The Impact of Food Inflation on Poverty in Nepal

Min Bahadur Shrestha, Ph.D.[*] and Shashi Kant Chaudhary[**]

Abstract

This paper examines the impact of food price hike on poverty in Nepal employing cross-sectional sample household consumption data of Nepal Living Standard Survey III. The findings of the study suggest that a 10 percent rise in food prices is likely to increase overall poverty in Nepal by 4 percentage points. It implies that one percent rise in food inflation will push 100 thousand additional people into overall poverty and 180 thousand additional people into food poverty. The paper also analyses the impact at the regional level and suggests some policy options to contain the food inflation and to mitigate the impact of food price hike on the poor section of the population.

Key words: Consumption, food prices, poverty
JEL Classification: A11, A13, E31

1. BACKGROUND

The global food prices have remained highly volatile during the last five years. Food prices in the global market recorded a dramatic increase in 2007 and then sharply declined in 2008 amidst the global financial crisis. Again the food prices started to increase in 2010 and reached a record level in 2011. During both these episodes, South Asia experienced relatively higher inflation rate driven by the food prices. In Nepal also, food prices have been the major contributor of the higher rate of overall inflation in the last few years. The major causes of the food price hike in Nepal are decline in agricultural production due to unfavorable weather conditions and various types of supply bottlenecks. On the demand side, growing population and increased remittance inflow raised the demand for cereal grains, which in turn exerted the pressure on prices. Moreover, export bans imposed by India and use of cereals as feed products also influenced the food prices in Nepal.

[*] Executive Director, Nepal Rastra Bank, Research Department, Central Office, Baluwatar, Kathmandu, Nepal. Email: minshrestha@nrb.org.np.

[**] Assistant Director, Nepal Rastra Bank, Research Department, Central Office, Baluwatar, Kathmandu, Nepal. Email: sawsee@nrb.org.np.

According to the Nepal Living Standard Survey III, 2010/11 (CBS, 2011a), poor people spend 72 percent of their total consumption expenditure on food. This implies that higher food prices have a direct impact on households' purchasing power as it increases food deprivation and malnutrition. Besides, increased expenditures on food due to increased prices may lead to reduced expenditures on health and education, and also squeezes investment in agricultural inputs such as fertilizers, fuels, and power, which are required to increase the food production. Hence, rapid food price hikes have become matter of serious concern as these may have unwanted impact on poverty and hunger and may dilute the progress made toward achieving the Millennium Development Goals (MDGs). In this context, this paper tries to analyze the impact of food price hike on poverty in Nepal. The paper also discusses some policy options to contain the food inflation and suggests some measures for mitigating the impact of higher food prices on poor section of the population.

The rest of the paper proceeds as follows. Section 2 reviews the findings of previous studies on impact of food price hike in the global context. In section 3, the inflation trend in Nepal is discussed. Section 4 presents overview of the poverty status in Nepal and section 5 discusses the methodology and findings of the paper. Finally, section 6 concludes the paper.

2. LITERATURE REVIEW

As poor and vulnerable households spend major share of their total expenditures on basic foodstuffs, higher food prices erode their purchasing power. This will increase the hardship of those who are already below the poverty line and also push additional population below poverty line. Studies show that higher food prices can also increase level of inequality. In particular, studies of Bangladesh, Viet Nam and Latin America show that inequality rates in these countries rose as a result of the 2007-08 food price shocks (World Bank, 2008; Save the Children, 2009). These findings support ADB (2008) estimates that a 20 percent nominal food price increase leads to a one percent increase in the Gini coefficient.

Changes in food prices can affect poverty and inequality through consumption and income channels. As food prices increase, the monetary cost of achieving a fixed consumption basket increases leading to reduced consumer welfare. However, for the segment of the population whose income depends on agricultural markets, the rise in food prices results in an increase in their monetary income. For each household, the net welfare effect of an increase in food prices will depend on the combination of a loss in purchasing power (consumption effect) and a gain in monetary income (income effect). Since poor people spend a large majority of their income on food and many farmers derive much of their income from producing food, the changes in food prices will have large effects on the welfare of both farmers and poorer consumers (De Hoyos and Medvedev, 2009).

FAO (2011) argues that the average income of net food buyers is higher than that of net food sellers in most of the developing countries, and thus high food prices would transfer income from higher-income people to those with lower income. However, studies that use a more detailed disaggregation show that significant number of poor people in the developing countries is a net food buyer. Ivanic and Martin (2008) find that higher food prices increased poverty in seven of nine countries studied, with Peru and Viet Nam being the only exceptions. Viet Nam is a significant rice exporter with relatively equitable land distribution. As a result it has many households that produce a surplus of rice, but that are still relatively poor. In Peru, the beneficial impact was very small. In all other countries in the sample (Bolivia, Cambodia, Madagascar, Malawi, Nicaragua, Pakistan and Zambia), higher prices increased poverty, even after taking account of increased labour demand (Ivanic and Martin, 2008). A study by Zezza *et al.* (2008) also found that the poor are hurt by higher prices in all countries studied (Albania, Bangladesh, Ghana, Guatemala, Malawi, Nepal, Nicaragua, Pakistan, Panama, Tajikistan and Viet Nam), with the exception of rural dwellers in Viet Nam. This study did not examine labor market effects, but did incorporate supply and demand responses, and found that high prices still hurt the poor.

Ivanic and Martin (2008) estimate the poverty impact of global price changes of seven key staples (beef, dairy, maize, poultry, rice, sugar and wheat) between 2005 and 2007. Their results show that the effects of rising commodity prices on poverty differ considerably between countries and commodities, but that poverty increases are considerably more frequent and larger than poverty reductions. Urban households are typically hit harder than rural households, though many in rural areas are also net consumers of food and therefore adversely affected by price rises. The average impact of a 10 percent increase in seven key food items raises the poverty headcount ratio by 0.4 percentage point. Similarly, Wodon and Zaman (2008) find that in West and Central Africa, an increase in the price of cereals by 50 percent could increase the share of the population in poverty by 4.4 percentage points if only the impact on consumers is taken into account. Even when factoring in potential gains for producers, the headcount index of poverty would still increase by 2.5 percentage points.

An examination of the food price elasticity of poverty by ADB (2011) in 25 countries of Asia and Pacific shows that the effects of food price increases on poverty differ across countries and within countries. India, the rural areas in particular, and Bangladesh would be the most affected; while Sri Lanka would be the least affected by increase in food prices. It also explains that the poor in South Asia are more vulnerable to food price increases than other regions in developing Asia.

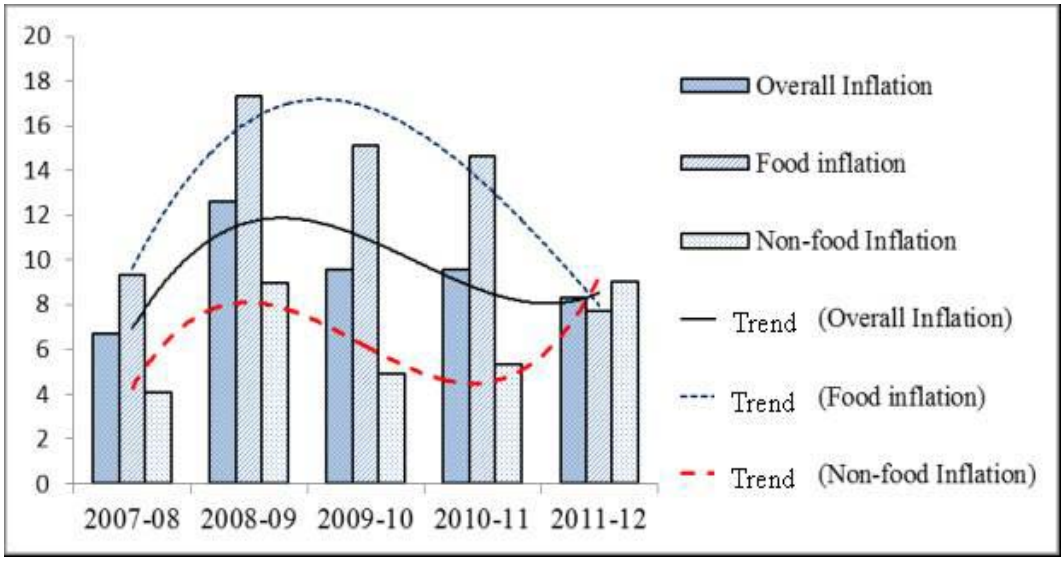
ESCAP (2011) simulations show that even a halt in the rise of food prices in 2011 would still have an impact on poverty, as the poor would still have to contend with a substantially higher level of food prices than in 2010. The results show that spike in food prices in 2010 and 2011 could postpone the achievement of the Millennium Development Goals (MDGs) on poverty reduction by up to half a decade in many countries of the

region, including least developed countries such as Bangladesh and Nepal. According to ADB (2012), an additional 112 million population in Asia could have escaped poverty annually in the late 2000s, had food prices not escalated.

3. INFLATION TREND IN NEPAL

Rising inflation has appeared as one of the core macroeconomic challenges in Nepal in recent times. During the last five years, fiscal year 2007-08 experienced moderate single digit inflation (6.7 percent) but it hovered around 13 percent in 2008-09 and remained in the higher single digit in the rest of the period. Sudden rise in global fuel prices in 2008 led to a drastic increase in petroleum prices in the domestic market, which in turn increased the cost of production of domestic products, resulting in rising prices of consumer goods and services. The combined effect of the rise in food, commodity, and fuel prices led to spiraling prices starting from 2008. Since then, the inflation remained on the higher side until the third quarter of 2011. However, inflation dropped to a four-year low rate of 8.3 percent in 2011-12 due mainly to moderating food prices (Figure 1).

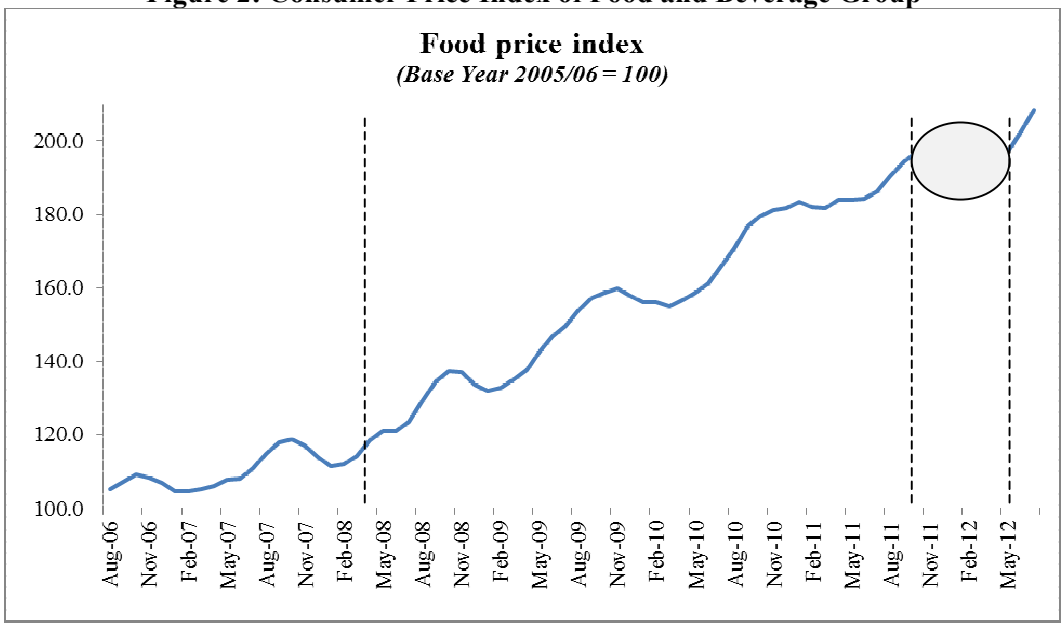
Figure 1: Inflation Trend



Data source: Nepal Rastra Bank, 2012

In most of the cases, food inflation has been the main contributor to overall inflation. Food prices witnessed a double-digit growth rates from April 2008 until September 2011. During these four years, the food price index rose from 118.5 to 194.3, recording an increase of 64 percent. From October 2011 to April 2012, food inflation rate remained moderate at 6 percent on average due to the food surplus in the country and moderation of food prices in India. However, food inflation started to rise after May 2012 mainly because of the supply obstructions resulting from the political activities and reached 11.9 percent in July 2012 (Figure 2).

Figure 2: Consumer Price Index of Food and Beverage Group



Data Source: Nepal Rastra Bank, 2012.

4. POVERTY STATUS IN NEPAL

According to the Cost of Basic Needs (CBN) approach, the poverty line is defined as the expenditure value (in local currency) required by an individual to fulfill his/her basic needs in terms of both food and non-food items. The food basket of the poverty line is constructed by estimating how much the poor spend to reach a minimum caloric requirement of 2,220 Kcal per day. Based on this approach, the overall poverty line has been set to be annual NRs 19,261, which is composed of the food poverty line of NRs 11,929 and the non-food poverty line of NRs 7,332 (CBS, 2011b).

The poverty incidence (head count rate) of overall poverty and food poverty in Nepal are 25 percent and 23 percent respectively. Among the ecological belts, the incidence is highest in Mountain followed by Hills and least in Terai in both the cases. However, the distribution of poor people is least in Mountain and higher in Hills and Terai (Table 1).

Table 1: Poverty and Its Distribution in Ecological Belts

Ecological Belt	Overall Poverty*		Food Poverty#	
	Head Count Rate	Distribution of Poor	Head Count Rate	Distribution of Poor
Mountain	42.3	11.8	43.1	12.9
Hills	24.3	42.8	22.0	48.0
Terai	23.4	45.4	21.1	39.1
Nepal	*25.2*	100.0	23.1	100.0

* *Central Bureau of Statistics (2011b)*

\# *The headcount rate of food poverty has been calculated by comparing the annual per capita food consumption (y_{fi}) of each household to the food poverty line z_f, where i = 1, 2... M; M is the total number of households in the sample. An indicator variable is used for each household, taking the value 1 when annual per capita food consumption falls below the food poverty line or 0 if annual per capita food consumption is greater: $I(y_f, z_f) = 1$ if $y_{fi} \leq z_f$ and $I(y_f, z_f) = 0$ if $y_{fi} > z_f$. The headcount rate is simply the sample average of the variable $I(y_f, z_f)$ weighted by the number of people in each household.*

Among the development regions, Far Western region has the highest headcount rate of overall poverty followed by Mid Western and Western regions. Poverty is least in Eastern region. But, the distribution of poor is highest in Central (31 percent) and least in Far Western region (16 percent). The incidence of food poverty has similar pattern as that of overall poverty. The food poverty situation is severe in Mid and Far Western regions. In case of food poverty, the distribution of poor people is highest in Central region (30 percent) followed by Mid Western (20 percent) and Far Western region (18 percent) respectively (Table 2).

Table 2: Poverty and Its Distribution in Development Regions

Development Region	Overall Poverty*		Food Poverty#	
	Head Count Rate	Distribution of Poor	Head Count Rate	Distribution of Poor
Eastern	21.4	19.8	17.8	16.9
Central	21.7	30.8	18.6	30.3
Western	22.2	16.9	18.3	15.3
Mid-Western	31.7	16.4	32.8	19.7
Far-Western	45.6	16.0	43.3	17.8
Nepal	*25.2*	100.0	23.1	100.0

** Central Bureau of Statistics (2011b)*

 # Calculated as in Table 1

The overall poverty rate is much lower in urban areas than in rural areas. Moreover, urban Hill is the least poor region with a poverty incidence of 8.7 percent only. On the contrary, rural Hills of Mid and Far Western region have the highest poverty incidence, 36.8 percent. Within urban areas, poverty ranges from

8.7 percent in urban Hills to 22 percent in urban Terai. Similarly, within rural Hills, poverty ranges from 15.9 percent in Eastern region to 36.8 percent in Mid and Far Western region. Within rural Terai, poverty ranges from 21 percent in Eastern region to 31.1 percent in Mid and Far Western region. The incidence of food poverty is highest in rural parts of Mid and Far Western regions (40.8 percent in rural Hills and 29.2 percent in rural Terai) followed by rural Hills of Central region (27.8 percent) and Western region (25.4 percent) (Table 3).

Table 3: Poverty and Its Distribution in Urban/Rural areas

	Overall Poverty*		Food Poverty#	
Urban/Rural	Head Count Rate	Distribution of Poor	Head Count Rate	Distribution of Poor
Urban	15.5	11.7	13.1	18.5
Rural	27.4	88.3	27.1	81.5
Urban – Kathmandu	11.5	2.6	12.2	6.6
Urban – Hill	8.7	1.5	9.4	2.9
Urban –Terai	22.0	7.5	16.7	8.2
Rural Hills – Eastern	15.9	4.0	17.3	4.8
Rural Hills –Central	29.4	10.8	27.8	9.4
Rural Hills – Western	28.0	10.5	25.4	7.9
Rural Hills – Mid & Far Western	36.8	13.3	40.8	16.4
Rural Terai – Eastern	21.0	9.6	22.4	8.0
Rural Terai – Central	23.1	13.9	19.9	8.1
Rural Terai – Western	22.3	5.9	19.9	6.0
Rural Terai - Mid & Far Western	31.1	8.5	29.2	8.8
Nepal	*25.2*	100.0	23.1	100.0

** Central Bureau of Statistics (2011b)*
 # Calculated as in Table 1

5. EMPIRICAL ANALYSIS

5.1 Data Source

This paper uses cross-sectional sample household consumption data of the Nepal Living Standard Survey III (CBS, 2011a). The main information taken from the survey is the per capita food and non-food expenditure and per capita farm income of the household members. The per capita expenditure has been used to compare the poverty line; while the per capita farm income has been used to compare the household's food position as net buyer or net seller.

5.2 Methodology

Let y_i be the per capita consumption of household *'i'* where i = 1, 2... M; M is the total number of households in the sample and z is the poverty line, i.e. the monetary value of affording a fixed basket of goods in terms of both food and non-food, required by an individual to fulfill his/her basic needs. The headcount rate (H) of poverty is then calculated by taking ratio of headcount (G) of poor to the total population of the sample (N), i.e. H = G/N.

The headcount (G) is calculated by comparing the income y_i of each household to the poverty line z. The individuals whose per capita consumption (y_i) falls below the poverty line (z) are defined as poor i.e. $I(y, z) = 1$ (poor) if $y_i \leq z$.

$$G = \sum_{i=1}^{M} I(y,z)n_i \tag{1}$$

Where n_i is the number of people in each household.

Thus,
$$H = \frac{\sum_{i=1}^{M} I(y,z)n_i}{N} \tag{2}$$

Now when food prices increase, the monetary value of affording the same basket of goods required by an individual to fulfill his/her basic needs also increases. It means the post-price increase poverty line (say z_1) would become higher than the previous one (z). Therefore, those people who are just above the poverty line and whose income would not increase with the increase in the food prices has greater chance to fall below newly set poverty line (z_1). Thus, the number of poor would rise with the food prices increase. This would give a new headcount rate of poverty (H_1). The difference between the proportions of post-price increase poor (H_1) and old poor (H) is termed as the impact of food price hike.

While estimating the impact of food price increase on poverty in line with the concept discussed above, it is assumed that the expenditure on the food basket would increase proportionately with the rise in food prices with no change in non-food expenditure. Once the new per capita food consumption is determined by increasing the per capita food expenditure proportionately with the inflation rate, it is compared with the set poverty lines to find what proportion of sample population falls under overall and food poverty lines separately (post-price increase poor). The difference between the proportions of post-price increase poor and old poor is termed as the impact of food price hike.

5.3 Findings

The findings of this paper are based on the analysis of consumption of aggregate food basket. The impact of food price increase on poverty has been examined under five different scenarios with food inflation rates ranging from 10 percent to 30 percent, with

an interval of 5 percent points. The findings suggest that overall poverty in Nepal is likely to increase by 4 percentage points while food poverty is likely to increase by 6.3 percentage points when there is a rise in food prices of 10 percent. Similarly, 30 percent rise in food prices will raise the overall poverty by 11.5 percentage points and the food poverty by 20.0 percentage points. A simple regression between the degree of food price hike and its degree of impact on poverty shows that one percentage point increase in food inflation causes 0.38 percent rise in overall poverty (equivalent to 100 thousand poor) which is statistically significant at one percent level. Similarly, one percent increase in food inflation causes 0.68 percent rise in food poverty (equivalent to 180 thousand poor) in Nepal and the result is also statistically significant at one percent level.

$$\text{Overall Poverty} = \underset{(0.90)\ (28.05)^*}{0.26 + 0.38\ \text{Food Inflation}} \quad (3)$$

$$\text{Food Poverty} = \underset{(-6.15)^*\ (178.05)^*}{-0.50 + 0.68\ \text{Food Inflation}} \quad (4)$$

*(Figures in parentheses are t-statistics and * indicates level of significance at 1 percent)*

In this analysis, the impact of food price increase has been looked at in a short-term framework without adjusting for the possibility of higher incomes in certain segments of the population due to higher food prices. The analysis also excludes the substitution effects on the assumption that demand for most goods purchased by consumers below or near the poverty line is inelastic in the short-term.

5.3.1 Poverty Impact in Ecological Belts

Table 4 presents the increase in the overall poverty and food poverty in Nepal by ecological belts. The poverty impact of food price shocks is higher in Mountain and Terai regions. Up to the food price shocks of 20 percent, the overall poverty impact is highest in Mountain region, but impact becomes highest in Terai with the food price shocks of above 20 percent. In terms of food poverty impact, Terai has the highest impact among all scenarios. Thus, Terai region seems to be more vulnerable to food price shocks compared to other ecological belts.

Table 4: Increase in Poverty Head Count in Ecological Belts

Price Shocks →	10%		15%		20%		25%		30%	
Poverty Type →	Overall	Food	Overall	Food	Overall	Food	Overall	Food	Overall	Food
Mountain	5.7	6.4	7.2	10.2	9.0	13.6	10.4	17.2	11.2	18.6
Hills	3.7	5.3	5.4	8.6	7.2	11.8	9.1	14.2	10.6	17.7
Terai	4.1	7.6	6.2	11.2	8.9	14.5	10.9	19.1	12.7	23.0
Nepal	4.0	6.3	5.9	9.8	8.1	13.1	10.0	16.5	11.5	20.0

5.3.2 Poverty Impact in Development Regions

Among the five development regions, the impact is severe in Mid and Far Western regions. The overall poverty impact is highest in Mid Western region while the food poverty impact is highest in Far Western region. In Mid Western region, the impact on overall poverty ranges from 6.2 percent to 16.3 percent while food poverty in Far Western region ranges from 9.8 percent to 25.2 percent. The impact in terms of both overall poverty and food poverty is least in central region (Table 5).

Table 5: Increase in Poverty Head Count in Development Regions

Price Shocks →	10%		15%		20%		25%		30%	
Poverty Type →	Overall	Food	Overall	Food	Overall	Food	Overall	Food	Overall	Food
Eastern	3.4	7.1	5.2	10.9	7.5	14.7	9.7	18.5	11.9	22.6
Central	3.5	5.0	4.7	8.0	6.3	10.8	7.6	13.9	8.7	16.5
Western	3.1	6.1	5.4	9.5	8.1	12.6	10.1	16.7	12.0	20.4
Mid Western	6.2	6.8	8.9	11.1	12.0	14.8	14.9	17.3	16.3	21.4
Far Western	6.0	9.8	8.3	13.4	10.8	16.9	12.4	21.1	14.2	25.2
Nepal	4.0	6.3	5.9	9.8	8.1	13.1	10.0	16.5	11.5	20.0

5.3.3 Poverty Impact in Urban and Rural Areas

In terms of the impact of food prices, urban Hill is the least affected part while rural Hills of Mid and Far Western region is the most affected parts. The food poverty impact differs according to the rates of food price shocks. Up to the food price shocks of 20 percent, rural Terai of Mid and Far Western regions has highest impact. However, rural Terai of the Western region observes the highest impact from the price shocks of more than 20 percent (Table 6).

Table 6: Increase in Poverty Head Count in Urban and Rural Areas

Price Shocks →	10%		15%		20%		25%		30%	
Poverty Type →	Overall	Food	Overall	Food	Overall	Food	Overall	Food	Overall	Food
Urban	2.7	4.2	3.5	7.0	4.7	9.7	6.0	12.1	7.1	15.6
Rural	4.6	7.3	7.0	11.1	9.7	14.7	11.9	18.6	13.6	22.1
Urban – Kathmandu	2.3	4.0	2.8	6.8	4.2	9.3	5.1	11.3	6.2	14.0
Urban – Hill	1.6	1.9	2.3	3.5	2.9	5.2	3.9	6.9	4.6	9.7
Urban –Terai	3.9	6.3	5.1	10.1	6.7	13.4	8.6	16.9	9.8	21.7
Rural Hills – Eastern	3.1	6.5	5.0	10.4	7.5	14.9	12.0	17.2	14.7	21.6
Rural Hills –Central	3.3	4.4	4.9	7.6	6.3	11.0	8.0	13.8	8.8	16.7
Rural Hills – Western	3.9	6.6	6.6	10.4	8.7	14.9	10.4	17.1	12.9	21.2
Rural Hills – Mid & Far West.	7.5	8.5	11.0	13.0	14.1	16.5	16.5	19.8	18.1	24.2
Rural Terai – Eastern	3.7	7.5	6.2	11.1	9.3	14.4	10.6	19.3	13.0	23.6
Rural Terai – Central	5.1	7.3	6.9	10.9	9.2	14.0	10.7	18.1	12.4	21.5
Rural Terai – Western	2.6	8.5	5.9	11.6	10.4	14.6	13.4	22.5	15.5	26.0
Rural Terai - Mid & Far West.	4.7	9.3	7.2	13.3	10.4	17.3	13.0	20.4	14.7	23.2
Nepal	4.0	6.3	5.9	9.8	8.1	13.1	10.0	16.5	11.5	20.0

5.4 Suggestions for Policy Response

The findings of this paper suggest that the overall poverty in Nepal is likely to increase between 4 percent and 12 percent, while the food poverty is likely to range between 6 percent and 20 percent due to the food price rise by 10 percent to 30 percent. It implies that one percent rise in food inflation will push 100 thousand new consumers into overall poverty. Similarly, 6.7 million people, who are already below the poverty line, would face further hardship in their lives. The impact is even intensified in some regions. As higher food prices have serious consequences on poverty in Nepal, the policy makers need to focus on containing the food inflation and maintain a sizable food buffer in order to prevent new consumers from falling into the poverty and also to control further deterioration of living standards of existing poor population. In this regard, following policy options should be considered.

a. Reducing taxes on key staples to lower the domestic prices: In general, countries impose taxes on food imports to encourage domestic production and also to increase domestic revenue. However, in the time of sharply increasing food prices, reduction in taxes can help in lowering the food prices so that some relief can be provided to the consumers, *albeit* at a fiscal cost.

b. Stimulating food grain production: While higher food prices are a burden to net purchasers of food, they also present an opportunity to stimulate food grain production.

To boost agriculture production, irrigation facilities, access to agricultural credit, supply of agricultural inputs and availability of extension services should be increased. In this regard, the government will have to invest heavily in improvement of irrigation facilities, in-country production of necessary chemical fertilizers, and strengthen agricultural research and extension services.

c. Maintaining food buffers at regional level: Establishment and management of national food buffer located in one place may be costly. Therefore, regional food buffers should be established. In this regard, the existing set-up of Nepal Food Corporation will not be sufficient to handle such food buffers. Therefore, either a new agency should be established or a massive structural reform of Nepal Food Corporation should be carried out to enhance its capacity for the effective management of the regional food buffers. This will help in maintaining food reserves at regional level and also support the national food security program. This type of food buffers can make market intervention possible to moderate the price volatility whenever there is a higher surge in food prices.

d. Targeted cash transfers and food grain subsidies: The targeted cash transfers to vulnerable groups can help in maintaining their purchasing power without affecting the incentive to produce more food, and without reducing the incomes of poor food sellers. However, to implement this option effectively, the administrative capacity should be enhanced first. Another option may be to provide food grain subsidies to the targeted poor in order to enable them to cope with household food insecurity in the time of food price hikes.

e. Promoting second-generation agricultural co-operatives: Agricultural cooperatives are involved in supply of inputs to their members and sell of produced items in the market. Besides, they can also purchase food grains to sell to their members during the period of shortage. However, the current level of activities of traditional agricultural cooperatives is not sufficient to make contribution to food security. Therefore, concept of *second-generation agricultural cooperatives* should be promoted for the commercialization of agriculture and proper marketing of produces. This concept will help in making the agricultural co-operatives more competitive and guided by high quality management (Chambo, 2009).

6. CONCLUDING REMARKS

Change in food prices generally affects all the households. As people differ in terms of their needs, consumption patterns and food position (as net buyer or net seller), the effects of food price changes will also be different from one household to another. Depending on households' position as net seller or net buyer of staple food, increase in prices of staple food would raise the income of households that are net sellers and add to the hardship of the households that are net buyers. Hardship of the poor people increases because they have to spend a larger share of their income on essential foods and less is left to spend on other items. Since the population below poverty line spend 72 percent of their total expenditure on food in Nepal, the impact of food price rise is severe on the poor section of the population.

The findings of this study suggest that overall poverty is likely to increase between 4 and 12 percentage points, and the food poverty between 6 and 20 percentage points as a result of the food price rise ranging from 10 percent to 30 percent. It means that a food price hike of 10 percent will push 1 million new consumers into overall poverty while 6.7 million existing poor populations would experience even harder lives. Therefore, policy makers need to focus on containing food price hikes and maintain a sizable food buffer. In this context, short and long term policy responses are required to prevent the reoccurrence of the food crisis and food price hikes in the future. These responses include lowering domestic food prices by reducing taxes on imports of key staples, boosting domestic food production, establishing regional food buffers, providing cash transfers and subsidies and promoting second generation concept among agricultural cooperatives.

REFERENCES

ADB, 2008. *Food Prices and Inflation in Developing Asia: Is Poverty Reduction Coming to an End?* Asian Development Bank, Manila.

ADB. 2011. *Global Food Price Inflation and Developing Asia.* Asian Development Bank, Manila.

ADB. 2012. *Food Security and Poverty in Asia and the Pacific: Key Challenges and Policy Issues.* Asian Development Bank, Manila.

Chambo, Suleman A. 2009. "Agricultural Co-operatives: Role in Food Security and Rural Development." *Paper* presented to Expert Group Meeting on Co-operatives, 28-30 April, New York.

CBS. 2011a. *Nepal Living Standard Survey III, 2010/11*. Central Bureau of Statistics, Government of Nepal, Kathmandu.

CBS. 2011b. *Poverty in Nepal 2010/11*. Central Bureau of Statistics, Government of Nepal, Kathmandu

De Hoyos, Rafael. E. and Denis Medvedev. 2009. "Poverty Effects of Higher Food Prices: A Global Prospective." *Policy Research Working Paper* No. 4887. The World Bank, Washington DC.

ESCAP. 2011. "Rising Food Prices and Inflation in the Asia-Pacific Region: Causes, Impact and Policy Response." *MPDD Policy Briefs* No. 7, United Nations Economic and Social Commission for Asia and the Pacific, Bangkok.

FAO. 2011. *The State of Food Insecurity in the World*. Food and Agriculture Organization of the United Nations, Rome.

Ivanic, Maros. and Will Martin. 2008. "Implications of Higher Global Food Prices for Poverty in Low-Income Countries." *Policy Research Working Paper* No. 4594, April. The World Bank. Washington DC.

NRB. 2012. *Quarterly Economic Bulletin* April 2012. Nepal Rastra Bank, Kathmandu.

Ortiz, Isabel, Jingqing Chai and Mathew Cummins. 2011. "Escalating Food Prices: The Threat to Poor Households and Policies to Safeguard a Recovery for All." *Social and Economic Working Paper*, February. UNICEF, New York.

Save the Children, 2009. *How the Global Food Crisis is Hurting Children: The Impact of the Food Price Hike on a Rural Community in Northern Bangladesh*. Save the Children UK, London.

Wodon, Quentin and Hassan Zaman. 2008. "Rising Food Prices in Sub-Saharan Africa: Poverty Impact and Policy Responses." *Policy Research Working Paper* No. 4738, October. The World Bank, Washington DC.

World Bank, 2008. *Rising Food and Fuel Prices: Addressing the Risks to Future Generations.* World Bank, Washington DC

Zezza, Alberto, Benjamin Davis, Carlo Azzarri, Katia Covarrubias, Luca Tasciotti and Gustavo Anriquez. 2008. "The impact of rising food prices on the poor." *ESA Working Paper 08-07.* Food and Agriculture Organization of the United Nations, Rome.