CHAPTER II

LITREATURE REVIEW

"In moral terms, just stating the fact that one child dies every five seconds as a result of hunger and malnutrition should be enough to prove that we cannot afford to allow the scourge of hunger to continue".

"In economic terms the case is more complex but no less cogent," on a global scale, every year that hunger persists at current levels cause deaths and disability that will cost developing countries future productivity with a present discounted value of US$500 billion or more."
(FAO, 2004).

Scourge of food insecurity is very clear from the above information. This draws attention of policy makers and planners how urgent it is to resolve the problem. Additionally, it also justifies the importance of the study related to the food insecurity especially in the developing countries.

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2.1 Definition and Concept

According to the American Institute of Nutrition (AIN), food insecurity is defined as a condition "whenever the availability of nutritionally adequate and safe foods or the ability to acquire acceptable foods in socially acceptable ways is limited or uncertain" (Cited by Olson *et al.*, 1996). This definition can be extended to the household level as well. At the household level, food insecure households may either inadequate access to nutritionally adequate food supplies or be at risk of losing such access (i.e. vulnerable). Vulnerability is influenced by the recurrence of shocks (e.g.

natural disasters, conflicts, HIV/AIDS), forcing the sale by households of their assets, thus reducing their coping capacity, which might eventually lead to destitution (Olson *et al*., 1996). There are some definitions of food security literature that can be used to understand the food insecurity because food security is just reverse situation of food insecurity. One of the widely used definitions put forward by FAO (2002) is “Year-round access to the amount and variety of safe foods required by all household members in order to lead active and healthy lives, without undue risk of losing such access.” This definition carries the four sequentially linked components of food security – *food availability*, *food accessibility*, *food access stability* and *food utilization* (FAO, 2002). These components are explained as following:

1. Food availability: The availability of **sufficient quantities** of food at appropriate qualities, supplied through domestic production or imports (including food aid). This is often confused with food security but should properly be seen as only a part, albeit an important part of food security. The question is not only whether food is available in a country, but whether it is available in the right place at the right time and there must be a mechanism for ensuring that food of the right quality is made available.

2. Food access: **Adequate resources (entitlements)** are the key to have access of food at right amount, appropriate quality and at right time for individuals and for households. These resources need not be exclusively monetary but may also include traditional rights e.g. to a share of common resources. Since **entitlement**s are the key to determine food security at household or at individual. Entitlements are as "the set of alternative commodity bundles that a person can command in a society using the totality of rights and opportunities that he or she faces", (Sen, 1981). Households derive food entitlements from their own production, income, gathering of wild foods, community support (claims), assets, migration, etc. Sen (1981) has identified four main categories of entitlement:

a) **Trade-based entitlement**, which describes what an individual can buy with the commodities and cash they own.

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b) **Production-based entitlement**, which describes the right to own what one produces with one's own resources.

c) **Own-labor entitlement**, which describes the sale of one's own labor power, and the resulting trade-based entitlements. This type of entitlement mainly signifies the quality of labor in household, which makes the household strong enough against food insecurity.

d) **Inheritance and transfer entitlement**, which refers to the right to own what is willingly given by others as remittances, gifts or bequests, as well as transfers from the state such as social security, pensions and food distribution.

3. Stability of access: Food insecurity is the dynamic concept, at a point of time a household may not be food insecure but it may fall in such situation in future or it has happened in the past. An example of this situation would be a landless agricultural laborer who was almost wholly dependent on agricultural wages in a region of erratic rainfall. Such a person is at high risk of not being able to find work in a situation of general crop failure and thus going hungry, i.e. is vulnerable (FAO, 2002).

4. Food utilization*:* Non-food inputs such as clean water, sanitation, and health care are essential for utilization of food. This brings out the importance of non food items food security. It is not enough that someone is getting what appears to be an adequate quantity of food if that person is unable to make use of the food because he or she is always falling sick (FAO, 2002).

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The first point here to note is that only when all four dimensions have to be present before it can truly be said that an individual is food secured. The second critical point is that food security is defined at the level of the individual even though it is brought about by a combination of individual, household, community, national and even international factors. The third point is that the mere presence of food does not entitle a person to consume it. The quantity of food required must lie within that person's entitlement set. But, this study is mainly concerned with household level food insecurity; therefore the individual health issues were not analyzed. FAO (2002)

has identifies dimensions of food security at the household level and at the market level (Table 2.1).

Table 2.1 Dimensions of food insecurity.

Level	Transitory	Chronic
Household level	Income and saving short fall	Insufficient assets (Including education and human capital)
	Entitlement failure	Intra-household resource sharing
	Health Shocks	
Market level	Change in the food prices	Long run relative prices and wages
	Food availability decline	

Source: FAO, 2002

Food insecurity is largely depends not only on the socio economic characteristics of households but also affected by the government macro policies, trade and other macro measures. According to Gittelsohn *et al.* (1998) households' food security is under the framework of macro level of agricultural policies regarding both production and trade that influence food supply. Regional food supplies are affected by seasonality, climate and governmental inter-regional trade policies. The state of regional food supplies determines what foods are available in the community-level where households go to sell, trade, and purchase foods for consumption. Community food markets are affected by seasonality and climate, but also by cultural factors. Additionally, the cultural factors are primarily rules that determine food selection by households and patterns of inter-household food sharing. The household is a multilevel construct, with cultural factors influencing not only food selection and preparation but also intra-household allocation of food. Community-level factors, such as the health services available and the status of sanitation and water supply, are included as exogenous variables that influence individual nutritional status through morbidity (Figure 2.1).

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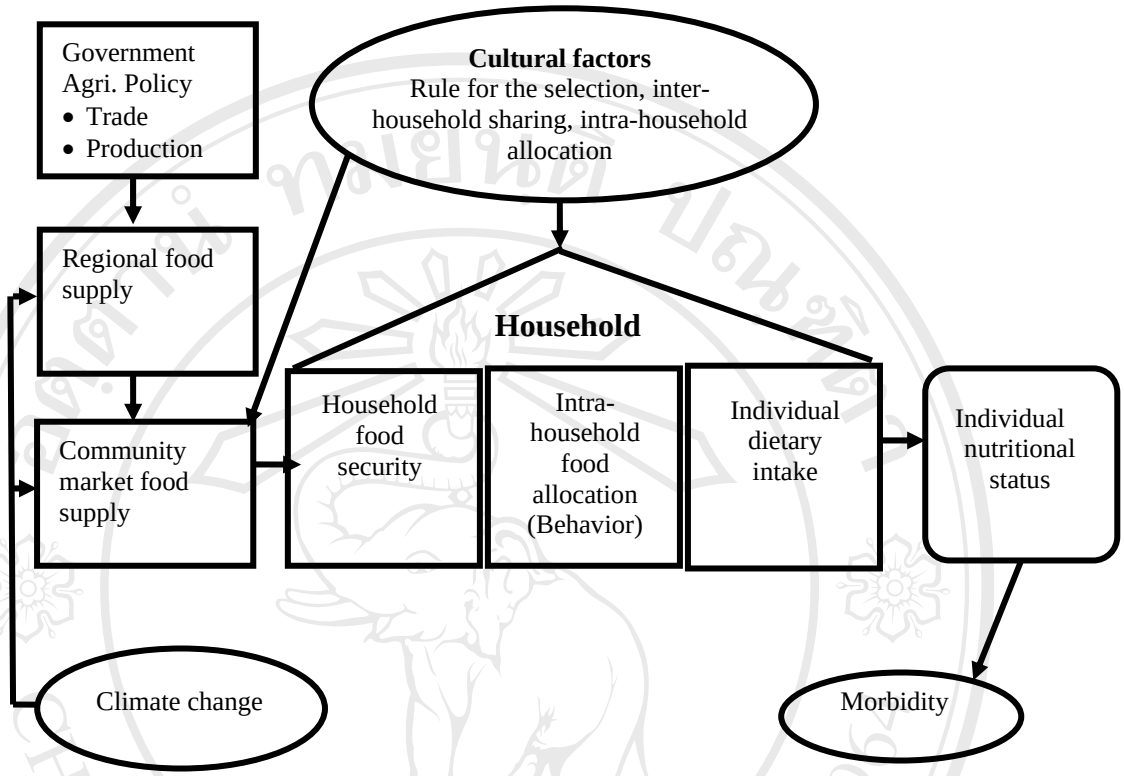

Figure 2.1 Conceptual framework for examining household food security.
Source: Gittelsohn *et al.*, 1998

2.2 Determinant of household food security

Identification of major factors of household food security is the crucial for the analysis of food insecurity at this level. According to Hoddinott (1999), households' resources can be divided into two broad categories: labor and capital. Labor refers to the availability of labor for production. It incorporates not only a physical dimension of how many people are available to work but also a 'knowledge' or human capital dimension. For an agricultural household, this knowledge includes formal schooling, formal training in agricultural production, and also the informal knowledge obtained via trial and error, past farming experiences, discussions with friends and relatives, observations made about practices on neighbors' farms, and so on. Capital refers to

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those resources such as land, tools for agricultural and nonagricultural production, livestock, and financial resources that, when combined with labor produce income. Households allocate these endowments across different activities such as food production, cash crop production, and nonagricultural income-generating activities (such as wage labor, handicrafts, food processing, services, etc.) in response to the returns each activity generates. In addition, households may receive transfer income from other households or from some public body such as the state or a non-governmental organization. Together, these all sources determine household income. Households face a set of prices that determines what level of consumption can be supported by this level of income. Consumption is divided between those goods that affect household and individual food security and all other goods. Those goods that will affect food security include food consumption, or acquisition, at the household level, referred to as food access in much of the food security literature—goods directly related to health care (e.g., medicines), and goods that affect the health environment, such as shelter, sanitation, and water. These three goods, together with knowledge and practice of good nutritional and health practices—called 'care behaviors'—and the public health environment (for example, the available of publicly provided potable water), affect illness and individual food intake, which, in turn, generates nutritional status or food utilization (Hoddinott, 1999). Food security could not be viewed as is static over time. Finally, household food security cannot be seen in isolation from broader factors, and it is constantly under the influence of physical, policy and social environment (Figure 2.2).

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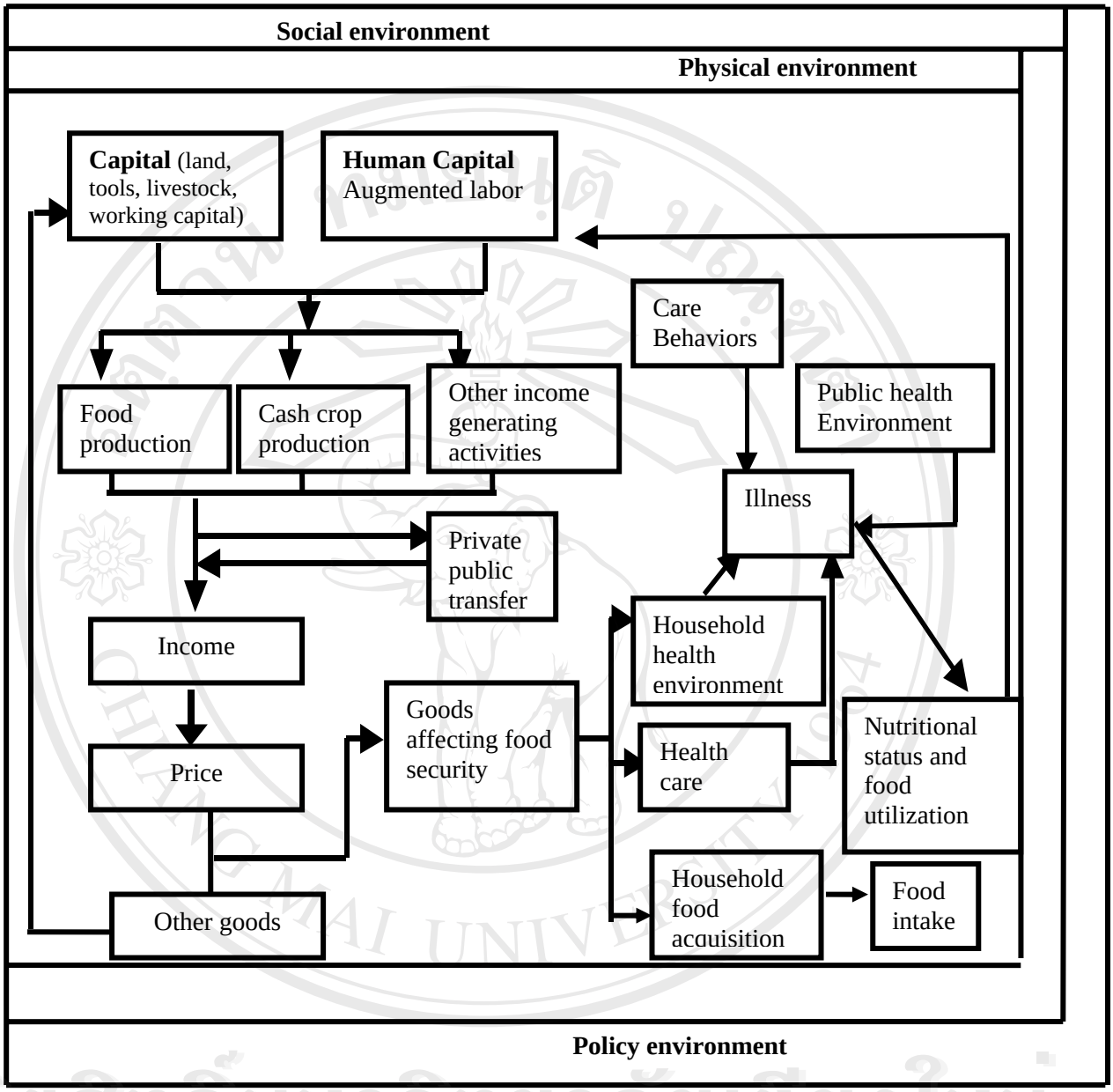

Figure 2.2 Determinants of household food security.
Source: Hoddinott, 1999.

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2.3 National food self-sufficiency versus food security

FAO (2002) has explained that national self-sufficiency is so often confused with food security despite the fact that national self-sufficiency is neither necessary nor sufficient to guarantee food security at the individual level (Hong Kong and Singapore are not self-sufficient but their populations are food secure while India is

self-sufficient but a large part of its population is not food secure). The principal reason for the confusion is that food production as a source of income and entitlements is confused with food production as a source of supply of the commodity food (FAO, 2002). What often happens is that a collapse in food production, which necessitates imports, may also lead to an entitlement collapse which causes hunger. Under these circumstances it is easy to see why food imports may appear to cause the latter. The collapse of entitlement can be triggered from several causes: wars, floods, drought, crop failures, and the loss of purchasing power by groups of households, and market failures including sometimes high food prices and grain hoarding (FAO, 2002). All of these types of disruptions to food supplies can 'trigger' subsistence crises by threatening a population's access to food. They are the immediate causes of famine. But these precipitating 'triggers' lead to famine only where particular groups of people are already vulnerable to it. The most vulnerable include: small-scale subsistence farmers, landless agricultural workers, other workers who are affected by drop in real income in famine regions, pastoralists, female-headed households, children, and the elderly (FAO, 2002).

In some cases even if particular country or state do not have self sufficient food production for their consumption that country or state may be better in food security aspect. Kannan (2000) has cited that an expert committee of Kerela state government has concluded that "food self-sufficiency for Kerala, in the sense of the state's ability to produce all the food items to meet its requirements, is not an economically feasible one. This is especially true for its requirement of rice. Therefore the policy of the state should be redefined in terms of achieving food security rather than food self-sufficiency". He further adds that Kerala finds itself at a lower level in terms of the average intake of food among various states in India; it is in the forefront in such food security indicators as the incidence of under nutrition, poverty, infant mortality and life expectancy (Kannan, 2000).

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2.4 Transitory and chronic food insecurity

According to Ayalew (1997), food insecurity can be classified into two categories i.e. transitory and chronic food insecurity. Transitory food insecurity is a temporary or seasonal shortage of food because of unexpected factors for only a limited to that period. In other word, transitory food insecurity is a temporary decline in a household's access to enough food. Transitory food insecurity can be further divided into temporary food insecurity and cyclical or seasonal food insecurity based on time dimension. Temporary food insecurity occurs when sudden and unpredictable shocks, such as drought or pest attack, affect a household's entitlements. For urban households, sudden unemployment may also be a cause of transitory food insecurity. Seasonal food insecurity occurs when there is a regular pattern of inadequate access to food for particular period of time. This is often linked to agricultural seasons, particularly when it is difficult for households to borrow from other sources. In a chronically food-insecure society that ultimately leads to famine. However, in normally food-secure populations, it does not turn into famine because of the resilience power of the households. Chronic food insecurity translates into a high degree of vulnerability to hunger and famine. Contrary, ensuring food security presupposes elimination of vulnerability to hunger and famine. Vulnerable populations can reach the stage of famine with slight abnormalities in the food production-distribution-consumption process (Ayalew, 1997). Therefore, in conditions of chronic food insecurity there is always an impending famine. Repeated seasonal food insecurity, however, could deplete the assets of the even seemingly secure societies, exposing them to a higher level of famine vulnerability.

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2.5 Famine versus hunger

Famine and hunger are both rooted in food insecurity. But, hunger is not famine. Hunger is similar to undernourishment and is related to poverty. Therefore, in the poor countries there are always undernourished and hungry people. Besides, in many poor countries there is seasonal hunger, usually in the months just before the coming harvest. When hunger persists for a longer period, covering a large number of

the population and resulting in mass migration and death, it then becomes famine Ayalew (1997). The one "good" thing about famine is that it does not strike unexpectedly, but builds up slowly and provides a lead time before it occurs. In other words, the predictability of famine makes it possible to prevent it (Ayalew, 1997). If a food shortage develops to the scale of a famine, it must therefore be the weakness of society in general and government in particular. In this sense, famine is a man-made disaster (Ayalew, 1997).

2.6 Poverty, food insufficiency and food insecurity

According to OECD “poverty encompasses different dimensions of deprivation that relate to human capabilities including consumption and food security, health, education, rights, voice, security, dignity and decent work” (Cited by FAO, 2002). Hunger and food insecurity are closely linked to poverty. Living at or below the poverty line places tremendous strain on a household budget that adversely affects the ability to purchase adequate diet. It affects households that persistently lack the ability either to buy enough food or to produce their own. Hence, poverty is considered the root cause of chronic food insecurity. Many explanations focused on the importance of access to food at the household level, which is closely related to poverty. At the household level, food security is measured by actual dietary intake of all household members using household income and expenditure surveys (Saad, 1999). It is important that changes in socio-economic and demographic variables be monitored continuously over time.

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The poverty is virtually widespread every part of the Nepal. If “one US dollar a day” taken as a threshold limit of the poverty about 37.7 percent of population is under the poverty line in Nepal (UNDP, 2001). Moreover, there is stark differences exist in the incidence of poverty between the poor and rich. National Living Standard Survey showed that in nominal terms, the bottom 80 percent of households earn 50 percent of total income, while the top 20 percent earn the other 50 percent of income. Poverty also differs by place of residence (Cited by UNDP, 2001). According to UNDP (2001) the relative incidence of poverty in rural areas is 2.6 times higher than

in urban areas. Similarly, according to that report poverty is less severe in the eastern and central development regions compared to other development regions and most intense in the mid-western and far western mountains, followed by the eastern and far western hills. At the same time, poverty was found less rampant in *Tarai* compared to other ecological regions. It is relatively less severe in eastern *Tarai*, and central Hills and central *Tarai*. Depending upon severity of poverty of place, food insecurity of that place differs accordingly. The evidence of the poverty can also further be substantiated by the percentage of expenditure on food items. According to the National Household Consumption Survey, food items continued to account for over half of total consumption (Cited by UNDP, 2001). Basic continuity in consumption patterns with a heavy commitment to food is a general indicator of poverty.

According to Ribar and Hamrick (2003), poverty and food insufficiency are both indicators of economic hardship. But, food insufficiency depends on more than just poverty status, indicating that measures of poverty and food insufficiency capture different dimensions of economic hardship. They further stated that female- headed households are significantly more likely to enter into food insufficiency and the household remain vicious circle less likely to exit from it than other households. Moreover, completing high school education is consistently found to increase the chances of leaving food insufficiency (Ribar and Hamrick, 2003).

2.7 Food inflows and outflows in Nepalese households

In order to assess the food insecurity at household level, it is essential to identify the inflows and outflows of food into and out of the households' food store. According to Gittelsohn *et al.* (1998) the sources of outflows and inflows of food can be shown in the following figure (Figure 2.3). He has described that on the inflows side, produced in own plot, bought from market, received as gift, and received as payments are the ways by which food is entered into the household food store; whereas food sold in the market, given as gift, paid as rent, feed to animal and planted are the ways by which food goes out of the households food store.

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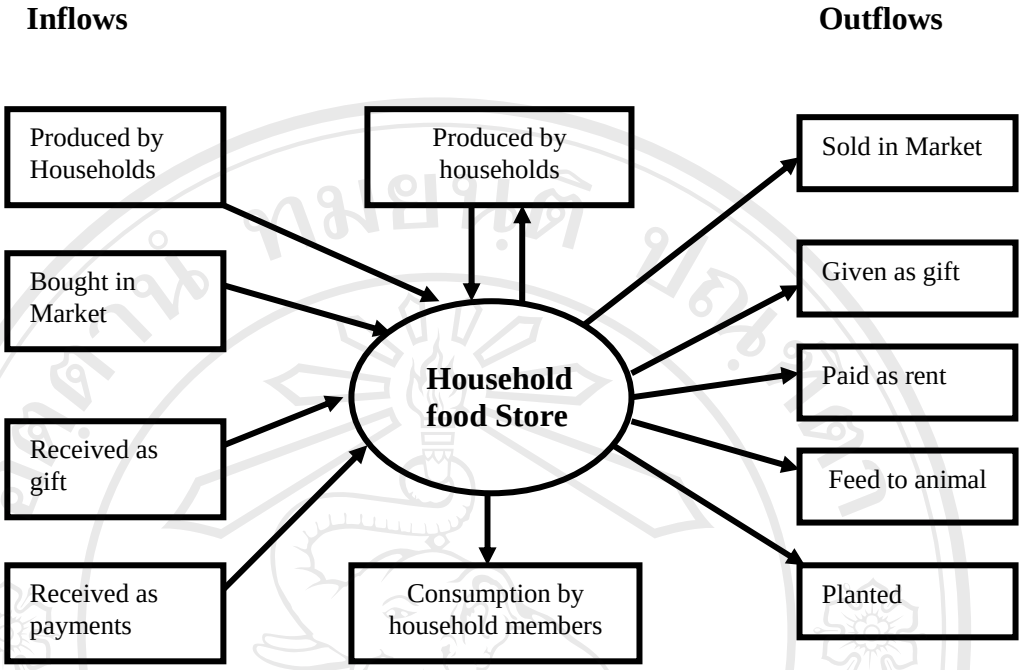

Figure 2.3 Food inflows and outflows in the Nepalese households.
Source: Gittelsohn *et al.*, 1998

2.8 Characteristics of Nepalese households

Since the majority of people depend on agriculture therefore, food security or insecurity is largely determined by agriculture. Agriculture is largely depends upon the landholding size especially when there are several institutional constraints on the technology dissemination and capital investment (Chapagain, 1999). Such constraints are widely prevalent in Nepal. According to Central Bureau of Statistics (CBS, 2000) at the national level the distribution of landholding showed skewed distribution of land (Table 2.2).

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Table 2.2 Number and area of landholdings by size.

Size of holdings (ha.)	Holdings			Area of holdings		
	Number (000)	Percent	Cumulative Percent	Area (000 ha.)	Percent	Cumulative percent
< 0.5	1,166.1	43.1	43.1	292.4	11.3	11.3
0.5 – 1.0	711.7	26.3	69.4	499.5	19.2	30.5
1.0 -3.0	697.9	25.8	95.3	1142.5	43.0	73.5
3.0 -5.0	88.2	3.3	98.5	328.1	12.6	86.1
5.0 -10.0	32.0	1.2	99.7	209.3	8.1	94.2
> 10.0	8.2	0.3	100.0	151.3	5.8	100.0
Total	2,703.9	100.0	100.0	2,597.4	100.0	100.0

Source: CBS, 2002

The average size of holdings is about 0.96 ha. per farmer, similarly average parcels per farm and number of parcels per hectare is 3.96 and 4.2 respectively (CBS, 2002). At the same time, about 70 percent of the farmers have less than or equal to one hectare of land. These farmers occupied about the 30 percent of the total area (Table 2.3). Additionally, only about 33 percent of cultivated land is under irrigated condition (MoAC, 2003). But the percentage of total area under year-round irrigation is very limited and concentrated only in the *Tarai*. Similarly, an official figure shows that the use of chemical fertilizer was merely 17 kg per hectare in the year 2001. It is far below than other countries in South-Asia.

There are about total four millions households in Nepal (CBS, 2002). The average household size is 5.45 persons per family (CBS, 2002). The majority of population in the rural areas is under poverty and illiteracy. Besides, there is tendency that rural population especially youth to migrate to the city area in search for jobs. So, in the rural area only illiterate old people, children and women people are living and engaging in agricultural practices. The literacy rate for women is only 25 percent as compared with 54.5 percent for men (UNDP, 2001). Existing traditions and customs showed that some of the caste or ethnic groups were having less opportunity in

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accessing resources and off-farm jobs. Besides, women were also found discriminated against their male counter part irrespective of caste/ ethnic groups. Due to such prevailing traditions at households, even when the households have just sufficient food for consumption, women consume fewer calories than men. However, severity of discrimination differs from one caste to another. Discrimination can also be found in the wage rate and ownership of factors of production. Gittelsohn *et al.*, (1997) found that adult women are disfavored when allocating micronutrient-rich food items in rural Nepali households.

While looking at national level, poverty is also concentrated among the few caste/ethnic groups; incidence of poverty is highest among *Limbus*, followed by socially underprivileged formerly untouchable castes i.e *Sudra* such as *Kami* (metal worker), *Damai* (tailor) and *Sarki* (cobbler) (UNDP, 2004). Incidence of poverty is lowest among *Newar*s followed by *Brahmin*s at national level (UNDP, 2004). But, in the study area only *Brahmin*, *Chhetri*, *Sudra*, and *Tharu* are the main dominant caste/ ethnic group (DDC, 2003). Because of specificity of poverty in some caste/ethnic groups, poverty becomes the hereditary. Therefore poverty encompasses the food insecurity from one generation to another generation.

Similarly, food consumption behavior differs from one caste to another caste.. Being *Brahmin* or, to a lesser degree, *Chhetri*, associated with significantly more frequent consumption of green leafy vegetables, tubers, and dairy products and significantly less frequent consumption of meat (Gittelsohn *et al.*, 1998). Therefore, these all socio-economic behaviors make the household as multilevel construct. In fact these cultural factors not only influencing food selection and preparation but also intra-household allocation of food. Moreover, these in society some of the caste/ ethnic groups such as *Damai*, *Kami*, and *Sarki* are more vulnerable to food insecurity (Shakya and Singh, 2000).

Community level factors, such as the health services and the status of sanitation and clean drinking water supply, are also included as exogenous variables that also equally affect to individual or household nutritional status through morbidity.

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It has shown that about 80 percent of population has access to piped drinking water (UNDP, 2001). But, due leakage on the water delivery system people who were getting water from these improved sources were also consuming contaminated water. Therefore, the exact percentage of people who have access to clean drinking water is not clear. Consequently, diarrhea was the second most prevalent disease that causes morbidity in Nepal (UNDP, 2001). Moreover, about 75 percent of the pregnant and 67 percent of non-pregnant women were anemic. Vitamin A Deficiency and Iodine Deficiency Disorder (IDD) still remain problems among the children and women. It showed the poor health condition.

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