahs* provide a storage space for a rent. The rent varies from season to season and ranges from 2kg to 4 kg of grains per every mann, per month where 1 Mann = 40 kg. Only some big farmers with surplus, about 10% can afford to hold on to their grains and pay the rent. In the harvesting season, i.e. October-November, however the crops cannot be stored for long due to their high moisture content. Hence, most of the farmers are forced to sell their crops immediately after harvesting, when the price is lowest.

The intermediary, at this stage, has larger working capital as well as storage facilities and can hence store grain anticipating the rise in price.

#### **4.2.3. Tertiary market system**

The tertiary market system often occurs in the urban areas where agricultural goods are sold to mostly urban businessmen. Very few farmers are involved in selling and mostly it is the collection agents or middlemen who participate in selling the

agricultural goods. The interview with urban businessmen revealed that oftentimes the top businessmen are also not autonomous in fixing the price and is determined by price in Indian market.

At the final market level, the processed grains are distributed through wholesalers and retailers to final consumers. Farmers are also found to sell their products directly to the final market depending on the accessibility and price difference between final market and those offered by agents in the secondary markets. Processing of the food products occurs in the final market in urban areas like Biratnagar, and sometimes the same intermediaries deliver the processed agricultural goods to the rural markets (SAPPROS, 1998). While in the Terai private sector networks of wholesalers and retailers link the final markets to consumers, in hills and mountains Nepal Food cooperation manages food distribution and networks. The distinction might be because of the food surplus in the Terai as compared to food deficiency in the hilly areas, which occurs all around the year. The mountainous areas like especially in the western mountains have intense food shortages, which had only multiplied in recent years due to Maoist insurgency. They suffer from food shortages through out the year and import food form other parts of Nepal, India and Tibet. Road transportation also plays one of the key factors in these market system.

Biratnagar shares market relations not only with its periurban villages, but also to other urban areas in the same regions. Most intricate relations are shared with neighboring towns like Itahari, Duhabi, Urlabari, Dharan, Damak and Dhankuta, which can best be described as inter urban linkages. Some farmers from Rangeli and Katahari also trade their products in these areas, but oftentimes it occurs via Biratnagar. Road transport accessibility is one of the key factors in establishing and determining the type of rural urban linkages that occur in various regions.

In all levels of markets, it is farmers who bear total risk of production; pricing and seasonal fluctuation in pricing. Without adequate infrastructure for storage, farmers cannot afford to wait long for the right price and have to sell their products for low returns. The low return for their high investment adds to the burden of farmers and continues the cycle of taking loans, investing it on farm sand harvesting to pay loans. The cycle continues until some farmes are compelled to take non-farm options. Without any

positive return, some of the farmers just keep on farming for the food security. For some who don't even produce enough to last them for four or five months in a year often do so for livestock keeping. They feed the hay from rice crops to the livestock. Many farmers say that farming is not "profitable for the farmers" anymore, (*gareeb lai poshaundaina*) and just profits the *golawallahs*. However they continue to farm, because they feel that it provides food security to some extent and they have no other opportunities. Some of the big farmers also commented on the high investment and low returns, and sometimes even they hesitate to invest on production. With this magnitude of investment, the agriculture market poses a big question for the food security of the nation. On one hand, the small farmers are just hanging in there to meet their food needs and on the other hands big farmers also find it not very profitable. Farming is just like a burden for many farmers, resulting into hard work, debt cycles and poverty, but they have very few options to meet their food demands. The non farm employments that these farmers are engaged in, even teaching in schools, is not enough to feed the whole family lest they should leave farming altogether. The state, without remedying some farming policies, would be even more vulnerable to food shortages in the country. Considering that an overwhelming 82% percentage of farmers would not wish their children to be farmers, the state should really work to make conducive environment for the farmers and give them some economical incentives.

#### **4.2.4. The urban players**

Most of the businessmen interviewed had their business for more than five years and some have existed there from 35-40 years, like Dhiraj Khadya Udhyog, showing the stability. The urban businessmen involved in the tertiary markets, most often by the agro-products from the wholesalers and sometimes from farmers. They often have a fixed range of villages, from which they buy agro-products. The payment is done immediately in cash if bought from farmers and commonly in credit or installments if bought from the wholesalers, one of the reasons cited for preference to wholesalers. Natures of products also determine whether they are bought from farmers or wholesalers. For example, some rice mills buy almost 50% of rice from farmers whereas only 10-15% of the lentils are bought from the farmers. Farmers with surplus sell rice in bulk and hence sometimes directly approach the mills. The businessmen buy from wholesalers either at a same or a

slightly more price than farmers. Price at which businessmen buy may differ but it is more or less maintained at the same rate by market competition. However, price paid to farmers in cash is significantly less than price paid to the middlemen in credit.

All the businessmen I talked in Biratnagar were from Indian origin, referred to as “*Marwaris*”, involved in one or other kind of trade in Nepal from generations. They were very guarded in the interviews and very reluctant to quote even an unspecific amount of profit they make. They were also very reluctant to give indication of total amount of agro-products bought annually. I got only two figures after some persuasion, ranging from Rs. 500,000 to Rs.2 million. The urban agro-industries, in general, are not restricted to the local villages only and buy raw materials from other districts of Nepal and also from India, Bangladesh and Burma. In an average, 60% of the agro-products sent to Kathmandu from urban agro-mills in Biratnagar and remaining to the rest of Nepal and India.

The benefit to both the rural areas and rural farmers from this urban transaction is very less. With the high cost of transportation for the sellers and comparatively low price paid to the farmers by the mills, no small farmers and very few big farmers sell to these businessmen. It is the only middlemen that profit from such transactions and though the capital flows to villages, it is of little help to the small farmers. Farmers generally do not have any idea of how much middlemen are selling their crops, though they know that price is determined in Biratnagar.

#### **4.3. Rural Urban Interactions and their Implications**

Rural Urban economic linkages that occur between urban market centers and surrounding rural areas is a two-way phenomenon. While the surrounding areas receive services and commodity production from the urban centers, urban centers are dependent on the rural areas for the supply of agriculture products, dairy products and a variety of raw materials for industries. This results into the flow of capital, products and people with broad implications for both rural and urban areas.

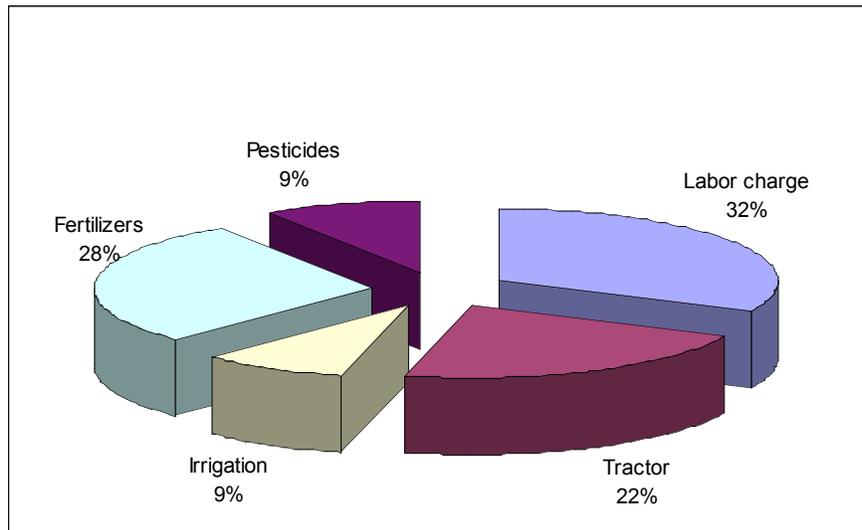
The rural urban interaction in the agriculture market is shaped by their pre-existing socio economic conditions, lack of financial resources and market inadequacies.

The implication of these, compounded with the state policies and trade relations, on rural farmers is characterized by high investment and low returns. The capital flow is skewed towards the urban areas keeping the farmers in a cycle of poverty. These interactions change the socio economic dynamics of urban areas too. Since agriculture market alone is not enough for the farmers to sustain themselves, the survival costs are met by non-agriculture jobs in urban areas. One reason for phenomenon of rural urban migration is the failure of agriculture to meet their survival. The influx of a large number of people in the urban areas serve to make them densely populated, exerting pressures on natural resources, causing environmental degradation and in some cases, creating urban slums.

#### 4.3.1. Investment for production

Major investment is required for the agriculture inputs like fertilizers and also for the laborers. The investment for the agriculture inputs directly and indirectly causes a capital flow to urban areas.

**Figure 4.5: Investment proportion per Bigha (0.66 ha) of land**



Source: Field study (2003)

**Table 4.2: Production investment per Bigha**

Type of Investment	Amount in Rs.
Labor charge	2600
Tractor	1800
Irrigation	700
Fertilizers	2300
Pesticides	750
Total investment	8150

Source: Field study (2003)

#### **4.1.2.1 Labor**

Unlike what Blaikie et al observed in western Nepal, almost all of the farmers I interacted with employed laborers to work in the field. Normally a bigha of land (equivalent to 0.66 hectares) needs around 40 men/day in total (in fact, it can be 8 men for 5 days etc.) who get paid Rs 50 in average. The price varied from Rs 40 – Rs. 80. In some cases, in Rangeli the men get paid Rs. 80 and women get paid Rs. 50. Here the working hours of men were also longer and the nature of work varied. Similarly labor is needed to weed the fields and to harvest. For harvesting reimbursement is done in kind, the normal practice seemed to be paying 6 kg per every 40 kg or 1 mann. If a farmer rented “*thressor*”, the equipment for harvesting they would pay 2 kg for the rent and 2 kg for the harvester who uses thressor. It would have been interested to see the time trend for the investment data, but no research really breaks down the investment.

#### **4.1.2.2 Ploughing by Tractors or bulls**

Tractor for ploughing was another major expense for the farmers who rented it for around 600-700 per turn. A bigha usually needed three turns. The farmers, who owned bulls, also used traditional plough. Around 40 labors/day were needed for ploughing. However they would also have to invest in hiring the bulls and laborers. The percentage of farmers using tractors, either for the whole ploughing process or just smoothening the surface was 41.7. Some would rent a tractor afterwards to smoothen the land. Additional Rs. 250 was paid for smoothening the land. The number of farmers who rented tractor

#### **4.1.2.3 Irrigation**

A small percentage of farmers, i.e. 18 % have access to the drainage made by the government for irrigation. A large number of farmers depend upon the rain (68%), and

some make the most of nearby rivers and streams (25%). Majority of farmers use boring pump set that pumps the round water to the fields. The farmers have to pay around Rs. 90-100 per hour for renting the pumps and 1 bigha generally needs 7-8 hours of pumping. The pump-owners explained the high charge for pumping by the price of diesel, ie. Rs.35/ Litre. There is no subsidy for the diesel, however there is a subsidy for electricity in irrigation.

#### **4.1.2.4 Fertilizer and Pesticides**

The other bulk of investment was required for the fertilizers, mainly Urea and Phosphorus. In an average, a farmer put 1 sack of urea and 1 sack of Phosphorus, each sack containing in 1 bigha of soil. However some big farmers put 2 sacks of urea in 1 bigha, and some small farmers put whatever amount they can afford. The amount of fertilizers going in the soil was largely determined by the investment ability and very few farmers, less than 1%, had tested the soil for the fertilizer requirement. The fertilizers were applied depending on farmer's own knowledge and advise of their friends and kins. The nearest lab for soil test was in Jhumka, Sunsari district, about two hours bus ride from Biratnagar. According to the officials there and the junior technical advisors, there are yearly camps for free soil tests organized by the government, where some farmers can take part.

The lab normally charges a minimal amount of sum for the soil test (around Rs. 40. for pH, and NPK less than USD1 and about Rs. 100 for the test of micronutrients). Most farmers, however view the soil tests there as a waste of time and money because they feel they know the right amount of fertilizer usage. Only about 2.3% of respondents cited that as a problem. Here it is significant to mention that those farmers fell on two categories: either they had college level education or they attended the training programs organized by government a year ago. They also had their soil tested for fertilizer need. This is an indication that the government given trainings do make a difference and not many farmers have access to that at present.

Some farmers I interacted with could afford also applied around 25 kg of Potash and 5 kg of Zinc per bigha in the fields in. In an average a sum of 2,300 was spent for the

fertilizers. Fertilizers were bought either from Biratnagar or directly from Indian businessmen who went hour to house of farmers to sell it. Pesticides used normally included fungicides, organophosphates and cypermethrin. Pesticides were normally bought from both local dealers and from Biratnagar in Rangeli and from Biratnagar only in case of Katakari. Around Rs. 700-1000/bigha was used for pesticides. Morang district as a whole, where my research area is located use fewer fertilizers than other districts in the Eastern Terai region (Statistical Information on Nepalese Agriculture, (2002).

District/Region	Urea	DAP	Potassium	Total	Total/ farmer's population
Morang	180.0	1222.80	42.450	1445.350	12.25 kg/person
Eastern Terai	1143.	3985.45	317.05	5445.650	6.99 kg/person
Nepal	17697	20645.345	1015.843	39358.439	11.80/ person

Source: Compiled Statistical Information on Nepalese Agriculture, (2002) and CBS, 2001

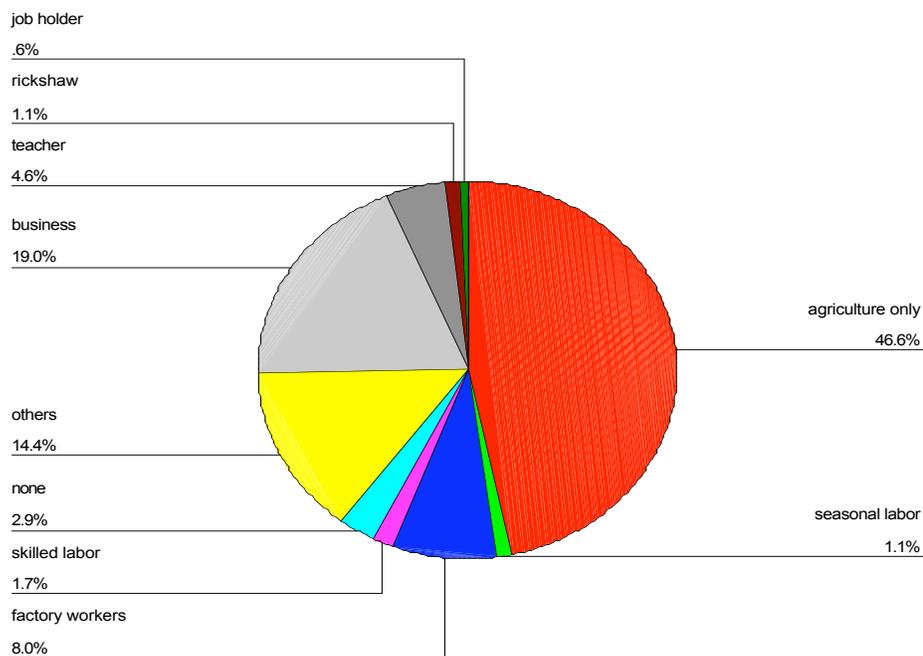
#### 4.1.2.5 Investment in Vegetable Farming

There exists a significant difference in production investment for fresh vegetables and the stable crops i.e. rice and wheat. The investment for vegetables plantation was much higher, which came around Rs. 5000-6000 in average per one Kattha or 0.03 hectares (where 20 Kattha = 1 bigha= 0.66.hectares). Roughly farmers estimated revenue of about 12,000 to 13,000 with a profit of around Rs. 6000 per Kattha. No such data could be obtained for marketing of rice and wheat because oftentimes, the crops were sold to pay for the land rent. Vegetable plantation was a better commercial option because it could be done in a small portion of land, and all farmers in general expressed a desire to grow vegetables but were limited by the amount of land available to grow subsistence crops, family size that would have to be fed and investment capacity.

### 4.1.3 Source of Investment

The production investment is met either by the loan or by the non-farm incomes. In my research, about 52% of the farmers had non farm incomes from laboring in the factory, running small shops and in 4.6% of the cases teaching in schools. The percentage of farmers that took loans was about 60% in Rangeli. The percentage of farmers who took loans were not calculated in Katahari. Among those who took loans, majority (77 took loans from the bank and the rest took it from the landholder and a local micro-credit project. The agriculture bank offered loan at 11% annual interest and the micro-credit program offered it at 18% interest rate, which was utilized for giving further micro-credits. The amount of loan varied from Rs. 4,000 to Rs. 50,000.

**Figure 4.8 Occupation of respondents besides farming**



The investment patterns, mostly causes the capital flow back to either urban areas or India, without leaving enough for the rural development. Even the bigger farmers find the investments too high, especially in competition with the Indian farmers. However, the

rent from land and the loan interests make the investment burden low for the big farmers, exerting all the pressures on the small ones.

### 4.3.2. Product and Capital Flow

An empirical inflow-outflow diagram from Rangeli and Kathahari shows the following material interaction:

**Table 4.5: Empirical Inflow to Rangeli and Kathahari:**

Biratnagar	Duhabi	Dhankuta	India
Clothes Salt Sugar Hardware Plastic Stationary Fuel gas Medicine	Soap Vegetable oil Steel Bar Biscuit	Ginger Orange	Agro-vet products Medicine Cloth Household goods

Source: Field Survey, 2003 and Field Survey, 1998\*

**Table 4.6: Empirical outflow from Rangeli and Kathahari**

Biratnagar	Duhabi	Rest of Nepal	India
Paddy Rice Pulses Wheat Vegetables Jute	Wheat Paddy Pulse	Rice Jute Corn Vegetables	Livestock Jute Corn

Source: Field Survey, 2003 and Field Survey, 1998\*

Very few farmers do not sell any agro-products in the market. It is however not done for the commercial purpose. Most of the time farmers just sell their products whenever they need cash. Rice, wheat and green vegetables are some of the commonest things sold in the agriculture market.

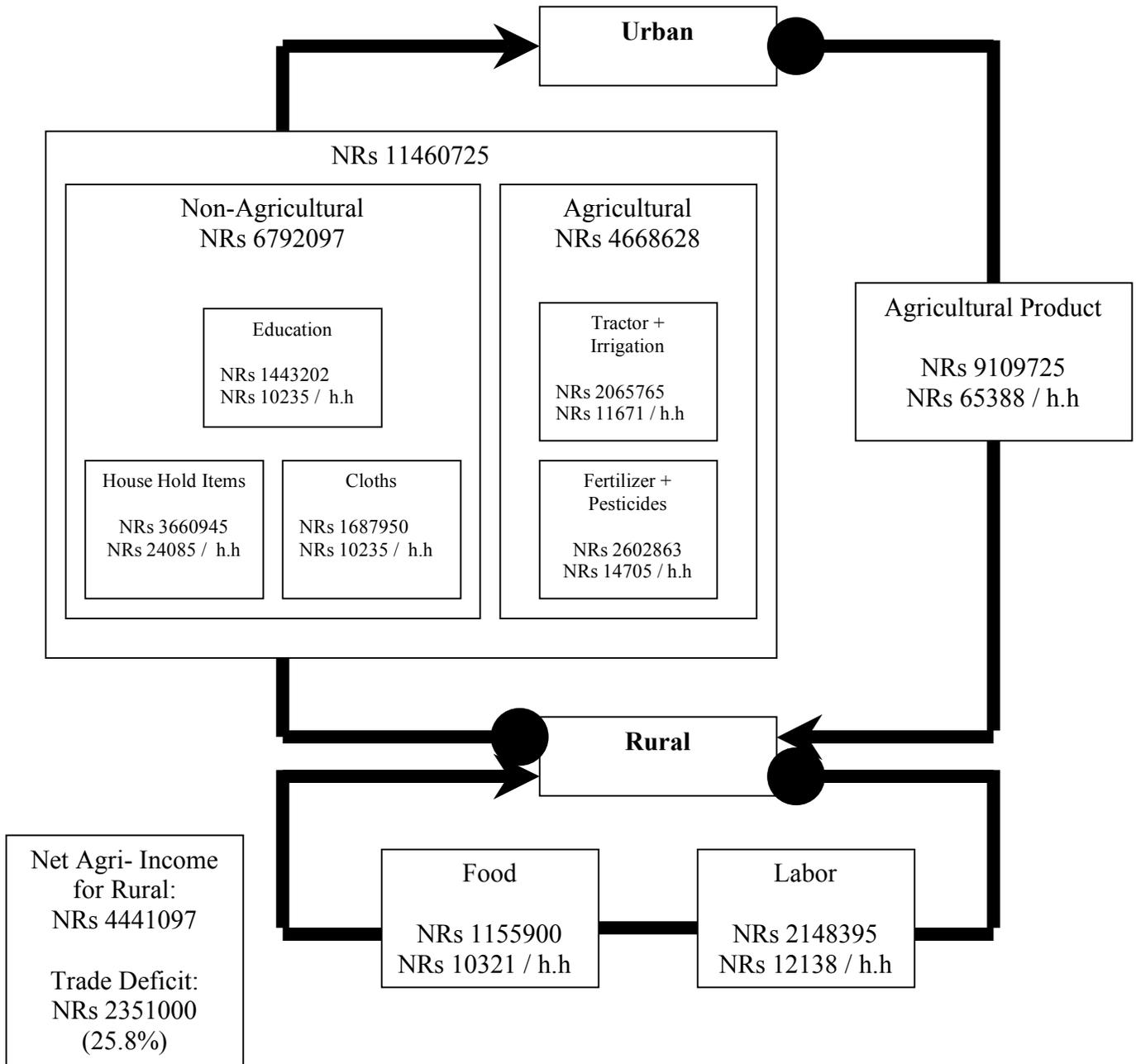
Most of the goods sold by rural farmers are intermediary in nature, which are not processed in the area because of numerous constraints. Agro mills are the only types of agro-processing industries found in the rural villages and not all the villages have it (SAPPROS, 1998). Substitutes competing in the urban center are generally vegetables and fruits that are often imported in India. The major input required by the rural areas from urban center for further processing towards final sale are professional services, technical inputs, lubricating oil, equipment and machinery. The major input required by

the rural areas from the urban center is further processing towards final sale such as raw materials, labor etc. The lack of existence of agro- processing industries in the rural areas together with the coordinated programs for harnessing inner potentials of the hinterlands have limited the scope for establishing cross-sectoral production linkages.

The above material flow shows that the urban areas do provide the necessary basic services to their rural counterparts. However the extent and nature of dependency of urban and rural areas with each other are very different (food crops vs. commodity goods). One important observation here would be the effect of India. While it provides limited market opportunities to rural products, imports from India are varied and important, most significant being the agro-vet products.

The income and expenditure data however show that it is only the big farmers that make a substantial income from the agricultural market system and that money goes to the urban areas. In contrast, a bulk of small farmer's income goes to the production investment. The following flow chart gives an idea of capital flow between rural and urban areas. It shows the trade deficit of more than 25% implying that the capital flow from the rural areas to the urban areas are higher than 25%. Though agriculture does bring some money inside the rural areas, a huge amount, especially from the big farmers flows back to the urban areas. Constraints like needing to rent the land and loan from the local landowners result in unequal distribution of capital that remains within the village too. Hence in spite of the potential of the agriculture market, it is not providing economic benefits to the small farmers and can't help them to break the poverty cycle.

**Figure: 4.9. Capital Flow between Rangeli, Katahari and Biratnagar (/hh=per household)**



Source: Field study (2003)

### **4.3.3 Flow of People (Migration)**

One vital linkage of the rural urban relationship is the migration phenomenon, which can give rise to a number of social and economical changes. Remittances or the transfer of cash and other resources from migrants to their original kins play an important role in the family linked migration processes in the developing countries (Tisdell, 1990). It is widely accepted that remittances are likely to stimulate rural economic activities, including agriculture and contribute ultimately to increase in income in the rural sector in developing countries. The issue of contestation, however is that the remittance in least developed countries like Nepal do not seem to result in long term capital investment and so may not promote long-term development of these areas.

Migration is the least researched area in Nepal compared to other demographic dynamics despite the fact that many socio-economic, demographic and political problems are closely associated with the process of both internal and international migration ( Regmi et al., 2002).

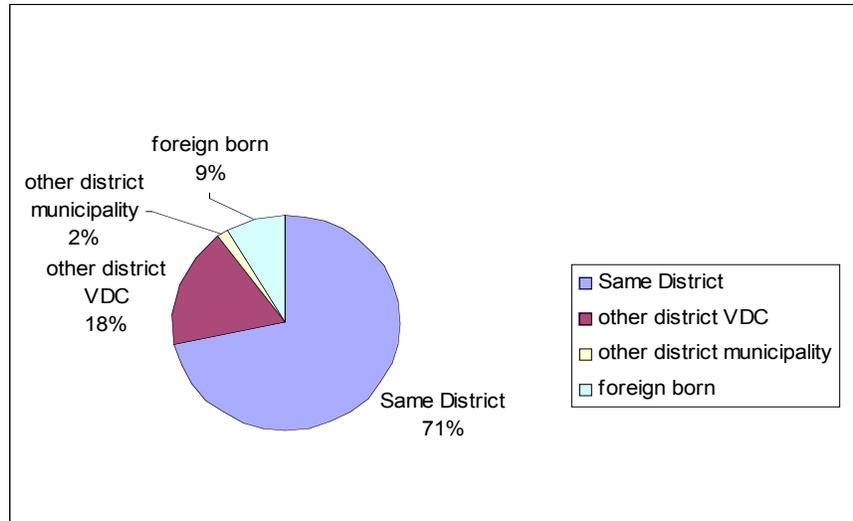
#### **4.3.3.1. Rural Urban Migration**

According to a survey performed by UNDP/RUPP, the population of 12 municipalities grew by 5.2% over the last two years compared to 3.6% between 1991 and 2001. This represents an increase in about 80,000 rural-urban migrants in last two years, with about 2000 people migrating in Biratnagar in the year 2003 alone. It should be noted here that the high increase could be the reason of the ongoing insurgency with Maoists in Nepal, which is more intense in rural areas. Many people from rural areas are compelled to flee their villages to protect themselves from the ongoing violence.

In Biratnagar, the in migration normally occurs from people in the same districts, as well as other nearby districts. A look at the number of people based on their origin also shows the rural-urban migration phenomenon in the Biratnagar. It shows that total 20% of the population in Biratnagar is migrants from other districts, and 18% from the villages. The data does not show the migration to Biratnagar from the villages of the same district like Rangeli and Katakari. So there is no direct way of finding out the immigrants from Rangeli and Katakari. Since both of these places are very near to Biratnagar (Katakari-adjained, Rangeli-22km), the migration could be low. Most people

commute from Katahari and Rangeli to Biratnagar for non-agriculture jobs like rickshaw pulling, construction works, working for various types of stores.

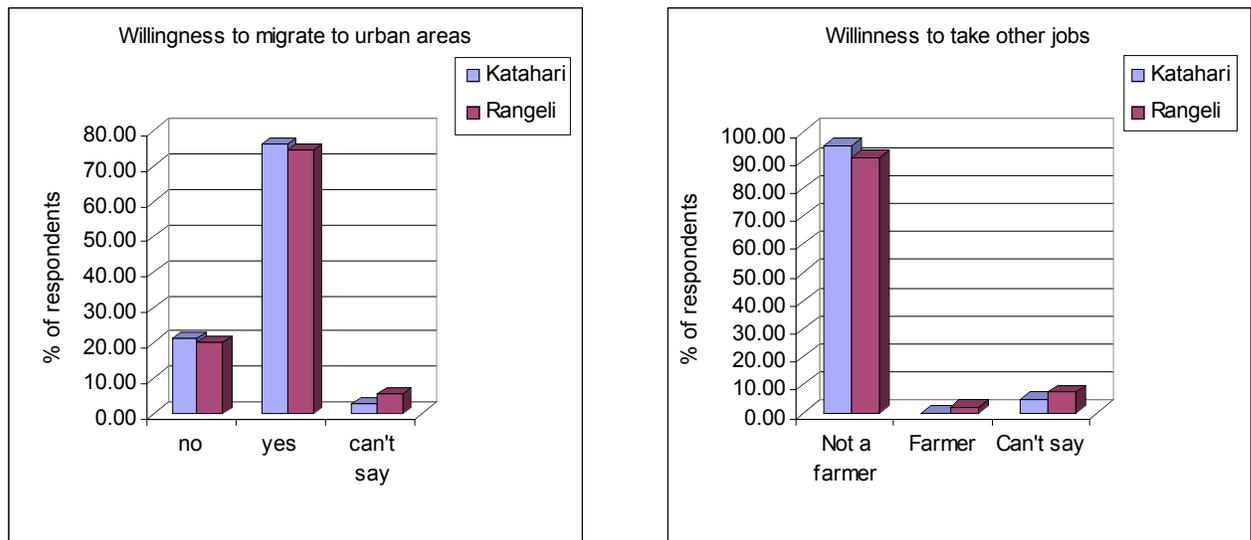
**Figure 4.10: Population of Biratnagar according to place of birth**



Source: CBS, 2001

However when asked whether, they would prefer to move to city if possible, quite a significant proportion of respondents showed willingness to migrate. The reason often coincided with their reluctance to continue as a farmer and do some other jobs. If they have possibilities, 48% of the respondents would like to start some business and 36% would like some kind of job.

**Figure 4.11: a) Willingness to migrate to urban areas, b) Willingness to take other job rather than farming**



Source: Field Study (2003)

Seasonal migration in Rangeli, Katahari and the rest of Nepal results from both push (high levels of poverty and food insecurity) and pull factors (seasonal employment opportunities elsewhere). While agricultural work seems to dominate in international migration, there are some non agriculture opportunities for the local migration in urban areas. Many of these flows are of recent origin. Daily wage rates are very variable, but generally lie in the US\$1.50-3.00 range for international migration and about Rs. 75-Rs.100 per hour for non-agriculture works for international migration.

Currently, the Terai accounts for over 65 per cent of cultivated land (see table 1), over 35 per cent of roads and 63 per cent of industry (Gurung, 1989:41-43). Furthermore, the urban population of the Terai region has increased from 17 per cent of the national urban population in 1952 to over 53 per cent in 1991. Between 1952 and 1991, the urban population of the Terai region grew more than 8 per cent annually (K.C., 1993:18).

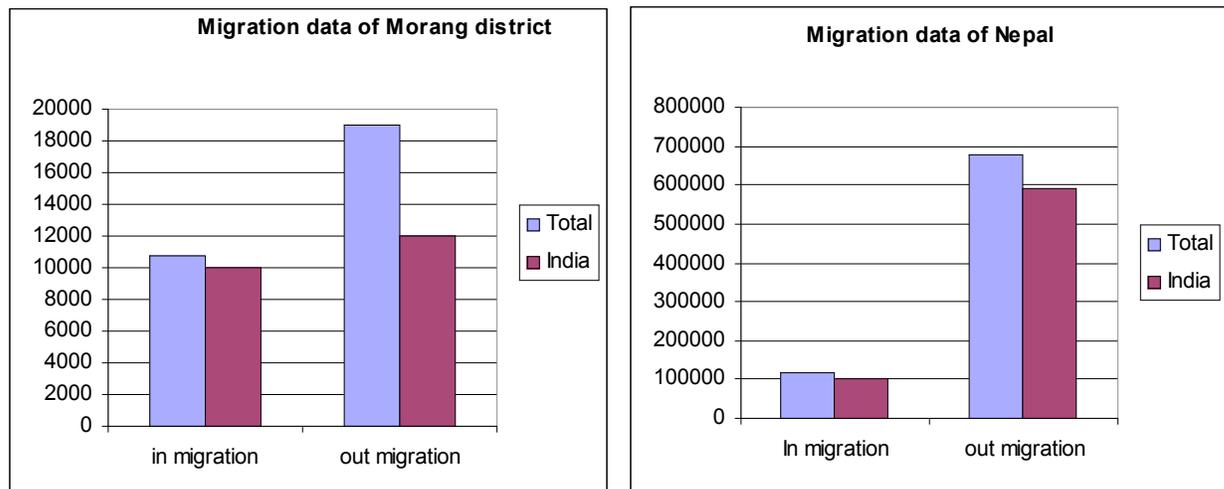
The migration can give rise to many issues that shape the socio-economy of both rural and urban areas. It creates pressure on natural resource in the urban areas and without the capacity to absorb them into good jobs, gives rise to a population of urban poor and slum dwellers. Similarly the problems of environmental pollution, especially regarding water and solid waste gets aggravated by the additional pressure of migrants. Environmental and development organization, interested in both rural and urban poor

cannot ignore the issue of rural urban migration, whether they are talking about suitable habitat for the urban poor or micro credit for the rural poor.

#### 4.3.3.2 International migration:

Based on the report of central bureau of statistics 2001, the number of people absent from the households for the district of Morang ranks among the highest in the eastern development region. The data of number of people absent from Biratnagar, Rangeli and Katakari at municipality level was not officially available. The major destination of migrated people is India; where about 63% of the migrated population from Morang goes. The same figure for whole Nepal is 86%. The migration data of Morang district and whole Nepal is graphed below.

**Figure 4.12: International Migration**



Source: CBS 2001

This comparison shows that Morang district, (where Biratnagar, Rangeli and Katakari are) has in general a lower out-migration rate than the average of whole Nepal and also that of the Eastern development region. However, about 12,044 people out of 843220 in Morang district (1.43%) migrate to India. In India Punjab, Delhi, West Bengal and Harayana are the states most frequented by the seasonal migrants of Morang districts. While seasonal migration is observed in the lowest income families, short-term migration was observed in relatively higher-class families, with main destination being India

followed by Gulf countries and other South Asian countries like Malaysia and Bangladesh.

The need of this huge mass of Nepalese to migrate to India and other countries comes out of the economic depression in many of the hills and Terai of Nepal. The migration was observed in Rangeli and Katahari with the lower class of farmers with little land holding. My informal interviews with the farmers indicated that the migration is a survival strategy often carried out by those with the least income and least landholding. Out-migration is a survival move carried out in response to the inability to eke out subsistence by adapting to the existing social relations of production, or of their inability to revolt against the existing socio-economic order.

In my research, I came across quite a few numbers of respondents, who had been to India to look for jobs while they were young and were farming now. Similarly I met families who would have their sons working in India and sending remittance regularly. Rural remittance seemed to be a significant income for a number of families in Rangeli and Katahari as in the rest of Nepal. In most of the surveys, there is a discrepancy in the yearly income and expenditure, which is met by either loan or remittance.

The government figure for the rural remittance of India amounts to about 6 billion from nearly 600,000 migrant workers (CBS, 2001). However independent studies (Seddon and Gurung, 1998) estimate a higher estimate with around 1 to 3 million males working in India. Considering the finding of the "Nepal Living Standard Survey" that 33 percent of all remittances in Nepal comes from India, remittances from India is estimated to be Rs 40 billion. There is a huge confusion about these numbers since Nepal and India share open borders and money transfer occurs in various informal ways. For example: The preferred mode for money transfer for Nepalis in countries other than India is hundi, which entails payment in rupees within Nepal for a premium on hard currency deposited abroad. The foreign currency then comes into the country in kind, the bulk as gold. This is not counted as the "remittance" in the official data according to the chief financial advisor of the Nepal Rashtra Bank and hence is not represented in the government figure (Dahal, 2000).

All these figures do indicate that migration is one of the phenomena that cannot be ignored while talking about the survival strategies of the rural populace like those of Rangeli and Katahari.

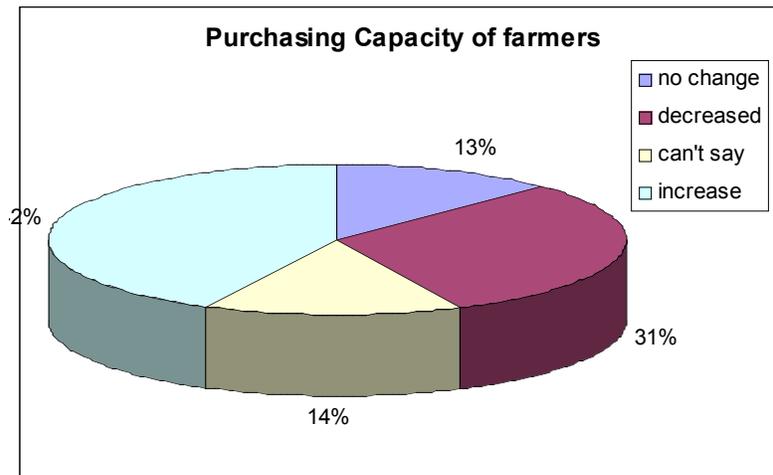
#### **4.3.4. Implications in Lifestyle**

As shown by the previous discussions, the main effect of the rural urban agriculture linkages is the income generation for farmers, to some extent. However, it was apparent that only few big farmers and the middlemen benefited from such linkages. Some of the other parameters included in the study were change in purchasing capacity, education facility for school-kids, hospital and health facility, the way they spent their leisure time etc. However these parameters were highly correlated with income of the family. Though changes in the socioeconomic conditions of the farmers over the past years are reported, it is not possible to correlate them with the agriculture market until further research is done. The fact that high number of small farmers has other jobs and a major bulk of farmers survive on debt cycle further complicates the matter.

- Purchasing capacity

Although 42.5% of farmers that remark their purchasing capacity has increased than the past 30.5% report decrease in purchasing capacity. Interestingly most of the reasons given for the increase of purchasing capacity was not increase in productivity, but increase in more labor, for example: the grown children, whose labor could now be added or some additional undertaking of jobs. The decrease in purchasing capacity was, on the other hand mostly the result of decreasing productivity (54%).

**Figure: 4.13. Change in Purchasing Capacity**

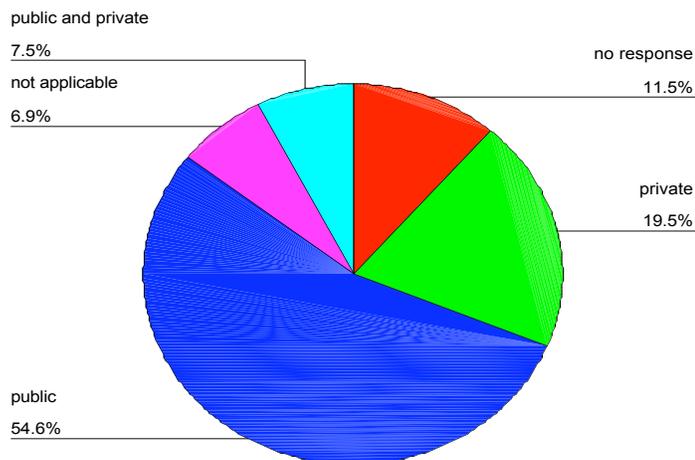


Source: Field Study, 2003

- **Education and Health facilities**

Few obvious changes in life style appear in terms of schooling, health facilities and the way they spend their leisure time. Although only 45% and 54% of population in Rangeli are literate, most of the poor farmers do send their children to school these days. It would be very hard to determine if rural urban linkages played a part on it or not. Potential jobs in urban areas are often the primary wish and motive of the farmers who sent their children to the schools. 54.6% of the farmers sent their children to public schools and 19.5% sent their children to the private schools.

**Figure 4.14: Type of school**



Source: Field Study (2003)

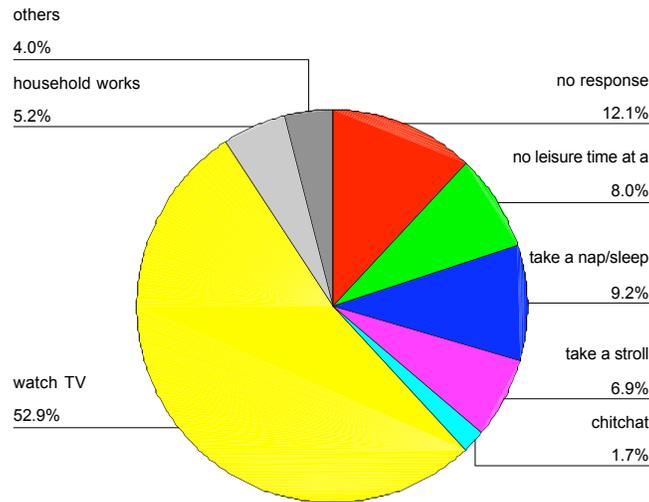
Private schools are also considered as a symbol of social status. In many cases, I came across farmers who were in huge debt couldn't really afford to send their children to private school but sent anyway. Also, some of the farmers sent their sons to private schools and their daughters to public school. It not only reflected the gender bias, but also the relative poverty and priority of farmers. It was however a good indicator in determining the income of farmers.

The access to health facility has also improved somewhat than the past. Though there was no hospital in Katahari, most of the farmers went to the hospital in Biratnagar. Rangeli has a hospital, where most of the farmers go. However there are also so called "private clinics" where Assistant health workers and medical assistants check the patients. They are referred to as "doctors" and people in Rangeli preferred those "doctors" because the service was allegedly faster.

- **Leisure Time**

The way people spend their leisure time can also be one factor to determine the comparative rich or poor lifestyle of farmers. One of the interesting factors observed in change of lifestyles was their activity in the leisure time. About 52.9% of the respondents said that they watched television in their free time. Ironically some of the poor farmers couldn't even afford electricity in their houses, but owned a battery run TV set. It was also taken as a symbol of economic prosperity.

**Figure 4.15: Leisure time**



Source: Field Study (2003)

#### **4.3.5. Implication in production and consumption systems**

The major crops for consumption in the Terai, as reported by the Ministry of Agriculture and Cooperatives are rice and wheat. (SIAN, 2002) There hasn't been significant change in the consumption pattern in the Terai region, though this region shows more consumption of meat and milk as compared to their counterparts in the hill region. Though no significant change in agriculture crops was reported, the consequence of using improved seeds has been disappearance of some of the old varieties of rice. While in the past, they used to grow varieties like "Aghoni" and "Basmati", nowadays most common variety of rice grown is "Kanchhi", "Mansuli", "Chaite" and "Radha", all of which are high yield varieties. Aghoni has completely disappeared; some people still plant Basmati for the taste. Similarly for vegetable farmers, the investment of improved seeds caused a significant capital outflow.

The most significant change in agriculture pattern in this region has been the declination in the jute plantation, which is still considered a very significant cash crop in Nepal. The reason given to it by both the farmers and the key informants are high production investment and low market. Jute is very labor intensive and the price for labor is remarkably high in this region, amounting to Rs. 50-80 per day. The district office of

agriculture department reports the decrease in jute plantation from 60,000 to 10,000 hectares. Similarly, the district office of agriculture department in Morang also remarks increase in sugarcane production, though actual details not available. This coincides with what farmers say about the change in crops from the past. Three big farmers (landholding > 5 bigha) in Rangeli who now grow sugarcane in 5-10 bigha used to plant jute in the same land till 3-5 years ago. The influence of market (example: low price, high investment in jute) have also affected small farmers who have stopped planting jute for commercial production and plant it for their self-use only.

Farmers also mention the change in soil quality and productivity over the years, which contrast with the government figures. Though experts say that the amount of fertilizers used in Nepal is not in the amount to have negative impact<sup>7</sup> and Nepal still uses the lowest amount of fertilizers among South Asian countries, 76% of the farmers feel that soil quality has declined over the years, the primary reason being the necessity to add more fertilizers each year, thus increasing more investment without return (50%). Similarly 50% of the respondents say that the production has decreased because of the same reason, while 15% farmers say that productivity has actually increased because of the application of fertilizers and pesticides. Again it is the small and medium farmers who cannot meet the growing investment demands every year and the productivity is declining slowly. The perceptions of farmers are in contrast to the government figures that report increase in productivity. Considering that the no soil test has been done in the area and fertilizers are applied based on experience rather than the technical need, it is highly likely that the soil quality, at least in my research site is actually deteriorating.

Though there have been some changes in food consumption pattern, especially for urban consumers with the advent of prepared foods like instant noodles and bread. Remarkable changes in food patterns are observed in urban population because of the availability of more instant foods like instant noodles, prepared breads, cookies and biscuits. Similarly majority of people report increase in consumption of meat, change in meat consumption from lamb to chicken and increased consumption of eggs. However,

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<sup>7</sup> Gautam Laxman and another responsive, 2004, FAO representative, Personal Communication and Blaikie et al, 2002 (see reference)

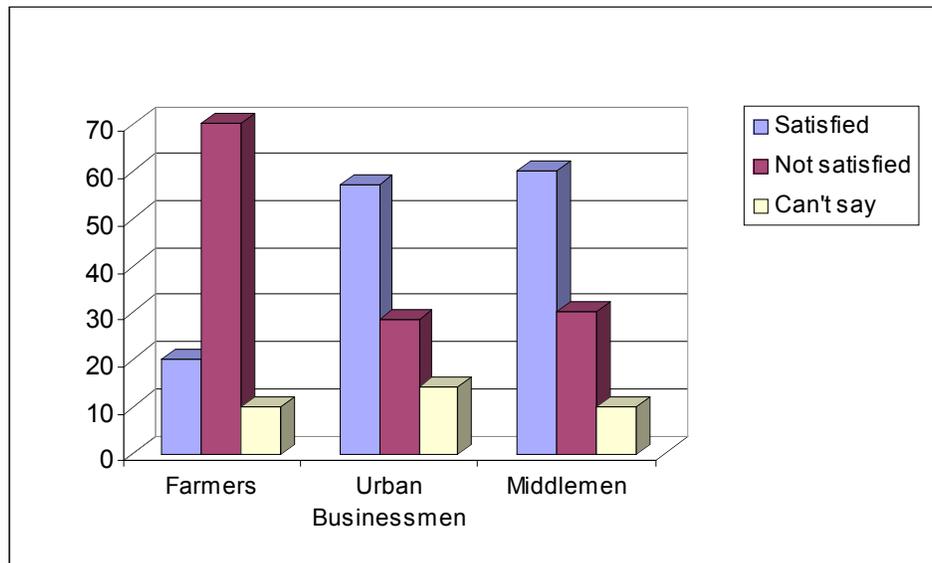
very low percentage of the rural producers (5%) remarked any change in production pattern due to such changes. The most common change in production mentioned were jute and sugarcane, which are major cash crops in this area. Though eastern Terai has other important cash crops like ginger, cinnamon, and though corn is one of the major crops exported, none of the farmers I interviewed were involved in raising these cash crops. The most common reason for this was due to soil and climate constraints. The change in production was thus reflected only in cash crops and majority of the respondents didn't report any change for subsistence crops over past five years, except land fragmentation.

The national statistics show a remarkable growth in cash crops, in the last few years, however it is always the comparatively bigger farmers who profit from projects such as those. The major cash crops of Nepal are oil seeds, potato, tobacco, sugarcane and jute, which find their biggest market in India. The total area allocated to these cash crops increased from 131,550 Hectares to 397,900 almost three-fold increase from 1984 to 2002 (Ministry of agriculture, 2002). Similarly, the yield of these products increased from 952,004 Metric tones to 3876414 metric tones, showing an increase of 300% in the period from 1984 to 2002. Contrasting with the cereal production in the same span of time, the area has increased from 2182752 hectares to 3295879 showing the increase of 50% as compared to the 200% of the cash crops. Similarly, the production of the cereal crops has increased from 4210890 hectares in 1984 to 7246862 hectares in 2002 showing their increase by 72%, compared to the production of cash crops.

#### **4.3.6. Rural Urban Perception on Market System**

Almost all the farmers and urban businessmen unanimously agreed on the importance of the agriculture market system. However, both farmers and urban businessmen see numerous problems in the market systems.

**Figure 4.16: Satisfaction with the agriculture market system**



Source: Field Study (2003)

The reasons farmers gave for dissatisfaction were mainly related to production, such as:

- High production investment
- No irrigation facility
- No subsidies for fertilizers and seeds
- Flood/ natural disasters
- No scientific farming

The farmers cited more than one reason. However, when asked what can be done for the betterment of the agriculture system, they emphasized on the role of government and the Indian influences. The answers given by the majority emphasized on:

- Need for government to offer a fixed rate at which it is ready to buy from farmers, so farmers could get better returns if the market price falls too low. Most of the farmers feel that the *golawallahs* or the middlemen take advantage of them and the urban businessmen, who are again affected by the Indian market system, in turn affect them.
- Need for Subsidies in fertilizers and pesticides
- Need for infrastructures like cold storage

- Convenient distribution of seed and fertilizers
- Need to stop unauthorized trade with India and regulate the existing trade
- Good transportation system among various parts of Nepal

The problems middlemen and urban businessmen gave for the dissatisfaction with the agriculture market system were:

- Unfair trade relations with India: Most of the businessmen complained of plant quarantine charge that they have to pay. The rate of payment is Rs 2500 for the first ton and thereafter Rs. 50 for each ton. However, businessmen complain that they are charged far more than the fixed rate.
- Unauthorized smuggling of agricultural goods from India
- Political Instability that makes the whole market relations uncertain
- Overarching dependence with India, which determines the price of the products.
- Small landholding and low investment capacity of farmers that limits production and hence limits market at larger scales.
- Government tax bribery. The urban wholesalers from Biratnagar complain of high government tax they have to pay to import green vegetables from other districts. Though the fixed rate per full truckload is about Rs. 700, they complain that they are charged around Rs. 2800. Similarly, the businessmen involved in mills complain of some unfair charge in import duty.

When asked about the situation of farmers in the agricultural market system, without any exception, both the middlemen and the urban businessmen feel that they are in a pitiable condition. The reasons cited match with farmers' assessment of their own problems, i.e. high production investment, market price fluctuations, no subsidies and no timely distribution of high yield seeds.

Rural farmers when asked about the situation of urban businessmen remark that they always make profit because they have nothing to lose. It shows that the farmers are aware about the magnitude of risks they are taking. 82% of the farmers don't want their children to be farmers and majority of these people want them to go into business in urban areas.

#### **4.4 Rural and Urban Market in relations with the state:**

In the agricultural market, what happens in local level is either created or manifested by the policies of state. The state policies in the past and shaped the pre-existing socioeconomic conditions of farmers and have determined their role in the market system. Landholding, for example can be one important example of the state policies that have direct and local effect of farmers. The disparity in land holding is one of the main characteristics of Nepalese agriculture system, where around 27% of people control almost 50% of land, with the richest 2% controlling the 18%

Land distribution of Nepal, especially in the Terai has deep political and historical roots. Prior to 1950, nobody lived in the flat Terai land, which was infested with Malaria. The people there, mostly natives and some Indian migrants inhabited those villages, as they were immune to Malaria. After the eradication of Malaria in 1950, however the then King Mahendra appointed some high caste people as the tax collector of those lands which were later given as those people as “land grants” or “birta” and “mauja.” The biggest reason of land discrepancy thus lies deep in the political history. Two land reforms have happened since 1950 with some positive changes, but still the land disparity between the low caste people and high caste people is very high.

As discussed above, landholding is the most important thing that determined the incomes and expenditures of farmers. The past state policies and legislation have failed to develop the life standards of thousands of farmers involved in agriculture. Other factors that are clearly affected by the state policies and practices are:

- **The irrigation facility:** Only around 33% of the land in Nepal is irrigated and Rangeli and Katarhari, about 70% do not access to any kind of irrigation. The farmers for its construction faults criticize even some of the irrigation programs by government heavily. The government used to subsidize the shallow tube wells to facilitate the small farmers for irrigation. However that was cut off in the New Agriculture Perspective Plan in 1999 because of the ADB’s influence in the decision-making. The “structural adjustment programs” for the developing countries, which multilateral banks/donors like ADB promote have been responsible for the cut off of various subsidies for farmers, with highly negative feedbacks. With the very low production growth following the cut off, the government wanted to reintroduce the subsidy, but ADB

totally opposed it and it was made one of the conditionality to get agricultural loan. The problem in irrigation is thus not only the result of state policy but has a very significant global background and interests.

- **Subsidies in fertilizers and pesticides and their distribution:** There is no subsidy in necessary agro-products and raw materials such as fertilizers and irrigation facilities like shallow tube wells. This results into the debt cycle because of high investment and low returns. Similarly, the distribution of fertilizers and improved seeds are not timely compelling the farmers to buy them directly from the Indian businessmen.
- **Better financing mechanisms for small farmers:** High interest rates of government banks, cumbersome bureaucratic procedures to access the government bank's loans and necessity to burrow money from local land lender also maintains the debt cycle of the farmer. State policies and practices should make the soft loans accessible and with minimum interests for the poor farmers.
- **Government intervention in market by fixing a minimum price:** To ensure reasonable returns from the agriculture market, some farmers and businessmen suggest that the government should be more involved I the agriculture market system. Considering the involvement of thousands of farmers and the current decision making process that leads to India, the intervention of government could be in the interest if farmers. In India, for example, government fixes the minimum price for the agro-products. If the market price is too low, farmers have a choice to sell it to the government. Since Terai is the only food sufficient zone in Nepal and there are other food deficient zones, this might help in protecting the interests of farmers, while taking initiatives to relieve food shortages in various places.
- **Need for infrastructures like storage:** The small and medium farmers suffer at the hands of middlemen because they cannot store the products, and wait for the right price. Some storage facilities for rice and wheat and some cold storage facilities for vegetables would help to regulate some of the market inefficiencies, especially for the medium farmers who have some surplus. To address the larger problem of the farmers living in margin, selling the products randomly to meet cash needs, building storage would not be of much help. Building of some agro-mills and small food

processing industries in the villages where farmers can access it would benefit all the farmers to get better prices.

- **Good transportation system among various parts of Nepal:** Though this research hasn't talked about the transportation costs or the difficulty of transportation, some farmers specify the need for better transportation mechanisms. Though, it is only 24 km distance, it takes 2 hours to go to Biratnagar from vice versa, which is one of the reasons vegetable farmers do not venture to go there. Better transportation, under the present conditions is likely to benefit intermediate and tertiary markets more than the primary markets. However the transportation facility along with better market information of nearby areas would help the farmers too.
- **Trade negotiations with India:** Under the present situation, the ultimate force for the pricing mechanism is India. The state heads should negotiate with the Indian government not for the political ambitions, but for the betterment of common people. Similarly there is an urgent need to stop unauthorized trade with India and regulate the tax and tariffs of the existing trades.

If the opinions and expectations of farmers and urban businessmen are any indications, the state has not been very encouraging to the agriculture market system. The state policies have to be effectively designed with the interests of poor people in mind. With the long history of dependence on foreign/multilateral/bilateral aid however, the intervention in national policies from the donors and lenders is hard to shed.

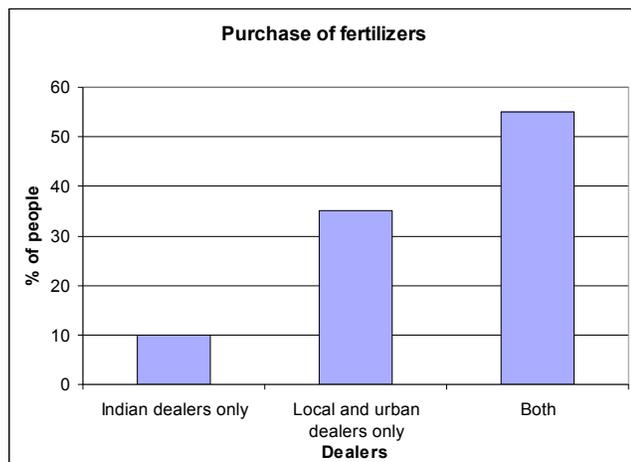
#### **4.5 Rural Urban Market system and Indian influence**

As a landlocked country, Nepal has to use the port of India for all its trade transactions, which has dictated its trade relations with India since decades. The bilateral trade and treaty transfer made with India in 1950 which allows Indian trade in Nepal without any tax and tariff dictates the market relations in the two countries (Ives and Messerli, 1989, Blaikie et al, 2002). Ives and Messerli, 1989 also argue that the increasing control of agricultural raw materials from across the open border with India, deprives Nepal of potential industrial growth, as well as an extensive loss of revenue due to smuggling and illegal transfer of products. Nepal has a substantial trade deficit in the

trades with India and it is very hard for Nepal compete with the Indian industrial capitalism by starting domestic production in agriculture and other matters.

India provides the fertilizers, pesticides and other agriculture raw materials to Nepal. For people of Rangeli and Katahari, situated in the border of India, the illicit transit of various agro-vet products is also very high. Fertilizers and Pesticides enter into Nepal from several authorized as well as unauthorized points (Statistical Information on Nepalese Agriculture, 2003). In Rangeli and Katahari, the Indian businessmen across the border also strike deals directly with the farmers and deliver these much-needed products in farmers' doorsteps. Over 40% of the farmers buy fertilizers directly from Indian businessmen and about 10% buy only from the Indian businessmen.

**Figure: 4.18. Purchase of fertilizers from various sources**



While talking about the control of India in agriculture inputs and agriculture markets, it is also important to discuss the source of stability that India provides to large sectors of Nepalese, especially the farmers. While India ensures that it has sufficient hold on Nepal to influence the policies and decision making, it also has the capacity to absorb the cheap labor of Nepal in huge percentage, the remittance of which helps maintain the rural lives. This rural remittance, conspicuously absent in the government data is also

one stabilizing factor in stabilizing rural societies and peasantry (Dixit Kunda, 1997, Seddon et al, 2002). While the Nepal Living Standard Survey has reported that remittances report that the rural remittances now contribute to over 25% of the household income to nearly a quarter of all households, Seddon et al., 2002 have estimated that over 1 million Nepalis working abroad might be contributing about 15 and 20% of the Gross Domestic Product of the country.

The outcome of this huge dependence and influence in trade, is that though the citizens of Nepal have little control on decisions taken in India which nevertheless affect their lives to a considerable extent- they are, in a sense, disenfranchised by virtue of their belonging to another state (Blaikie et al, 2002).” Thus from the agriculture input control to the rural remittance, a loop is created, which provides farmers enough to survive and continue but not enough to raise their class and prosper.

## **6. Conclusion**

The significance of the study of rural urban linkage lies in its potential to address the worldwide phenomenon of urbanization and the related issues of food demand, environmental deterioration and widening rural urban gap. This research, based on three specific villages and towns of Nepal, shows the implications of such linkages to the lives of farmers, and to an extent to the urban counterparts.

By the analysis of two broad parameters of the rural urban market system, namely socio-economical and environmental, it can be realized that the evaluation of rural urban linkages are not simple and easy. The relationships between the two areas are not always tangible, complex and are influenced by many local and global markets. The importance of rural urban agriculture cannot and should not be undermined, considering that for a significant proportion of small farmers (36% in this research), this linkage with the urban area is the sole involvement in the cash economy. However, the more important question is again “does rural-urban linkage provide a way out of the poverty cycle”? The only farmers benefiting from the market seemed to be the bigger farmers, who have more resource to invest and who can also give the loans and rent the land to poor farmers. The ultimate capital flow however goes back towards the city with little retained for the rural development. The poor farmers are not able to get out of the poverty cycle embedded with annual debts and compiling interests. There are many irregularities in the agriculture market system that penalize the farmers by compelling them to take all the production risks, while the profit is accrued by another, much richer person. Under such scenario, the economic potential of the agriculture market system for the rural poor can only be realized if and only if such irregularities are mitigated.

The importance of state regulations and transnational trade policies can not be understated because close analysis of the local factors such as landholdings and market mechanisms show their deep political and historical connections. In case of Nepal such connections extend well over the borders, especially to India. Even the bigger farmers are not willing to farm for commercial purposes because they have little control over the price of products they sell. Because of the free entry of Indian goods into Nepali market, the unsubsidized domestic products have to compete with the subsidized products of its neighboring state. The price for the agricultural products is fixed by the forces beyond the

border, which farmers have no power to control. Unless the power relations between Nepal and India are redefined, and the trade policies amended, even if the local irregularities are minimized, the market cannot be sustained and make profits. Farmers do need some economic incentives and policy support from the government policies. Lot of monitoring is however required if government is to provide incentives like subsidy in fertilizers, so that they are not misused and do not have adverse impact in the environment. I think it is also important to talk about the resources that the country has, while talking about its responsibility as a nation state. Nepal, with its lack of economical resources is surviving on international/ multilateral aids and hence some interventions from the donors/lenders in the national policies are a norm. Especially with weak governance and corruption abound, the presence of multilateral organizations have resulted into making few people richer at the cost of putting thousand of people survival at risk. The “development mechanism” whether it be in the agriculture sector or something else hence needs a lot of study and research, so that common people in countries like Nepal can actually benefit from such aids. For the betterment of small farmers, investment should be made on agriculture equipments, soft loans, and some kind of crop insurance and generation of sustainable non-farm income sources that do not put excessive demand on the resource of either rural or urban areas.

From environmental perspective, mitigating the negative environmental implications of the rural urban market system like the unregulated use of fertilizers and pesticides, changing cropping patterns, disappearance of some varieties of agro-products, change in land use is a big challenge. The bigger challenge is however to do so without penalizing the small farmers by making them bear either economical or environmental cost. The case study like this are important because they help to see the micro effects can some macro policies have in the life of a poor farmer; how the environment and economics, the global and the local are interconnected with the survival.

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## **Appendix**

### **Annex 1: List of various interviewees excluding the farmers**

#### **Urban businessmen**

1. Keshri Chandra Bohra, Chandanwala Khadya Udhyog
2. Aswani S, Aswani and Sanjay Traders
3. Pradeep Kumar Chainwalla, Sagarmatha Flour mills
4. Surendra Golchha, Dhiraj Khadya Udhyog, Golchha House
5. Mahesh Agrawal, Mahesh Khadya Udhyog
6. Chandrashiv, Chandrashiv Rice mills

#### **Middlemen (Rice and Wheat):**

Jaya Prakash Rajbanshi (Katahari)  
Birendra K. Rajbanshi (Katahari)  
Satyalal Rajbanshi (Katahari)  
Manoj Mandal (Katahari)  
Ratan Mahto (Rangeli)  
Rameshwor Yadav (Rangeli)  
S. Yadav (Rangeli)

#### **Middlemen (Vegetables)**

Sanjay Kumar (Biratnagar gudri)  
Babulal Rajbanshi Katahari, Secretary of Gudri, Katahari  
B. Bohra, Biratnagar  
H. Choudhary

#### **Government Officials**

Ward Officials, Rangeli and Katahari  
Deena Nath Bhattarai, Tax department, Rangeli  
Jaya Prakash Rajbanshi, Ex ward Chairman  
Shukhdhar Mainali, District agriculture development Office (DADO), Biratnagar  
Mr. Uprety, Fertilizer Division, DADO, Biratnagar  
Basanta Gautam, DADO, Biratnagar  
Nandalal Rao, Soil Test laboratory, Jhumka, Sunsari  
Dinesh Bahadur Bista, Department of agriculture, Kathmandu  
Bouyalal Shah, DADO, Biratnagar  
**Surya Narayan Shah, Regional Agriculture Development Center, Biratnagar**

#### **Fertilizer/ Pesticides Dealer:**

Umamal Rajbanshi, Rangeli  
Respondent, Bachhan Agrico Ltd., Biratnagar

#### **JTA**

Surya Narayan Shah (Rangeli)

## Annex 2: List of Questionnaires

### 2.1. List of survey questionnaires for farmers

General Information of the interviewee

Caste: \_\_\_\_\_

Age: \_\_\_\_\_

Gender: Male \_\_\_\_\_ Female \_\_\_\_\_

Occupation: Farmer \_\_\_\_\_ Laborer \_\_\_\_\_

Others: \_\_\_\_\_

Education: Illiterate \_\_\_\_\_ Primary \_\_\_\_\_

Secondary \_\_\_\_\_

College \_\_\_\_\_ Other: \_\_\_\_\_

Size of land owned: \_\_\_\_\_ (Bigha/ Aana)

Number of family members .....

Adults (over 21) \_\_\_\_\_ Children : \_\_\_\_\_

Male : \_\_\_\_\_ Female: \_\_\_\_\_

#### ***Dependence on Urban Market for Household Economy:***

#### **What products do you sell in the market?**

Rice \_\_\_\_\_ Wheat \_\_\_\_\_ Lentils \_\_\_\_\_ Vegetables \_\_\_\_\_

#### **How much do you get for each product you sell?**

Rice \_\_\_\_\_ Wheat \_\_\_\_\_ Lentils \_\_\_\_\_ Vegetables \_\_\_\_\_

#### **Does the price vary according to season?**

Yes \_\_\_\_\_ No \_\_\_\_\_

#### **What do you do in off-season when you are not working?**

Labor \_\_\_\_\_ Go to city \_\_\_\_\_ Others \_\_\_\_\_

#### **How much food do you grow for yourself and how much food do you sell?**

Self-use \_\_\_\_\_ Sell \_\_\_\_\_

#### **How much do you have to invest for agriculture production annually?**

Laborers \_\_\_\_\_

Ploughing: Tractor \_\_\_\_\_ Traditional Plough \_\_\_\_\_

Fertilizers : Urea \_\_\_\_\_ DAP \_\_\_\_\_ Potash \_\_\_\_\_ Zn \_\_\_\_\_

Irrigation: Pump \_\_\_\_\_

Pesticides \_\_\_\_\_

Harvesting/ Thressor \_\_\_\_\_

#### **How much do you have to invest for vegetable farming?**

Fertilizers \_\_\_\_\_ Laborers \_\_\_\_\_

Planting/cropping \_\_\_\_\_ Pesticides \_\_\_\_\_

Irrigation \_\_\_\_\_ Others \_\_\_\_\_

#### **What is your annual income from selling the agricultural food products?**

< 5000 \_\_\_\_\_ 5000-10,000 \_\_\_\_\_ 10,000-25,000 \_\_\_\_\_

25,000-50,000 \_\_\_\_\_ 50,000-100,000 \_\_\_\_\_ >100,000 \_\_\_\_\_

**What is your total income?**

Agriculture

Others

**How much do you spend annually for following products?**

Food

Clothes

School fees

Household Items

Others

**Change in Productivity/ Agriculture system:**

**Has the production over the years been increasing or declining?**

Increasing \_\_\_\_\_ Declining \_\_\_\_\_ No change \_\_\_\_\_ Can't say \_\_\_\_\_

**What is the reason for increase/ decline?**

Dependency on Rain \_\_\_\_\_ Quality of seed \_\_\_\_\_ Use of fertilizers \_\_\_\_\_

Use of pesticides \_\_\_\_\_ Irrigation facility \_\_\_\_\_

Better technologies ( specify ) \_\_\_\_\_ Others \_\_\_\_\_

**How has the farming pattern changed over around 10 years?**

Variety of Rice grain: Past \_\_\_\_\_ Present \_\_\_\_\_

Land allocated for Jute : Past \_\_\_\_\_ Present \_\_\_\_\_

Land allocated for vegetables: Past \_\_\_\_\_ Present \_\_\_\_\_

Other changes Past: \_\_\_\_\_ Present \_\_\_\_\_

**Have you noticed any difference in the soil quality because of pesticide use?**

Decrease in soil quality \_\_\_\_\_

Soil needs more fertilizers every year \_\_\_\_\_

Compaction of soil \_\_\_\_\_

Others \_\_\_\_\_

**Market system**

**How do you sell your products? What are the mechanisms involved?**

Sell to wholesaler

Middlemen

Directly sell to consumers

**Do you have direct contact/ communication with your consumers?**

Yes

No

**Who decides the market price and /or the price that you sell the products for?**

Wholesaler

Market

Farmers

Others

**Is the price fixed before or after harvest?**

Before

After

Both

**Have you taken any loans?** No: \_\_\_\_\_ Yes \_\_\_\_\_

**If yes, who do you take loans from?**

Wholesalers

Bank

Other villagers

Others

**What is the interest rate that you have to pay?** \_\_\_\_\_

***Change in Lifestyle because of Economy:***

**What is your diet?**

Rice 2 times \_\_\_\_\_ Wheat 2 times \_\_\_\_\_

Rice and wheat once \_\_\_\_\_ Others \_\_\_\_\_

If non vegetarian, frequency of meat per month \_\_\_\_\_

**What material is the roof made of?** Tin Thatch Others

**Do you own a watch/ radio/ bicycle/ TV/ VCR?**

**What do you do in your leisure time?**

**Are there any cinema halls in your village? Theatres? When were they built?**

**How has your purchasing capacity/ behavior changed over the years?**

Do you have irrigation pumps, tractors, thessors or some new equipment related with farming?

**Which school do you send your children to?**

**What facilities do you have for health care?**

Health post Hospitals Others

**What do you do for maternal health care?**

**Where do you go for vaccination?**

Health Post Hospitals Private clinic Others

***Perceptions:***

**Are you satisfied with the present agriculture market system?**

Yes No

**What do you think needs to be done to make it better?**

Fixed rate of agro-products by government	Subsidy for fertilizers
Better irrigation facility	
Convenient distribution of seed	Convenient distribution of fertilizers

**Would you want your children to be farmers? What would you want them to be?**

Yes	No
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**Would you want your children to live in villages? If not why?**

Yes	No
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**Sample questions for wholesalers**

1. Are you also a farmer?
2. How much can you store in your go-down?
3. Is there any minimum/maximum limit to the amount of agro-products you accept from the farmers?
4. What is the ratio of farmers coming to you that take money on credit and the farmers that store and sell later?
5. How much do you charge for
  - Storage/month
  - A man (40 kg) of rice/wheat/lentils (Moong, Moosri, Khesari), mustard and other relevant products
6. Where do you sell the products?
7. What is the average time of storage?
8. How do you fix the price for selling and buying?
9. What is your profit margin?
10. How do you feel about the agro-business as the wholesale dealer?
11. How do you think farmers are faring in the agro-business?

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**Questions for the Ward Chairman:**

1. Population and household numbers in the ward.
2. Rough percentage of farmers in the ward.
3. What are the other major occupations?
4. What is the situation of farmers in your ward?
5. What do you think should be the government's role in agriculture production and market?
6. Are the farmers getting better or worse over the years?
7. Has the agriculture products increased or declined over the years?
8. What are the major causes for the increase/decline in agriculture?
9. How do you envision the future of agriculture in your ward/village?
10. What are your recommendations for the betterment of agriculture production and marketing?

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**Questions for the RUPP workers:**

1. How do you analyze the farmers' condition in the present context?
2. How much importance do you put to the agriculture production phenomenon?
3. What are your programs for the support of the rural farmers?
4. How have you addressed the linkage between the rural farmers and urban consumers?