

# Market and Price Impact Assessment Nepal

United Nations World Food Programme (WFP) and Nepal Development  
Research Institute (NDRI)



Photo: Siemon Hollena, WFP

Terai women on their way to the local market

## Final Report

July 2008

## Market and Price Impact Assessment

### HIGHLIGHTS

- Approximately 2.5 million people in rural Nepal are in immediate need of food assistance. These people are highly vulnerable to food price increases and already have very low food intake levels.
- An additional 3.9 million people in rural Nepal are at risk of becoming food insecure due to increasing food prices.
- In urban areas 525,000 vulnerable poor are at risk. The total of 67,000 people may require immediate emergency support. This is best done through providing targeted subsidized food programmes with limited duration or through a non-food based response. The remaining 458,000 people need to be carefully monitored in case further price increases have a broader impact.
- Nepal faces a serious risk of stagflation, a condition of low economic growth, high unemployment and rising prices. Rising food prices pose a severe risk to the peace process if not taken seriously by all involved.
- Highest increases in real prices during the past six months were observed for cooking oil (26 percent), coarse rice (19 percent) and kerosene (13 percent). This during a period when rice prices normally decline by about 11 percent.
- Traders in rural areas expect that the price of coarse rice and kerosene will increase by a further 11 percent and 8 percent respectively in the coming period. They expect that the price of cooking oil will increase less sharply at about 5 percent. Price rice expectations for urban areas are much higher for almost every commodity. Observed increases in wholesale prices, transportation costs and farm gate prices confirm the likelihood of further increase in retail prices.
- The Indian ban on food exports have pushed up prices of the restricted food items to some extent in Nepal; however, supply from India has not been greatly affected.
- Nepal is facing a serious fuel shortage. This heavily affects transportation costs which according to traders, is one of the most important factors in determining food prices. The average cost of transportation has increased by almost 27 percent and further increases are imminent.
- More than 60 percent of traders indicate that the supply situation for commodities and their sale volumes have deteriorated. Most of them consider that the situation will continue to worsen, but they are unable to indicate for how long. Average supply has decreased by 44 percent for kerosene, 30 percent for coarse rice and more than 20 percent for lentils, cooking oil and fine rice.
- There has been an upward pressure on daily wage rates for unskilled labour and wages have increased by 7 to 13 percent during the past six months. Percentage-wise, wage rates have increased the most in the Terai and Urban areas. Despite wage increases, the purchasing power for food of households decreased because of the rise in commodity prices.
- Due to the price rises, people have shifted their consumer behavior to buying smaller quantities and buying cheaper food items. Sales on credit have increased substantially.
- An inverse relationship between rising food prices and food intake can be observed for the extreme poor and poor wealth groups. This may result in higher malnutrition rates.
- Nepal is unlikely to overcome in the near future the challenges associated with increasing agricultural production, including, limited irrigation coverage, limited use of fertilizers and improved seed varieties, and increasing input costs.

## 1. BACKGROUND AND OBJECTIVES

Nepal is high on the list of countries where rising food and commodity prices could have a huge impact on the population. This is because Nepal relies heavily on food and oil imports and has a high level of chronic food insecurity (41 percent is undernourished<sup>1</sup>) and poverty (31 percent). Moreover, on average, its population spends almost 60 percent of its income on food. The country is only just emerging from a ten-year conflict. Its political future is uncertain and its government structures are weak. Nepal's citizens have high expectations for the newly elected government. Improvements in living standards are urgently needed to avoid civil unrest that may threaten the new government.

Since the 1990s, Nepal has been a food deficit country and has had to rely on food imports from India and other neighboring countries to feed its population. Annual food grain imports are estimated at up to 600,000 Mt. However, due to a large informal trade along the porous border with India, the exact amount that is annually imported is difficult to quantify.

Since only a third of the country's agricultural land is irrigated, the annual national grain production depends upon favourable weather conditions such as timely and sufficient rainfall during the monsoon period. The growth in agricultural output has declined over the years. The 2.8 percent growth experienced from 2000/01 to 2005/06 is only slightly above the population growth rate of 2.25 percent.

The bulk of food grains are produced in the Terai (productive plains along the border with India). In contrast, the Hills and Mountains of Nepal are mostly food deficient. Food must therefore be transported from the Terai to markets in the Hills and Mountains by truck where roads are available, by plane to places with landing strips or by porters or mule pack animals.

Rice is the principle staple food. Other important cereals include maize, wheat, barley and millet.

Nepal shares a porous border with India. The bulk of Nepal's international trade in agricultural commodities is with India. Domestic food and commodity prices are therefore directly influenced by supply and prices in India. In October 2007, India introduced a ban on the export of non-basmati rice, wheat and lentils. In addition, payment and supply issues between the Indian and Nepal Oil Corporations have seriously limited the supply of fuel to Nepal, resulting in severe and routine fuel shortages. Just after the completion of this survey, the government announced a fuel price hike of more than 25 percent. This resulted in a period of extended riots and demonstrations from civil society and transporters with opposite demands for lower and higher transportation tariffs respectively.

Food prices in Nepal have increased by 20 to 30 percent and are still rising. It is expected that the increase in fuel prices and the ongoing Indian export

ban will further aggravate food supply and/or prices. To cope with the impact, it is necessary to understand the nature, extent and causes of price fluctuations, the supply situation and the effect these may have on household food security conditions.

The overall goal of this market and price impact assessment is to gain better insight into the current phenomenon of food price hikes and the effect this has on household food security in order to guide government and humanitarian relief efforts for appropriate and timely actions. Specifically, the assessment has the following objectives:

- To quantify the magnitude of the recent increase in food prices and assess the future outlook in different areas of the country.
- To gain a better understanding of the likely impacts on household food security.
- To make recommendations for potential interventions by the government, WFP and other agencies in order to address the needs of the poor and other vulnerable populations.

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<sup>1</sup> FAO/WFP Crop and Food Supply Assessment Mission, April 2007

## 2. METHODOLOGY

The assessment was carried out by utilizing the WFP Food Security Monitoring and Analysis System (FSMAS) and its current team of 30 field monitors<sup>2</sup> as well as six NDRI enumerators. They collected field data across the country, in key urban centers, in selected regional markets and in selected border markets in India.

The market survey was carried out in 40 districts covered under the FSMAS. Five markets were selected in each district, with one market located at the district headquarters and four other markets<sup>3</sup> selected randomly across different geographic areas. In each market, five traders (ideally, at least three retailers and two wholesalers) were randomly selected and interviewed. For this analysis a total of 406 retailers and 193 wholesalers were interviewed.

Subsequently, a household survey was carried out using the standard FSMAS quarterly monitoring questionnaire adjusted to include a module on the impact of price rises on household livelihoods. For each market surveyed, five households were randomly selected in one sample community located in the market's catchment area. This was done to correlate the findings in each market to outcomes at the household level. Catchment areas of regional, district and local markets within the FSMAS monitoring areas are presented in Map 1 and 2. For this analysis a total of 611 rural households were interviewed.

Six NDRI enumerators carried out a rapid survey in four Terai cities with regional markets (Biratnagar, Birgunj, Nepalgunj and Dhangadhi) and two key consumer centers (Kathmandu and Pokhara). In each urban area, the three poorest communities were identified with the assistance of city authorities. In each identified slum area, 10 households were randomly selected. In addition, two relatively better off households were purposively selected. A total of 216 households were therefore interviewed in six cities. Subsequently, with the assistance of poor communities, the main market that serviced most of the residents of the selected slum communities was identified and five traders were interviewed in this market. Therefore a total of 90 urban traders were interviewed in the six cities.

The thirty FSMAS field monitors and six additional enumerators were trained on the survey techniques and questionnaires. A pre-test was carried out prior to the actual survey. Once the survey was completed, the data were directly transmitted by the FSMAS field monitors to the central database using their PDAs connected to the network through their satellite phones. Data collected by the NDRI enumerators was entered into the same database using a web-based input facility.

Statistical analysis of the primary data was carried out using the statistical package "R".

Available secondary data on prevailing market prices was analyzed and compared with the primary data collected. Main sources of primary data include bi-monthly price data from selected markets of Nepal available from the Agro-business Promotion Directorate of the Department of Agriculture, price data from FNCCI (Chamber of Commerce), and reports from the Nepal Rastra Bank and Ministry of Finance.

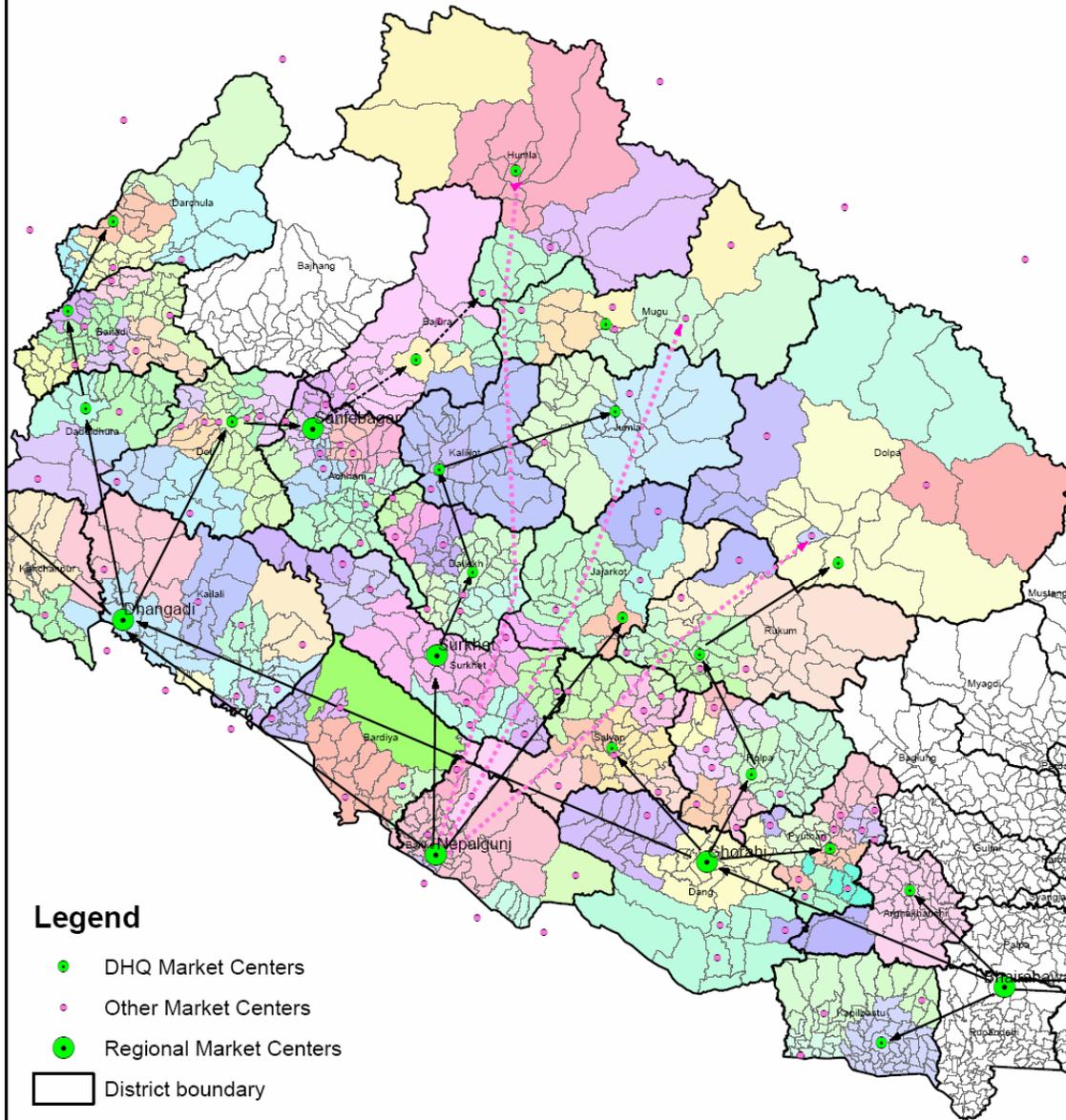
Analysis of secondary data was carried out using Excel.

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<sup>2</sup> The FSMAS is funded by the Nepal Peace fund and is a joint project between WFP, OCHA and UNMIN which aims to provide evidence-based analysis on issues related to peace and recovery.

<sup>3</sup> In some districts less than 4 markets were sampled due to lack of markets in these districts.

# Market Network and Catchments West Nepal



## Legend

- DHQ Market Centers
- Other Market Centers
- Regional Market Centers

District boundary

## Means of transport

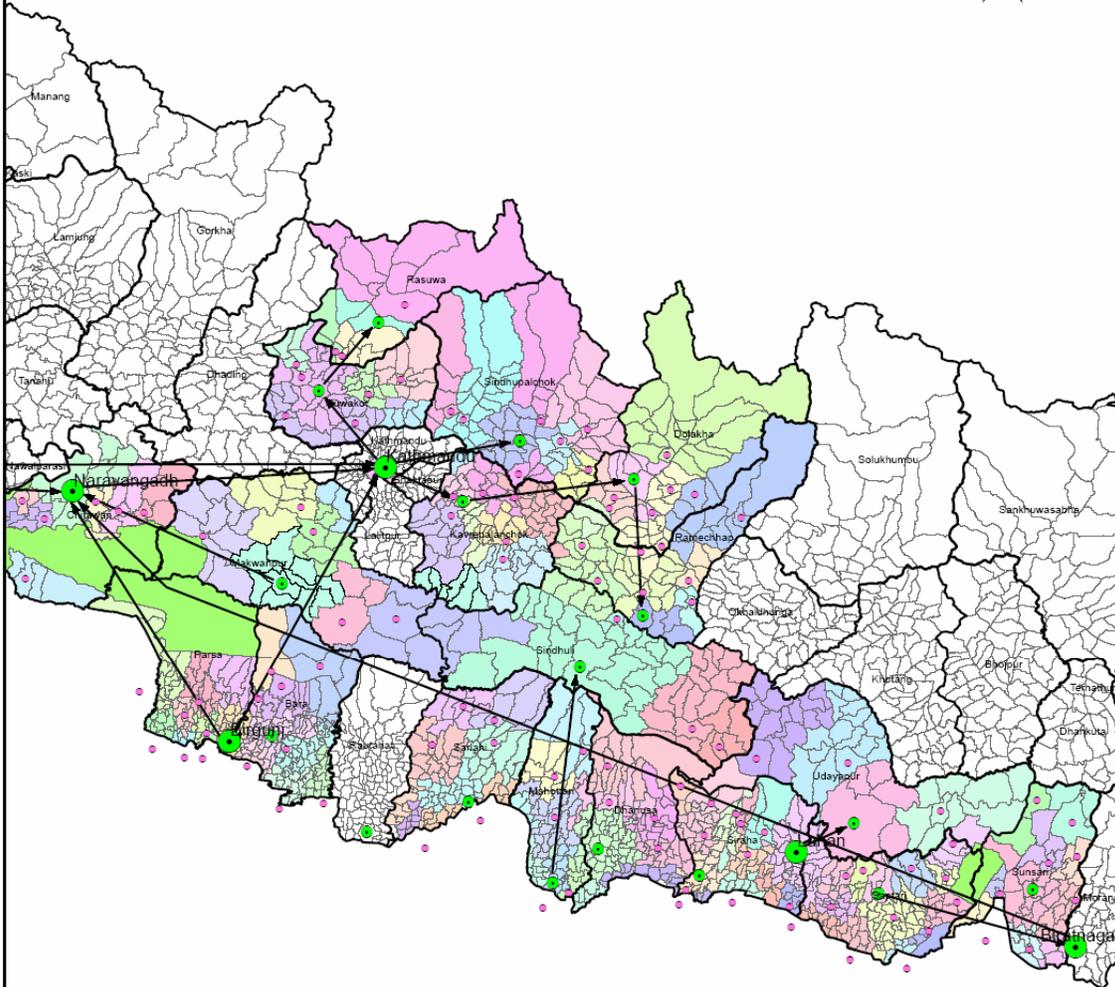
- - - - - By plane
- · - · - By porter/mule
- By road



The areas colour sheds represent catchment areas served by different markets

Map 1

# Market Network and Catchments East Nepal



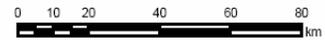
## Legend

- DHQ Market Centers
- Other Market Centers
- Regional Market Centers

District boundary

### Means of transport

- ⋯ By plane
- By porter/mule
- By road



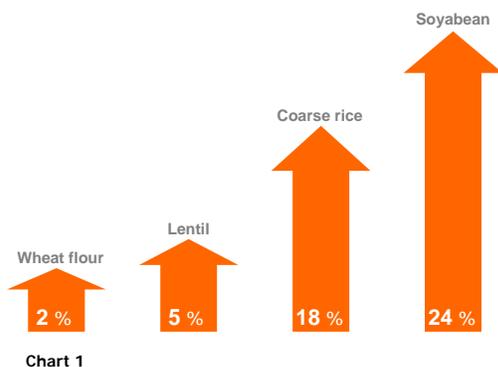
The areas colour sheds represent catchment areas served by different markets

Map 2

### 3. COMMODITY PRICE INCREASES

Globally, rice prices have increased by 74 percent while wheat prices more than doubled during the period between March 2007 and March 2008 (Bloomberg/FAO). Oil is currently trading at around USD 140 per barrel compared to only USD 50 one year ago. In Nepal fuel prices are heavily subsidized and have only increased by around 28 percent during the same period, not including the fuel price hikes in June 2008.

According to price data from the Agro-business Promotion Directorate, which tracks bi-monthly data on food commodities in key markets, the price of coarse rice in Nepal rose by 18 percent during the first quarter of this year<sup>4</sup> (see Chart 1). The highest nominal price rise was for cooking oils, i.e. soyabean, vegetable and mustard oils, and for soyabeans where prices have risen by at least 24 percent. The price of wheat flour and lentils, increased only marginally.



Food prices in Nepal have not yet increased to the same extent as on international markets. This can be partially attributed to a very good paddy harvest (up by 17 percent compared to last year<sup>5</sup>) and a good overall wheat harvest (up by 4 percent compared to last year). Despite a good national crop, the Far and Mid-Western Hills and Mountains were once again hit by drought. When people, particularly those living in these areas, run out of food stocks in June, the effects of increasing prices may further compromise their food security situation<sup>6</sup>.

<sup>4</sup> Prices hikes in Nepal are very much a recent phenomena. During 2007, prices for key commodities increased only marginally.  
<sup>5</sup> Comparison with last year's paddy production figures are a bit misleading as last year's crop was down by 12.5 percent due to drought in the Eastern Terai.  
<sup>6</sup> A joint MOAC (Ministry of Agriculture and Cooperatives) and WFP mission took place from 16 to 29 June to the drought affected areas in the Far- and Mid-west to assess extent of crop losses and impact on household food security (see Far and Mid-west drought assessment mission report, MoAC/WFP, July 2008)

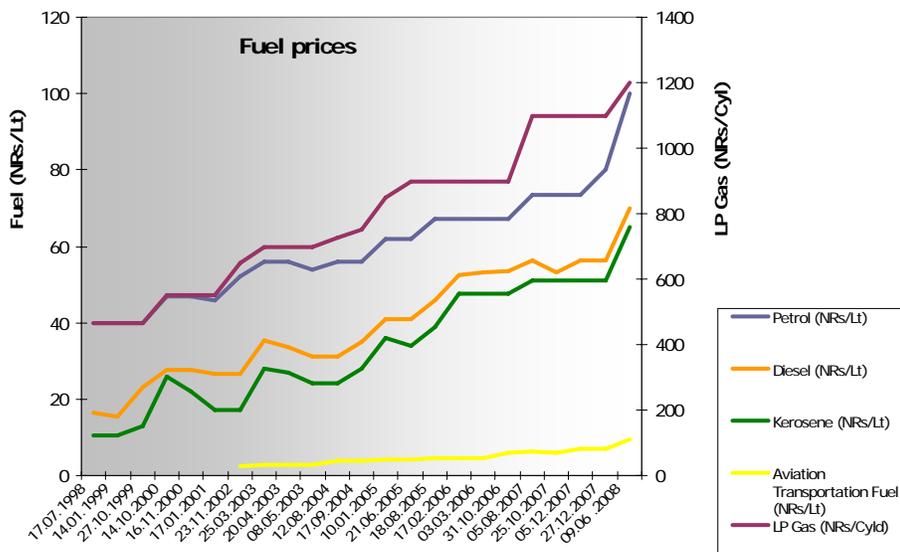


Chart 2

Nepal is facing a serious fuel shortage problem. The country is fully dependent on fuel imports from India. In June 2008, the cash-strapped Nepal Oil Corporation (NOC) had no option but to increase prices for fuel by 25 percent or more. Despite this drastic step, fuel shortages are continuing and the NOC is still suffering losses at about NRs 1.5 billion per month (compared to NRs 2.62 billion per month prior to the price increase). Given the very high oil prices in the global market and possible price increases in India, further increases in fuel prices are imminent. Chart 2 shows the trend in fuel prices since 1998.

Higher fuel prices as well as unavailability of fuel have already translated into higher transportation tariffs (see section 4 for more details). With transportation costs being one of the key determinants of food prices in Nepal this will eventually translate into even higher food prices, particularly in remote Hill and Mountain markets.

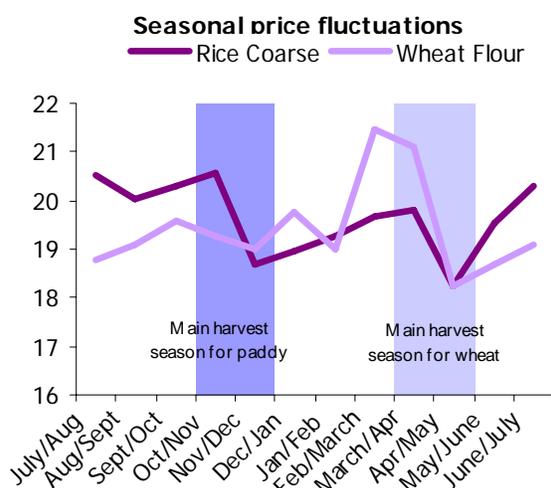
According to the Nepal Rastra Bank, inflation for the first three-quarters of the fiscal year 2007/2008 climbed up to 8.9 percent. Rising food prices is the major factor that caused the increase in the national consumer price index (CPI). Food and beverages prices, which make up 53 percent of the CPI, recorded a rise of 12.6 percent.

#### 3.1 Extent of price increase for different commodities

Wholesalers, retailers and consumers were asked to report current prices of key commodities and those from six months ago. A recall period of six months was chosen because prior to October 2007, food price increases were only marginal, and during the pre-harvest period for the main paddy crop, the price of rice as the main staple food would normally be at its highest. Additionally, it was in October 2007 that India banned exports of non-basmati rice, wheat and lentils to Nepal and this is the month of the main Hindu festivals of *Dashain* and *Tihar* which makes it easier as

a reference month for recall. As the recall period was six months and not one year, seasonal fluctuation of commodity prices need to be taken into consideration when analyzing price increases.

Chart 3 shows the seasonal price fluctuations for rice and wheat flour as well as their main harvesting periods. Prices of other traded commodities such as cooking oil and lentils do not show any significant seasonal fluctuations according to available price data from the Agribusiness Promotion Directorate of the Ministry of Agriculture and Cooperatives.



Average monthly price of coarse rice and wheat flour for the period April 2002 until April 2008  
Source: Agribusiness Promotion Directorate, MoAC

Chart 3

The majority of the survey price data was collected during the period April/May 2008. Given the seasonal variation in rice and wheat prices, an 11.1 percent drop in the price of coarse rice and a 5.3 percent in the price for wheat flour would be expected. Instead, nominal and real prices have increased substantially as can be seen in Table 1, which presents average retail prices (nominal and in real prices) in NRs per kilogram or liter and the percentage change by Mountain, Hill and Terai.

	Mountain			Hill			Terai			Average overall increase in real prices	
	6 months ago	Now	%	6 months ago	Now	%	6 months ago	Now	%		%
Bean	41.7	61.7	48.1	57.2	67.8	18.6	54.5	61.2	12.3		14.6
Blackgram	85.9	99.6	16.0	66.4	75.4	13.5	62.0	65.7	6.0		2.5
Coarse rice	35.5	45.1	27.1	22.3	28.6	28.5	20.2	25.0	23.9		19.1
Cooking oil	126.6	167.7	32.5	107.0	139.5	30.3	101.6	128.2	26.2		25.7
Fine rice	43.2	51.4	19.0	29.4	37.0	25.8	27.9	34.1	22.3		15.2
Kerosene	70.5	84.3	19.6	55.8	64.1	14.9	51.7	55.9	8.1		13.4
Maize	27.4	34.6	26.5	14.0	17.6	25.4	15.1	14.9	-1.3		11.0
Musuro	76.4	95.0	24.4	60.5	72.5	19.7	58.0	69.2	19.3		17.3
Rahar	92.8	105.5	13.6	69.8	76.6	9.7	63.0	73.1	16.0		3.2
Salt	13.1	15.6	19.0	10.6	12.5	17.4	10.5	12.1	15.7		11.8
Sugar	54.7	61.0	11.6	35.2	37.7	7.3	29.7	32.3	8.5		6.4
Wheat flour	48.6	54.2	11.4	25.9	29.7	14.6	21.1	23.9	13.2		6.3
Wheat grain	18.9	21.6	14.1	17.3	19.8	14.5	16.7	16.8	0.7		5.0

Table 1

<sup>7</sup> To calculate real prices, nominal prices were deflated by using the consumer price index (CPI). In September/October/November 2007, the

The last column shows the average overall price increase in constant 1995/96 prices<sup>7</sup>. The most significant price change is in cooking oil; within six months, it increased by almost 26 percent in real terms. The real price of coarse rice increased by 19.1 percent. Overall, price increases were less dramatic for wheat grain and flour but given that one would normally expect a decrease in prices during the period under review, it is still worrying. Black gram, *musuro* and *rahar* are Nepal's most common lentils used for making *dal*, which forms an important part of the Nepali traditional diet. Black gram is generally produced in the Hills. *Musuro* and *rahar* are produced in Terai. The price of black gram and *rahar* changed only marginally whereas the price of *musuro* increased significantly. *Musuro* is generally more traded with India than *black gram* and *rahar*. This may explain the sharp price increase as higher export demand pushed up the price.

Chart 4 shows price changes in the Terai, Hills and Mountains for selected commodities. The price increase for coarse rice is highest in the Hills and Mountains. Considering that coarse rice in the Mountains is generally more than two to three times as expensive as in the Terai, in absolute terms prices have increased even more in the Mountains as can be seen in Table 1. The Nepal Food Corporation (NFC) supplies subsidized rice to remote areas in the Hills and Mountains which in certain districts has had, to a limited extent, a stabilizing effect on the price of coarse rice in these areas. However, the demand for NFC rice far outweighs the supply.

Cooking oil shows the highest increase in all three zones and rose sharpest in the Mountain areas with more than 32 percent increase over a six month period. Although wheat prices should normally have decreased during this period, the price of wheat flour has increased by 11 to nearly 15 percent in nominal terms. This increase is significant given the overall good wheat harvest this year.

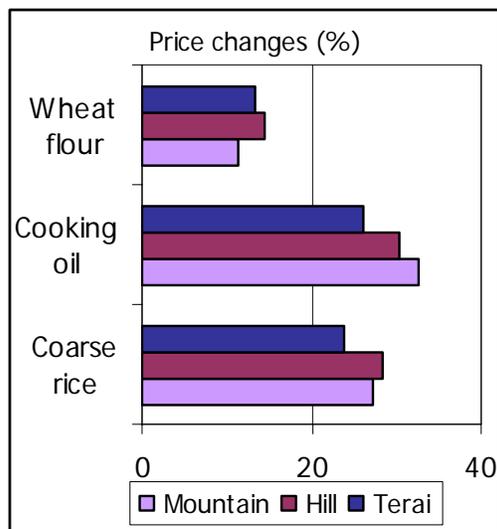


Chart 4

Table 2 shows the real increase in wholesale prices using the overall national wholesale price index for October 2007 and May 2008 as reported by the Nepal Rastra Bank. The difference between wholesale price and retail price is the gross margin made by the traders. Changes in the wholesale price may not necessarily translate immediately into changes in retail prices as retail traders may decrease their gross margins or chose to deplete existing stocks before increasing retail prices.

	% increase
Bean	20.1
Black gram	12.9
Coarse rice	26.8
Cooking oil	30.2
Fine rice	22.6
Kerosene	12.9
Maize	13.6
Musuro	20.2
Rahar	13.8
Salt	15.4
Sugar	8.6
Wheat flour	12.4
Wheat grain	5.8

Table 2

When comparing these wholesale prices with the retail prices as presented in the last column of Table 1 some

	Paddy			Wheat		
	Now	Last Year	Change(%)	Now	Last Year	Change(%)
Terai	11.14	9.82	13.44	15.87	15.05	5.42
Hill	16.12	14.11	14.22	15.94	14.14	12.74
Mountain	24.75	20.00	23.75	21.29	19.29	10.37

Table 3

CPI was 198.7. In April/May 2008 it was 204.6. Base year is 1995/96. Source: Nepal Rastra Bank

interesting observations can be made. The increases in the wholesale prices for coarse and fine rice were 7 percent or more above the increases in the retail prices. For lentils (except for *Musuro*) the increase in the retail price was marginal. However in the wholesale price for lentils we observe sharp increases of between 13 to more than 20 percent. The same can be observed for the wholesale price of wheat flour which increased by 12.4% during the six months under review.

The observed increases in wholesale prices support the expectation (see section 3.3) for further increases in retail prices in the near future.

Table 3 shows farm gate prices for the two most important cereals, paddy and wheat, in NRs per kilogram. It compares the selling price after harvesting to the price it was sold at one year ago. Farm gate prices for paddy show the highest increase in the Mountain areas, where prices increased by almost 24 percent compared to only 14 percent in the Terai and Hills. Wheat prices increased approximately half as much, except in the Hills where the price increase was similar to paddy. The drought that affected wheat production in the Far- and Mid-West Hills has most likely driven up the selling price of wheat at the farm gate in these areas.

Higher farm gate prices are a key factor that will result in increased wholesale and retail prices.

### 3.2 Price determination

To gain insight into the factors that influence price in Nepal, traders were asked to list factors that they thought were most important. The results are presented in Chart 5 and 6.

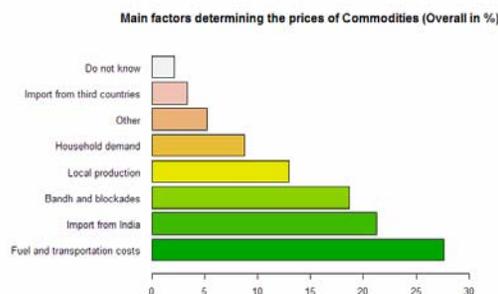


Chart 5

Not surprisingly, the most frequent determinant of price was the cost of fuel and transportation, particularly for traders in the Hill and Mountain areas.

The Nepal Oil Corporation which provides subsidized fuel is struggling with current monthly losses of approximately 1.5 billion. To regularize the supply, a further price increase in fuel is warranted following the one in June 2008. However, given the importance of fuel and

transportation costs in determining food prices, this will immediately translate into higher food prices. Similarly, the cost of bandhs and blockades has an immediate impact on the operational costs of businesses that needs to be recovered. Further they limit the supplies of commodities in affected areas. These effects can further increase prices.

The price of imports from India is the second most important factor determining food prices overall; however, for traders in the Terai, it is the most important factor. Monitoring price fluctuations in India is therefore essential for understanding price movements in Nepal.

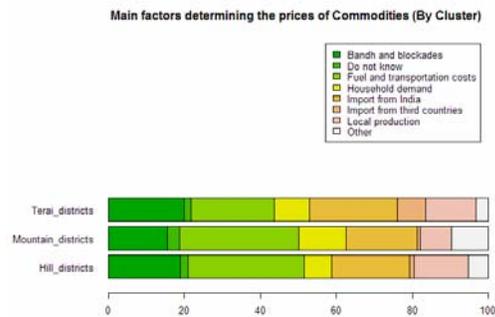


Chart 6

### 3.3 Future price expectations

Expectations for future prices were expressed considering current trends, future supplies, the cost of doing business, the quantity of current stocks and seasonal factors.

The traders' expectations of prices six months from now were collected for selected commodities. Chart 7 shows the overall expected price change, while Chart 8 records the price expectations by zone.

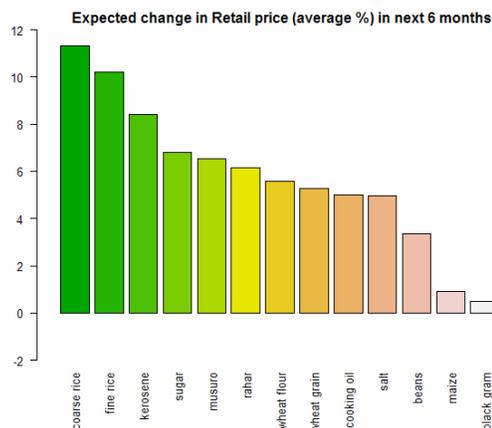


Chart 7

The biggest price increase is expected for coarse rice. Prices are expected to increase by an additional 11.3 percent. Region-wise, traders in the Terai expect the biggest increase, by an average of almost 19 percent over the next six months. Traders in the Hills and

Mountains expect less significant price changes, but the expected price is higher in absolute terms because prices are generally higher in these areas. In view of the imminent increase in fuel and transportation costs, these forecasts for the Hill and Mountain areas may be too optimistic.

The price of wheat grains in the Terai is expected to decrease, most probably because of the good overall wheat harvest in Nepal and an expected bumper wheat harvest this season in India. However, wheat prices are expected to increase for the Hill and Mountain areas where crop production, especially in the Far- and Mid-West, is less favourable. The price of wheat flour, which is generally more available for retail purposes than wheat grains, is expected to go up by almost 6 percent in all areas.

In the Hill and Mountain areas, traders expect the price of cooking oil to rise by only 5 percent over the upcoming six months. Traders in the Terai anticipate an increase of 10 percent in cooking oil prices for the same period.

They anticipate that kerosene prices will continue to increase by an additional 8.4 percent in the coming months.

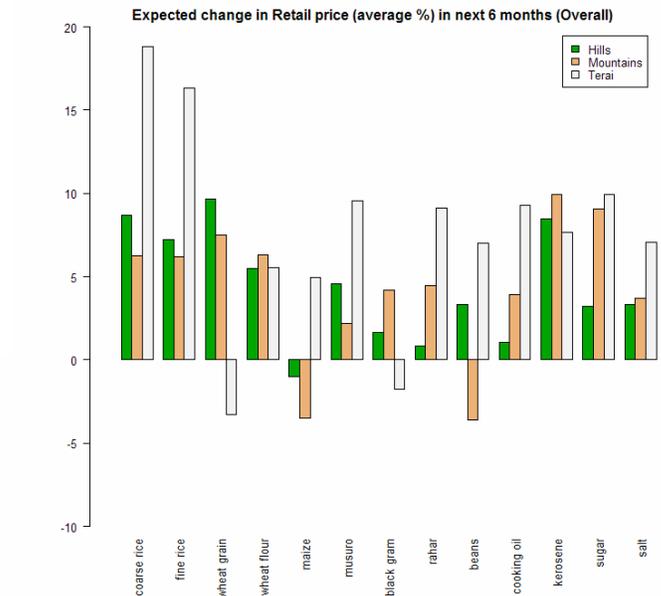


Chart 8

### 3.4 Price changes in urban areas

Average urban food prices, as shown in Table 4, are generally slightly above the prices observed in the Terai. This is logical as most urban centres are located in the Terai with the exception of Kathmandu and Pokhara.

	6 months ago	Now	% increase
Bean	55.1	63.9	15.9
Blackgram	64.6	70.2	8.6
Coarse rice	21.6	26.2	21.5
Cooking oil	98.3	128.7	30.9
Fine rice	29.2	35.3	20.7
Kerosene	50.3	56.4	12.0
Maize	19.5	21.8	11.8
Musuro	58.9	72.8	23.7
Rahar	62.8	74.9	19.3
Salt	10.2	12.1	18.5
Sugar	29.8	33.1	11.1
Wheat flour	21.3	25.5	20.1
Wheat grain	15.6	18.1	16.1

Table 4

Chart 9 compares the increase in prices for selected commodities in urban areas with those in rural areas. The price of lentils (with the exception of black gram) has increased more in urban areas than in rural areas, as has the price of cooking oil and wheat flour. On the contrary, the price of the main staple, rice (coarse and fine), increased less in urban areas as compared to rural areas.

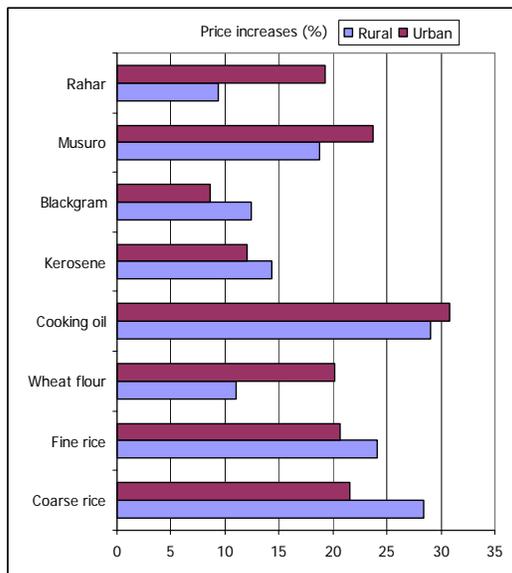


Chart 9

Chart 10 shows the expected change in the retail prices of selected commodities six months from now. For almost all commodities, retailers in urban areas expect higher price rises than those expected by their counterparts in rural areas. However, as reported earlier, with the recent increase in fuel prices and an ongoing shortage in fuel supply, it is probable that the

rural price expectations are too low. Particularly sharp price increases are expected in urban areas for rice and wheat products.

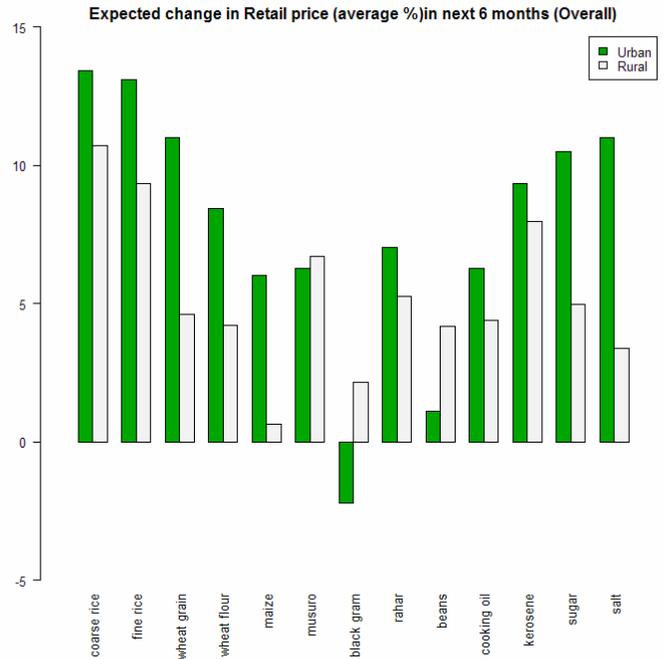


Chart 10

## 4. IMPACT ON TRADE AND THE ECONOMY

High food and commodity prices pose a serious challenge to Nepal's economy. There is a serious risk of stagflation, an economic condition of low growth (around 3.5 percent), high unemployment and rising prices. The remedy of stagflation would be to increase domestic agricultural production quickly, but Nepal is unlikely to overcome in the near future the challenges associated with increasing production such as the lack of adequate irrigation, the limited use of farming inputs, the need for improved seeds, better fertilizers and mechanization, limited road and market infrastructure and frequent natural disasters including floods and droughts.

### 4.1 Trade with India

In 2005, WFP/FAO undertook a study on the food grain market system in Nepal<sup>8</sup>. It identified the key food grain flows, mapped the main regional market systems and determined the extent of market integration between the Terai, Hills and Mountains. The results are presented in maps 1 and 2. In general, the Terai's markets are predominantly dependent on supply and market conditions in India. Most of the markets in the Hills and Mountains are supplied by goods from the Terai or India, and small markets in the northern mountains depend to some extent on remote markets in Tibet. Chart 11 shows the origin of food stocks held by traders. Thirty two percent of traders' stocks in the Terai come from India. For the Hills and Mountains this percentage is substantial at nearly 20 percent.

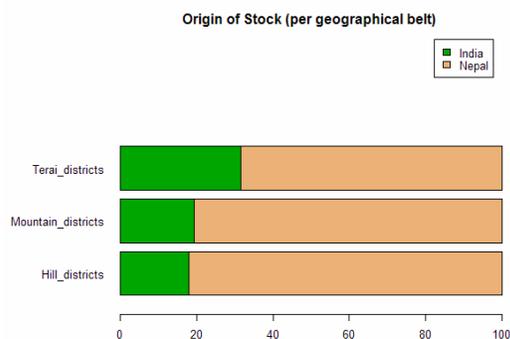


Chart 11

When comparing market prices in India and Nepal, using secondary data from the Directorate of Agribusiness Promotion, it shows that prices in the Nepal border markets closely follow those in the corresponding border markets in India. However prices in India are lower and show less seasonal fluctuation than prices recorded in the border markets in Nepal. Table 5 compares average prices from April 2007 to April 2008 for selected commodities in border markets of India and Nepal.

Average Prices NRs/Kg (April 2007 – April 2008)

	Jogbani	Morang	Raxaul	Parsa	Rupadiya	Banke
Coarse rice	17.95	20.38	19.72	20.63	16.57	20.35
Wheat flour	21.93	25.38	21.47	24.33	19.94	20.65
Black gram	63.93	68.93	68.55	75.42	63.52	69.57

Legend:  
  Indian border markets  
  Nepal border markets

Table 5

In October 2007, India banned the export of non-basmati rice, wheat and lentils to Nepal. If the ban would have been effectively implemented one would expect a divergence in the prices of these restricted commodities in markets in India and Nepal. Chart 12 plots the average price differential in the six border markets six months before and after the export ban was introduced by India.

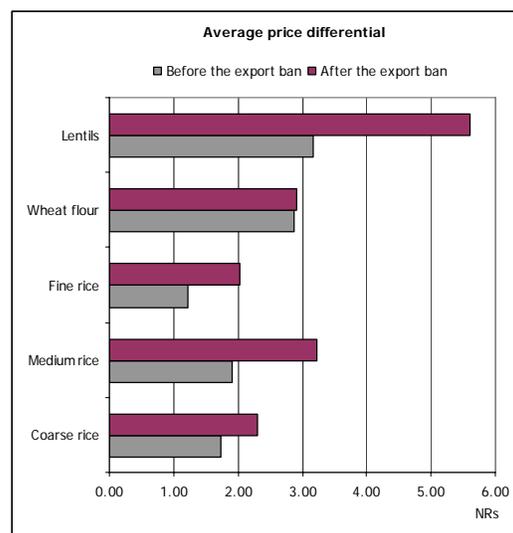


Chart 12

From this chart it is clear that the export ban has indeed pushed up prices of the banned food commodities in Nepal despite the existence of a large informal trade between India and Nepal along the porous border.

### 4.2 Trade stocks and sale volumes

Chart 13 shows the source of purchase by wholesalers and retailers in Nepal. The main source of purchase for retailers is wholesalers (66 percent). Similarly, wholesalers procure most of their stocks from other wholesalers (45 percent). Millers are the second largest source for wholesalers followed by middlemen and direct imports from India. Wholesalers procure up to 8.2 percent directly from farmers. Retailers purchase very little directly from farmers.

<sup>8</sup> WFP/FAO, Food Grain Markets in Nepal, 2007

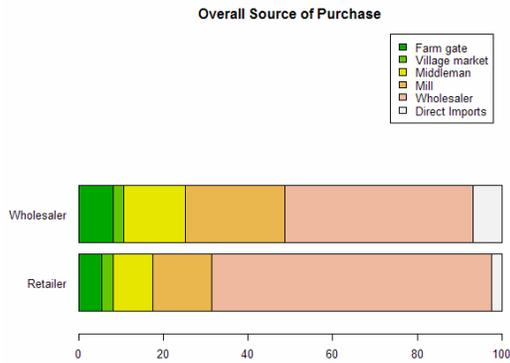


Chart 13

Traders were asked to indicate whether they experienced any supply constraints for selected commodities. More than 60 percent of traders indicated that the overall supply situation has deteriorated. Chart 14 displays the results by commodity.

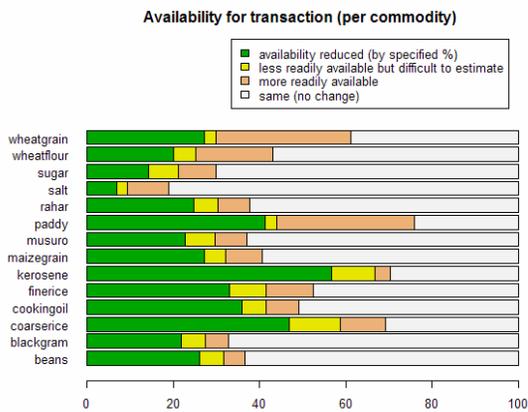


Chart 14

Supply constraints are most pronounced for kerosene and coarse rice. Respectively, more than 56 and 47 percent of traders indicated that their availability had reduced significantly.

Chart 15 shows the average reduction in quantity as estimated by traders who reported a reduction in supply. Supply of kerosene dropped by more than 44 percent compared to one year ago. Supply of coarse rice was reduced by almost 30 percent and lentils, cooking oil and fine rice all reduced by 20 percent or more. This is consistent with the observed price increases for these commodities.

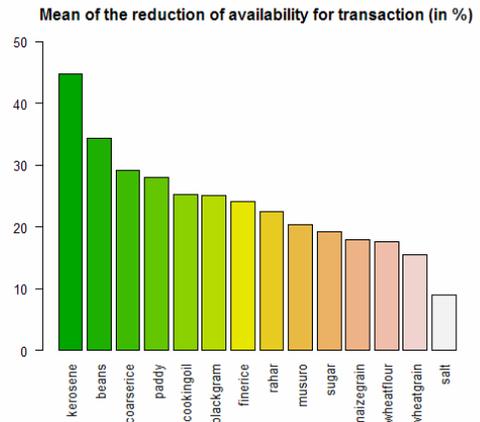


Chart 15

Most traders could not provide an indication of when the supply situation would return to normal. A little over 15 percent thought that it was a short-term problem which would be resolved within a year. For more than 40 percent of traders, the supply situation was normal or had recently improved due to better road connections (Chart 16).

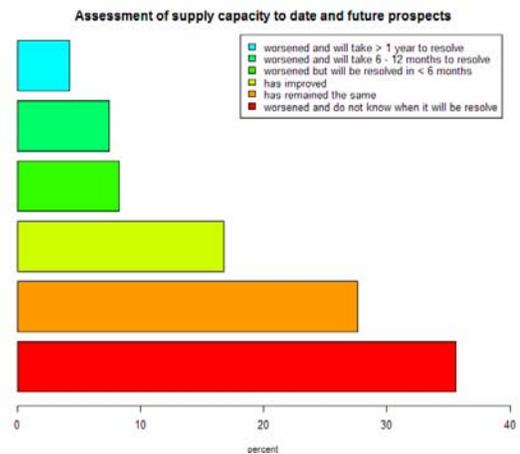


Chart 16

Traders reported adopting a variety of methods for dealing with supply problems. Adjusting stock levels, sourcing from other local suppliers and increasing the selling price were among the most common methods used by traders as shown in Chart 17.

It has been reported that traders often hoard goods in anticipation of further price increases. This trend is indicated in Chart 17 where 37 percent of traders reported that they have increased their stock levels.

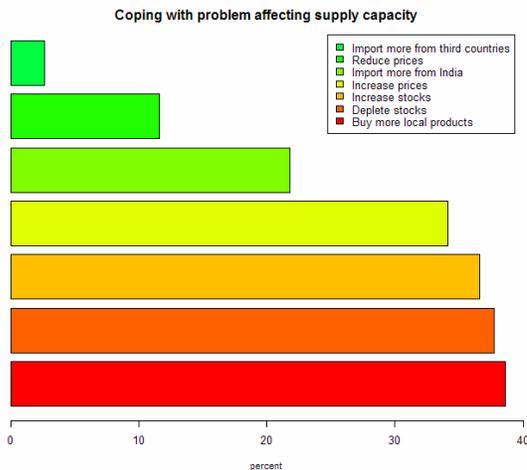


Chart 17

The volume of sales is determined by supply and demand conditions, such as changes in the availability of products as well as the purchasing power of the consumers. Almost 77 percent of all traders reported a decrease in their volume of sales.

### 4.3 Challenges ahead

Even before the increase in commodity prices, businesses faced huge challenges. A large part of the country is inaccessible to motorable traffic and goods have to be carried or airlifted; the purchasing power of the population is low; the country is emerging from a 10- year conflict with weak law enforcement and security; fuel is scarce and power failures and load shedding are a daily phenomenon. During the dry seasons load shedding can be more than eight hours a day.

Traders were asked to list their three most significant problems. The results are shown in Chart 18. The most serious issue reported by over 85 percent of traders was increasing commodity prices. This was followed by bandhs and blockades, a lack of investment, rising transportation costs and the unavailability of supplies.

Weak consumer demand due to limited purchasing power was reported by 19 percent of retailers as a problem.

Involuntary contributions in the form of forced payments, is one of the main problems faced by 9 percent of traders.

The two primary effects of bandhs and blockades have been a disruption in supplies and an increase in transportation costs.

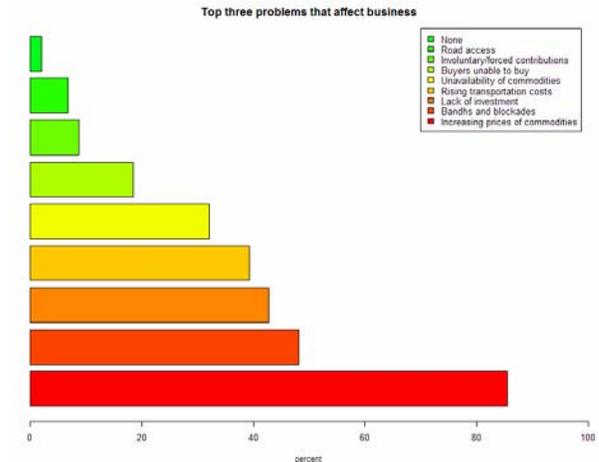


Chart 18

The increase in transportation costs was experienced by both wholesalers and retailers with more than 73 percent of traders reporting that the cost of transportation had increased considerably. The average increase in transportation costs was 26.7 percent. Region-wise, fewer traders in the Mountains than in the Terai reported an increase in transportation costs. This result is likely because most of the supplies in mountain areas are transported by porters and their wage rates have not yet been adjusted to the level of the overall price inflation (see section 5.3). The Terai had the highest percentage of traders reporting transportation cost increases because of fuel shortages/ prices and increased tariffs for transport.

Chart 19 shows the change in the cost of transportation by business area coverage.

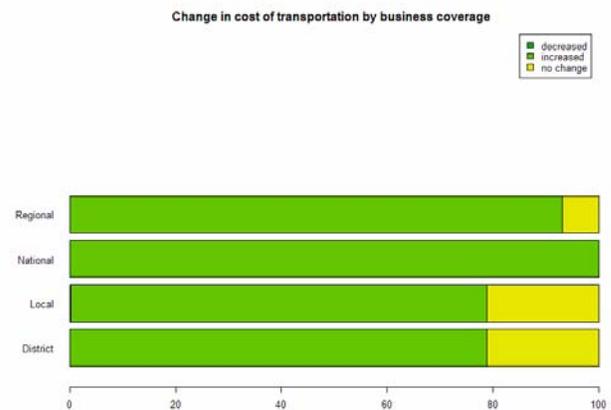


Chart 19

As mentioned before, fuel is in scarce supply as is evident by the long queues in front of petrol stations. Its immediate effects are delays in supply deliveries and increases in the cost of transportation as shown in

Chart 20.

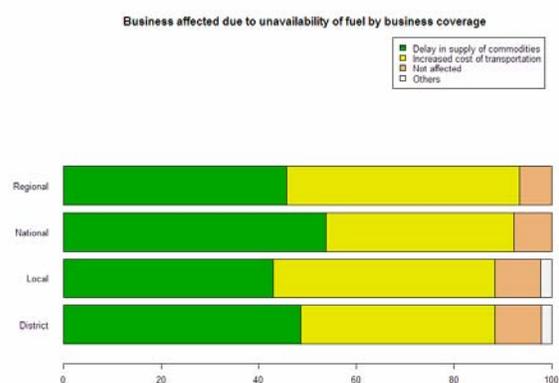


Chart 20

**Transportation syndicates**

Government regulated transportation tariffs exist for the transportation of goods in Nepal. However for many routes, established transportation syndicates control the movement of goods from one place to another. Any private transporter will have to become a member of the syndicate before being able to operate. Road permits from the government are only provided on recommendation of the transportation syndicate. This has resulted in exorbitant transportation prices for some routes. In comparison, the cost of transportation from Shanghai (China) to Tatopani (border town in Nepal), a distance of almost 2500 km, is equal to the cost of transportation from Tatopani to Kathmandu, a distance of 114 km.

**The case of Dailekh:** In Dailekh, a remote district in the Mid-West of Nepal, the truck and tractor entrepreneurs' association fixed the cost of transportation at NRs 3,000 per tonne from Surkhet (nearest regional market at a distance of 70 km). Traders in Dailekh reported that if they were allowed to transport their goods outside the syndicate it would only cost about Nrs 1,250 per tonne.

Given the present situation of transport price hikes due to fuel price increases, there has been renewed demand for complete abolishment of the transportation syndicates.

actually irrigated (CBS 2007). The growth of irrigation coverage has been very slow and only 10 to 15 thousand ha of additional land is being brought under irrigation per year. Most irrigation facilities are only functioning during the monsoon season and are constructed to provide water to the paddy fields. Year round irrigation is provided only to about one third of all irrigated land. This has resulted in low cropping intensity as well as low crop productivity. Expansion in the area for winter crops and planting additional paddy crop in spring is constrained due to the unavailability of water. In other words, even if higher food prices may raise the profitability of farming, it is unlikely that production levels can be raised in the short term by bringing more area under cultivation due to limited irrigation facilities.

The use of fertilizer in Nepal is very low. Average per hectare consumption is at 25.6 kg, the lowest in the region as shown in Table 7.

	Use of fertilizer (kg/ha)
Nepal	25.6
India	98.6
Bangladesh	156.3
China	255.6
Japan	301

Source: FAO, Agri statistics  
Table 7

During 2007 the price of fertilizer is estimated to have increased by as much as 30 percent and the price has further increased in 2008 as a consequence of high oil prices and soaring transportation costs. This is likely to further reduce the use of fertilizer and thus ultimately will affect agricultural productivity. Beside the cost of fertilizer, other operating expenses such as wage labour (see section 5), transportation and fuel have or are likely to increase as well.

#### 4.4 Constraints in agriculture

Agricultural yields in Nepal are among the lowest in Asia as is shown in Table 6.

		Rice paddy	Wheat	Maize
Nepal	Mountains	1.9	1.6	1.7
	Hills	2.5	1.8	2.0
	Terai	2.6	2.4	2.3
India	Uttar Pradesh	2.0	2.6	1.1
	Punjab	3.7	4.2	2.7
Vietnam		4.9		3.7
China		6.3	4.5	5.4

Table 6

A worrying trend is that growth in agricultural output has declined over the years and is only slightly above the population growth rate. Year to year agricultural output shows large fluctuation and is highly depended on favourable weather conditions due to limited irrigation facilities.

Nepal has 2.65 million ha of agricultural land out of which 1.7 million ha is irrigable. Of this 1,062,197 ha is

Many farmers in the Hills and Mountains rely on their own seed production for next year's crop. Unfortunately, many of these seeds are of very low quality and may be affected with disease. Use of commercially traded high-yielding variety seeds is extremely low.

Although no exact data is available on how farm input costs have been affected by the recent hike in food prices, it is likely that these cost have increased as discussed above. Assuming that this is the case and given the constraints in expanding the land under cultivation, and the limited access to credit facilities, farm households in Nepal will be highly constrained in increasing agricultural production despite the outlook of much higher farm gate prices (see Table 3, Section 3.1).

## 5. IMPACT ON HOUSEHOLD FOOD SECURITY

One of the most important issues this survey tries to address is the impact of rising prices on household food security. Rural Nepal is to a large extent a subsistence economy. Unfortunately most farm households are net consumers of agricultural produce due to the limited size of their land holdings. Similarly, urban populations depend on markets to access their food and are likely to be affected by rising food prices. Section 5.7 examines who is likely to lose and gain from rising food prices.

Chart 21, depicts the three most important commodities for which households reportedly depend on markets to acquire them. The chart shows that most households depend heavily on markets for the purchase of coarse rice, cooking oil and kerosene - items that also experienced the largest price increases.

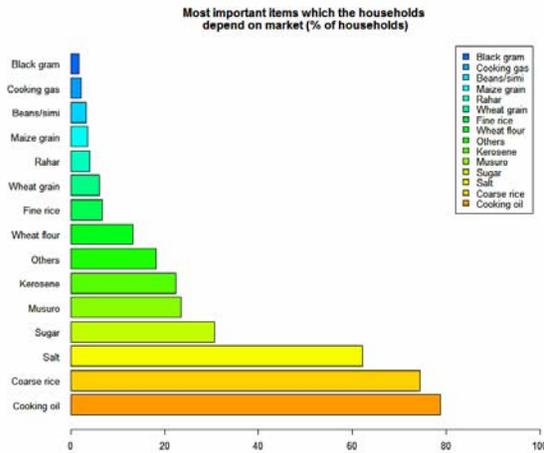


Chart 21

Households spend on average 59 percent of their total expenditure on food, but the poorest 20 percent of the population spend as much as 73 percent<sup>9</sup>. Sharp increases in the price of coarse rice and cooking oil, items which most households must acquire from the market, will have major repercussions on the food security status of the poor.

### 5.1 Wealth ranking

Taking into account ownership of assets, including financial, human, household and agricultural, WFP field monitors ranked the sample households in rural areas into five wealth classes: extreme poor, poor, lower middle, upper middle and well-off. In doing so, 20 percent were classified as extremely poor, 35 percent as poor, 25 percent as lower middle, 13 percent as upper middle and 7 percent as well off. Chart 22 shows the different wealth groups according to the

average relative asset ownership. It also includes the urban poor and non-poor.

The extreme poor in rural areas have access to very limited agricultural land (on average 0.18 ha); the amount of food they can produce generally does not last more than one month a year; their diet is one sided and mainly consists of cereals (maize, millet or wheat) and occasionally rice and *dal*; they spend most of their income on food (78 percent of their total expenditure).

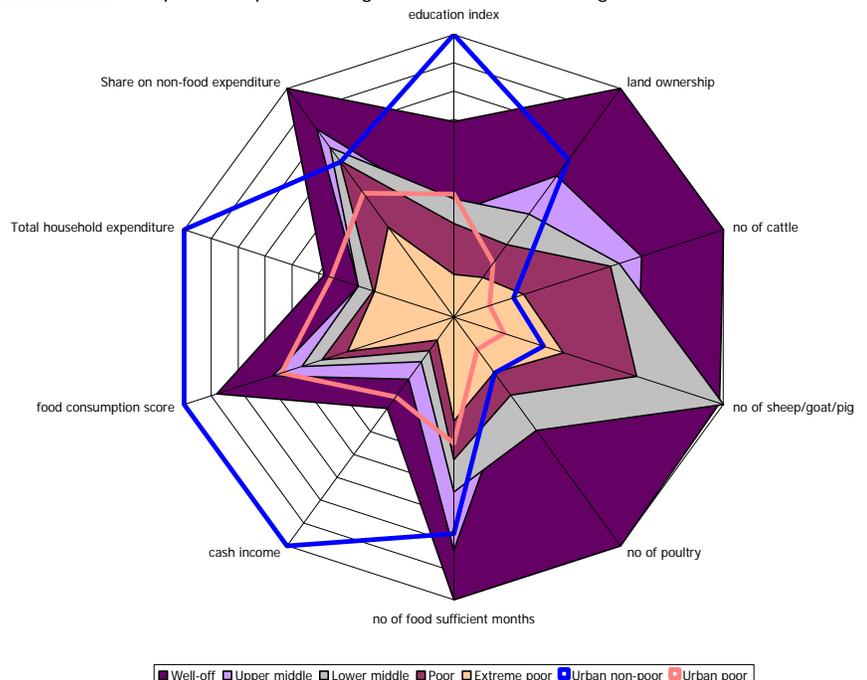
The rural poor also have limited access to agricultural land (on average 0.32 ha); they can produce sufficient food for almost two months of the year; they have few cattle and smaller animals as well as poultry; and they spend about 62 percent of their total expenditure on food.

The lower and upper-middle in rural areas have very similar asset ownerships. The latter generally have access to more land and are therefore able to produce more food for their own consumption or sale. The lower-middle have a larger number of small farm animals such as sheep, goats and pigs. Their total food expenditure is similar, but the upper-middle spent more on non-food items.

The rural well-off generally own more than 1.0 ha of agricultural land, have more farm animals, income and food and non-food expenditure than other wealth categories.

In urban areas, only two wealth classes were used. They include the urban poor (who were randomly selected in the poorest areas of the cities) and the non-poor (who were purposively selected).

Compared to the rural poor, the urban poor have a better asset allocation and entitlement than the rural poor except for the agricultural assets including land,



<sup>9</sup> Nepal Living Standard Survey, 2003/04

Chart 22

livestock and poultry. On average, they own less than 0.2 hectares of agricultural land which is a little more than the land entitlements of the extreme rural poor. As they depend almost solely on markets for their food supply, the average monthly expenditure on food is much higher than the rural poor at NRs 2,360 per household per month. However, the share they spent on food is higher. Their average food consumption is generally better than for poor rural households.

The impact of rising food prices on household food security will be analyzed using these wealth categories.

## 5.2 Hazards

Chart 23 shows the shocks faced by households by wealth category in the past three months. The unavailability of food and increase in food prices as well as lack of employment opportunities and drought were among the main shocks. For the urban population, besides food prices, continuous bandhs and civil strife remain key problems.

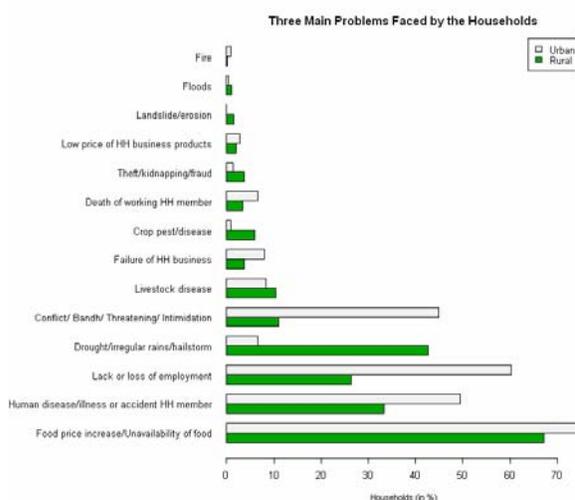


Chart 23

## 5.3 Income and expenditure patterns

All households reported that their expenditures were higher than normal during this period of the year. The rise in food prices was the principle cause for the increase in household expenditures in rural as well as in urban areas (Chart 24).

Factors behind household expenditure increase

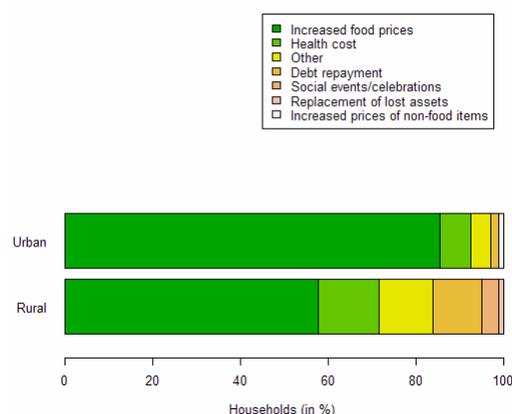


Chart 24

Table 8 shows the total monthly household expenditure and the total share that is spent on food. The data need to be carefully interpreted as it is not based on a comprehensive income and expenditure survey but simply records household's estimated monthly expenditure. Despite this, it provides a similar picture with data from the NLSS (2003/04). The extreme rural poor and urban poor have the highest share of food expenditure in total household expenditure. These shares are very high at 78.2 and 70.0 percent, respectively. The urban poor however have a higher total expenditure pattern reflecting the absence of their own production possibilities. In comparison, results from the NLSS (2003/04) find that the poorest households in Nepal spend 73.0 percent of total household expenditure<sup>10</sup> on food (Table 9).

Area	Wealth Category	Total expenditure (Nrs.)	Share of food expenditure (%)
Rural	Extreme poor	2,180	78.2
	Poor	2,218	62.1
	Lower middle	2,631	59.0
Urban	Upper middle	2,625	54.5
	Well-off	3,569	44.6
	Poor	3,374	70.0
	Non-poor	7,427	62.4

Table 8

Area	Quintile	Total expenditure (Nrs.)	Share of food expenditure (%)
Rural	Poorest	2,669	73.0
	Second	3,723	66.6
	Third	4,294	64.8
	Fourth	6,084	58.1
	Richest	15,089	40.1
Urban	-	15,309	39.1

Table 9

Source: NLSS, 2003/04

<sup>10</sup> Total household expenditure is often used as a proxy for household income.

Such high levels of household expenditure on food as a percentage of total expenditure for both the rural and urban poor make these population groups highly vulnerable to rising food prices.

#### 5.4 Wages

Rising household expenses puts pressure on wage rates. The household survey collected daily wage rates for main unskilled labour activities and compared them over the six month period. Table 10 shows the average wage increases for different daily wage labour by gender. General wage rates have increased by between 7 to a little over 13 percent.

Type of Job	Sex	current	six month ago	Change (%)
Agriculture	Male	84.62	77.84	8.70
	Female	73.43	67.88	8.18
Construction	Male	156.04	142.18	9.75
	Female	120.00	109.38	9.71
Others	Male	133.98	125.14	7.06
	Female	121.92	109.23	11.62
Porter	Male	138.83	130.33	6.52
	Female	138.33	122.22	13.18

Table 10

Table 11 shows the average wage rates increases by zone. Wages have increased the most in the Terai and in urban areas. Female wage rates are much lower than male wage rates.

Geographical Cluster	Gender	current	six month ago	Change (%)
Hill	Male	112.21	104.96	6.91
	Female	65.37	60.64	7.81
Mountain	Male	182.08	167.43	8.75
	Female	109.77	103.75	5.81
Terai	Male	88.42	78.30	12.92
	Female	60.61	53.36	13.59
Urban	Male	152.75	134.90	13.23
	Femal	98.67	87.68	12.53

Table 11

However, wage rates have not kept pace with the increase in food prices. Table 12 calculates the deterioration in terms of trade between male wage rates and coarse rice. For example, 6 months ago a male labourer would earn an equivalent of 4.7 kg of coarse rice in the Mountains and Hills of Nepal. Currently, he would earn an equivalent of only 4 kg. A deterioration of 14.4 and 16.6 percent, respectively.

The deterioration in terms of trade is less pronounced in the Terai. However, despite lower prices a Terai labourer would receive the least equivalent amount in coarse rice (half a kilogram less than a labourer in the Mountains). The least deterioration in terms of trade can be observed in urban areas. Urban daily wage earners enjoy the highest rice equivalent wage rates.

#### 5.5 Consumption behaviour

Changes in food prices lead to changing consumption patterns. When prices increase, poor consumers either decrease the amount of food consumed or purchase cheaper and poorer quality food. Chart 25 shows how consumers have changed their buying habits in response to the increase in food prices during the past six months. Buying on credit has increased substantially, according to retailers as well as wholesalers. As expected, people have also started to procure smaller quantities of food and/or have shifted to cheaper food items.



Chart 25

The change in the consumption behaviour is assessed by comparing the increase in food prices and food consumption scores. Standard food consumption scores are calculated on the basis of weights assigned to different food items consumed and the frequency of consumption during a one week period<sup>11</sup>. Lower food consumption scores indicate less variety in the diet. Chart 26 shows the relationship between increasing food prices and dietary intake for different wealth groups. It demonstrates that there is a strong correlation between food intake and food prices among the poor and the extreme poor wealth categories<sup>12</sup>. Higher prices result in worse consumption scores.

Since their malnutrition rates are already high, this finding is alarming, as it suggests that malnutrition rates are likely to increase among the poor and extreme poor wealth groups<sup>13</sup>.

	Male wage rate		Price of coarse rice		Terms of Trade		
	Now	6 months ago	Now	6 months ago	Now	6 months ago	Change %
Mountain	182.1	167.4	45.1	35.5	4.0	4.7	-14.4
Hill	112.2	105.0	28.6	22.3	3.9	4.7	-16.6
Terai	88.4	78.3	25.0	20.2	3.5	3.9	-8.8
Urban	152.8	134.9	26.2	21.6	5.8	6.2	-6.6

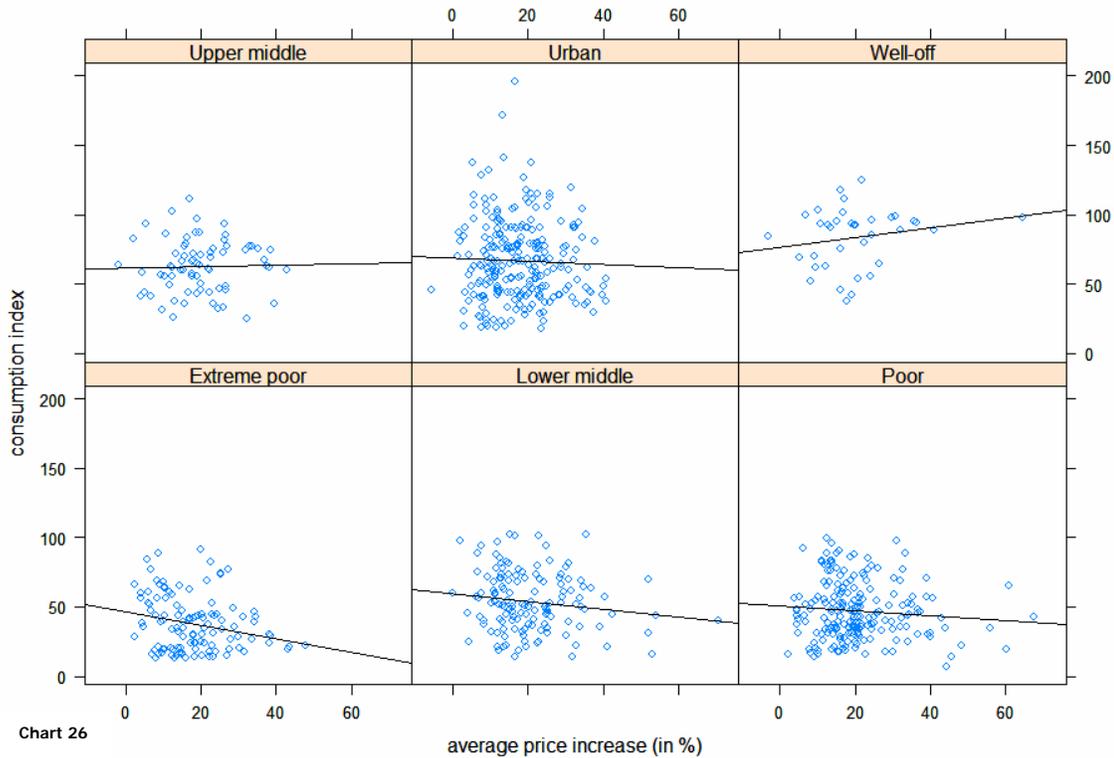
Table 12

<sup>11</sup> The food consumption score was calculated based on the number of days particular food groups were consumed as follows: FCS = 2(cereal) + 3(pulses) + 4(poultry/meat/eggs) + 0.5(oil) + 4(milk products) + 1(vegetables) + 1(fruit) + 0.5(sugar/sweets).

<sup>12</sup> This relationship is significant for the extreme poor only at the P=0.001 level.

<sup>13</sup> On average, 48 percent of children are stunted in Nepal, 39 percent are underweight and 13 percent are wasted (DHS, 2006)

**Food consumption index vs percent price increase per wealth group**



### 5.6 Coping strategies

The relationship between household coping strategies and food prices is illustrated by combining the coping strategies into a coping index and plotting this index against average price increase in the local market. The higher the average price increases, the higher the coping intensity of poor households, as shown in Chart 27. For other wealth categories this relationship is less pronounced<sup>14</sup>.

Chart 28 shows the percentage of households that have adopted a particular coping strategy in the past three months. The most common coping strategies are borrowing money for food consumption and relying on less expensive and less preferred food. Spending savings on food, reducing food intake and migration are also commonly practiced.

### 5.7 Profile and caseload of people in need of assistance

At the onset of the increase in food prices at the beginning of the year, WFP estimated that there were approximately 4 million people vulnerable to rising food prices and an additional 4 million people potentially at risk. These figures were based on available poverty estimates and monitoring data from the FSMAS.

<sup>14</sup> This relationship is significant at P=0.05 level for extreme poor, poor and lower middle rural wealth classifications. For other wealth groups this relationship is not significant. It is significant for the extreme poor at the P=0.001 level if only the immediate coping strategies (consuming less preferred food, borrowing money, spending savings on food, reducing frequency or proportion of food and reducing spending on non-food items) are taken into account.

This market and price impact assessment provides an opportunity to review these figures and derive more precise estimates based on a vulnerability analysis. The analysis is done separately for rural and urban populations.

#### Rural populations

To estimate the extent of impact on the rural population, three vulnerability indices were developed based on potential food price impacts. These were (a) a land access index, (b) a food expenditure index, and (c) an income source index. Subsequently, these indices were combined into a single food price vulnerability index that captured the overall household vulnerability to rising food prices<sup>15</sup>.

All three indices are based on the hypothesis that certain people will gain from rising food prices, while others will lose. Those likely to lose have (a) limited access to land, (b) high food expenditures as a percentage of total expenditures, and (c) a low percentage of income from sales of agricultural produce. For potential gainers the reverse is true.

<sup>15</sup> This approach is based on Deaton (1989) who calculated a proxy for a measure of the short run impact of food price change on household welfare as follows:  $NBR = BR - CR$ , where NBR is the net benefit ratio,  $BR = Y_{food}/Y_{total}$  or the ratio of food sales to total household monetary income, and  $CR = C_{food}/C_{total}$  or the ratio of food expenditure to total household expenditure.

**Coping index vs percent price increase per wealth group**

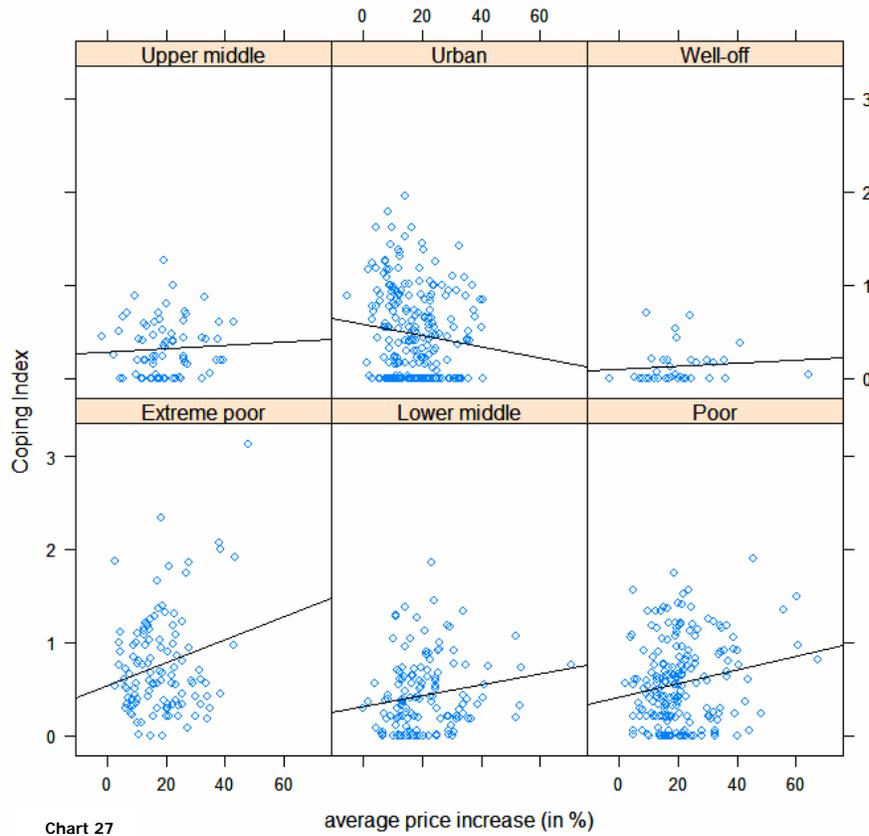


Chart 27

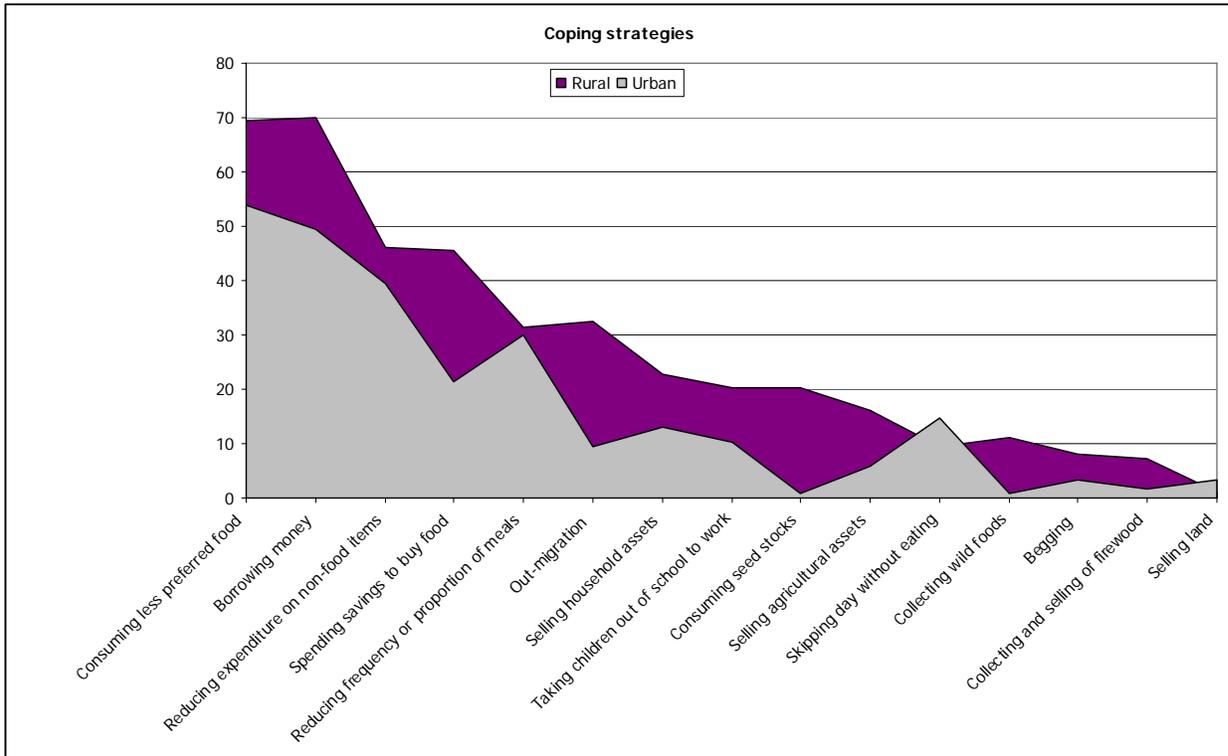


Chart 28

#### Land access index

This index was derived by first categorizing all sample households according to their geographic location, i.e. Terai, Hills or Mountains. Subsequently, threshold levels were established for landownership for each zone. As average yields per hectare are lower in the Mountains and Hills than in the Terai, more land is needed per agricultural household to potentially be a net seller of agricultural products. The thresholds - the absolute minimum amount of land required to be an overall net producer of agricultural crops - were fixed at 0.64 ha for the Mountains, 0.55 for the Hills and 0.45 for the Terai. Subsequently, for each household a value between -1 and 1 was calculated using the logarithm of a household's land entitlements divided by the established thresholds. Negative values indicate that the household may potentially lose from higher food prices while positive values indicate that the household may potentially gain.

#### Food expenditure index

The higher the expenditure on food as a percentage of total household expenditure, the more vulnerable a household is with regard to rising food prices. As mentioned before, the extreme poor in rural areas spent 78 percent of their total expenditure on food which makes them extremely vulnerable to rising food prices.

To calculate the food expenditure index for each household, the share of food expenditure in the total household expenditure was multiplied by  $(-2/100) + 1$ . Similar to the land access index this provided a continuous value between -1 and 1. Minus one in this case indicates the highest level of vulnerability while plus one indicates no vulnerability.

#### Income source index

For each household the sources of income were recorded. If all or most of a household's income was derived from the sale of agricultural products, it was assumed that the household would potentially benefit from food price rises. If on the other hand, the household depended predominantly on daily wage income it would likely lose out. Based on this, a weight of one was given to the sale of agricultural produce as an income source. Income sources such as daily wages, remittances, petty trade etc. were given a weight of minus 1. Income derived from development projects and relief was given a weight of zero.

Subsequently, the percentage share for each income source was multiplied by these weights, divided by 100 and added up to derive an index that ranges from -1 to 1. Households with an income source index of 1 derive all their income from the sale of agricultural products and are therefore likely to gain from increasing food prices. Those with an index of minus 1 depend solely on the market to acquire food and will therefore suffer the most.

The food price vulnerability index combined the above three indices into a single index by calculating the mean value. The following categories were used:

1. Significant losers: households with an overall score between -1 and -0.5
2. Marginal losers: households with an overall score between -0.5 and zero

3. Marginal winners: households with an overall score between zero and 0.5
4. Significant winners: households with an overall score above 0.5

Table 12 shows the estimated number and percentage of rural people who will gain or lose from rising food prices according to the food price vulnerability index.

	Number of rural people (million)	(%)
Significant losers	9.7	42.2
Marginal losers	9.5	41.2
Marginal winners	3.3	14.3
Significant winners	0.5	2.3
Total		100

Table 12

Chart 29 combines the food price vulnerability index with the wealth rankings.

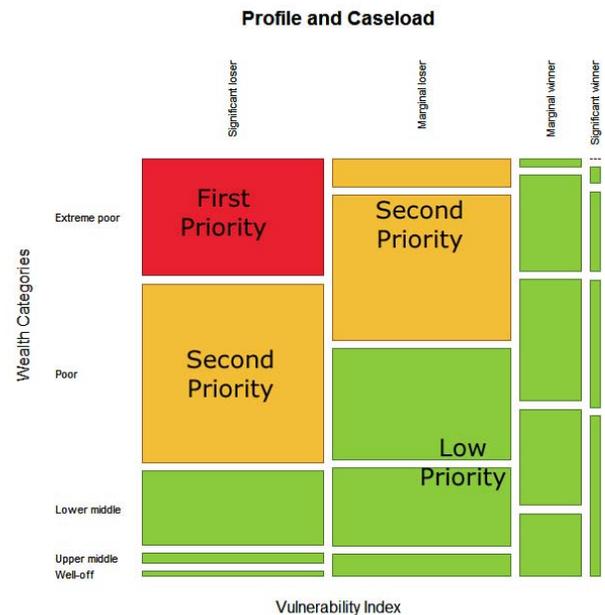


Chart 29

By doing so, priority groups for support programmes can be derived and estimates for total beneficiaries can be generated.

The first priority for assistance should be the extreme poor who risk the greatest loss from the increase in food prices. This represents approximately 13 percent of the total rural population. The second priority is the extreme poor who risk to marginal lose and the poor who risk to significant lose from rising food prices. This represents approximately 35 percent of the rural population. Better off households will also lose but will have a higher resilience and are therefore a low priority.

For WFP, the most important consideration in providing assistance is the population's access to food. To some extent this can be measured by the food consumption

score presented in Section 5.5. Chart 30 plots the priority groups against the consumption score. Poor, moderate and adequate consumption categories have been derived by using the international standard cut-off scores.<sup>16</sup>

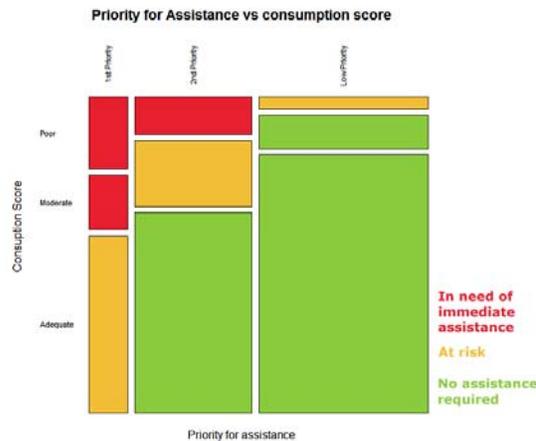


Chart 30

Immediate assistance is required for households in the red shaded areas, i.e those with poor consumption scores, in the first priority group (extreme poor and significant losers) and in the second priority group (extreme poor who risk to marginally lose and poor who risk to significantly lose). This would prevent further declines in food intake as shown in Chart 26 in Section 5.5 and the likely deterioration in malnutrition rates for highly vulnerable groups. This represents about 11 percent of the rural population or about 2.5 million people.

The yellow shaded areas show people who would be at risk and possibly in need of food assistance if food prices continue to increase. These include people in the first, second and third priority group with adequate, moderate and poor consumption scores, respectively. This represents about 17 percent of the rural population or about 3.9 million people.

Table 13 provides some key characteristics of the targeted populations.

The most vulnerable population in need of immediate assistance has had no or limited education, owns less than 0.2 ha of land, owns few livestock, and has

category	education index	average land cultivated (ha)	Average no. of cattle	Average no. of sheep/goat/pig	Average no. of poultry	Average no. of month sufficient food stocks	Average food consumption score	Average monthly expenditure on food	Average expenditure on non-food
Immediate assistance	0.78	0.19	2.03	1.92	2.25	1.21	19.55	1710.31	433.59
At risk	1.03	0.23	2.12	2.00	1.91	1.47	37.83	1494.61	549.61
No assistance	2.06	0.50	3.56	3.58	3.97	2.29	60.50	1582.29	1176.39

Table 13

<sup>16</sup> Cut-offs are as follows:  
 Poor food consumption: score between 0.5 and 21  
 Moderate food consumption: score between 21.5 and 34.5  
 Adequate food consumption: score above 35

generally about one month's worth of food stock depending on the time of the year. According to the survey data, their total food expenditure is higher than for those at risk or not in need of assistance. This is logical as their dependency on markets to acquire food is higher than those at risk or not in need of food assistance.

### Urban populations

For the urban areas, the particular concern is for the urban poor and slum dwellers. They have limited or no access to land (average land ownership is 0.2 ha), spend about 70 percent of their total expenditure on food, and as shown in Chart 31, obtain more than 86 percent of their income from wage employment and/or trade or business.

Source of income (average share per wealth group)

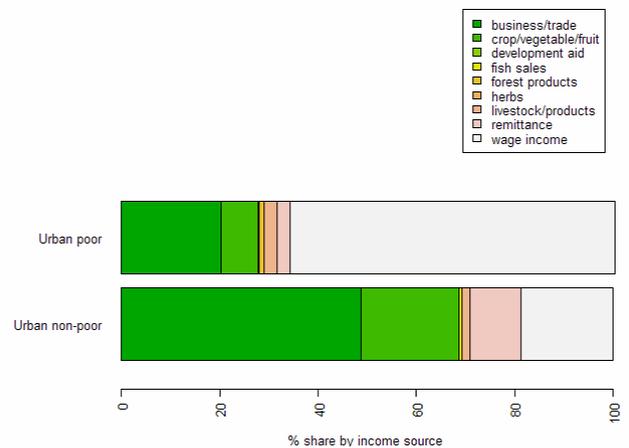


Chart 31

Given the dependency of the urban poor on markets for accessing their food, they will almost all be impacted from rising food prices. On the positive side, however, on average food prices have risen less in urban areas than in rural areas (see Table 4, Section 3.4), although increases in the prices of essential commodities, such as coarse rice, wheat flour, cooking oil and kerosene are still very substantial. In addition, the decrease in the terms of trade between wages and coarse rice was much less than in rural areas, and thirdly the urban poor have a better overall food consumption intake compared to the rural poor.

The current urban population in Nepal is estimated at almost 4 million people. According to small area estimates of poverty as calculated by the Central Bureau of Statistics in 2006, the incidence of urban poverty is 13.2 percent<sup>17</sup>. This results in a total number of approximately 525,000 vulnerable urban poor.

According to the survey data, 12.7 percent of the urban poor have an inadequate consumption score (2.8 percent have a poor consumption score and 9.9 percent have a moderate score). The remaining urban poor have an adequate consumption score.

Therefore, any targeted urban food security programme in response to rising food prices would have a target population of around 67,000 people.

### 5.8 Geographic targeting

Food price rises affect people all over the country. However, particular areas may be more vulnerable to rising food prices than others. This section aims to identify areas that face the biggest threat to household food security as a consequence of rising food prices.

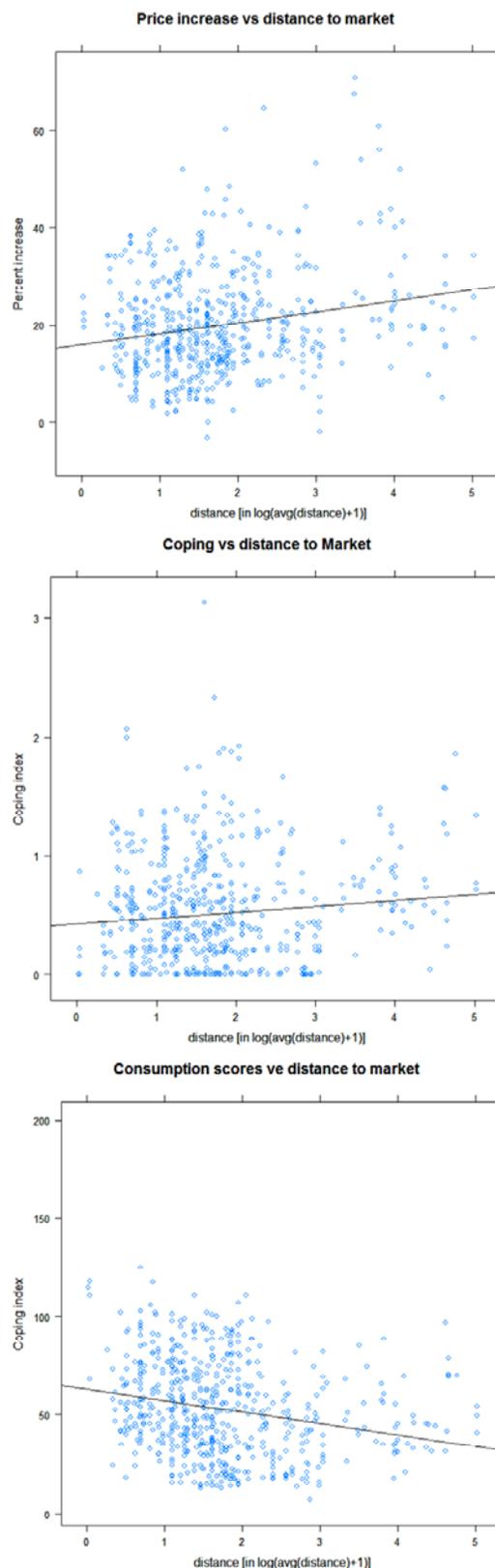
Table 14 shows the average return distance to markets by zone in average hours and minutes (hrs.min). Markets infrastructure is least developed in the mountain districts where it takes on average 1 day to reach the nearest market. To reach the nearest road head market it requires on average 4 to 5 days walk. In comparison, the nearest market in the Terai is at an average distance of 2 hours and this is often a road head market.

	nearest market	second nearest market	road head market
Mountain districts	28.45	69.35	112.23
Hill districts	10.17	15.06	19.24
Terai districts	4.03	6.59	5.26

**Table 14**

Distance to markets is strongly correlated to the average rise in food prices. But not only that, it also correlates strongly with increased coping intensity and consumption intake<sup>18</sup>. This is illustrated in Chart 32. In other words, communities further away from markets, face higher food prices, have a higher coping intensity and consume less nutritious food. Remote areas such as districts in the Far and Mid-West Hills and Mountains where limited or no road and market infrastructure are to be found should therefore be targeted at a priority basis.

<sup>17</sup> Small Area Estimation of Poverty, Caloric Intake and Malnutrition in Nepal, CBS, WFP, WB, 2006. The NLSS (2003/04) estimates urban poverty at 9.6 percent. Here the small area estimation estimate is taken as the estimate is more robust and has a lower standard error.  
<sup>18</sup> All relationships are significant at the P=0.001 level



**Chart 32**

It was earlier determined that poor landless and marginal farmers who spent most of their income on food and derive minimal income from their own crop production were particularly at risk from rising food prices. To get an indication of where concentrations of these poor households can be found, the number of estimated poor that are supported by one metric ton of cereal production was plotted in Map 3<sup>19</sup>. The higher the density, the higher the chance that these poor households are marginal farmers or landless who for the majority of the year depend on markets for their food supply. The map also indicates areas with much lower than average consumption expenditure.

The highest concentration of rural populations most vulnerable to rising food prices can be found in the Hills of Western Nepal. In addition, the Hill districts of Makwanpur, Sindhuli and Udayapur in Central and Eastern Nepal are highly vulnerable. Several Terai districts with a high density of poverty and landless households such as Kailali, Banke and Dang are also among the areas of concern.

The Mountain areas are less populated and therefore show less of a concentration of vulnerable populations. However, given high food prices, high coping intensity, lack of infrastructure, low agricultural yield and low food consumption in these areas, particularly in the Karnali zone of the Mid-West, makes the population in the Himalayas extremely vulnerable to rising food prices.

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<sup>19</sup> Total cereal production was taken instead of available agricultural land as it takes into account the large differences in land productivity (yields) in Terai, Hills and Mountains. Cereal production data (2007/08) are provided by the MoAC. Poverty rates are taken from the report, Small Areas Estimation of Poverty, Caloric Intake and Malnutrition in Nepal (CBS, WFP, WB, 2006).



## 6. OUTLOOK AND POLICY ACTIONS

The global increase in food prices initiated an international debate on the impact of rising commodity prices on poverty and food security, and possible solutions. The UN World Food Security Summit on Climate Change and Global Food Prices during the first week of June aimed at identifying solutions and obtaining financial commitments to tackle the issue at the global level. Various donors have made funds available to mitigate the impact of rising food prices. At this point, it remains unclear if or how much of these resources might be directed to Nepal.

The issue of rising food prices is a major challenge for the newly formed government of Nepal. Nepal's population has high expectations for immediate improvements in their livelihoods especially since the 10-year conflict has ended. However, the politicians are focusing their attention on the political process of developing a new constitution and formation of a new government. The likelihood that the issue of rising food and fuel prices will receive the appropriate attention is small.

As shown in section 3.3, traders expect further price increases in key commodities. The recent increase in fuel prices will translate into higher transportation costs, one of the most important factors determining food prices in Nepal, especially for the Hills and Mountains.

Further increases in food prices may reverse the gains in poverty reduction achieved during the past decade. Food security will be compromised as shown by Chart 26 in Section 5.5 and the quality and quantity of the food intake of the poor will further decline, with disastrous consequences for malnutrition.

Nepal's food insecurity was already critical before the global food crisis. Forty-one percent of its population is undernourished and half of its children are stunted from chronic lack of food. Even more worrying, acute malnutrition is approaching 20 percent in some parts of the Terai where people arguably should have access to food through the markets.

Nepal's potential for civil unrest is high: its government is inexperienced and its people have a history of quickly taking to the streets to protest. There is a clear risk that rising food prices may undermine the peace process if adequate and timely response are not taken.

### 6.1 Government actions

At the onset of the global food crisis, several policy actions were taken to stabilize food prices. India introduced an export ban on non-basmati rice, wheat and lentils. This, to some extent, contributed to increased food prices in Nepal (see Chart 12, Section 4.2). However a drastic reduction in supplies from India has not yet been reported. Wholesalers reported increasing import prices, but have not yet reported a significant reduction in supply.

Nepal reacted by introducing an export ban on food items after reports of increasing quantities of wheat

being exported to Bangladesh. According to traders the ban is not effective and trade still takes place on the basis of letters of credit dated before the ban was introduced. Some food grains were also exported to Tibet from Nepal. However, after the introduction of the ban, this practice stopped. China also closed the border with Nepal and this has resulted in food shortages in several remote mountain communities along the Tibetan border, as they were unable to access their usual food markets in Tibet.

A second and much better strategy adopted by the Nepal government was to release food stocks held by the Nepal Food Corporation in the market. The basic function of the NFC is to supply food to 30 remote food deficit Hill and Mountain districts. It has a strategic reserve to meet emergency needs. The size of the reserve is around 15,000 Mt. This is a very small amount and cannot meet the demands during significant shortages. NFC's effectiveness depends on available funds. Although there has been a budget increase to 19,000 Mt for this fiscal year, this is by no means sufficient to cover the requirements in remote areas.

The problems of food supply and food security in Nepal are related to: its decline in agricultural productivity, which is among the lowest in South Asia, increasing fuel prices, fuel shortages and global inflation. Many parts of the country have experienced droughts and floods, and there is a lack of adequate investment in agriculture such as in improved farming techniques, seeds, or irrigation (only 31 percent of the land is under irrigation). The effects of the decade-long conflict on agriculture and Nepal's population growth also contribute to the challenges for meeting Nepal's food needs.

Fortunately, this year (2007/08) has been a good year for paddy and wheat production, which increased by an estimated 17 percent and 4 percent respectively, compared to last year's production. However, there is a severe problem of food shortage in the Hills and Mountains of the Far and Mid-West, which are facing four consecutive seasons of drought. The Ministry of Agriculture and Cooperative's list of possible policy responses to food prices focuses on improving agricultural productivity, increasing investment in agriculture infrastructure development, enhancing farmers' access to credit and crop insurance, implementing pro-poor income enhancement programs, mobilizing food aid, reformulating the NFC's domestic food procurement policy to enhance domestic food production and stabilize market prices and a policy to discourage the conversion of agricultural land for non-agricultural purposes.

In June, the Nepal Oil Corporation announced a fuel price hike of 25 percent or more following recent fuel price increases in India. The increases in fuel prices – as well as the ongoing constraints in supply – will push up food prices further. Fuel price increases ideally should go hand in hand with the introduction of a targeted safety net programmes directed at the poorest population groups.

The Three Year Interim Plan proposes several programs to address food supply related problems. They are: a) the continuation of NFC activities to supply food to deficit areas, b) the establishment of at least one fair price shop in each district headquarters, c) the maintenance of a buffer stock (15,000 MT), d) the utilization of SAARC's food security stock of 4,000 MT, e) increasing local food production and storage facilities, f) the establishment of integrated supply system for food, salt, petroleum product and medicines, g) the promotion of competitive markets and market interventions to protect consumer rights, and h) an awareness campaign to change the food habits of the population. It also states that supply monitoring will be done by local governments. However, all these programmes will only provide benefits over the medium to longer term.

## 6.2 WFP actions

WFP's operational costs have increased by at least 26 percent as a consequence of the rise in food prices and transportation costs. Its lead time from procurement to distribution is now approximately 12 weeks instead of its usual six to eight weeks due to supply constraints. Transportation of commodities due to severe scarcity of fuel is currently one of the main logistical challenges WFP faces.

WFP food for work programmes, under the protracted relief and recovery operation (PRRO) for food assistance to food insecure and conflict-affected populations, procures a significant amount of food locally. The majority is being distributed in the Hills and Mountains. This has created employment opportunity, developed infrastructure and helped to ease food security faced by the poorest families. With adequate funding, the PRRO will provide food support to 1.25 million food insecure people. This activity is to be expanded in the short term to provide coverage to the 2.5 million rural poor who need immediate food support.

In addition, the WFP school feeding and nutrition programme ensures a daily minimum food ration to school children, infants and pregnant and lactating women, predominantly in the Hills of the Far- and Mid-west.

WFP in partnership with FAO has set up a national task force on food prices to coordinate action and provide advice to the Government of Nepal for appropriate policy action. These include:

In the short term:

- Give direct subsidies in districts with significant price rises
- Support income transfer initiatives
- Increase targeted food aid through food for work schemes
- Review existing policies and regulations – i.e., enforce existing legislation such as the goods hoarding act, revise Nepal's ban on wheat export
- Initiate dialogue with India to find ways of restoring food price stability and address immediate concerns – i.e. remove their export ban

- Set up an emergency food security reserves system – SAARC, NFC
- Improve farmers' access to inputs -- seeds, fertilizers, pesticides, techniques and credit through the private sector or NGOs.
- Support small scale farmers with a focus on food security related actions.
- At the broader level, establish a joint market watch with government, consumers, central bank, FNCCI, etc. to monitor price changes along the Nepal-India border as an indicator of food transfer
- At the household level, monitor changes in household food security and coping strategies in the affected areas

For the medium and longer term:

- Address land reform issues
- Make agriculture a "real" policy priority
- Revive NFC operations to full capacity and guarantee that the food goes to those that need it the most in market inaccessible areas.
- Invest in flood control, drainage structures and soil and water conservation
- Expand financial institutions including microfinance institutions to improve the access of marginal farmers and the rural poor's access to credit
- Improve farmers' access to market information so that they can adjust production decisions and respond to changing market conditions
- Rehabilitate and upgrade post-harvest processing facilities (handling and processing)
- Set up market and road infrastructure where required
- Eliminate barriers to agricultural trade with regional and international cooperation.
- Incentives require reforms, pricing, trade and other policies to accompany investment in agriculture

## 6.3 Next steps

At the end of July under the Initiative on Soaring Food Prices, a joint mission will take place focusing on appropriate actions to be taken in Nepal. Participating organizations include MoAC, FAO, WFP, World Bank, ADB, IFAD, and OCHA. The mission will be led by FAO and the Ministry of Agriculture and Cooperatives.

In June, a joint WFP/MoAC assessment mission took place to drought affected areas in the Far and Mid-west of Nepal. The assessment identified 103 VDCs<sup>20</sup> in 9 districts severely affected by drought. The assessment pointed out that almost 300,000 people in these VDCs would need immediate support to bridge the food gap until the next main harvest in November due to large losses sustained by these populations in the winter wheat crop. As a consequence of this they have become dependent on markets for their food supply.

A joint market and price monitoring system is being set up by WFP in collaboration with the Agribusiness Promotion Board of the Department of Agriculture, the Federation of the Nepal Chamber of Commerce (FNCCI) and the Consumer Protection Board. The initiative aims

<sup>20</sup> VDC is a village development committee, the lowest administrative unit in Nepal

to provide a twice monthly update on the developing market situation from districts across the country.

As part of its FSMAS, WFP with active support from the MoAC, has been strengthening its food security phase classification system in which district food security networks that are currently being set up in districts across the country define on a quarterly basis the food security status of each VDC. This is done on the basis of a series of agreed indicators and established threshold values which determine the food security phase of each VDC. The resulting district maps provide a common tool to monitor the food security situation within and across districts.

## 7. RECOMMENDATIONS

An effective response requires collaboration between the government, NGOs, CBOs, the private sector, the donor community the IFI's, and the UN system. The most immediate requirement is to implement a targeted response in the most affected areas and elaborate an information strategy to keep the public updated on the food price situation and activities implemented to address the issue. These steps to mitigate immediate concerns should buy the time - a strategic resource - required to redress the agricultural sector in Nepal and improve food production.

The government market and price monitoring system needs to be improved and extended to include more remote areas. The joint market watch system which is being set up by WFP, Agribusiness promotion board, FNCCI and the Consumer Protection Board, is a first step in this direction. Information products need to be timely produced and circulated widely to inform the wider public. This initiative is supported by the WFP Food Security Monitoring and Analysis System.

Targeted safety-net programmes should be introduced to provide support to the poorest population groups most affected by the price increases (priority 1).

Targeted food assistance is immediately required for 2.5 million rural people who are severely affected by the price increases and whose food intake is already far below the average to prevent further deterioration in malnutrition rates.

A further 3.9 million rural poor need to be closely monitored. They are at high risk of food insecurity if food prices continue to rise. If so, targeted food or cash assistance needs to be extended to include this group.

WFP is currently conducting a pilot study to implement a cash/voucher programme in response to high food prices in areas with better access to markets, e.g. the Terai. Cash or voucher programmes can potentially stimulate local demand for food commodities. It involves local commercial traders and as such can act as a stimulus to the local economy. In areas where commercial trade is inadequate due to limited demand (e.g. poor areas in the Hills) it could be used as an instrument to activate trade by guaranteeing a minimum demand. In the Nepal context, it would also allow for better individual targeting based on household characteristics such as those listed in Table 13 in section 5.7.

Cash/voucher based systems may also be a mechanism to provide support to the half million or so urban poor. However, as the analysis showed the food security priorities are in the remote rural areas of Nepal. Another option to assist the urban poor would be the introduction of targeted rice subsidy programmes such as practiced by the NFC.

The NFC's role in providing subsidized food assistance to remote areas should be strengthened, provided that

the targeting mechanisms used are improved and transparent.

With child nutrition rates already among the worst in the world, it is essential that nutrition-based programmes such as the Mother and Child Health Care (MCHC) and School feeding be strengthened and expanded. In addition, emergency nutrition programmes providing supplementary and high nutritious foods to young children need to be considered in areas with extremely high malnutrition rates and as a potential response to local emergencies to prevent further deterioration in the already unacceptable high malnutrition rates.

Fuel shortages push up transportation costs and make supplies lines unreliable. The many hours of idle time people spend queuing for petrol comes at an economic cost. The petrol supply issue will need to be solved to help bring down transportation costs.

The transportation syndicate system needs to be abolished. Free competition on all routes will drive down transportation costs which, especially in the Hills and Mountains, are one of the major factors determining retail prices.

The many and almost daily bandhs and road blockages across the country are another key factor behind rising food prices. This issue needs to be addressed with urgency.

In the short and medium run, the focus needs to be on addressing the constraints in improving agricultural production, including:

- Distribution of improved seeds and the setting up of community seed banks
- Extending the coverage of irrigation facilities
- Stimulation appropriate use of fertilizers
- Improving road access and market facilities
- Improving farm management techniques
- Improving access to credit facilities by farmers
- Rehabilitate the agricultural extension services in rural areas.

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