



Food and Agricultural Markets in Nepal



Kalimati Wholesale Market in Kathmandu

February 2007

Food and Agricultural Markets in Nepal

United Nations World Food Programme, Nepal and Food and Agriculture Organization of the United Nations, Nepal

February 2007

Published by :	United Nations World Food Programme, Nepal Food and Agricultural Organization of the United Nations, Nepal
Date of Publication :	February, 2007
Duration of study :	January - August 2006 (field work in February-March 2006)
ISBN :	978-99946-2-341-9

Acknowledgements

The background work of this report was led by Mr. Rajendra P. Singh (Agricultural Marketing, Consultant Team Leader) in cooperation with Dr. Punya P. Regmi (Agricultural Economist, Consultant), Dr. Bishnu Upreti (Conflict Specialist, Consultant), with an outstanding support received from Mr. Uttam Prasad Dulal (Statistician), Ms. Luni Piya and Mr. Pashupati Pokhrel who provided statistical assistance in both secondary and primary data collection, entry and analysis.

Technical coordination and report finalization were led by Mr. Issa Sanogo (WFP/ODB). Dr. Jo Cadilhon (FAO/RAP Bangkok) provided technical assistance, especially in the survey data analysis and interpretation. Valuable and critical comments and suggestions provided by Mr. Andrew Shepherd (FAO/HQ), Ms. Agnes Dhur (WFP/HQ) and Mr Michael Sheinkman (WFP/ODB) played an instrumental role in shaping and finalizing the report.

The study would not have been possible without the cooperation and full support of all staff at WFP and FAO both at Country Office and Sub-Office levels. We are especially thankful to Dr. Padma Singh (FAO/Nepal) for providing inputs as Agricultural Specialist and helping to coordinate the study. Field support and assistance in coordinating the project activities were provided by Mr. Morten Olesen, Mr. Pushpa Shrestha and Dr. Krishna Pahari (WFP/VAM/ Nepal). Valuable inputs on spatial analysis and mapping were also provided by Dr. Pahari. The team is also grateful to Ms. Sheila Isanaka for the remarkable work on editing the report for publication.

Finally, strong support provided to undertake this WFP/FAO collaborative study by the then WFP Country Director, Ms. Erika Joergensen, FAO Representative Mr. Kazuyuki Tsurumi, WFP Deputy Country Director, Mr. Jean-Pierre deMargerie and WFP Country Director Mr. Richard Ragan deserve high appreciation.

For questions and comments, please contact Issa Sanogo, Regional Assessment Officer (Markets), WFP/OD, Bangkok, at issa.sanogo@wfp.org

List of Acronyms

ADB	Asian Development Bank
ADB/N	Agricultural Development Bank, Nepal
APP	Agriculture Perspective Plan
B/BRMC	Bhairahawa/Butwal Regional Market Cluster
BRMC	Biratnagar Regional Market Cluster
BJRMC	Birguni Regional Market Cluster
CBS	Central Bureau of Statistics
CCI	Chamber of Commerce and Industry
CDO	Chief District Officer
CDR	Central Development Region
CFSVA	Comprehensive Food Security and Vulnerability Analysis
CPN(M)	Communist Party of Nepal (Maoist)
DADO	District Agricultural Development Office
DDC	District Development Committee
DFTOC	Department of Food Technology and Ouality Control
DOC	Department of Cooperatives
DOLDS	District Livestock Development Services
DRMC	Dhangadhi Regional Market Cluster
EDR	Eastern Development Region
ECHO	European Commission Humanitarian Aid Office
EFSA	Emergency Food Security Assessment
FAMS	Food and Agricultural Market Study
FAO	Food and Agricultural Organization of the United Nations
FGD	Focus Group Discussion
FNCCI	Federation of Nepalese Chamber of Commerce
FSM	Food Security Monitoring
FWDR	Far-Western Development Region
FY	Fiscal Vear
GDP	Gross Domestic Production
GNP	Gross National Production
GON	Government of Nepal
IRMC	Ihana Regional Market Cluster
KII	Key Informant Interview
LRMC	Lahan Regional Market Cluster
LIGA	Local Self-Governance Act 2055
MOAC	Ministry of Agriculture and Cooperatives
MOICS	Ministry of industry Commerce and Supplies
MRDC	Mahendranagar Regional Market Cluster
MWDR	Mid-Western Development Region
NAP	National Agricultural Policy
NEC	Nenal Food Corporation
NISS	Nepal Living Standard Survey
NRMC	Narayangadh Regional Market Cluster
NRMC	Nenalguni Regional Market Cluster
NTFP	Non Timber Forest Products
PRSP	Poverty Reduction Strategy Paper
SAAPC	South Asian Association for Pagional Cooperation
SAARC	Statistical Package for Social Science
	Third Livestock Development Projects
TOP	Terms of Pafaranaa
IUNCDE	United Nations Capital Davalanment Fund
UNDD	United Nations Development Program
VDCs	Village Development Committees
WB	World Bank
WDD WDD	Wolly Dallk Western Davalonment Pagion
WED CO	Western Development Region
WTPCO	world Food Programme Country Office

Executive Summary

WFP and FAO Country Offices in Nepal jointly commissioned this study on food and agricultural markets (FAMS) to develop an agricultural market profile based on study of market dynamics within the context of a long-standing conflict in order to contribute to the decision making in case of emergency. The study was prepared, relying heavily on secondary data sources complimented by primary information collected through different market sizes in different regions and key informants such as traders, millers and government district officers. The final report focuses on food grain markets, as food grains constitute a major component of food consumption and thus food security in Nepal. However, the field survey covered also other food items such as livestock and vegetables and fruits. Specific findings on these non-food grain agricultural markets are annexed to the report. The rest of the executive summary highlights key issues related to food markets and food security and recommended actions.

Growth performance in Nepal remains low over the recent years, resulting in persisting low purchasing power among the population. Nepal ranks 136 out of 177 on the UNDP Human Development Index of 2005. Of its population of some 25 million, an estimated 31 percent live below the poverty line. The real GDP (Gross Domestic Product) has grown by 2.8 percent per annum while the population has grown by 2.3 percent per annum, resulting in slow progress in per capita incomes, over the past 5 years (2001-2005). The income distribution is uneven with the bottom 80 percent of the population earning 47 percent of total income. Although, it is likely that the overall rural livelihoods have been maintained or improved during the last two decades (1985-2002) due to increasing per capita food availability, dependency on remittances has increased in recent years. Overseas remittances, which rose by 17.6 percent to US\$1.1 billion in 2005, helped offset the negative impact of poor rainfall in the agricultural sector and the pronounced decline (41.4 percent) in tourism (ADB, 2006). The lowest annual income per capita levels are localized in the mid west and far west hilly and mountain areas. Of its three ecological belts (mountains, hills and Terai), Terai is considered as the granary of the country from where most of the marketed surplus of the country is generated. The mountain and hill districts are generally food deficit and mostly populated with low income and vulnerable population.

Nepalese economy is dominated by a slow performing agriculture sector with the majority of the population relying on subsistence farming and increasingly on external remittances. Food grains in Nepal account for nearly three fourth of the calorie intake. Over the recent years (2002-2005), the agriculture sector recorded a rather low growth rate of 3 percent a year on average. The negative impact of this low performance on the living conditions was reduced by substantial increase in non-farm incomes, especially remittances. The increase of migration (and thus remittances) could be a result of the long-standing conflict and low economic performance in the country. However, migration and displacements may have created new forms of vulnerabilities, especially for women head of households. The conflict opened an opportunity for women to be empowered, though at the cost of overwhelming economic responsibilities in many cases. Women have taken additional responsibility on household management, crop production, livestock rearing and decision on marketing of their livestock, horticultural and agricultural products. The findings indicate that women have relatively greater participation in petty trade and road side sales of vegetables and fruits which are more disrupted by frequent blockades and strikes. *In the context of the current peace building process, the promotion of*

trade facilitation responses such as micro-credit may help to mitigate the impact of the conflict on women's activities by resuming and developing petty trade. Continued monitoring of the patterns of migration at household level is also recommended, given its increasing role in household food security.

Foreign supply plays a major role in complimenting the limited domestic food production in Nepal. Nationally, Nepal is food insufficient due to limited cultivable soil, low productivity growth and frequent dry winters affecting crop production. The country depends therefore substantially on foreign food supply, mainly from India. The food supply management is predominantly private sector-led but the reach of private traders is limited to accessible areas of the country. Public intervention through Nepal Food Corporation (NFC) and international assistance remain important sources of food supply, especially in areas where the private sector has a minimal reach. However, despite its high reserve potential, the operational capacity of NFC has weakened because of the insurgency and closure of food depots in remote areas, resulting in a decline of government capacity to meet the needs of vulnerable groups. The high reserve potential of NFC has left scope for humanitarian agencies to draw upon the reserves in order to provide assistance during emergency interventions. *Further consideration should therefore be given to improving the field operational capacities of NFC*.

The implementation of Nepal food sector strategies are challenged by trade liberalization.

With a trade-to-GDP ratio of more than 50 percent, an average tariff rate of about 14 percent, and virtually no quantitative restrictions, Nepal is one of South Asia's most open and trade dependent economy. The agricultural sector policies were liberalized in the second half of the 1990s and have been accelerated with recent accession to WTO in April 2004. Having gained WTO membership, this existing framework will continue to be strengthened, either with new or amended legislation, in order to better align it with WTO recommendations. All duties and charges other than customs duties will additionally be phased out by 2012. The long-standing Trade and Transit Treaty between Nepal and India is one bilateral agreement with significant influence on trade and the agricultural sector. The agreement, allowing for preferential market access, permits most exports to enter India duty-free and allows imports from India to enjoy considerably reduced duties. However the benefits of trade liberalization are challenged by the weak external competitiveness of the economy, characterized by a pegged exchange rate (to the Indian Rupee), high production costs and the poor in-country road connectivity, as opposed to India. Both private traders and institutional buyers rely increasingly on imports from India (especially rice). Private traders are reportedly procuring rice from the Food Corporation of India (FCI) during the replenishment cycle of its buffer stocks at a lower cost than private channels. Assuming targeted beneficiaries have no effective demand due to lack of purchasing power, it could be worth exploring the possibility of direct provision of rice from FCI for costeffective public intervention, as a short term option.

Private sector involvement in food commodity trade in the hilly and mountain remote areas is limited by weak physical access to markets. Difficult terrain and consequently, weak road connectivity from the main roads and from the district headquarters to rural areas, especially in mountain and hilly areas, are cause of high in-country transportation costs and reduced reach of private traders. Hence, public market intervention through subsidized prices in mountain and hilly districts remains one response to the lack of functioning markets, though at a high operational cost. The transport network depends heavily on the Mahendra Highway, which serves as the backbone of the country running throughout the length of the country on the foothills. There are

a number of feeder roads linking this highway with major towns in Nepal and to India. Arniko highway connects Mahendra Highway to Tibet via Kathmandu. The point of intersection between the Mahendra highway and the north-south arterial roads is the main basis of the transportation hubs and the major market settlements are evolving in line with these hubs. This combination of transport hubs and market hubs is heavily located in the Terai and almost nonexistent in the mountains. Only 30 percent of the rural population is reported to have access to all-weather roads. *In addition to short and medium term responses such as food for work programs, increasing efforts on long term development projects are indispensable to improve road connectivity to supply centers, strengthen market integration and contribute consequently to improving the food security status in Nepal.*

Despite the relatively competitive food grain market structure, the lack of backward and forward linkage markets bears the risk of undermining the food trade flows, given the relatively small number of large millers-traders controlling the trade of cereals. The food grain market channel is one of a tertiary market. It operates with a large number of stakeholders including farmers, kantawalas, rice millers, importers, wholesalers and retailers and consumers. Individual farmers are price takers in the marketing system because of their small marketable surpluses and the lack of cooperatives in food grain markets. Large millers/traders play a central role as they process the majority of the produce, accounting for more than 80 percent of traded grains in the market, and determine the rice price based on information collected on production, import from India and demand through brokers on major regional markets networks and consumption centers. Among others, Biratnagar Regional Market Network is one of the most important regional market networks, while Katmandu Valley is the largest consumption center. Transit markets such as Surkhet and Sanfebagar play an important role in the marketing channel as they bring food from source markets to consumers living in the hill and mountain fooddeficit areas. From a food security surveillance perspective, these markets are instrumental in the price information and transmission system and could be worth monitoring. In particular, Sanfebagar transit market could be instrumental in monitoring the impact of labour movement (employment migration from Nepal to India) on demand and prices in food-deficit areas of the Far west of Nepal.

Price differentials are both seasonal and spatial, with a key role of Indian border markets in the price integration process. In general, the rice price is low during the market arrival months (September-February) which include the main rice harvest season. From a procurement perspective, a proper scheduling of local purchase over the major food availability season (September-January) would support farmers' incomes with limited impact on prices. As opposed to seasonal price differentials, spatial price differentials remain high between the mountain and Terai areas throughout the year due to the relative isolation of the former from functioning markets. Low market prices observed in the Terai are likely due to the surplus status of the majority of these districts and the impact of Indian border markets on the price transmission mechanism to Terai markets. Notwithstanding data limitations, the price integration analysis for coarse rice suggests that the Terai market prices are cointegrated with their corresponding Indian border-markets, implying the existence of a long-run price transmission mechanism between these markets. This result suggests cash (transfer or for work) or food voucher options would be more appropriate in targeting Terai vulnerable groups. As Indian prices are lower on average by 10 to 30 percent, they play an important role in stabilizing prices in the Terai and would therefore reduce the inflation due to an injection of cash. However, the price stabilization process merely benefits the hilly and mountain remote areas because of the lack of food grain

functioning markets, low food availability and low purchasing power, resulting in a limited market participation of household in these areas. *Food distribution options, including food for work schemes are seen more appropriate in this context.*

The long-standing conflict has led to significant market system disruptions in conflictaffected areas. Overall, market functioning has weakened in conflict-affected areas due to market shutdowns, induced shortage of goods and services, physical damage of goods and food stuff incurred during transport on unsafe roadways, obstruction of production, processing, transportation and trading of agricultural commodities, damage of physical infrastructure, and price instability due to taxation, donation and transport strikes, blockades and *bandhs*. Although uncertainties remain regarding the political situation, recent progress in peace agreement creates hope for overall economic activity and livelihood recovery. *WFP's role in this peace building process is seen in pursuing and increasing its interventions in hilly and mountain remote areas through for instance, food for work activities which may be appropriate options for the reinsertion of able-bodied insurgents. In addition, long term support to agricultural development and food security patterns is indispensable. A combination of responses such as micro-credit/micro-saving programs for small farmers, high yield seeds, techniques on planting density, soil fertility restoration, plant selection for seed multiplication, seems to be appropriate.*

Overall, conflict, recurrent winter droughts and dependence on food imports are seen as the main potential shocks to monitor for food security purposes. In order to inform decision making in case of emergency and drawing from the lessons learned, the study recommended monitoring and analyzing the post-conflict security situation, as part of a regular monitoring system. Besides, the report suggests an indicative list of food security monitoring indicators related to the macro-economic environment, food availability and accessibility and market information. This list is based on the cost effectiveness (ease, simplicity, importance, frequency and level of disaggregation) of collecting information on the indicators. It can be noted that most of the indicators (and related analysis) are available through secondary sources. The existing food security monitoring system (FSMS) within WFP Nepal/VAM is experienced enough to fulfill both the task of collecting secondary data as well as additional primary data if necessary. However, outsourcing and partnership could be an option in order to minimize the cost and the workload on the VAM Unit. A detailed list of possible indicators worth monitoring is presented below.

Indicators	What to Analyze?	Where to Collect?
Macro Environment		
Internal and external trade	Changes in trade policies related to	Customs; MOICS, Federation of
regulations and Tariffs	food sector (including list of	the Nepalese Chamber of
between India and Nepal	sensitive products)	Commerce and Industry and
	Changes in Tariffs Between India	other private trader/agro-
	and Nepal	industry associations
Trends of Foreign exchange	Most recent data (monthly if	CBS, Nepal Rastra Bank, IMF,
reserves	possible) on foreign reserves in	World Bank
	terms of number of months of	
	imports (comparison with last 3-	
	year trend)	
Trends of the Exchange rate	Monthly average of official	CBS, Nepal Rastra Bank, IMF,
of the Indian Rupee	exchange rate (comparison with	World Bank
	last 3-year trend)	

Suggested Market	t Indicators for	· Food Security	Monitoring	in Nepal
------------------	------------------	-----------------	-------------------	----------

Index, CPJ (comparison with asis 3-year trend, cereals vs others) World bank Food Availability	Inflation (Consumer Price	Monthly and region wise CPI	CBS, Nepal Rastra Bank, IMF,
Food Availability Most recent figures both at national level and sub-national level (comparison of current production in previous 5-year average) MOAC, FAOSTAT/FAO; USDA, district agricultural development office (DADD) and farmers Prospects of food grain stocks (cspecially rice and wheat) in India Trend analysis of FCI buffer stocks (cspecially rice and wheat) in groduction in previous 5-year average) Comparison of current stocks with production in previous 5-year average) Customs; CBS, MOICS, Federation of the Nepalese (Cambor of the Nepalese (Chamber of Commerce and undustry and representatives at district level) Information and Access Trend analysis using monthly prices including Indian bordermarkets WFP FSM visit to border checkpoints and Customs Wholesale and retail food prices in other main sources of income (including radio same for the Nepalese (India, Vietnam and Thailad) Trend analysis using monthly prices for cereals on major market surfaces for the Nepalese (Chamber of Commerce and Industry and representatives at district level) CBS, MOICS, MOAC, Agricultural Marketing Information Bulletins, www. agripricenepal.com, www. indiastat.com, www. agripricenepal.com, www. agripricenepal.com, Federation of the Nepalese (Chamges of the status of main roads and bridges during the rainy seasons; (including fuel prices) CBS, MOICS, MOAC, FAOSTAT/FAO; (SS, MOAC, Agricultural Marketing Information Bulletins, www. agripricenepal.com, WFP FSM Monthly changes in employment opprices of the status of main roads and bridges during the rainy seasons; (including fuel prices) Monthly changes in employment oras and bridges during the rainy seasons; (including fuel prices) <td>Index, CPI)</td> <td>(comparison with last 3-year trend, cereals vs others)</td> <td>world Bank</td>	Index, CPI)	(comparison with last 3-year trend, cereals vs others)	world Bank
Production trends for rice, wheat, maize and lentilMost recent figures both at national level and sub-national level (comparison of current production in previous 5-year average)MOAC, FAOSTAT/FAO; USDA, district agricultural development office (DADO), WFP Food Security Monitoring (FSM), Interviews with DADO and farmersProspects of food grain stocks (cespecially rice and wheat) in IndiaTrend analysis of FCI buffer stocks (Comparison of current stocks with production in previous 5-year average)FCI website: http://fciweb.nic.inFormal import trends of food grains, especially rice and wheat form major sources such as IndiaTrend analysis of FCI buffer stocks (comparison of current stocks with production in previous 5-year average)Customs; CBS, MOICS, Federation of the Nepalese (Chamber of Commerce and Industry and representatives at district levelInformal cross border importEstimate of amount and direction of border trade with IndiaCBS, MOICS, MOAC/Agricultural Marketing Information Bulletins, www.agripricenepal.com, www.indiastat.com, WFP FSM for border marketsWholesale and retail food pricesMonthly prices for creals on major market sources and destinations (Biratangar, Birguri, Katmandu, Pokhara and Sanfebagar) and local marketsCBS, MOICS, MOAC/Agricultural Marketing Information Bulletins, www.agripricenepal.com, www.agripricenepal.com, www.agripricenepal.com, www.agripricenepal.com, www.agripricenepal.com, www.agripricenepal.com, www.agripricenepal.com, www.agripricenepal.com, www.agripricenepal.com, www.agripricenepal.com, www.agripricenepal.com, www.agripricenepal.com, www.agripricenepal.com, www.agripricenepal.com, secasons;	Food Availability		
wheat, maize and lentilnational level and sub-national level (comparison of current production in previous 5-year average)USDA, district agricultural development office (DADO), WFP Food Security Monitoring (FSM, Interviews with DADO and farmersProspects of food grain stocks (especially rice and wheat) in IndiaTrend analysis of FCI buffer stocks (Comparison of current stocks with production in previous 5-year average)FCI website: http://ciweb.nic.inFormal import trends of food grains, especially rice and wheat from major sources such as IndiaEstimate of imported and exported quantities of main food commodifies (specifying the origin or destination)Customs; CBS, MOICS, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district levelInformation and AccessTrends on fice prices from of border trade with IndiaCBS, MOICS, MOAC/Agricultural Marketing Industry and representatives at district levelWholesale and retail food pricesMonthly prices for cereals on major market sources and destinations (Birtangar, Birgunj, Katmandu, Pokhara and Sanfebagar) and local marketsCBS, MOICS, MOAC/Agricultural Marketing Information Bulletins, www.agripricenepal.com, www.agripricenepal.com, www.agripricenepal.com, www.agripricenepal.com, www.agripricenepal.com, www.agripricenepal.com, www.agripricenepal.com, was and hadesChanges in other main sources of income (including emittances)Monthly changes in employment roads and bridges during the rain roads and bridges during the	Production trends for rice,	Most recent figures both at	MOAC, FAOSTAT/FAO;
IndiaInterview	wheat, maize and lentil	national level and sub-national	USDA, district agricultural
production estimates with production in previous 5-year average)WPF Food Security Monitoring (FSM), Interviews with DADO and farmersProspects of food grain stocks (comparison of current stocks with IndiaTrend analysis of FCI buffer stocks (Comparison of current stocks with production in previous 5-year average)FCI website: (http://fciweb.nic.inFormal import trends of food grains, especially rice and wheat from major sources such as IndiaEstimate of imported and exported quantities of main food commodities (specifying the origin or destination)Customs; CBS, MOICS, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district levelInformal cross border importEstimate of amount and direction of border trade with IndiaCBS, MOICS, WFP FSM visit to borderMarket Information and AccersTrend analysis using monthly prices, including India border- marketsCBS, MOICS, MOAC/Agricultural Marketing Information Bulletins, www.agripricenepal.com, www.indiastat.com, www.agripricenepal.com, Federation of the Nepalese (CBS, MOICS, MOAC/Agricultural Marketing Information Bulletins, www.agripricenepal.com, Federation of the Nepalese (Changes of income (including rentiances)Changes of income (including rentiances)Monthly changes in employment opportunities, migration flows and national accounts, WFP FSMChanges of the status of main roads and bridges during the rainy seasons; changes of the status of main roads and bridges during the rainy seasons; changes of the status of main roads and bridges during the rainy seasons; conset it ransport costs (including fuel prices)Borought<		level (comparison of current	development office (DADO),
production in previous 5-year average)(FSM), Interviews with DADO and farmersProspects of food grain stocks (comparison of current stocks with IndiaTrend analysis of FCI buffer stocks (Comparison of current stocks with production in previous 5-year average)FCI website: http://fciweb.nic.inFormal import trends of food quantities of main food commodities (specifying the origin or destination)Customs; CBS, MOICS, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district levelInformal cross border importEstimate of amount and direction of border trade with IndiaWFP FSM visit to border checkpoints and CustomsMarket Informationa and AccessTrend analysis using monthly prices, including Indian border- marketsCBS, MOICS, MOAC/Agricultural Marketing Information Bulletins, www.agripricenepal.com, Www agripricenepal.com, WeW PF FSM for border marketsWholesale and retail food pricesMonthly prices for cereals on major market sources and destinations (Biratnagar, Birgunj, Katmandu, Pokhara and Sanfebagar) and local marketsCBS, MOICS, MOAC/Agricultural Marketing Information Bulletins, www.agripricenepal.com, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSMChanges in other main sources of income (including remittances)Monthly changes in employment ooportunities, migration flows and unskilled wage rates at district level (changes of the remittancesMinistry of Transport, MOAC, MOACS, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level or in rural areas which may aftect the roads and		production estimates with	WFP Food Security Monitoring
average)and tarmersProspects of food grain stocksFCI website: (Comparison of current stocks with production in previous 5-year average)FCI website: http://fciweb.nic.inIndiaproduction in previous 5-year average)Customs; CBS, MOICS, Federation of the Nepalese (Cammodities (specifying the origin or destination)Informal cross border importEstimate of amount and direction of border trade with IndiaCustoms; CBS, MOICS, Federation of the Nepalese (Cammodities (specifying the origin or destination)Market Information and AccessTrends of rice prices from of rice prices from marketsTrend analysis using monthly prices, including Indian border- marketsCBS, MOICS, MOAC/Agricultural Marketing Information Bulletins, www.agripricencpal.com, www. wagripricencpal.com, www. wagripricencpal.com, www. wagripricencpal.com, www. agripricencpal.com, www. agripricencpal.com, WEP FSM for border changes of the remitancesCBS, MOICS, MOAC/Agricultural Marketing Information Bulletins, www.agripricencpal.com, www.agripricencpal.com, www.agripricencpal.com, www.agripricencpal.com, www.agripricencpal.com, www.agripricencpal.com, www.agripricencpal.com, Federation of the Nepalese Changes of the ramitancesChanges in other main sources of income (including renationesesMonthly changes in employmentCBS household surveys and national accounts, WFP FSM		production in previous 5-year	(FSM), Interviews with DADO
Prospects of lood grain stocks (especially rice and wheat) in IndiaTrend analysis of PCI buffer stocks (especially rice and wheat) in (Comparison of current stocks with average)http://fciweb.nic.informal import trends of food grains, especially rice and what from major sources such as IndiaCommodities (specifying the origin or destination)Customs; CBS, MOICS, Federation of the Nepalese (Chamber of Commerce and Industry and representatives at district levelInformal cross border importEstimate of amount and direction of border trade with IndiaWFP FSM visit to border checkpoints and CustomsMarket Information and AccessTrend analysis using monthly prices, including Indian border- markets (India, Vietnam and Thailand)CBS, MOICS, MOAC/Agricultural Marketing Information Bulletins, www.agripricenepal.com, www agripricenepal.com, www.agripricenepal.com,		average)	and farmers
(comparison of current stocks with production in previous 5-year average)Ittp://terweb.ntc.inFormal import trends of food grains, especially rice and wheat from major sources such as IndiaEstimate of imported and exported commodities (specifying the origin or destination)Customs; CBS, MOICS, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district levelInformal cross border importEstimate of amount and direction of border trade with IndiaWFP FSM visit to border checkpoints and CustomsMarket Information and AccessTrend analysis using monthly prices, including Indian border- marketsCBS, MOICS, MOAC/Agricultral Marketing Information Bulletins, www.agripricenepal.com, www.indiastat.com, www.agripricenepal.com, www.agripricen	Prospects of food grain stocks	Trend analysis of FCI buffer stocks	FCI website:
Indiaproduction in previous 3-year average)Formal import trends of food grains, especially rice and wheat from major sourcesEstimate of imported and exported quantities of main food commodities (specifying the origin or destination)Customs; CBS, MOICS, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district levelInformal cross border importEstimate of amount and direction of border trade with IndiaWFP FSM visit to border checkpoints and CustomsMarket Information and AccessTrend analysis using monthly prices, including Indian border- marketsCBS, MOICS, WFP FSM for border markets (India, Vietnam and Thailand)CBS, MOICS, MOAC/Agricultural Marketing Information Bulletins, www.indiastat.com, WFP FSM for border marketsWholesale and retail food pricesMonthly prices for cereals on major market sources and destinations (Biratnagar, Birgunj, Katmandu, Pokhara and Sanfebagar) and local marketsCBS, MOICS, WOAC/Agricultural Marketing Information Bulletins, www.agripricenepal.com, Federation of the Nepalese Chamber of Commerce and Industry and representatives at distirct level, WFP FSMChanges in other main sources of income (including remittances)Monthly changes in employment oportunities, migration flows and unskilled wage rates at district level Changes of the status of main roads and bridges during the rainy seasons; Changes of the status of main rads and bridge sduring the rainy seasons;Ministry of Transport, MOAC, MOICS, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSMChanges of the status of main rads and bridg	(especially rice and wheat) in	(Comparison of current stocks with	http://fciweb.nic.in
Formal import trends of food grains, especially rice and wheat from major sourcesEstimate of imported and exported quantities of main food commodities (specifying the origin or destination)Customs; CBS, MOICS, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district levelInformal cross border importEstimate of amount and direction of border trade with IndiaCustoms; CBS, MOICS, Federation of the Nepalese (Eackpoints and Customs)Market Information and AccessTrends analysis using monthly prices, including Indian border- marketsCBS, MOICS, MOAC/Agricultural Marketing Information Bulletins, www. indiastat.com, www. indiastat.com, WFP FSM for border marketsChanges in other main sources of income (including remittances)Monthly changes in employment oportunities, migration flows and usfield wage rates at district level Changes of the transport costs (including frequences)CBS household surveys and national accounts, WFP FSMChanges of the status of the status of main roads and bridges during the rainy seasons; Changes of the status of same month during previous 5 yearsMinistry of Transport, MOAC, MOAC, Local weather stations and DADO.ConflictReporting on any abnormal events and reasons at district level or in rural areas which may affect the food security situation of the ponulationMonthly Rainfall compared to average level of same month during previous 5 years	India	average)	
grains, especially rice and wheat from major sources such as Indiaquantities of main food commodities (specifying the origin or destination)Federation of the Nepalese Chamber of Commerce and Industry and representatives at district levelInformal cross border importEstimate of amount and direction of border trade with IndiaWFP FSM visit to border checkpoints and CustomsMarket Information and AccessTrend analysis using monthly prices, including Indian border- marketsWFP FSM visit to border checkpoints and Customs(India, Vietnam and Thailand)Trend analysis using monthly prices, including Indian border- marketsCBS, MOICS, MOAC/Agricultural Marketing Information Bulletins, www.agripricenepal.com, www.agripricenepal.com, www.agripricenepal.com, www.agripricenepal.com, www.agripricenepal.com, www.agripricenepal.com, Federation of the Nepalese (CBS, MOICS, MOAC/Agricultural Marketing Information Bulletins, www.agripricenepal.com, Federation of the Nepalese (CBS, MOICS, MOAC/Agricultural Marketing Information Bulletins, www.agripricenepal.com, Federation of the Nepalese (Chamber of Commerce and Industry and representatives at district level, WFP FSMChanges in other main sources of income (including remittances)Monthly changes in employment oportunities, migration flows and unskilled wage rates at district level (Changes of the tratunaces)CBS household surveys and national accounts, WFP FSMChanges of the status of main reads and bridges during the rainy seasons; (including fuel prices)Ministry of Transport, MOAC, MOICS, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level or in <b< td=""><td>Formal import trends of food</td><td>Estimate of imported and exported</td><td>Customs; CBS, MOICS,</td></b<>	Formal import trends of food	Estimate of imported and exported	Customs; CBS, MOICS,
wheat from major sources such as Indiacommodities (specifying the origin or destination)Chamber of Commerce and Industry and representatives at district levelInformal cross border importEstimate of amount and direction of border trade with IndiaCBS, MOICS, WPF PSM visit to border checkpoints and CustomsMarket Information and AccessTrends of rice prices from prices, including Indian border- marketsTrend analysis using monthly prices, including Indian border- marketsCBS, MOICS, MOAC/Agricultural Marketing Information Bulletins, www.agripricenepal.com, www.agripricenepal.com, WFP FSM for border marketsWholesale and retail food pricesMonthly prices for cereals on major market sources and destinations (Biratnagar, Birgunj, Katmandu, Pokhara and Sanfebagar) and local marketsCBS, MOICS, MOAC/Agricultural Marketing Information Bulletins, www.agripricenepal.com, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSMChanges in other main sources of income (including remittances)Monthly changes in employment oportunities, migration flows and unskilled wage rates at district level Changes of the status of main roads and bridges during the rainy seasons; Changes of the status of main roads and bridges during the rainy seasons; Changes in transport costs (including fuel prices)Ministry of Transport, MOAC, MOICS, Federation of the Nepalese Chamber of Commerce at district level, WFP FSMShock MonitoringMonthly Rainfall compared to average level of same month during previous 5 yearsMOACA Local weather stations and DADO.ConflictReporting on any abnormal	grains, especially rice and	quantities of main food	Federation of the Nepalese
such as Indiaor destination)Industry and representatives at district levelInformal cross border importEstimate of amount and direction of border trade with IndiaWFP FSM visit to border checkpoints and CustomsMarket Information and AccessTrends of rice prices from prices, including Indian border- marketsCBS, MOICS, MOAC/Agricultural Marketing Information Bulletins, www.agripricenepal.com, Www.indiastat.com, WFP FSM for border marketsWholesale and retail food pricesMonthly prices for cereals on major market sources and destinations (Biratnagar, Birgurj), Katmandu, Pokhara and Sanfebagar) and local marketsCBS, MOICS, MOAC/Agricultural Marketing Information Bulletins, www.agripricenepal.com, WFP FSM for border marketsChanges in other main sources of income (including remittances)Monthly changes in employment opportunities, migration flows and unskilled wage rates at district level Changes of the status of main roads and bridges during the rainy seasons; Changes of the status of main roads and bridges during the rainy seasons; Changes of the status of main roads and bridges during the rainy seasons; Changes of the status of main roads and bridges during the rainy seasons; Changes of the status of main roads and bridges during the rainy seasons; Changes of the status of main roads and bridges during the rainy seasons; Changes of the status of main roads and bridges during the rainy seasons; Changes of the status of main roads and bridges during the rainy seasons; Changes of the status of main roads and bridges during the rainy seasons; Changes of the status of main roads and bridges during the rainy seasons; Changes in transport costs 	wheat from major sources	commodities (specifying the origin	Chamber of Commerce and
Informal cross border importEstimate of amount and direction of border trade with IndiaWFP FSM visit to border checkpoints and CustomsMarket Information and AccessTrends of rice prices from key international markets (India, Vietnam and Thailand)Trend analysis using monthly prices, including Indian border- marketsCBS, MOICS, MOAC/Agricultural Marketing Information Bulletins, www.agripricenepal.com, www.indiastat.com, WFP FSM for border marketsWholesale and retail food pricesMonthly prices for cereals on major market sources and destinations (Biratnagar, Birgunj), Katmandu, Pokhara and Sanfebagar) and local marketsCBS, MOICS, MOAC/Agricultural Marketing Information Bulletins, www.agripricenepal.com, WFP FSM for border marketsChanges in other main sources of income (including remittances)Monthly changes in employment oportunities, migration flows and unskilled wage rates at district level Changes of the remittancesCBS household surveys and national accounts, WFP FSMRoad and transport conditionsChanges of the status of main roads and bridges during the rainy seasons; (including fuel prices)Ministry of Transport, MOAC, MOICS, Federation of the Nepalese Chamber of Commerce and ladustry and representatives at district levelBhock MonitoringMonthly Rainfall compared to average level of same month during previous 5 yearsMOAC, Local weather stations and DADO.ConflictReporting on any abnormal events and reasons at district level or in rural areas which may affect the food security situation of the powletionMOAC, Local weather stations and DADO.	such as India	or destination)	Industry and representatives at
Informal cross border importEstimate of amount and direction of border trade with IndiaWFP FSM visit to border checkpoints and CustomsMarket Information and AccessTrend analysis using monthly prices, including Indian border- marketsCBS, MOICS, MOAC/Agricultural Marketing Information Bulletins, www.agripricenepal.com, www.indiastat.com, WFP FSM for border marketsWholesale and retail food pricesMonthly prices for cereals on major market sources and destinations (Biratnagar, Birgunj, Katmandu, Pokhara and Sanfebagar) and local marketsCBS, MOICS, MOAC/Agricultural Marketing Information Bulletins, www.agripricenepal.com, WFP FSM for border marketsChanges in other main sources of income (including remittances)Monthly changes in employment opportunities, migration flows and unskilled wage rates at district level Changes of the remittancesCBS household surveys and national accounts, WFP FSMRoad and transport conditionsChanges of the status of main roads and bridges during the rainy seasons; Changes in transport costs (including tuel prices)Ministry of Transport, MOAC, MOICS, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSMShock MonitoringMonthly Rainfall compared to average level of same month during previous 5 yearsMOAC, Local weather stations and DADO.ConflictReporting on any abnormal events and reasons at district level or in rural areas which may affect the food security situation of the powletionWFP Security Officer, WFP FSM, District Officers, DADO			district level
of border trade with Indiacheckpoints and CustomsMarket Information and AccessTrends of rice prices from prices, including Indian border- marketsCBS, MOICS, MOAC/Agricultural Marketing Information Bulletins, www.agripricenepal.com, www.indiastat.com, WFP FSM for border marketsWholesale and retail food pricesMonthly prices for cereals on major market sources and destinations (Biratnagar, Birgunj, Katmandu, Pokhara and Sanfebagar) and local marketsCBS, MOICS, MOAC/Agricultural Marketing Information Bulletins, www.agripricenepal.com, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSMChanges in other main sources of income (including remittances)Monthly changes in employment opportunities, migration flows and unskilled wage rates at district level Changes of the remittancesCBS household surveys and national accounts, WFP FSMRoad and transport conditionsChanges of the status of main roads and bridges during the rainy seasons; Changes in transport costs (including fuel prices)Ministry of Transport, MOAC, NOICS, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSMShock MonitoringMonthly Rainfall compared to average level of same month during previous 5 yearsMOAC, Local weather stations and DADO.ConflictReporting on any abnormal events and reasons at district level or in rural areas which may affect the food security situation of the produs sy desrWFP Security Officer, WFPConflictReporting on any abnormal events and reasons at district level or in rural areas which may affect the <td>Informal cross border import</td> <td>Estimate of amount and direction</td> <td>WFP FSM visit to border</td>	Informal cross border import	Estimate of amount and direction	WFP FSM visit to border
Market Information and AccessTrends of rice prices from key international markets (India, Vietnam and Thailand)Trend analysis using monthly 		of border trade with India	checkpoints and Customs
Trends of rice prices from key international markets (India, Vietnam and Thailand)Trend analysis using monthly prices, including Indian border- marketsCBS, MOICS, MOAC/Agricultural Marketing Information Bulletins, www.agripricenepal.com, www.indiastat.com, WFP FSM for border marketsWholesale and retail food pricesMonthly prices for cereals on major market sources and destinations (Biratnagar, Birgunj, Katmandu, Pokhara and Sanfebagar) and local marketsCBS, MOICS, MOAC/Agricultural Marketing Information Bulletins, www.agripricenepal.com, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSMChanges in other main sources of income (including remittances)Monthly changes in employment opportunities, migration flows and unskilled wage rates at district level Changes of the status of main roads and bridges during the rainy seasons; Changes in transport costs (including fruel prices)Ministry of Transport, MOAC, MOICS, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSMShock MonitoringMonthly Rainfall compared to average level of same month during previous 5 yearsMOAC, Local weather stations and DADO.ConflictReporting on any abnormal events and reasons at district level or in rural areas which may affect the food security situation of the populationWFP Security Officer, WFP FSM, District Officers, DADO	Market Information and Acc	ess	
key international markets (India, Vietnam and Thailand)prices, including Indian border- marketsMOAC/Agricultural Marketing Information Bulletins, www.agripricenepal.com, www.agripricenepal.com, WFP FSM for border marketsWholesale and retail food pricesMonthly prices for cereals on major market sources and destinations (Biratnagar, Birgunj, Katmandu, Pokhara and Sanfebagar) and local marketsCBS, MOICS, MOAC/Agricultural Marketing Information Bulletins, www.agripricenepal.com, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSMChanges in other main sources of income (including remittances)Monthly changes in employment opportunities, migration flows and unskilled wage rates at district level Changes of the remittancesCBS household surveys and national accounts, WFP FSMRoad and transport conditionsChanges of the status of main roads and bridges during the rainy seasons; Changes in transport costs (including fuel prices)Ministry of Transport, MOAC, MOICS, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSMShock MonitoringMonthly Rainfall compared to average level of same month during previous 5 yearsMOAC, Local weather stations and DADO.ConflictReporting on any abnormal events and reasons at district level or in rural areas which may affect the food security situation of the ponulationWFP Security Officer, WFP FSM, District Officers, DADO	Trends of rice prices from	Trend analysis using monthly	CBS, MOICS,
(India, Vietnam and Thailand)marketsInformation Bulletins, www.agripricenepal.com, www.indiastat.com, www.indiastat.com, www.indiastat.com, www.indiastat.com, www.indiastat.com, www.indiastat.com, www.indiastat.com, www.indiastat.com, www.agripricenepal.com, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSMChanges in other main sources of income (including remittances)Monthly changes in employment opportunities, migration flows and unskilled wage rates at district level Changes of the remittancesMinistry of Transport, MOAC, MOICS, Federation of the Nepalese Chamber of Commerce and industry and representatives at district level, WFP FSMRoad and transport conditionsChanges of the status of main roads and bridges during the rainy seasons; (including fuel prices)Ministry of Transport, MOAC, MOICS, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSMShock MonitoringMonthly Rainfall compared to average level of same month during previous 5 yearsMOAC, Local weather stations and DADO.ConflictReporting on any abnormal events and reasons at district level or in rural areas which may affect the food security situation of the ponulstionWFP Security Officer, WFP FSM, District Officers, DADO	key international markets	prices, including Indian border-	MOAC/Agricultural Marketing
Thailand)www.agripricenepal.com, www.indiastat.com, WFP FSM for border marketsWholesale and retail food pricesMonthly prices for cereals on major market sources and destinations (Biratnagar, Birgunj, Katmandu, Pokhara and Sanfebagar) and local marketsCBS, MOICS, MOAC/Agricultural Marketing Information Bulletins, www.agripricenepal.com, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSMChanges in other main sources of income (including remittances)Monthly changes in employment opportunities, migration flows and unskilled wage rates at district level Changes of the status of main roads and bridges during the rainy seasons; Changes in transport costs (including fuel prices)Ministry of Transport, MOAC, MOICS, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSMShock MonitoringMonthly Rainfall compared to average level of same month during previous 5 yearsMOAC, Local weather stations and DADO.ConflictReporting on any abnormal events and reasons at district level or in rural areas which may affect the food security situation of the nonulationWFP Security Officer, WFP FSM, District Officers, DADO	(India, Vietnam and	markets	Information Bulletins,
Wholesale and retail food pricesMonthly prices for cereals on major market sources and destinations (Biratnagar, Birgunj, Katmandu, Pokhara and Sanfebagar) and local marketsWMOAC/Agricultural Marketing Information Bulletins, www.agripricenepal.com, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSMChanges in other main sources of income (including remittances)Monthly changes in employment opportunities, migration flows and unskilled wage rates at district level Changes of the remittancesCBS household surveys and national accounts, WFP FSMRoad and transport conditionsChanges of the status of main roads and bridges during the rainy seasons; Changes in transport costs (including fuel prices)Ministry of Transport, MOAC, MOICS, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSMShock MonitoringMonthly Rainfall compared to average level of same month during previous 5 yearsMOAC, Local weather stations and DADO.ConflictReporting on any abnormal events and reasons at district level or in rural areas which may affect the food security situation of the nonulationWFP Security Officer, WFPConflictReporting on any abnormal events and reasons at district level or in rural areas which may affect the food security situation of the nonulationWFP Security Officer, MFP	Thailand)		www.agripricenepal.com,
Wholesale and retail food pricesMonthly prices for cereals on major market sources and destinations (Biratnagar, Birgunj, Katmandu, Pokhara and Sanfebagar) and local marketsCBS, MOICS, MOAC/Agricultural Marketing Information Bulletins, www.agripricenepal.com, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSMChanges in other main sources of income (including remittances)Monthly changes in employment opportunities, migration flows and unskilled wage rates at district level Changes of the remittancesCBS household surveys and national accounts, WFP FSMRoad and transport conditionsChanges of the status of main roads and bridges during the rainy seasons; Changes in transport costs (including fuel prices)Ministry of Transport, MOAC, MOICS, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSMShock MonitoringMonthly Rainfall compared to average level of same month during previous 5 yearsMOAC, Local weather stations and PADO.ConflictReporting on any abnormal events and reasons at district level or in rural areas which may affect the food security situation of the nonulationWFP Security Officer, WFP FSM, District Officers, DADO			www.indiastat.com,
Wholesale and retail food pricesMonthly prices for cereals on major market sources and destinations (Biratnagar, Birgunj, Katmandu, Pokhara and Sanfebagar) and local marketsCBS, MOICS, MOAC/Agricultural Marketing Information Bulletins, www.agripricenepal.com, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSMChanges in other main sources of income (including remittances)Monthly changes in employment opportunities, migration flows and unskilled wage rates at district level Changes of the remittancesCBS household surveys and national accounts, WFP FSMRoad and transport conditionsChanges of the remittances (Including fuel prices)Ministry of Transport, MOAC, MOICS, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSMShock MonitoringMonthly Rainfall compared to average level of same month during previous 5 yearsMOAC, Local weather stations and DADO.ConflictReporting on any abnormal events and reasons at district level or in rural areas which may affect the food security situation of the nonulationWFP Security Officer, WFP			WFP FSM for border markets
pricesmajor market sources and destinations (Biratnagar, Birgunj, Katmandu, Pokhara and Sanfebagar) and local marketsMOAC/Agricultural Marketing Information Bulletins, www.agripricenepal.com, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSMChanges in other main sources of income (including remittances)Monthly changes in employment opportunities, migration flows and unskilled wage rates at district level Changes of the remittancesCBS household surveys and national accounts, WFP FSMRoad and transport conditionsChanges of the status of main roads and bridges during the rainy seasons; (including fuel prices)Ministry of Transport, MOAC, MOICS, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSMShock MonitoringMonthly Rainfall compared to average level of same month during previous 5 yearsMOAC, Local weather stations and DADO.ConflictReporting on any abnormal events and reasons at district level or in rural areas which may affect the food security situation of the nomulationWFP Security Officer, WFP	Wholesale and retail food	Monthly prices for cereals on	CBS, MOICS,
destinations (Bratagar, Brigun), Katmandu, Pokhara and Sanfebagar) and local marketsIntornation Butterins, www.agripricenepal.com, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSMChanges in other main sources of income (including remittances)Monthly changes in employment opportunities, migration flows and unskilled wage rates at district level Changes of the remittancesCBS household surveys and national accounts, WFP FSMRoad and transport conditionsChanges of the status of main roads and bridges during the rainy seasons; Changes in transport costs (including fuel prices)Ministry of Transport, MOAC, MOICS, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSMShock MonitoringMonthly Rainfall compared to average level of same month during previous 5 yearsMOAC, Local weather stations and DADO.ConflictReporting on any abnormal events and reasons at district level or in rural areas which may affect the food security situation of the powulationWFP Security Officer, WFP FSM, District Officers, DADO	prices	major market sources and	MOAC/Agricultural Marketing
Kathlandu, Poknara and Sanfebagar) and local marketswww.agripricenepai.com, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSMChanges in other main sources of income (including remittances)Monthly changes in employment opportunities, migration flows and unskilled wage rates at district level Changes of the remittancesCBS household surveys and national accounts, WFP FSMRoad and transport conditionsChanges of the remittancesMinistry of Transport, MOAC, MOICS, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSMShock MonitoringMonthly Rainfall compared to average level of same month during previous 5 yearsMOAC, Local weather stations and DADO.ConflictReporting on any abnormal events and reasons at district level or in rural areas which may affect the food security situation of the nomulationWFP Security Officer, WFPSM, District Officers, DADO		destinations (Biratnagar, Birgunj,	Information Bulletins,
Samebagar and local marketsFederation of the reprises Chamber of Commerce and Industry and representatives at district level, WFP FSMChanges in other main sources of income (including remittances)Monthly changes in employment opportunities, migration flows and unskilled wage rates at district level Changes of the remittancesCBS household surveys and national accounts, WFP FSMRoad and transport conditionsChanges of the status of main roads and bridges during the rainy seasons; Changes in transport costs (including fuel prices)Ministry of Transport, MOAC, MOICS, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSMShock MonitoringMonthly Rainfall compared to average level of same month during previous 5 yearsMOAC, Local weather stations and DADO.ConflictReporting on any abnormal events and reasons at district level or in rural areas which may affect the food security situation of the norulationWFP Security Officer, WFPDonulationnurga areas which may affect the food security situation of the ponulationWFP Security Officers, DADO		Sanfahagar) and local markets	Federation of the Nonalese
Changes in other main sources of income (including remittances)Monthly changes in employment opportunities, migration flows and unskilled wage rates at district level Changes of the remittancesCBS household surveys and national accounts, WFP FSMRoad and transport conditionsChanges of the remittancesMinistry of Transport, MOAC, MOICS, Federation of the Nepalese Chamber of Commerce and Industry and representatives (including fuel prices)Ministry of Transport, MOAC, MOICS, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSMShock MonitoringMonthly Rainfall compared to average level of same month during previous 5 yearsMOAC, Local weather stations and DADO.ConflictReporting on any abnormal events and reasons at district level or in rural areas which may affect the food security situation of the populationWFP Security Officer, WFP FSM, District Officers, DADO		Samebagar) and local markets	Chamber of Commerce and
Changes in other main sources of income (including remittances)Monthly changes in employment opportunities, migration flows and unskilled wage rates at district level Changes of the remittancesCBS household surveys and national accounts, WFP FSMRoad and transport conditionsChanges of the remittancesMinistry of Transport, MOAC, MOICS, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district levelShock MonitoringMonthly Rainfall compared to average level of same month during previous 5 yearsMOAC, Local weather stations and DADO.ConflictReporting on any abnormal events and reasons at district level or in rural areas which may affect the food security situation of the nomulationWFP Security Officer, WFP			Industry and representatives at
Changes in other main sources of income (including remittances)Monthly changes in employment opportunities, migration flows and unskilled wage rates at district level Changes of the remittancesCBS household surveys and national accounts, WFP FSMRoad and transport conditionsChanges of the remittancesMinistry of Transport, MOAC, MOICS, Federation of the Nepalese Chamber of Commerce and Industry and representatives (including fuel prices)Ministry of Transport, MOAC, MOICS, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSMShock MonitoringMonthly Rainfall compared to average level of same month during previous 5 yearsMOAC, Local weather stations and DADO.ConflictReporting on any abnormal events and reasons at district level or in rural areas which may affect the food security situation of the nonulationWFP Security Officer, WFP			district level, WFP FSM
sources of income (including remittances)opportunities, migration flows and unskilled wage rates at district level Changes of the remittancesnational accounts, WFP FSMRoad and transport conditionsChanges of the remittancesMinistry of Transport, MOAC, MOICS, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSMShock MonitoringMonthly Rainfall compared to average level of same month during previous 5 yearsMOAC, Local weather stations and DADO.ConflictReporting on any abnormal events and reasons at district level or in rural areas which may affect the food security situation of the nonulationWFP Security Officer, WFP	Changes in other main	Monthly changes in employment	CBS household surveys and
remittances)unskilled wage rates at district level Changes of the remittancesRoad and transport conditionsChanges of the status of main roads and bridges during the rainy seasons;Ministry of Transport, MOAC, MOICS, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSMShock MonitoringMonthly Rainfall compared to average level of same month during previous 5 yearsMOAC, Local weather stations and DADO.ConflictReporting on any abnormal events and reasons at district level or in rural areas which may affect the food security situation of the populationWFP Security Officer, WFP	sources of income (including	opportunities, migration flows and	national accounts, WFP FSM
Changes of the remittancesRoad and transport conditionsChanges of the status of main roads and bridges during the rainy seasons; Changes in transport costs (including fuel prices)Ministry of Transport, MOAC, MOICS, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSMShock MonitoringMonthly Rainfall compared to average level of same month during previous 5 yearsMOAC, Local weather stations and DADO.ConflictReporting on any abnormal events and reasons at district level or in rural areas which may affect the food security situation of the populationWFP Security Officer, WFP	remittances)	unskilled wage rates at district level	
Road and transport conditionsChanges of the status of main roads and bridges during the rainy seasons; Changes in transport costs (including fuel prices)Ministry of Transport, MOAC, MOICS, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSMShock MonitoringMonthly Rainfall compared to average level of same month during previous 5 yearsMOAC, Local weather stations and DADO.ConflictReporting on any abnormal events and reasons at district level or in rural areas which may affect the food security situation of the populationWFP Security Officer, WFP FSM, District Officers, DADO		Changes of the remittances	
roads and bridges during the rainy seasons;MOICS, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSMShock MonitoringMonthly Rainfall compared to average level of same month during previous 5 yearsMOAC, Local weather stations and DADO.ConflictReporting on any abnormal events and reasons at district level or in rural areas which may affect the food security situation of the populationWFP Security Officer, WFP	Road and transport conditions	Changes of the status of main	Ministry of Transport, MOAC,
seasons; Changes in transport costs (including fuel prices)Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSMShock MonitoringMonthly Rainfall compared to average level of same month during previous 5 yearsMOAC, Local weather stations and DADO.ConflictReporting on any abnormal events and reasons at district level or in rural areas which may affect the food security situation of the populationWFP Security Officer, WFP		roads and bridges during the rainy	MOICS, Federation of the
Changes in transport costs (including fuel prices)and Industry and representatives at district level, WFP FSMShock MonitoringMonthly Rainfall compared to average level of same month during previous 5 yearsMOAC, Local weather stations and DADO.ConflictReporting on any abnormal events and reasons at district level or in rural areas which may affect the food security situation of the populationWFP Security Officer, WFP FSM, District Officers, DADO		seasons;	Nepalese Chamber of Commerce
(including fuel prices) at district level, WFP FSM Shock Monitoring Monthly Rainfall compared to average level of same month during previous 5 years MOAC, Local weather stations and DADO. Conflict Reporting on any abnormal events and reasons at district level or in rural areas which may affect the food security situation of the population WFP Security Officers, DADO		Changes in transport costs	and Industry and representatives
Shock Monitoring Drought Monthly Rainfall compared to average level of same month during previous 5 years MOAC, Local weather stations and DADO. Conflict Reporting on any abnormal events and reasons at district level or in rural areas which may affect the food security situation of the population WFP Security Officer, WFP		(including fuel prices)	at district level, WFP FSM
Drought Monthly Rainfall compared to average level of same month during previous 5 years MOAC, Local weather stations and DADO. Conflict Reporting on any abnormal events and reasons at district level or in rural areas which may affect the food security situation of the population WFP Security Officer, WFP	Shock Monitoring		
average level of same month during previous 5 years and DADO. Conflict Reporting on any abnormal events and reasons at district level or in rural areas which may affect the food security situation of the population WFP Security Officer, WFP	Drought	Monthly Rainfall compared to	MOAC, Local weather stations
Conflict Reporting on any abnormal events and reasons at district level or in rural areas which may affect the food security situation of the population WFP Security Officer, WFP		average level of same month	and DADO.
Connect Reporting on any abnormal events and reasons at district level or in rural areas which may affect the food security situation of the population WFP Security Officer, WFP	Conflict	Departing on any share west and	WED Constitut Officer, WED
rural areas which may affect the food security situation of the	Confinet	and reasons at district level on in	FF Security Officer, WFP
food security situation of the		and reasons at district level of In	r sivi, District Officers, DADO
nonulation		food security situation of the	
		population	

Table of Contents

Ackr	nowledgements	iii
List (of Acronyms	iv
Exec	cutive Summary	V
Chap	pter I: Introduction	1
1.1	Background and Issues	
1.2	Objective and Expected Outputs	1
1.3	Study Methodology	1
	1.3.1 Scope of Study	
	1.3.2 Data Collection and Analysis	
1.4	Limitations of the Study	
1.5	Structure of the Report	3
Chap	oter II: Country Overview	4
2.1	Geographical Setting	
2.2	Natural Resources and Environment	
2.3	The Economy and Social Setting	5
2.4	Macroeconomic Environment	6
2.5	Concluding Remarks	7
Chap	oter III: Policy Framework for Food and Agricultural Markets	9
3.1	Structural Factors Influencing Policy in Nepal	9
3.2	Food Sector Strategies, Agricultural Policy and Planning	
3.3	Legal Framework for Agricultural Marketing	10
3.4	International Agreements and External Trade Regime	
3.5	Concluding Remarks	12
Chap	oter IV: Agricultural Performance and Food Supply and Demand Status	
4.1	Performance of the Agricultural Sector	13
4.2	Arrangements for Food Supply	13
	4.2.1 Role of the Private Sector in Regular Food Supply	13
	4.2.2 Public Sector Interventions in Food Supply	
	4.2.3 International Assistance in Food Supply	14
4.3	Food Availability in Nepal	15
	4.3.1 Domestic Food Production	15
	4.3.2 Food Exports and Imports	17
4.4	Food Habit and Food Demand	19

Food and Agricultural Markets in Nepal

4.5	Food Self-Sufficiency Status	20
4.6	Concluding Remarks	23
Char	the Ve Diversion Access to Markets Januar and Challenger	25
Cnap	oter V: Physical Access to Markets, issues and Challenges	
5.1	Road Connectivity	25
5.2	Transportation Network	28
5.3	Implications for Physical Access to Markets	29
5.4	Concluding Remarks	30
Chap	oter VI: Food Grain Marketing System in Nepal	31
61	Food Grain Market Stakeholders	31
6.2	Food Grain Marketing Channels	33
63	Food Grain Market Networks	34
0.0	6.3.1 Regional Market Networks in Terai	
	6.3.2 Transit Markets on the Road Head in the Hills and Mountains	
	6.3.3 Urban Consumption Center Markets	38
	6.3.4 Permanent and Temporary Rural Markets	38
6.4	Associations among Market Variables	39
6.5	Financial Facilities for Agricultural Trade	41
6.6	Concluding Remarks	42
Chap	oter VII: Price Dynamics and Food Accessibility	43
7.1	Food Grain Market Price Formation System	43
7.2	Rice Price Integration between Terai and Indian Border Markets	
7.3	Seasonal Price Fluctuation and Inflation	46
7.4	Implication on Purchasing Power and Food Security	48
7.5	Concluding Remarks	49
Chap	oter VIII: The Impact of Conflict on Markets and Food Security	51
8.1	Production. Trade and Market Disruptions	
8.2	Major Market-Related Indicators Affected	52
8.3	Concluding Remarks	54
Chap	oter IX: Concluding Recommendations and Monitoring Indicators	55
9.1	Key Issues and Recommendations	55
9.2	Proposal of Monitoring Indicators	56
Indie	cative List of References	59

List of Tables

Table 1:	Land distribution in Nepal	6
Table 2:	Projected 2006 Population of Nepal by Development Region and Ecological	
	Region	6
Table 3:	Unweighted Average Most Favored Nation (MFN) customs and other duties	
	Descriptions Rate (as of August 2003)	11
Table 4:	Self—sufficiency in food grains production in Nepal	23
Table 5:	Public Transportation Cost by Mode of Transportation (Unit: MT Rs. '000)	28
Table 6:	Distribution of grain mills by fixed assets and persons engaged (2001/02)	31
Table 7:	Business starting time and market coverage by food grain wholesalers	32
Table 8:	Business starting time and market coverage by food grain retailers	32
Table 9:	Purchase Sources of Different Commodities by Food Grain Wholesaler	34
Table 10:	Purchase Sources of Different Commodities by Food Grain Retailers	34
Table 11:	Sources of Funding for Food Commodity Traders*	41
Table 12:	Production Cost and Market Margin of Paddy (% of Market Value), 2003/04	44
Table 13:	Johansen Vector Error Correction Model of Coarse Rice Price, Summary of	
	Results	46
Table 14:	Monthly Cropping Pattern of Major Food Commodity	46
Table 15:	Nepal, Average Urban Consumer Price Inflation (%) (2000-2005)*	48
Table 16:	Nepal, Average Prices of Selected Cereals (2000-2005)	48
Table 17:	Nepal, Average Rice Price Differentials by Region (2002-2005)	49
Table 18:	Conflict and Market-Related Problems by Locations (%)	52
Table 19:	Perception of Food Grain Traders on Security Situation	52
Table 20:	Impact of Conflict through Damage of Road Infrastructures (percentage)	53

List of Figures

Figure 1:	Food Production in Nepal during 1994/95 to 2003/04	16
Figure 2:	Region-wise production of major crop in 2004-2005 (in MT.)	17
Figure 3:	Nepal's Agricultural Produce Export to India (MT.)	18
Figure 4:	Nepal's Agricultural Produce Imports from India (MT.)	19
Figure 5:	Produce flow from Farmers to Consumers	33
Figure 6:	Linkages between Market Stakeholders and Market Variables	40
Figure 7:	Monthly Price of Coarse Rice in Selected Markets in Terai and Indian	
	Boarder- Markets (2001-2004, Rs/Kg)	45
Figure 8:	Seasonal price trends of rice in Nepal (Monthly Average 2000-2004, Rs/Kg)	47
Figure 9:	Comparison of Local Market Price of Rice with the price of NFC (Rs/Kg)	49

List of Maps

Map 1:	Food Self-Sufficiency Status in Nepal	.21
Map 2:	Food Self-Sufficiency and Calorie Intake Status in Nepal	. 22
Map 3:	Connection between Road and Market Networks in Nepal	. 27
Map 4:	Food Grain Market and Commodity Flow in Nepal.	. 35

List of Boxes

Box 1:	Administrative Division of Nepal	5
DOM 1.		~

Box 2:	Nepal-India Trade Agreement	12
Box 3:	Bilateral and Multilateral Agreement related to Food Assistance	15

List of Annexes

Annex I	List of Persons Contacted	. 63
Annex II	Study Coverage	. 64
Annex III	Profile of Market Players for Fruits, Vegetables and Livestock Products	. 65
Annex IV	Marketing Channel for Fruits, Vegetables and Livestock	. 68
Annex V	Geographical Settings in Nepal	.71
Annex VI	NFC Coverage of Food-Deficit Areas	. 72
Annex VII	WFP Coverage in Nepal	. 73

Chapter I: Introduction

This introductory chapter presents the objectives of the study, the methodology and limitations.

1.1 Background and Issues

Within a broader organizational effort to expand and deepen its understanding of food insecurity, the World Food Programme (WFP) Nepal, with support from WFP Headquarters under the Precrisis Food Security Baseline grant from the European Commission Humanitarian Aid Office (ECHO), has undertaken two analytical studies of food security in Nepal: a Comprehensive Food Security and Vulnerability Analysis (CFSVA) and a Food and Agricultural Market Study (FAMS). It is hoped that both reports will help guide the development of the new WFP Nepal Country Programme in 2006/2007.

The Food and Agricultural Market Study, conducted in collaboration with the Food and Agricultural Organization of the United Nations (FAO), has been designed to be a comprehensive study of the dynamics of market conditions (i.e. prices, supply, availability, and accessibility) in selected retail and wholesale markets of Nepal. This study is the first of its kind. No other comprehensive work on the analysis of markets under 'normal' or pre-crisis conditions or on the relative significance of different types of markets to household food security exists in Nepal.

1.2 Objective and Expected Outputs

The primary goal of this study was to develop an agricultural market profile to 1) describe how specific national food markets work and 2) identify the most recurrent crises and their effects on food markets. In meeting this goal, the following specific objectives were identified:

- Examine and detail critical agricultural market information, including domestic price developments, marketing, storage, imports and exports, internal transport and distribution systems, and the impact of the conflict;
- Identify produce supply areas, produce supply alternatives, and key players in market linkages to use in analytical tools, such as food security surveillance and early warning systems;
- Determine a monitoring mechanism (including indicators) to ensure food security, recommending how best to maintain and update pre-crisis market information, when and where applicable.

1.3 Study Methodology

The methodology adopted for this agricultural market study included both an extant literature review and primary data collection and analysis. The secondary data review, conducted from Kathmandu, focused on gathering information on food production, consumption, pricing and socio economic indicators. The primary data collection conducted over three weeks in February

and March 2006, gathered information from different agricultural production and marketing stakeholders throughout the country.

In support of these two activities, informational meetings were also held with individuals and organizations involved in food production, supply, and agricultural development in Nepal. In brief, this included, at the central- and local-levels, agencies of the Government of Nepal (GON), private stakeholders such as traders, producer and consumer groups, the Federation of Nepalese Chamber of Commerce, and international development agencies. A full list of persons met throughout the study is included in Annex 1.

1.3.1 Scope of Study

The study included information from market sites in all five development regions and three ecological zones. Survey sites, identified through purposive sampling, were selected in consideration of the North-South market corridors for forward linkages (i.e. consumption) and East-West corridor for backward linkages (i.e. food supply) (see Map in Annex 2 for study coverage). Respondents included food grain wholesalers and retailers, fruit and vegetable wholesalers and retailers, livestock wholesalers and retailers, and millers in the selected market sites.

Information was gathered on a broad, but specific set of agricultural items, including food grains and pulses¹, oilseeds, horticultural crops, and livestock products. The focus of this report, however, is staple food grains, particularly rice, wheat, maize and pulses. Findings related to horticultural and livestock products and markets are provided in Annex 3 and 4.

1.3.2 Data Collection and Analysis

The primary data were collected using structured questionnaires, key informant interviews, and focus group discussions. In total, 80 food grain wholesalers and retailers, 86 fruit and vegetable wholesalers and retailers, 40 livestock wholesalers and retailers, and 14 millers were interviewed.

The data analysis was both quantitative and qualitative. Quantitative methods, including statistical, economic and econometric analyses, were used to explore: i) commodity market environments; ii) commodity market structures; iii) commodity market conduct; and iv) market performance. Qualitative data analysis was used to assess stakeholders' perception of the importance given to various production and market problems.

1.4 Limitations of the Study

The scope and depth of this study are limited for a number of reasons. First, due to (in)security, limited time and finite financial resources, the primary data collection was necessarily restricted. Field visits to some parts of Nepal's northern mountains were not possible due to both security and logistical reasons.

¹ Pulses are consumed together with rice and wheat and constitute a major source of protein to the poorer households.

Second, reliable secondary information on agricultural trade is not available in Nepal, limiting the ability to report on national imports, stocks, production, consumption and prices. In many cases, government data exist but cannot be considered reliable. For instance, government figures on imports are estimates only, reported from customs valuations (in rupees, not volume). Consumption information published by the Ministry of Agriculture and Cooperatives (MOAC) in its annual food balance sheets is also not sound, as consumption estimates are primarily linked to production figures without accounting for imported or purchased goods. Secondary information on private stocks is also not available, neither in print nor from personal communication, perhaps as part of a wider business strategy.

Third, the informal nature of trade between Nepal and India makes quantifying this type of trade difficult. The actual amount of informal imports has never been estimated, though several studies indicate (Taneja & Pohit 2000; Karmacharya 2002; and Shrestha 2003) that large quantities of rice and pulses come from India across Nepal's long, open border.² This makes it rather problematic to judge the impact of such informal trade on the economy, especially in terms of food security and livelihoods.

1.5 Structure of the Report

The report is divided into eight chapters, including this introductory section. Chapter 2 presents a general overview of Nepal. Chapter 3 discusses the policy framework in which markets function and the marketing of agricultural produce is conducted in Nepal. Chapter 4 discusses food availability, supply and demand status in the country. Chapter 5 analyzes the transportation network, connectivity and its implications for food markets. Chapter 6 presents an overview of the food commodity marketing system in Nepal, including marketing channels and evolving market networks. Chapter 7 focuses on the analysis of price dynamics between regions (including Indian border-markets) and their implications in terms of market accessibility. Chapter 8 discusses the impact of the socio-political tension and conflict on markets. Chapter 9 presents general concluding remarks and recommendations, including a proposal of monitoring indicators.

² Taneja, Nisha & Sanjib Pohit, 2000. India's Informal Trade with Bangladesh and Nepal: A Qualitative Assessment. Indian Council for Research on International Economic Relations: New Delhi.

Chapter II: Country Overview

This chapter briefly presents a general overview of the geographic, socio-economic, and macroeconomic environment of Nepal.

2.1 Geographical Setting

Nepal is a landlocked, predominantly mountainous country bordering China to the north and India to the south, east and west. It has an area of 147,181 square kilometres, average length of 885 km east to west, and average width of 193 km north to south. The country has an immense variety of topography, ranging from lowland plains in the south with elevation as low as 90 meters to the Himalayan mountain range in the north with elevation as high as 8848 meters.

There are two ways to geographically describe the country. The first is the development region, formed along administrative lines for governance purposes. There are 5 development regions: Eastern, Central, Western, Mid Western and Far Western. The second division corresponds to spatial characteristics and divides the country longitudinally along three belts: Mountains, Hills, and Terai (see map in annex 5). The belts are described below.

• **Mountain:** The Mountain belt comprises those parts of the country above 4887 metres in average elevation. Its harsh terrain makes communication and transportation difficult, and only 7% of the population live there with 2% of Nepal's cultivable land. The 16 districts in

this belt are food-deficit and mostly inhabited with low-income and vulnerable populations.

Hills: The Hill belt, ranging in altitude from 610 to 4887 metres, runs through the central part of the country and is much more densely populated. The region has several agriculturally suitable valleys, including the Kathmandu and Pokhara Valleys. There are 39 districts in the Hill belt, with a socioeconomically diverse population.

Box 1: Administrative Divisions of Nepal

For development and administrative purposes, Nepal's five development regions are further divided into 14 zones and 75 districts.

Each district has a number of Village Development Committees (VDCs) in rural areas and municipalities in urban areas. These VDCs and municipalities are further divided into wards: the smallest administrative unit.

• **Terai:** The Terai, or plains, is an extension of the Indo-Gangeatic flatlands that run across the southern part of the country bordering India. With an altitude up to 610 meters, this belt is mostly flat and includes dense forest and the country's most fertile land. The Terai is thus the main agricultural belt of the country, with general surplus food production. As in the Hills, the 25 districts in this belt include a wide range of income and social groups.

2.2 Natural Resources and Environment

Land is the primary natural resource available in the country and is thus a major determinant of economic activities. About 20% of Nepal's surface area is suitable for agricultural purposes, though this is unevenly distributed across ecological belts. Less than 10% of cultivable land is

in the Mountains and the remaining 90% is almost equally divided between the Hills and Terai (see Table 1 for additional information on the distribution of land in Nepal).

Description	NLSS		
Description	1995/96	2003/04	
Agricultural households with land (percent of the total holdings)	83.1	77.5	
Average size of agricultural land (in hectares)	1.1	0.8	
Percentage of irrigated land area	39.6	54.3	
Holdings operating less than 0.5 hectare (percent of total holdings)	40.1	44.8	
Percentage of holdings operating renting-in land only	4.8	7.3	
Percentage of holdings growing main paddy	76.0	76.1	
Percentage of holdings growing summer vegetables	35.6	60.8	

Table 1: Land distribution	ı in	Nepal
----------------------------	------	-------

Source: Nepal Living Standard Survey, 2003/04, Volume 2.

Forest covers about 38% of Nepal's surface area, which importantly helps to provide fuel to 90% of households and fodder to livestock. Forest area, however, continues to be under threat due to increased deforestation and clearing for agricultural purposes.

Unplanned urbanization and industrialization, combined with decreasing forest coverage, are contributing to significant water and air pollution.

2.3 The Economy and Social Setting

Demography: Based on the 2001 Census, the total population of Nepal is estimated as being 23,151,423 persons, of which 11,563,921 (49.95%) are male and 11,587,502 (50.05%) female. The overall population growth rate is 2.26% per annum (NLSS 2004).

The population distribution across belts and development regions, projected for 2006, is shown below in Table 2.

Dogions	Mounta	ins	Hills		Tera	i	Total
Regions	Number	%	Number	%	Number	%	Totai
Eastern	437,361	7.4	1,802,401	30.4	3,680,290	62.2	5,920,052
Central	611,097	6.7	4,013,478	44.3	4,428,846	48.9	9,053,421
Western	27,669	0.5	3,064,019	60.4	1,981,210	39.1	5,072,898
Mid Western	341,245	10.1	1,633,095	48.5	1,392,724	41.4	3,367,064
Far Western	439,550	17.8	882,136	35.7	1,151,610	46.6	2,473,296
Total	1,856,922	7.2	11,395,129	44.0	12,634,680	48.8	25,886,731

Table 2: Projected 2006 Population of Nepal by Development Region and Ecological Region

Source: Statistical Year Book of Nepal 2005, Central Bureau of Statistics

Economy: Nepal is a least-developed, low-income country. It ranks 136 <u>out</u> of 177 on the UNDP Human Development Index of 2005. The economy draws heavily upon the agricultural sector, which contributed 39 percent of the Gross Domestic Product (GDP) in FY 2004/2005.¹

The Asian Development Bank findings indicate that Nepal's economic growth dropped from 3.5% to 2.3% in 2005 and predict a further decline to 2% in 2006². The slow growth rates are attributed to unfavourable weather conditions affecting agricultural production, low industrial growth, contraction of the tourism sector, sluggish public and private investment and the ten-year conflict.

From FY 2003/2004 to 2004/2005, per capita GDP (at current producer's price) increased by 4.4 percent, with per capita GNP increasing by 3.7 percent and per capita income rising 7.9 percent, from USD 278 to 300.³ This progress was led mainly by growth in remittances (IMF, 2004)⁴. Overseas remittances, which rose by 17.6 percent to US\$1.1 billion in 2005, helped offset the negative impact of poor rainfall in the agricultural sector and the pronounced decline (41.4 percent) in tourism⁵.

Poverty: The Nepal Living Standard Survey (NLSS) 2003/2004 estimated that 31 percent of the population lives below the poverty line, an 11 percent decline from 1995/1996, and that the per capita consumption (in nominal terms) increased from NRs. 6,802 in 1995/96 to NRs. 15,848 in 2003/04. Despite population growth at 2.26 percent, impressive gains across all population groups was reported over the last eight years, with growth in per capita consumption at 91 percent for the bottom quintile of the population and 177 percent for the top quintile.

Despite gains in overall poverty levels, the income distribution remains quite uneven.⁶ The Central Bureau of Statistics (CBS) estimates that in nominal terms, the bottom 80 percent of the population earns 47 percent of total income while the top twenty percent earns 53 percent of total income⁷. The poorest 20% of the population earns just 5% of the total income. In general, the hill and mountain areas of the Mid West and the Far West regions have lower per capita income than other areas.

2.4 Macroeconomic Environment

From the mid-1980s, Nepal adopted a policy of liberalization and privatization. Nepal's integration into the global economy as the 147th member of the World Trade Organization (WTO) in April 2004 has resulted in a number of reforms in order to make the country's trade

¹ Economic Survey, Ministry of Finance/GON, 2005.

² Asian Development Bank, Rising Nepal April 7, 2006.

³ GNP, at current prices, reached NRs. 539.37 billion in FY 2004/2005, up from NRs. 508.54 billion in FY2003/ 2004.

⁴ IMF (2004), Nepal, First Review of Three-Year Arrangement Under the Poverty Reduction and Growth Facility and Request for Waiver of Performance Criteria.

⁵ ADB (2006), Asian Development Outlook, Country Report 2005.

⁶ In terms of consumption poverty (i.e. caloric intake) the distribution is similarly uneven. The bottom 20 percent of the population accounts for a mere six percent of total consumption, while the richest 20 percent of the population consumes 53 percent of the total in 2003/04. Overall, 31 percent of Nepalese households report that their food consumption is "less than adequate", while 67 percent say it is "just adequate" and two percent feel their diets are "more than adequate". More than one-third consumes less than 2,250 kcal a day.

⁷ Central Bureau of Statistics (CBS, 2004), Nepal Living Standard Survey, 2003/04.

FOOD AND AGRICULTURAL MARKETS IN NEPAL

regime compatible with WTO provisions. These reforms have led to the removal or relaxing of restrictions and interventions, such as licenses, permits, quotas and tariff barriers. In efforts to achieve macroeconomic stability, other liberalization policies have been initiated to balance the government budget, expand the revenue base by bringing hitherto exempted areas within the tax net, minimize domestic borrowing by the government and public sector enterprises, remove all types of direct and indirect subsidies, downsize the bureaucracy and divest public enterprises.

While the goal of these policy reforms has been to fully liberalize and privatize the economy, Nepal is challenged by its weak external competitiveness. Much of the reforms mentioned above assume a flexible and market-determined exchange rate, though the Nepali Rupee is pegged to the Indian Rupee. As a result, the Nepali Rupee floats with the Indian Rupee in the international currency market. Given that the Indian economy is growing faster than the Nepali and is operating at a higher technological level, concerns are often raised regarding the likelihood of the Nepali Rupee being overvalued vis-à-vis the Indian currency. In this case, Nepalese producers and entrepreneurs are likely disadvantaged in terms of their ability to compete with their Indian counterparts and to export in the global economy.

2.5 Concluding Remarks

- An estimate of 31 percent of the Nepalese population lives below the poverty line.
- The income distribution is uneven, with the bottom 80 percent of the population earning 47 percent of total income. The lowest annual per capita income levels are concentrated in the Mid West and Far West hill and mountain areas.
- The per capita income growth is undermined by the low agriculture performance and the long lasting conflict. Per capita income has grown slowly, by 1.4 percent per year, for the last two decades, relying increasingly on remittances.

Chapter III: Policy Framework for Food and Agricultural Markets

This chapter discusses the institutional arrangements and legislative framework for markets and marketing of agricultural produce in Nepal. In addition to the demand-effect resulting from population growth, rapid urbanization and changing living conditions, such institutional arrangements are a prerequisite for the evolution of agricultural markets and marketing system.

3.1 Structural Factors Influencing Policy in Nepal

The geo-political realities of Nepal and its internal diversity have a significant influence in shaping policies, especially those related to the agricultural sector. Key elements influencing policy in Nepal include:

- Location of the country and its open borders: Nepal is a landlocked country, bordering India to the south, east and west. The long open border with India has supported India in becoming Nepal's largest trading partner and transit country¹. Given this proximity, and India's more developed infrastructure, economic base and advanced agricultural settings, Nepal has become relatively dependent (economically) on India.
- **Geographic diversity:** Variations in altitude and rainfall, especially in the hill and mountain areas, produce micro-climatic conditions throughout the countryside. This diversity greatly shapes spatial market development patterns.
- **Human settlement pattern:** In the Mountain belt, settlements are generally scattered, with concentrations forming only around the district headquarters. In the Terai, villages tend to be larger than in other belts. In most cases, human and market settlement has appeared to parallel the development of motorable roads.

3.2 Food Sector Strategies, Agricultural Policy and Planning

The government adopted the food security agenda in the Ninth Plan (1997-2002). In line with the Rome Declaration, the government decided to implement the mandates of achieving sustainable food security for eradicating poverty and improving access to food for all. The Agricultural Perspective Plan (APP), implemented in 1997, contains the government's long term vision and strategy for the development and growth of Nepal's agricultural sector. The overall goal of the APP is to accelerate agricultural growth from about three percent in the first half of 1990s to five percent during the 20-year plan period. The APP emphasizes realigning investment in selected priority inputs and outputs. Such investments are expected to not only increase farm incomes, bringing direct benefits to the farming community, but also generate strong multiplier effects on growth of output and employment in non-farm sectors.

In 2002, in an effort to assess, and in turn inform, sectoral policy and programmes, the Agricultural Sector Performance Review (ASPR) was conducted. This evaluation highlighted sectoral

¹ Theoretically, the other potential transit country could be China. However, the long distance from the sea and the lack of a reliable transport system to the north precludes this possibility at this time.

shortcomings and recommended a number of strategies to strengthen Nepal's agricultural development, including: i) reducing vulnerability of farmers; ii) strengthening Nepal's research and development and extension capacity; iii) enhancing stakeholder participation in agricultural development; iv) strengthening post-harvest management, and v) improving the agricultural marketing system.²

Subsequent medium-term strategies have incorporated these ASPR recommendations and are aligned with the long term vision and strategies of the APP. The Tenth Plan (2002-2007) aims to reduce poverty by empowerment, human development, security, and targeted programmes. The Tenth Plan's main objective within the agricultural sector is broad-based growth through improved production and productivity. One of the key features of the Plan's food security strategy is to link food aid to local development and social development programmes.

In 2004, the government approved the National Agricultural Policy (NAP) of the Ministry of Agriculture and Cooperatives (MOAC) with the primary goal of attaining food security and improving livelihoods through the transformation of subsistence-based agriculture into a commercialized and competitive system. The Decentralization and Local Self-Governance Act 2055 (1999) (LSGA) followed the NAP to facilitate its local-level implementation. Among other things, the LSGA authorizes local bodies, such as Village Development Committees (VDCs), District Development Committees (DDCs) and municipalities, to formulate, implement and raise resources for policies, programmes and activities related to agriculture and rural development. The LSGA further highlights the role of the local government in the operation of agricultural markets, making local bodies responsible for identifying possible sites for development of markets and their operation.

3.3 Legal Framework for Agricultural Marketing

The legal framework pertaining to agriculture and agricultural marketing is quite extensive, with over 60 laws—and additional rules, regulations, orders, and bylaws— of direct concern^{3,4}. Having gained WTO membership in 2004, this existing framework will continue to be strengthened, either with new or amended legislation, in order to better **align** it with WTO recommendations. All duties and charges other than customs duties will additionally be phased out by 2012.

Despite this existing framework, it is important to note that there is neither a policy to ensure that producers and traders compete freely nor to prohibit connivance and cartels in the domestic market. The latter is evident in today's practise of rate fixing by transport syndicates.

3.4 International Agreements and External Trade Regime

Overall, with a trade-to-GDP ratio of more than 50 percent, an average tariff rate of about 14 percent, and virtually no quantitative restrictions, Nepal is one of South Asia's most open and 2 Final Report, Agricultural Sector Performance Review, January 2002.

³ Discussion on this issue is based on the "Nepal Ain Sangraha – Compendium of Acts and Regulations" various issues and "Nepal Rajpatra – Nepal Gazettes various issues" and Devendra P. Chapagain and Hari Phuyal (2003 July), A Review of the Agricultural Policies and Legal Regime in Nepal, Food and Agriculture Organization of the United Nations, Rome.

⁴ It may be noted that these acts are not necessarily mutually exclusive nor made to cater the need of agricultural marketing development. In addition, the existence of such laws does not ensure that farmers and smaller buyers are aware of the legal instruments supporting their business and consumer rights.

trade-dependent economies (Action Aid, 2006). Nepal's agricultural sector policies were liberalized in the second half of the 1990s and have only been accelerated with its accession to the WTO. The target of the liberalization was to enhance employment and income opportunities to the poor and the disadvantaged by emphasizing social security, physical infrastructure and human resources development⁵. The scope of liberalization was extended to the agricultural sector by:

- Removing input and output subsidies in agriculture;
- Deregulating the price in agricultural inputs and products by leaving price determination to the market force;
- Removing subsidies in food distribution;
- Increasing private sector participation in the production, distribution and marketing;
- Reducing the tariff rates on food products, and to open agriculture to foreign direct investment (FDI).

Table 1: Unweighted Average Most Favored Nation (MFN) customs and other dutiesDescriptions Rate (as of August 2003)

Description	Rate (as of August 2003, %)			
Customs duties	13.5			
Other general protective taxes	6.1			
Other selective import taxes	0			
Total	19.6			
General maximum customs duty	40.0			
Other general protective taxes	4.5			
General maximum: customs duty plus others	44.5			
Average of bound tariff levels	42.3			
Specific duties as percent of tariff lines	0.6			

Source: Action Aid (2006), Import Surge in Nepal, A Case Study of Rice. Data originally from The World Bank, 2004

The long-standing Trade and Transit Treaty between Nepal and India is one bilateral agreement with significant influence on trade and the agricultural sector. The agreement, allowing for preferential market access, permits most exports to enter India duty-free and allows imports from India to enjoy considerably reduced duties. It is also linked to various other collaborative arrangements, including the exchange of technology for mutual benefit.

⁵ Bishwamber Pyakural, Y.B. Thapa and Devesh Roy (2005).

Box 2: Nepal-India Trade Agreements

Bilateral treaties on trade and an agreement for cooperation to control unauthorised trade govern trade relations between Nepal and India. Nepal signed its first Trade and Transit Treaty with India in 1950. The treaty was renewed in 1960, 1971, 1978 (when trade was de-linked from transit), 1991, 1996 and 2002. The key features of the treaty are:

- Exemption from basic customs duties and quantitative restrictions on imports of primary products on a reciprocal basis;
- Access for selected Nepalese manufacturing exports to the Indian market free of basic customs duties and quantitative restrictions;
- Preferential entry on manufacturing goods imported from India to Nepal, without any quantitative restrictions.

The Nepal-India Trade Treaty renewed in 2002 introduced several new provisions, including a) more stringent rules of origin, b) trade restriction quotas, c) clear specification of safeguard clauses, and d) submission of information regarding the basis of calculating rules of origin to the Indian government by Nepal on an annual basis.

Source: Action Aid (2006), Nepal Import Surge, A Case Study of Rice

3.5 Concluding Remarks

- Long and medium term food sector strategies and agricultural policies are well established through various national and sectoral plans, with a clear objective of improving agriculture and food availability. However, the policy remains weak in ensuring food security and the livelihoods of the population.
- The implementation of such sectoral strategies and policies is challenged by the accession of Nepal to the WTO, which has required further efforts in liberalizing the trade regime. The existing legal framework will need to be amended to ensure free competition and prohibit cartels.
- Both the accession to the WTO and the bilateral Trade Treaty between Nepal and India have major implications on trade patterns, agriculture development and food security in Nepal. With a trade-to-GDP ratio of more than 50 percent, an average tariff rate of about 14 percent, and virtually no quantitative restrictions, Nepal is one of South Asia's most open and trade-dependent economy.

Chapter IV: Agricultural Performance and Food Supply and Demand Status

This chapter discusses food availability in Nepal, analyzing domestic food production, imports and international food assistance. The analysis also includes estimates of food demand and the national food balance, with special attention to food supply in food deficit areas.

4.1 Performance of the Agricultural Sector

From 2002-2005, the agriculture sector recorded rather low growth rate (3 percent a year, on average), resulting in slow growth in per capita incomes in rural areas.¹ On average, agriculture productivity remains quite low by South Asian standards, with cereal yields estimated at about 2 tons per ha.

However, Nepal continues to observe positive growth of agricultural production in terms of volume. Production of major food crops and cash crops in FY2003/04 increased by 5.2 and 7.2 percent, respectively, from the previous year. Production of other crops like lentils and vegetables also increased by 2.3 percent during the same period.²

4.2 Arrangements for Food Supply

Broadly speaking, food supply in Nepal is either by private traders, public intervention or international assistance. The Tenth Plan's strategy for food supply management identifies the private sector as the leading player, with the public sector supporting regulatory and monitoring functions.

4.2.1 Role of the Private Sector in Regular Food Supply

Private sector enterprises manage the supply of all edible items, though they generally service only urban, municipal or township areas where people are largely dependent on food purchases. Their presence is not significant in many rural or remote areas, even with the later often facing food deficiencies and needing outside food supply. In these areas, without markets and private intervention, households often arrange for food supply themselves.

4.2.2 Public Sector Interventions in Food Supply

The Ministry of Industry, Commerce and Supplies (MOICS) is the lead government agency responsible for the management of food supply in Nepal. The role of MOICS has traditionally been more of a facilitator than of a market operator or direct service provider, except in remote areas. In remote areas only, the government plays an essential role in providing food and supporting food security, through the Nepal Food Corporation (NFC).

¹ Despite the slow agricultural growth, the impact on rural livelihoods may have been lessened by the increase in non-farm incomes, particularly from remittances.

² Of the total agricultural production, the share of food and cash crops stood at 65.5 percent and 34.5 respectively, in FY2004/05.

NFC specializes in meeting demand in food-deficit, inaccessible areas in the Mountain and Hill districts.³ (see map in annex 6, for food-deficit districts). This includes both the supply and distribution of coarse rice to targeted areas.

The NFC procures rice from different production areas, on the recommendation of its Procurement Committees in the Terai. ^{4,5} Up to 100,000 MT of rice can be stored by NFC, throughout the Hills, Mountains, and major market centers of the country. Transportation to the receiving depots is supported by a GON subsidy. As a result, one limiting factor of NFC operations is the budgetary allocation made by the GON.

In 2005/2006, approximately 7,000 MT of rice was planned to be supplied to depots across the hill and mountain areas. It should be noted that presently only depots in the district headquarters are being used. Other depots in more remote areas have been closed due to the insurgency, weakening the operational capacity of NFC to reach all vulnerable households.⁶

Laslty, NFC additionally maintains reserve grain stocks as part of the government policy on food security. The NFC is mandated to keep 4,000 MT for the South Asian Association for Regional Cooperation (SAARC) Food Security Reserve Stock, 20,000 MT for the National Food Security Reserve Stock and 15,000 MT for its operational reserve stock. Given the limited operational capacity of NFC, there is a potential for humanitarian agencies to use these strategic reserves during emergency interventions.

4.2.3 International Assistance in Food Supply

International assistance is a major source of food supply in Nepal. The first type of international assistance is oriented to development programmes, such as Food-for-Work, where rice is distributed to households as in-kind payment for their participation in local work schemes. These programmes target vulnerable households in food-deficit areas and have become an important livelihood source to many beneficiaries⁷.

The Rural Community and Infrastructure Works (RCIW) programme of the Ministry of Local Development (MLD), is the primary example of the Food-for-Work modality of food assistance in Nepal. Using in-kind, food aid payments, the work projects of RCIW aim to increase food production, improve physical access to food and markets, increase and diversify income and employment opportunities, and improve health and nutrition. RCIW is implemented by the MLD, with technical assistance from GTZ and commodity support from the World Food Programme, which provides approximately 13,000 MT of locally procured coarse rice per year.⁸

³ It may be noted that MOICS supplies mainly cereals, especially rice to urban areas of mountains and hills, with a limited reach to rural areas. In other areas, MOICS interventions take place only when natural disasters occur.

⁴ The Chief District Officer (CDO) chairs the committee and other members include representation from farmers, traders, district agriculture office, and NFC Zonal Office. The Zonal Manager of the NFC is the Member Secretary.

⁵ NFC also receives and manages food assistance provided to the GON from donor countries, such as Japan and France. This rice is sold in NFC depots, with proceeds (after deduction of NFC operation costs) being deposited in the donor country's counterpart fund for financing development programmes in Nepal.

⁶ Once rice is received in the district depots, household eligibility to purchase a certain quantity of rice is determined by the district-level Food Management and Supply Committee chaired by the Chief District Officer.

⁷ Other programs such as Food for education (FFE) and mother and child health (MCH) can be mentioned, though their coverage of targeted vulnerable groups is smaller.

⁸ GTZ has recently launched a separate, but similar Food-for-Work programme, the Food Security and Rehabilitation Project, in Rukum and Rolpa. Implementation is directly through GTZ or its implementing partners. Food aid is provided by GTZ.

The second type of international assistance in Nepal includes bilateral donations, particularly from France and Japan. As noted above (see footnote 18), food assistance from France and Japan is managed by the Nepal Food Corporation, which is responsible for the sale of donated grain.

- *French Cooperation Grant:* The Food Security Program for Nepal (FSPN) was launched in July 2003 with support of the French Cooperation Grant. The 3-year grant provides NRs. 72,018,507 (or Euro 883,312). Financial allotments are made for each year and the Government of Nepal procures rice from the market through NFC.
- *Food Grant from Japan:* 9,700 and 8,300 MT of donated rice were received in 2004 and 2005, respectively.

Box 3: Bilateral and Multilateral Agreements related to Food Assistance

Bilateral and Multilateral Agreements related to food assistance to vulnerable groups in Nepal include:

- i) Operational agreements periodically signed between World Food Programme of the United Nations and GON for supply of food
- ii) Agreement Between Nepal and Japan on Food Assistance Convention, 2028
- iii) Agreement Between Nepal and India on Horticulture Development, 2029
- iv) Exchange of Letter Between Nepal and Japan on Increase of Food Production, 2044
- v) Agreement Between Nepal and France on Food Assistance Elementary Aid, 2044
- vi) Memorandum of Understanding between Nepal and India on Co-operation in the field of Agriculture, 2048

Grain supplied by WFP, GTZ, and the French Cooperation Grant is locally purchased and thus does not add to, as it is already included in, the national production/supply figures. In contrast, the rice donated by Japan is procured from third countries and included in the import figures. It is estimated that the local purchase of rice for international assistance accounts for about 6 percent of the average annual marketed surplus of about 745,000 MT (2001-2004)^{9,10}. WFP's local purchase of rice accounts for about 2.1 percent of this surplus, on average.

4.3 Food Availability in Nepal

Food availability in Nepal is a function of not only domestic production, but also of imports (official and informal) and bilateral donations.

4.3.1 Domestic Food Production

Cereals are the dominate component of agricultural production in Nepal, with paddy, maize, wheat, millet and legumes being the major crops of the country. The largest proportion of households cultivate mainly paddy (76%), followed by wheat and summer maize (63% each) and millet (39%). Paddy and wheat cultivation is greatest in the Far West, while summer maize

⁹ NARMA (2005), Local Food Procurement, an Analytical Review, Nepal Country Case Study.

¹⁰ About 27 percent of the estimated annual average production of rice (i.e. 2.8 million ton a year from 2001-2004) is reported to be sold on the markets (NARMA, 2005).

FOOD AND AGRICULTURAL MARKETS IN NEPAL

cultivation is most common in the Mid West. Millet is mostly grown in the high Hills and Mountain belts.

Other items, such as soybean, lentil, and mustard are also grown by a significant proportion of households, 24, 32, and 38 percent respectively. Lentils and oilseed are most common in the Far Western Terai, though production and productivity have varied over the years. Area planted for crops like winter potato (cultivated by 50% of households), garlic (35% of households), winter and summer vegetables (63% and 61% of households, respectively) are increasing.¹¹ This trend is part of ongoing shift in cropping patterns, which emphasizes diversification and income-generating and high-value agricultural crops (HVACs) such as vegetables.

Figure 1 shows the upward trend in food production observed during the last ten years. Agricultural productivity in Nepal is very much dependent on adequate rainfall, due to the country's under-developed irrigation system. The period of slower growth in 1997/98 is actually attributed to poor weather and limited rainfall. Production, by region, is presented in Figure 2. As shown, agricultural production is highest in the Eastern and Central regions and decreases gradually moving westward, particularly for the major food grains of paddy, wheat and maize.





Source: Statistical Information on Nepalese Agriculture, MOAC, Kathmandu

¹¹ NLSS, 2003/4, Statistical Report.



Figure 2: Region-wise production of major crop in 2004-2005 (in MT.)

Source: Statistical Information on Nepalese Agriculture, MOAC, Kathmandu.

Paddy/rice, maize and wheat together account for over 70 percent of the annual cropped area and 95 percent of all food grain production. Rice production is around 2.8 million MT annually, which is equivalent to 4.3 million MT of paddy. Nepal also produces some 1.3 million MT of wheat, which accounts for 22 percent of total food grain production. The largest share of total production (except millet and barley) comes from the Central region, i.e. nearly one-third, while the Eastern and Western each produce about one-fifth of national production. The Mid West produces 16%, and the Far West contributes the least of all development regions with 12%.

4.3.2 Food Exports and Imports

The true value of exports and imports in Nepal continues to be unclear. Due to the porous border, preferential market access and the pegged exchange rate, official data often does not reliably reflect actual values and volume. These figures are often only indirect estimates, as is the case of import volumes that are recorded in nominal values and do not account for informal trade.

Though the exact volume of imports is difficult to determine, the findings of the field survey suggest that the import of rice from India has been increasing. This has been attributed to reduced supply, or less produce/raw material arriving at the market/mill, and increased demand. The reduced supply was thought to relate to increased household size, which reduces a household's disposable surplus, or to more households retaining more of their production for household food security. Increased demand reported by the business community is attributed to changing food habits, linked to increasing household incomes from foreign employment and remittances.¹²

It should be noted that according to official data from the Department of Customs, India is the primary, if not sole, source for paddy and rice imports. Between 1996/97 and 2003/04, India's contribution to total rice imports fluctuated between 93 percent and 100 percent. Several reasons

¹² Increase in rice consumption is directly related to the increase in income and rice consumption relates to social prestige.

FOOD AND AGRICULTURAL MARKETS IN NEPAL

are often offered to explain this influx of Indian food items in the Nepalese market. While some claim that India is dumping its excess produce in Nepal or that Indian produce is cheaper and more competitive due to government subsidies, others suggest that Indian food is being imported to meet demand created by low domestic production. Regardless of the reasons why Indian produce enters Nepal, it is agreed that rice imported from India (officially and informally) is necessary and has helped to considerably stabilize domestic rice prices.

Figures 3 and 4 below present the major agricultural items officially exported and imported from India. As shown, significant quantities of different food items are imported from India. Interviews with food wholesalers and processors suggest that Nepal's current demand for rice, pulses, oil, vegetables, fruits, and live animals¹³ is largely met by India. With regard to rice, two types are being imported from India: *mota*, or coarse, rice for rural consumption¹⁴ and *basmati* or other fine varieties for urban consumption. In addition to being cost effective and easily accessible, import of *mota* rice helps to fill the supply gap created by low, and even declining, production of this type of rice, which is a result of farmers planting more mansuli and basmati, that earn higher prices in the local markets.

Interestingly, despite the shift in production patterns away from coarse rice, a large proportion of the high quality rice consumed in urban areas of Nepal is still imported from India. Beside private import from India, the Food Corporation of India (FCI) is also a key player in this supply. It is reported that the Nepalese traders procure large quantities of rice during FCI offloading or replenishment of its buffer stocks. This suggests that an institutional partnership with FCI could help to also provide rice for public intervention in areas out of reach of private traders.





Source: Agriculture Marketing Information Bulletin, DOA, Nepal

¹³ Nepal is self sufficient in poultry and pork.

¹⁴ This variety of rice is cheap and preferred diet of the poorer sector of community and most of imported produce get into interior areas of the country.



Figure 4: Nepal's Agricultural Produce Imports from India (MT.)

Source: Agriculture Marketing Information Bulletin, DOA, Nepal

Unofficial Imports and Exports:

As mentioned above, accurately predicting import and export figures is not easy, as a significant amount of trade is expected to be conducted informally. This is especially so for import estimation, as informal trade is thought to be greater from India to Nepal than in the reverse. Informal trade enters (and less so leaves) Nepal by individual farmers or carriers using bicycles, rickshaws, or backloads or through various *kantawalas*¹⁵.

Based on interviews with millers, estimates of unofficial imports range from 30 to 70 percent of the processing requirement of the industry. The findings of this study compliment the conclusions of other sources (Action Aid, 2006, B. Pyakural, Y.B. Thapa and Devesh Roy, 2005)¹⁶.

4.4 Food Habit and Food Demand

The preferred diet of most Nepalis includes parboiled rice, a curry made from pulses or legumes, vegetables and meat. The rice and pulse dishes are staples, with a vegetable served as a common accompaniment. Vegetable consumption tends to depend on household income, though it has been gradually increasing due to greater production and availability. Meat is a preferred part of the Nepali diet (as most are non-vegetarian), though consumption is generally low given the limited purchasing power of most households.

After rice, maize, wheat and millet are the next preferred staple grains. Wheat is a relatively new crop in Nepal and is still gradually being integrated into Nepalese food habits. In various

¹⁵ Kantawalas are typical traders based in rural setting for procurement of unprocessed food for resale to processors. The Kantawalas operating on the border have emerged as the major source of getting produce into the country. With the kantawalas, there is no need to enter India to get produce, as they are available at the border. Thus, it is difficult to determine whether produce brought by them is Indian or Nepal and all produce arriving at the mill gate was considered as Nepali produce.

¹⁶ B. Pyakural, Y.B. Thapa and D. Roy (2005): *Trade Liberalisation and Food Security in Nepal*, IFPRI - Market Trade and Institution Division, October, 2005.

forms though, like pan bread, noodles, and biscuits, it is emerging as a major source of cereal consumption and increasing in popularity.

Despite a variety of cereals available, more households continue to shift their consumption away from other grains to rice. Increased preference and demand for rice could be linked to:

- 1. *Greater household preference and purchasing power.* Increasing incomes, mainly due to remittances, have expanded the disposable income base for many. This may make it more possible for households to purchase their preferred, and more expensive, cereal.
- Greater cultivation of maize for poultry industry. With Nepal's growing poultry industry (and the importance of maize in poultry feed), some farmers have begun to plant more maize for sale and less rice for consumption.¹⁷ As a result, more rice is being purchased for household consumption.
- 3. *Payment for Indian laborers*. During the planting and harvesting season, Indian laborers come to Nepal for temporary employment. As wages are paid in-kind, some cereals are taken out of Nepal and back to India.
- 4. *Informal export to India*. The possibility of rice informally leaving Nepal for India cannot be ruled out, given the long and open border. Food balance reports indicate high losses, which can hardly be considered as only post-harvest loss.¹⁸

4.5 Food Self-Sufficiency Status

Nepalese agriculture is generally of a subsistence nature, with most households consuming their own production (CBS, NLSS 2003/04). In general, own production can meet household food requirements for 6 to 8 months,¹⁹ with consumption beyond that usually being met through a combination of different coping mechanisms, such as wage labour and petty trade to help support market purchases (WFP Nepal, CFSVA 2005).

Food sufficiency varies across regions and within districts (Map 1). It also varies from year to year, as production is highly dependent on the monsoon. Invariably, however, there is a period of scarcity before the harvest season and period of abundance immediately after the harvest. Demand for food from external sources is greatest during period of scarcity before a harvest.

Food sufficiency and food security are largely dependent on the availability of food grains, as cereals account for nearly three-fourths of the daily calorie intake in Nepal (Map 2). Analysis of food grain production and consumption requirements over the years reveals that an increasing number of districts are losing their ability to produce sufficient food grains to meet consumption needs. In 2002/03, 43 districts out of 75 districts were food deficit (MoAC, 2004). By ecological belt, 13 out of 16 Mountain districts and 24 out of 39 Hill districts were food deficit. Among the 20 Terai districts, which generally are food surplus areas, 6 districts were reported to be deficit in 2003.

¹⁷ An estimated 64,835 MT of maize is required by the poultry industry. With the growing livestock sector, the bulk of maize produced in Nepal is likely diverted to it.

¹⁸ Loss relates to post harvest and loss.

¹⁹ Nepal Planning Commission (2005), MDG progress report 2005.





21




22

.

FOOD AND AGRICULTURAL MARKETS IN NEPAL

In any discussion of food sufficiency, it should be noted that, at the national-level, Nepal produces just enough food grains (4.5 million MT) to feed its population. The areas of production, however, do not match the areas of need. The Mountain belt, inhabited by about 8 percent of the population, produces about three-fourths of its requirements, while the Hill belt, with 44 percent of the population produces about 16 percent less than its regional requirement. The Terai belt, with 49 percent of population, produces 24 percent more food grains than its requirement.

Ecological belt	Particulars	% of population	East	Central	West	Mid West	Far West	Nepal		
Mountain	Production		79	97	2	30	41	249		
	SSR (%)	8	101.3	90.7	36.8	50.0	54.2	76.5		
Hills	Production		347	458	584	271	86	1,746		
	SSR (%)	44	102.9	64.4	102.4	90.7	53.2	84.0		
Terai	Production		769	841	397	294	2319	2,532		
	SSR (%)	48	127.3	117.7	124.5	131.1	128.9	124.1		
Nepal	Production		1,195	1,337	983	595	358	4,468		
_	SSR (%)	100%	117.3	87.2	110.0	102.1	85.9	100.5		

Table 4: Self—sufficiency in food grains production in Nepal (Average of 2000/01 — 2002/03) (In thousand MT)

Note: SSR is Self Sufficiency Raito; Source: MDD, 2000-2004 -Special Issue.

4.6 Concluding Remarks

- Public food assistance, including international assistance (mainly through free food distribution and food for work for agricultural development), remains an important source of food supply in Nepal, especially in remote, food-deficit areas. However, medium and long term agricultural development would require increasing efforts in combining responses such as micro-credit/micro-saving programs for small farmers, high yield seeds, techniques on planting density, soil fertility restoration, plant selection for seed multiplication, etc.
- Despite its high reserve potential, the operational capacity of NFC in the field has been weakened by the insurgency and closure of food depots in remote areas, consequently reducing the overall capacity of the country to meet the needs of vulnerable groups. This reserve potential leaves scope for humanitarian agencies to draw upon the reserves in order to provide assistance during emergency interventions.
- Although the domestic production data suggest marginal surplus in production. Nepal has been importing rice from India and domestic production is not sufficient to meet national demand. Imports (formal and informal) from India play a major role in filling the gap. Consideration could be given to exploring direct provision of rice from the Food Corporation of India (FCI) for public intervention purposes. Private traders are reportedly procuring from FCI during its buffer stock replenishment cycle.
- Paddy/rice, maize and wheat are the main food grains grown and consumed in Nepal. They represent over 70 percent of the annual cropped area and 95 percent of all food grain production. The increase of rice consumption is associated with changing consumption habits and increasing incomes from non-agricultural sources, such as remittances.

Chapter V: Physical Access to Markets, Issues and Challenges

This section discusses the transportation network, connectivity and its implications for agricultural trade. Special attention was made to link transportation to the market development pattern in Nepal.

5.1 Road Connectivity

The transportation system in Nepal depends heavily on the road network. The Mahendra Highway serves as the backbone of Nepal running the length of the country across the Terai. A number of feeder roads link to the Mahendra Highway, facilitating access to major towns throughout Nepal, India, and Tibet.

The transport network of Nepal has traditionally followed a "hub and spokes" model, rather than one of inter-connections or trans-shipment. Under this model, goods generally travel one day's journey (i.e. maximum of 600 kilometers) from the supply point (i.e. the hub) to their different destinations along the spokes. This type of point-to-point transport has been preferred as it reduces handling costs (loading and unloading), loss and pilferage. It has also allowed traders to keep only the minimum inventory required to meet daily business requirements, as supply points were just one days' travel away¹.

The current transportation system, however, is changing with the emergence of inter-connected transportation hubs. Today's main transportation hubs lie at the points of intersection of different North-South feeder roads and the arterial Mahendra Highway². An understanding of these hubs is instrumental to understanding the flow of produce from farmers to consumers. A description of the main transportation hubs on the Mahendra Highway as shown on Map 3 (from east to west) is presented below:

- **Damak:** Bordering West Bengal in India, Damak connects the rest of the country with the important agricultural market in Birtamod. Damak and surrounding area is also a major agricultural area of the eastern Nepal.
- *Itahari/Biratnagar:* Biratnagar, connected with Jogbani, India and by train to the Kolkata port, is an important hub for domestic, Indian and third country produce. Besides, represents major food surplus districts of the country.
- *Lahan:* Lahan provides a direct connection from major rice producing districts, like Siraha, Saptari, Rajbiraj, Mahottari, Dhanusa and Udayapur, to Kathmandu via the Sindhuli Road.

¹ Putting a blockade on one of these hubs has been a common way of agitation in Nepal, creating supply shortages to these areas, including Kathmandu. With the increased frequency of such blockades during the conflict, traders may have been keeping larger inventories to meet demand for longer periods of time. Information on private stocks however is not shared.

² This study considers these hubs to be instrumental in providing backward and forward linkages to agricultural produce in Nepal and presented analysis proceeds with this assumption.

- *Narayanghat:* Narayanghat, in central Nepal, is located at the junction of the north–south highway to Tibet with the Mahendra Highway. Narayanghat connects the major consumption center like Kathmandu and Pokhara with the major production area.
- *Birgunj:* One of the largest hubs in Nepal and a dry port, Birgunj has access to the Indian Railway and Kolkata port. It supplies domestic, imported and most third country goods.
- **Butwal:** Situated near Bhairahawa with access to Uttar Pradesh, India, Butwal represents a major point for influx of Indian goods. Butwal is at the junction of the Mahendra and Siddhartha Highways, connecting the Terai to Kathmandu via Palpa and Pokhara. Besides, it is situated in the central location for supplying produce grown in Bhairahawa, Parasi and Taulihawa districts.
- *Kathmandu:* Kathmandu, the major urban center of the country, is connected to the Mahendra Highway by four routes (Hetaunda via Tribhuvan Highway; Sindhuli-Banepa Highway; Prithivinarayan Highway; and Siddhartha Highway) and to Tibet via Kodari by the Arniko Highway. Kathmandu is the major trading hub for Chinese goods, especially temperate fruits and spices. All consignments originating from China are distributed to different markets via Kathmandu³.
- *Pokhara:* Connected with the Mahendra Highway by two routes, the Prithivinarayan and Siddhartha Highways, Pokhara serves as the primary supply point for the hill and mountain areas of Dhaulagiri and Gandaki Zones.
- Kohalpur/Nepagunj: Connected to the Mahendra Highway at Kohalpur, Nepalgunj is linked with Surkhet, a major trading point for Bheri, Rapti and Karnali Zones⁴ and the major supply point to the Mid and Far West. It is also the major industrial city in the Bheri Zone. This hub is centrally located in the major agricultural district of Dang, Banke and Bardia, of the mid western and far western districts of Kailali and Kanchanpur. Kohalpur/Nepalgunj and Attaria/Dhangadhi is closely linked.
- *Attaria/Dhangadhi:* Attaria/Dhangadhi links the Mahendra Highway with Sanfebagar, a major trading point for Achham, Bajhang and Bajura in Far Western Nepal. The hub is based in the major rice growing districts of Kailali and Kanchanpur in the far western region of the country.

³ Kalimati Fruit and Vegetable Wholesale Market is based in Kathmandu, this market is a governing market for fruit and vegetable trading in the country.

⁴ Karnali zone doesn't have any road connection and all transportation is done by backload or air.





5.2 Transportation Network

Road Transportation: Nepal's road network and density is the lowest in the South Asia, with much of this (i.e. above 60 percent) concentrated in the Terai. As a result, road access in rural areas, particularly in the hill and mountain regions, is quite limited. Only 30 percent of the rural population has access to all-weather roads and an estimated 36 percent of the population live at least 2 hours walk from the nearest all-season road. At least 15 districts are not connected to a motorable road, though the GON considers transportation significantly difficult in 30 districts.

It should be noted that, at the mountains and hill districts, road connectivity generally does not include road access beyond the district headquarters. When roads are not available within district (i.e. to connect rural areas beyond the headquarters), connectivity is established through other means, such as portering and animal transport.

Air Transportation: Air transportation, through 42 domestic airports, plays a vital role in providing access to the Hill and Mountain belts of the country. The use of air transportation in the supply of food to remote areas is well accepted.

Ropeway: Considered an important mode of transportation in Nepal.

Portering: Portering is the most common mode of transportation in the hills between market centers and consuming districts/households. As roads generally do not go beyond the district headquarters and landing zones are limited, portering is the primary means of transporting goods from these points to different parts of the region and district.

Animal Transportation: Animal transport is commonly used in all three ecological belts. In the Terai, bullock carts, or *bailgadha/ladia*, are the most common means of transportation (human and goods) in rural areas. Mules, yaks and goats are commonly used for transport in the mountains.

With limited road access, aggregate transportation costs to the Hill and Mountain districts can be very high. To compare by mode, in 2001/2002 the Nepal Food Corporation estimated air transport to be NRs. 38,800/MT, against NRs. 14,300/MT for surface transport (see Table 5). While surface transport can be considerably cheaper than air, the insurgency in some mountain areas has made this method unreliable. The recent improvement in the socio-political context may, however, encourage the resumption of surface transport to these remote areas.

		-				<u>^</u>			
	Total				By air		By surface		
Fiscal Year	Quantity	Transport Cost	Per MT. Cost	Quantity	Transport Cost	Per MT. Cost	Quantity	Transport Cost	Per MT. Cost
1996/97	15,114	226,819	15.0	3,655	119,780	32.8	11,459	107,039	9.3
1997/98	14,000	267,350	19.1	4,113	157,658	38.3	9,887	109,691	11.1
1998/99	16,367	334,596	20.4	4,278	195,122	45.6	12,089	139,474	11.5
1999/00	14,218	332,804	23.4	6,661	239,967	36.0	7,551	92,837	12.3
2000/01	9,773	232,118	23.8	5,187	176,060	33.9	4,584	56,058	12.2
2001/02	6,792	200,000	29.4	4,255	165,200	38.8	2,437	34,800	14.3

Table 5 : Public Transportation Cost by Mode of Transportation (Unit: MT Rs. '000)

Source: Nepal Food Corporation, Planning Division, Central Office (2002)

5.3 Implications for Physical Access to Markets

Transport connectivity in Nepal includes both internal connectivity (i.e. traveling within Nepal to reach one point to another) and external connectivity (i.e. traveling from one point in Nepal to another point on foreign land, such as India to the south and Tibet to the North).

Nepal's geography is one of the primary challenges for developing road connectivity, both internal and external. In addition to being land-locked, the extreme topography in the hills and mountains has prohibited the development of a transportation link between these areas and the Terai. This limited connectivity impedes the supply of essential goods to the hills and mountains and results in high transportation costs in these areas and increased vulnerability to food insecurity⁵.

The country's limited connectivity also plays an important role in shaping the Nepalese trade regime. For instance, it creates high transportation costs for tradable goods being moved within the country for eventual export, reducing the competitiveness of these goods⁶. It does, however, allow trade with and the movement of goods through India and Tibet. As provided for in the Nepal-India Trade Treaty, routes through India are used for the movement of goods from one part of Nepal to another. In addition, on a limited basis, routes through Tibet are used for cargo and food movement to some northern parts of Nepal, like Humla⁷ and Mustang.

In general, food market development is either linked to supply (i.e. production) or demand.⁸ In Nepal, however, the market development is most significantly linked to the road network, as shown in Map 3 above. The most developed markets are found only where roads are developed. For instance, with the improvement of all-weather road access, Sanfebagar—once lacking access to the Terai markets, has now become a regional market for food. This and similar development have shown how progress in road construction can promote markets to shift further north.

In addition to road access, limited purchasing power in rural areas can be another limiting factor for market development. Rural households generally practice subsistence agriculture and seldom have production surplus or disposable income. The high transportation costs in these areas additionally places high-priced market items further out of reach of these households. This limited purchasing capacity, despite demand, inhibits the development of markets in remote, rural areas.⁹

⁵ This fact is well reflected in the GON policy, whereby 30 districts receive transport subsidy when only 15 districts are not connected by road.

⁶ The World Bank, (March 18, 2004) Implementation Completion Report, Multimodal Transit and Trade Facilitation Project.

⁷ Goods are sent from Kodari to Khasa (Tibet) to Sera (Tibet) and carry to Taklakot (Tibet) and re-enter Nepal through Hilsa for Humla.

⁸ Case presented here relates to cereals.

⁹ According to NLSS data (CBS, NLSS 2003/04), only 9 percent of households living in the Mountain belt have access to a market centre within 30 minutes of travel, as opposed to 30 percent in the Hill belt and 42 percent in the Terai. About 41 percent of the households in the Mountains spend at least 3 hours traveling to the nearest market centre, compared to 30 percent and 2 percent in the Hills and Terai, respectively.

5.4 Concluding Remarks

- In addition to the challenges accompanying the Nepali Rupee being pegged to the Indian Rupee, the external competitiveness of Nepalese tradable goods is further undermined by weak road infrastructure and high in-country transportation costs.
- Weak road connectivity between main roads and from the district headquarters to rural areas, especially in the Mountain and Hill belts, is a major cause of the reduced private sector involvement in food commodity trade and the food insecurity situation in these areas. Solving this problem will require long term development projects on the transportation system while pursuing short term interventions such as food for work projects on roads.
- Public intervention in the Mountain and Hill belts remains one response to the lack of functioning markets, though at a very high operational cost.
- Although new transportation hubs are emerging with the development of major central markets, the transport system is still dominated by the nodal point movement of goods mainly from east to west, with the inconvenience of increased vulnerability of trade flows to shocks.
- Lack of backward and forward linkages in cereal markets may undermine the capacity of small stakeholders (i.e. farmers and retailers) to engage in market supply, keeping market control with a limited number of large millers/traders.

Chapter VI: Food Grain Marketing System in Nepal

This chapter presents an overview of the agricultural marketing system in Nepal, including marketing channels and evolving market networks. Market structures, along with the role of various stakeholders in marketing, are discussed.

6.1 Food Grain Market Stakeholders

Agricultural market stakeholders in Nepal include farmers, rice millers, importers, wholesalers and retailers. The marketing system for most grains is similar, with individual suppliers usually handling a variety of grains (i.e. rice, pulse, wheat, and mustard) depending upon the season.

Farmers: Except for a small number of large farmers, the majority of farmers in Nepal are small land holders, with only small quantities of their production going for sale. It was reported that farmers tend to withhold their surplus production until the off-season or until it is necessary to sell. This practice is common in areas east of Bhairahawa, while farmers from the Western part of the country have limited holding capacity and generally sell immediately after harvesting¹. When farmers sell their produce, it is generally to vendors at the farm gate, *kantawalas*, or millers at the farm gate, local markets, or processing facilities. Individual farmers are price takers due to their small marketable surpluses and lack of food grain cooperatives.

Kantawalas: Kantawalas constitute a major link between farmers and the mill, as they purchase grains from farmers for processing. Most *kantawala* collection depots are located in rural areas and/ or along the border, the later allowing *kantawalas* to buy significant quantities of Indian produce.

Rice Millers: Commercial rice mills in Nepal can broadly be categorized as micro, small, medium and large mills (Table 6). Micro mills, with a processing capacity of about 1 MT/day, are generally found in the interior part of cities and in villages with larger settlements. These units are used to i) process grain for farmers for own consumption or ii) process grain for small traders who sell directly to the market. Small mills are located in larger settlements with large production areas and either process farmers' grain for a fee or buy raw materials for their own sale/delivery to retailers. Medium and larger mills have a capacity of 1.0 to 1.5 MT/hour and account for more than 80 percent of traded grains in the market.

Size	Classifying variables	Size Class	No. of Establishments
Small	Fixed essets in	Less than 10 million	280
Medium	Million Dupoos	10 – 50 Million	33
Large	Willion Rupees	50 million and above	3
Small		10 - 19	235
Medium	Number of persons	20 - 49	67
Large	engaged	50 - 99	12
Large		100 and above	2
Total Number (316		

Table 6: Distribution of grain mills by fixed assets and persons engaged (2001/02)

Source: CBS (2003).

¹ Information based on interview with stakeholders.

Data gathered through the field study revealed the presence of 8 to 12 large millers/traders² in the Terai, who supply more than half of the rice in Kathmandu and other major markets. These large operators function in an oligopolistic market structure with a relatively large number of counterpart suppliers and buyers. The lack of backward and forward linkage markets can undermine trade flows, given the relatively small number of stakeholders controlling the trade of cereals.

Processed Food (Rice) Importers: Based along the Indian border, in Biratnagar, Birgunj and Bhairahawa, there is also an emerging group of entrepreneurs importing processed rice and other edibles. (This group is marked in red in Figure 5.)

Wholesalers: Most wholesalers are recently established (i.e. within the last 15 years), and across all regions, tend to cover higher levels of markets (i.e. district/regional/national/ international, see Table 8). Cereal wholesaling is largely company-led, with no organized wholesale facilities, except for "*Gol*" in Biratnagar.³ In addition, it can be noted that the larger miller/traders mentioned above are also directly involved in the marketing of rice.

	U	υ.	, U	
Items	Description	Terai	Hills	Mountains
Respondents	Distribution of respondents	13 (43.3)	15(50.0)	2 (6.7)
Business start	Time period during 1965-'90	6 (46.0)	3 (20.0)	1 (50.0)
	Time period during 1991-'06	7 (54.0)	12 (80.0)	1 (50.0)
Market	Local Traders	3 (23.1)	5 (33.3)	-
Coverage	District Trader	7 (53.8)	6 (40.0)	-
	Regional Trader	3 (23.1)	4 (26.7)	2 (100.0)

Tuble 7. Dubiness starting time and market coverage by food grain whoresarers

Source: FAMS: Field Survey, 2006.

Retailers: The majority of retailers are recently established, i.e. within the last 15 years, and all included in the field study have either local and district level coverage (Table 8).

Items	Description	Terai	Hills	Mountains
Respondents	Distribution of respondents	16 (32.0)	26 (52.0)	8 (16.0)
Business start	Business (1965-'90)	2 (12.0)	4 (15.0)	2 (25.0)
	Business (1991-'06)	14 (88.0)	22 (85.0)	6 (75.0)
Market	Local Traders	15 (93.8)	19 (73.1)	2 (25.0)
converge	District Trader	1 (6.2)	7 (26.9)	6 (75.0)
	Regional Trader	-	-	-

Table 8 : Business starting time and market coverage by food grain retailers

Source: FAMS: Field Survey, 2006.

Cereal flow, from producer to consumer, is shown in Figure 5. As shown, food processor/rice millers hold a central position in this process.

² There is a possibility that same owners may be operating under different names in different locations. The selling depots of large millers are based on the following locations: Mahendranagar, Dhangadhi, Satti, Nepaljung, Krishnanagar, Butwal, Bhairahawa, Narayanghat, Khatmandu, Pokhara, Birjung, Janakpur, Dhulabari, Jhapa.

³ It is a commodity speculation market in Biratnagar where no physical transactions take place.



Figure 5: Produce Flow from Farmers to Consumers

6.2 Food Grain Marketing Channels

The major cereals in Nepal, rice and wheat, are generally from domestic production or import, though both are sold as domestic product in the market. Pulses and legumes such as *rahar*, chickpeas, mung, green pea, white pea, black gram, and mustard are imported from various countries.

There are no organized (or wholesale) markets for the collection of cereals and sale of processed grains.⁴ Millers based in major rice producing districts, such as Jhapa, Morang, Sunsari, Saptari, Dhanusha, Sarlahi, Bara, Parsa, Rautahat, Chitwan, Rupundehi, Banke, and Kailali, directly sell their produce to wholesalers and retailers in their areas after processing. As shown in Table 9, it is reported that about 70 percent of rice in each belt is from such millers. Using field survey data, it is found that wheat is handled mainly by wholesalers and sourced essentially through imports.

⁴ *Gallamandi*, literally means cereals markets. Such markets are self-defined markets, do not have any legal standing and are operated independently and privately. Some district headquarters have such *Gallamandi* for trading of grain as well as processed products.

		Terai			Hills			Mountain	Mountain			
Commodity	Mill	Wholesaler	Others	Mill	Wholesaler	Others	Mill	Wholesaler	Others			
	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)			
Rice	70	30	0	67	33	0	70	30	0			
Wheat flour	20	80	0	26	74	0	0	100	0			
Lentil	15	75	10	20	80	0	0	100	0			
Black gram	0	85	15	10	80	10	0	100	0			

Table 9: Purchase Sources of Different Commodities by Food Grain Wholesaler

Source: FAMS Field Survey 2006.

In all belts, it was found that retailers are generally purchasing from wholesalers, with a small portion coming directly from the mills. Eight to 20 percent of the respondent retailers in the Terai and 5 to 30 percent in the Hills indicated that they purchase legumes from farmers and local traders, not mills and wholesalers (Table 10).

Table 10: Purchase Sources of Different Commodities by Food Grain Retailers

						-			
Crops	Terai				Hills		Mountain		
	Mill	WS	Oth	Mill	WS	Oth	Mill	WS	Oth
	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Rice	34	64	0	46	54	0	20	80	0
Flour	20	80	0	30	70	0	0	100	0
Lentil	0	92	8	10	85	5	0	100	0
B bram	0	90	10	0	95	5	0	100	0
Pigeon pea	0	80	20	0	95	5	0	100	0
Green pea	0	90	10	0	90	10	0	100	0
Chick pea	0	90	10	0	70	30	0	100	0

Source: FAMS Field Survey 2006. Note: WS:Wholesale;Oth: Others

6.3 Food Grain Market Networks

Market development in Nepal is partly in response to the increase in demand from urban consumers or with the emergence of new production pockets but depends heavily on road access, as shown on Map 5 above. In general, there are limited agricultural marketing facilities in Nepal. Four types of market networks can be identified: regional market networks; wholesale market networks; urban consumption market networks; and rural and food-deficit area market networks. Presentation of food flow between these markets is provided on Map 4 below.





30

6.3.1 Regional Market Networks in Terai

Though there are no designated regional markets in Nepal, the following have been identified based on their location and transportation connectivity with production/importation and consumption areas. From east to west, regional market networks include:

Jhapa Regional Market Network (JRMN): JRMN, based in a major agricultural surplus area, includes Birtamod, Damak, Bhadrapur, Gaurigunj, Budhbare and Suranga markets. JRMN primarily supplies produce to the Mechi Zone (Illam, Taplejung, Panchthar) and to more distant markets in Kathmandu, Pokhara, Kailali and Surkhet. JRMN is connected by road with the national transportation network at Damak and connected with West Bengal, India at Kakadvitta. This regional market area is rapidly diversifying its agriculture production and is gaining prominence as a major agricultural centre.

Biratnagar Regional Market Network (BRMC)⁵: BRMC, including Katahari, Siswani, Rangali, Dangihat, Letang, Madhumalla, Duhabi, Ithari and Dharan markets in Morang and Sunsari districts, is located in an important cereal production and food surplus area (in addition to including a major industrial center and agricultural processing facilities). As a major trading center of the country, Biratnagar is the source of many large traders and importers from India and third countries.

Lahan Regional Market Network (LRMN): LRMN includes the Rajbiraj, Siraha, Saptari, Mahottari, Dhanusa and Udayapur production areas of Central Nepal. This cluster is connected with various border cities in India, and as one of the major grain trading sources in Nepal, LRMN sends grain to markets all over Nepal, notably Narayanghat, Kathmandu, Kavre, Kaski, Tanahun, Sarlahi and Sidhuli and the mountain areas of Janakpur and Sagarmatha zones.

Birgunj Regional Market Network (BJRMN): The BJRMN includes Kalaiya, Hetauda, Birgunj and Gaur markets and the grain production areas of Bara, Makwanpur, Parsa and Rauthat districts. This cluster includes the dry port of Birgunj and is connected to the Mahendra Highway, Bettiah, Motihari and Muzaffarpur in India, and Kolkota by direct railway access. The majority of rice moving through BJRMN is from India, though once it enters Nepal it is incorporated with domestic production for forwarding to other markets.

Narayanghat Regional Market Network (NGRMN): NGMRN⁶, including Ratnanagar, Birendranagar, Parsa, Bhandara, Sukranagar, and Gunjnagar markets of Chitwan district, is emerging as a major trading post and terminal market in the country for domestic or imported products. Located in the center of Nepal, NGRMN is equally well connected with major production and consumption areas. It is also well linked to the transportation network, with access to the east-west Mahendra Highway, the north-south highway to Tibet via Kathmandu, and to India.

Bhairahawa/Butwal Regional Market Network (BBRMN): BBRMN directly serves the people living in the five municipalities of Butwal, Bhairahawa, Kapilbastu, Ramgram and Tansen. This network has two major markets, one for vegetables in Butwal and the other for cereals in

⁵ It is possible that the JRMC and BNRMC could merge and get into one market cluster in coming years.

⁶ It may be noted that all produce consigned to Kathmandu and Pokhar consumption market has to pass through road grid based in Chitwan district.

Bhairahawa. The later is well connected to India and is a major gateway for Indian rice entering the Nepali markets (both officially and unofficially). Linked to Butwal on the Mahendra Highway, and to Pokhara through Palpa, the BBRMN service area includes the mountain areas of the Lumbini and Dhaulagiri Zones.

Nepalgunj Regional Market Network (NRMN): Nepalgunj is the gateway to the Mid Western Development Region, the largest and least developed region of the country. Linked to the transportation network and the Mahendra Highway at Kohalpur and to Surkhet in the north, NRMN services the Karnali, Bheri, and Rapti Zones. It also feeds into other markets in the Far West, including Baitadi and Sanfebagar. The NRMC sources food items from the adjoining districts, such as Dang, Banke, Bardia, Kailali and Kanchanpur, and from the production areas around Dhangadhi and Mahendranagar. It can be noted that Dhangadhi/Attaria has the potential to develop into a major market center in the near future, especially given its connectivity to several Indian border cities.

6.3.2 Transit Markets on the Road Head in the Hills and Mountains

Transit markets, those importing and forwarding produce to other areas in the hills and mountains, play an important role in the supply of food to remote districts. Most of the transit markets are strategically located at arterial road heads. As a result, forward movement of food beyond the market centre or road head generally occurs in two ways: purchase by migrants returning to their homes in surrounding areas from employment elsewhere or purchase by households from the surroundings areas that travel to the road head to gather supplies and then return home. From east to west, the transit markets identified are Mechinagar, Dhankutta, Banepa, Okhaldunga, Dang, Surkhet, Dadeldhura and Sanfebagar.

Mechinagar Transit Market (MTN): MTN, located in the Jhapa Regional Market Network and near to the Indian border, specializes in bundling produce in smaller quantities for forwarding to Panchthar, Terathum and Taplegunj districts and plays an important role in forwarding produce grown in the area to other markets in Nepal and India.

Dhankutta Transit Market (DTTM): DTTM⁷, an important traditional market center of the Eastern hills, serves as a major supplier to people living in Bhojpur and Sankhuwasabha districts. DTTM receives its produce from the Biratnagar Regional Market Network and sells it to commuters and travelers in transit to/from employment in the urban areas of Nepal and India.

Banepa Transit Market (BTM): Banepa Transit Market, located in Kavre—a major agricultural production district of Central Nepal— is surrounded by high-quality rice producing areas. The high-quality rice grown locally is supplied to Kathmandu, while medium and coarse rice from Birgunj and Narayangarh Regional Markets is imported for forwarding to the surrounding hill and mountain districts of Ramechap, Dolakha, Sindupalchowk and some parts of Solukhumbu.

Okhaldhunga Transit Market(OTM): OTM, receiveing commodities from Lahan Regional Market Network, supplies food for consumption to the Okhaldhunga district and for forwarding by porter to parts of Ramechhap, Khotang and Solukhumbhu. OTM additionally supplies commuters traveling to/from employment in urban areas of Nepal and India.

⁷ There are two major markets in Dhankutta, at Hile and Sindhwa, in addition to the one in Dhankutta city.

Dang Transit Market (DTM): DTM, located in an important agricultural production area, serves as a major trading point in the Mid Western Development region and connects to Salyan, Rukum, Jajarkot (via Tulispur), and Rolpa and Pyuthan (via Bhalubang). DTM draws on low quality cereals from the Nepalgunj Regional Market Network and exports high quality grain to the same and the Narayangarh market in Chitwan. Traders in this market also export lentil and oil seed grown in the Dang Valley.

Surkhet Transit Market (STM): The Surkhet Transit Market, located before the Surkhet district headquarters from Kohalpur, receives commodities from the Nepalgunj Regional Market Network. It supplies goods and food to all five districts in the Karnali Zone and Dailekh and Jajarkot in the Bheri Zone.

Dadeldhura Transit Market (DDTM): DDTM, a traditional market of the Far West serving the entire Seti Zone and Baitadi, was the first market to be developed in the area with the extension of the road from Dhangadhi. The importance of this market, however, is diminishing with the completion of the road to Baitadi and Sanfebagar and perhaps will further be reduced with road construction to Bajhang and market development in Deura, Bajhang.

Sanfebagar Transit Market (SBTM): SBTM receives supplies directly from the Nepalgunj Regional Market Network via Dhangadi/Attaria. This market serves Accham, Bajura and parts of Dailekh, Bajhang and Kalikot, all food-deficit districts low on the UNDP Human Development Index. The main buyers in this market include those returning home from employment in India and other parts of Nepal. It could therefore be a monitoring site to capture labour movement and its impact on prices and demand in far western food-deficit areas.

6.3.3 Urban Consumption Center Markets

Urban Consumption Center Markets (UCM), those serving urban areas like Kathmandu and Pokhara, include many cereal wholesalers and serve as transit markets for surrounding areas. These markets are strategically located on the country's highway/transport network, though within the city, market sites are scattered.

Kathmandu Urban Consumption Center Market (KUCCM): Kathmandu, the capital city, is located in a valley with a population of about two million people. The Kathmandu Valley represents a major consumption center of Nepal, with its markets serving the entire population within a 50 km radius.

Pokhara Urban Consumption Center Market (PUCCM): PUCCM represents the second major consumption center in Nepal. Pokhara is a major tourist destination and the city has strong demand for quality produce. Its fertile land is used to produce high-quality cereals and off-season horticultural items.

6.3.4 Permanent and Temporary Rural Markets

There are two types of rural markets in Nepal: permanent and temporary. Permanent markets are based in areas having relatively larger populations, such as district headquarters. The nature of operation of these markets varies, though they tend to include more imported fruits and

livestock, as most cereals and vegetables in rural areas are supplied through home production. Temporary markets, or *haat- bazaars*, are periodically organized in central locations in a cluster of villages. These markets operate on a specific day of the week and are managed by the community. They provide varieties of locally grown or imported produce and play an important role in meeting household consumption needs.

It can be also noted that though markets normally exist in all rural district headquarters, these markets mostly deal with non-food items. Given the lack of connectivity and profitability of food supply (high volume, but low value), the private sector is largely not engaged in the supply of food to these areas. The major private sources of food for people living in these areas thus remain domestic production or transit markets.

6.4 Associations among Market Variables

A multivariate analysis was conducted with the survey data to determine the degree of correspondence between several categorical variables⁸. The objective of this correspondence analysis was to determine which characteristics were associated with the different traders interviewed. Figure 6 below illustrates the analysis results, plotting nine different categorical variables. The different dots on the chart represent the different response categories for each variable. Dots representing the different categories cluster together according to their degree of correspondence with other characteristics of the respondents.

The figure (bottom-right corner) suggests that livestock traders are an outlier from the other types of traders as they do not link strongly with other variables. On the left-hand side of the chart, a small cluster of dots shows that millers are strongly linked with business coverage at the national-level, rather than at the regional- or local- level. Millers are also associated with all types of problems: conflict, payment default and market structure.

The larger cluster on the right-hand side of the chart contains most of the other variable categories. An interesting subgroup can be found around "woman" at the bottom of this large cluster. Here, the short distance separating dots on the chart shows that some characteristics are closely linked with women traders. Women traders are very closely linked with "retailer", with "local" rather than regional coverage. The fact that "own investment" is located next to "woman" is an indicator of the small economic scale of the activity of female traders. Women traders interviewed are also linked with the Mountain belt. The short distance between "fruit and vegetable" and "woman" also confirms the finding that women are more involved in the fresh produce trade than in grains or livestock. Women traders are related with all types of conflicts as shown by the relative equidistance between "woman" and "market structure related problems" on the one hand, "payment default problems" and "conflict related problems" on the other hand. The same cluster shows also a small distance between "retailer" and "market structure related" problems. This suggests that retailers are particularly affected by inadequacies in market and transport infrastructures.

A second interesting subgroup is centered on "grain traders". These traders are linked with an urban location. The proximity of "grain traders" with "totally in credit" and "partially in credit" indicates that some credit was needed to start their activity. Grain traders are also very closely associated with conflict plus market structure-related problems.

⁸ The analysis presented in this section was carried out by Dr. Jo Cadilhon (FAO/RAP, Bangkok).

Finally, "wholesaler" at the top of the large cluster is the centre of another subgroup of characteristics. The coverage of their activity is wide, indicated by the proximity of "wholesaler" with "regional" and "international". Interestingly, wholesalers are very closely linked with payment and conflict plus payment problems. This finding can be interpreted by the intermediary position of wholesalers in both logistics and financial aspects of food markets.



Figure 6 : Linkages between Market Stakeholders and Market Variables

6.5 Financial Facilities for Agricultural Trade

As shown in the previous section above, limited access to credit undermines market participation of all the stakeholders, especially farmers, small traders and women. Interviews with major providers of credit in Nepal, such as specialized banks, commercial banks, finance companies and savings/credit cooperatives groups, revealed that institutional providers prefer to finance larger amounts of credit for large companies in major urban centers. These providers suggested some may avoid issuing smaller amounts of credit to farmers, due to the larger overhead and processing costs involved with disbursing small amounts to distant locations. As a result, it appears as though the major banks have little or no direct bearing on the agricultural sector.

The field study revealed that most of the respondents (regardless of type) use their own resources or investment while establishing their businesses in food marketing (Table 11).

Respondents and financing arrangements	Terai	Hills	Mountains	
Grain Wholesalers				
Own investment	11 (84.6)	9 (60.0)	1 (50.0)	
Partially on credit	2 (15.4)	6 (40.0)	1 (50.0)	
Formal loan	1 (50.0)	3 (50.0)	-	
Grain Retailers				
Own investment	10 (62.5)	16 (61.5)	6 (75.0)	
Partially on credit	6 (37.5)	10 (38.5)	2 (25.0)	
Formal loan	3 (50.0)	3 (30.0)	-	
Fruits and Vegetable traders				
Own investment	41 (77.4)	21 (67.7)	1 (50.0)	
Partially on credit	12 (22.6)	10 (32.3)	1 (50.0)	
Formal loan	5 (9.43)	9 (29.0)	1 (50.0)	
Livestock Retailers				
Own investment	11 (91.7)	12 (92.3)	3 (100.0)	
Partially on credit	1 (8.3)	1 (7.7)	-	
Formal loan	1 (100.0)	1 (100.0)	-	

Table 11: Sources of Funding for Food Commodity Traders*

Source: FAMS field survey, 2006

* Number of respondents followed by percentage (over total of respondents) between brackets.

Respondents' experiences and perspective using credit differs by type of respondent. Though farmers have various available options for using credit from institutional sources, respondents in this group commonly reported not doing so because of non-availability of loans for agricultural purposes. Small millers preferred to make investment with their own savings, citing concerns about complicated procedures and unwillingness of financial institutions to provide the small amounts they require. These respondents also suggested that sources more preferable to financial institutions were available. Larger operators reported using credit from banks and that obtaining such financing was easy. Investments by traders, retailers and wholesalers are made from own resources and as necessary supplemented by external borrowings. In most cases, traders were getting produce with arrangements for paying after selling and it was found that a bulk of investments for operating inventories originate from the suppliers, whether the millers supplying produce or farmers supplying vegetables.

6.6 Concluding Remarks

- The food grain market in Nepal is competitive, except for the oligopolistic structure of a few large millers/traders. Major market stakeholders include farmers, *kantawalas*, rice millers, importers, wholesalers and retailers. The large and medium sized mills account for more than 80 percent of traded grains in the market, with less than a dozen of the large millers/traders located in the Terai region managing more than 50 percent of the rice supply to Kathmandu and other distant markets. *Kantawalas* located in border areas provide an important connection between Indian farmers or carriers and millers in Nepal.
- The food grain marketing channel from farmers to consumers is one of a tertiary market, with millers playing a central role as they process a majority of the production. Upstream and downstream stakeholders such as wholesalers, retailers and commission agents are in competition due to their large numbers. Individual farmers are price takers due to their small marketable surpluses and lack of food grain cooperatives. Increasing efforts to promote farmers cooperatives seems to be an appropriate policy. This would improve farmers' role in the marketing channel.
- An understanding of the key market networks is advisable for food security monitoring. Biratnagar Regional Market Network (BRMN) is the most important regional market. It lies in a major cereal production and food surplus area and includes an industrial center with a number of agricultural produce processing facilities. It is the source of major private trade with India. Another important regional market is Birgunj Regional Market Network because of its transport facilities (dry port of Birgunj) and connection to Indian markets, including Kolkota.
- Transit markets are important for their central position in bringing produce from source markets to consumers living in the hills and mountains. Surkhet (Mid Western) and Sanfebagar (Far Western) are key transit markets because of their forward linkages with several food deficit districts. As a major trading point in the Mid Western region, Dang Transit Market imports low quality cereal from the Nepalgunj Market Network and exports high quality grains, lentil and oil seed grown in the Dang Valley.
- Urban Consumption Markets play a key role in price setting from the demand side. Kathmandu and Pokhara, the most important urban centers, are highly sensitive to market shocks such as *bandhs* and blockades.
- The limited capacity of small stakeholders (i.e. farmers, retailers, and women) to engage in food grain supply markets is associated with their limited access to credit, relative isolation in mountain areas, inadequate market infrastructure and transport facilities and conflict-related problems.

Chapter VII: Price Dynamics and Food Accessibility

This chapter analyzes the price movements, particularly of coarse rice, between and within regions in Nepal¹. Special attention is given to Indian border markets in order to capture information on potential price integration. The analysis also attempts to link price dynamics with consumer access to markets.

7.1 Food Grain Market Price Formation System

The degree to which changes in market price in one market affect those in other markets over time and space is defined as market price integration. Assuming that traders have incentives to move goods across markets², market integration suggests that the current and past prices contain all the information available, so future prices will adjust from current prices at different places³. In other words, although average prices between regions and districts will differ due to resource variations and other factors (e.g. cost of production and transaction costs including transport, conflict etc.), the intervention of traders should bring them back toward an equilibrium level, unless the opportunity cost of moving goods is higher than the benefits.

Cost of production in the agricultural sector is predominantly of variable nature in Nepal. For instance, the only fixed costs involved in agriculture (land tax, water tax, depreciation of farm equipment and repair and maintenance of the equipment), account for less than 5 percent of the total cost of production of paddy. Variable costs are composed mainly of labour cost (i.e. human and bullocks accounting for more than 60 percent of the variable cost of production). Though the absolute cost incurred on different variable factors varies geographically depending upon the connectivity to markets, nominal cost of variable inputs (essentially labour and chemical fertilisers) has seen substantial rise, ranging from 40 percent to 100 percent over the last few years (2000-2005). Based on the estimates of MOAC, farmers' market margin ranges from 10 percent to 40 percent depending on the quality of paddy (table 12). However, this relatively high margin and the increase of the cost of production would normally reduce the competitiveness of Nepalese paddy farmers⁴.

¹ The analysis presented in this chapter was carried out by Dr. Issa Sanogo (WFP/OD Bangkok).

² That is, the price differential between these markets exceeds the cost of moving goods (Donovan et al, 2005).

³ See C. B. Barret (2005) for an extensive definition and the conditions of spatial market integration.

⁴ Assuming an exchange rate of 1 Indian Rupee for 1.6 Nepali Rupee in 2003/04, the Indian Farmers' Minimum Support Price of Common Paddy was Rs.8800/Mt in 2003/04, against Rs.9,530/Mt to Rs.13,360/Mt in Nepal.

		Nepal Paddy Varieties								
		Local				Improved				
	Irrigation	Total Cost		Market Value	Market Margin	Total Cost		Market Value	Market Margin	
Location	Condition	(Rs/Ha)	Yield (Mt/Ha)	(Rs/Mt)	(%)	(Rs/Ha)	Yield (Mt/Ha)	(Rs/Mt)	(%)	
Terai	Irrigated	20179	1.87	13360	9.4	24967	3.12	11710	17.9	
	Un-Irrigated		-	-	-	24964	2.76	11710	18.0	
Hills	Irrigated		-	-	-	22055	3.50	10677	15.7	
	Un-Irrigated	18529	2.45	12780	19.0	25499	3.80	9530	38.9	

Table	$12 \cdot$	Production	Cost and	Market	Margin	of Paddy	(% 0)	f Market	Value)	2003/045
Table	14.	1 Iouucuon	Cost and	WIAINCE	wargin	01 I auuy	(700)		value),	2003/04

Source: MOAC, Agribusiness Promotion and Market Development Directorate (2004/2005), FAMS Estimates

Indian Minimum Support Price of Common Paddy was 8800 Rs/Mt in 2003/04.

Despite efforts to provide information on production costs and returns of paddy⁶, the link between the cost of production of paddy and market price of rice is rather weak. The market price of paddy is determined on the basis of the individual bargaining approach between buyers and sellers. Farmers are price takers as they obtain information through traders in rural areas and millers in market centers. They generally visit such operators to inquire about the price and then deliver their grain to the one who offers the best price and terms of payment. In order to purchase and sell, traders/millers use the service of few brokers to set up prices and identify marketable surplus. Brokerage firms operate in each of the major grain market centers (i.e. Biratnagar, Birgunj, Bhairahwa, and Nepalgunj).

Rice price is determined both by the supply from the Terai, as well as by demand from Kathmandu Valley. The Terai, especially Biratnagar, represents the major production area and also constitutes an entry point for Indian produce. Therefore, through import and domestic production, it has a price stabilizing effect on all markets of the country. As a major consumption area, the Kathmandu Valley plays an important role in determining retail prices through demand. However, this demand effect is contained by (formal and informal) import from India, especially for the most consumed rice varieties (coarse and medium rice). The price of milled rice in the Terai regional markets is determined by large local millers and traders, considering the expected price in the Kathmandu market and the price of paddy in the bordering Indian markets.

7.2 Rice Price Integration between Terai and Indian Border Markets

Coarse rice market price movement follows the same pattern in the Terai and Indian bordermarkets. Coarse rice is a major staple in Nepal. Its price movement is assessed considering monthly prices in the regional markets and in Indian border markets. The three major markets in the Terai, Morang (Biratnagar), Parsa (Birgunj) and Banke (Nepalgunj), are compared with corresponding Indian border market prices of Jogbani and Rupaidiha. The price trends (from 2001 to 2004) indicate that prices in the Terai are closely associated and uniformly follow the same pattern in all three areas (Figure 7). Similar trends are observed with Indian border market prices, though prices in Nepal are higher, on average. On the Indian side of the border, coarse rice is cheaper by 5-12 percent on average, when compared to the selected markets shown on Figure 7. The field survey suggests that the current price differential is from 10 to 30 percent for different varieties of coarse and medium rice. Lower prices in Indian border markets can therefore be interpreted as a lack of competitiveness of Nepali rice and as a major reason of the increase of rice imports in Nepal, eased by the free-trade regime between both countries.

⁵ No data available on mountain areas which are deficit in paddy production. Each paddy variety is composed of low, medium and high quality rice. The margin is available for the average but not by quality of rice.

⁶ The Agribusiness Promotion and Market Development Directorate of the MOAC estimates the cost of production on a yearly basis.

Figure 7: Monthly Price of Coarse Rice in Selected Markets in Terai and Indian Boarder-Markets (2001-2004, Rs/Kg)



Source: Statistical Information on Nepalese Agriculture, various issues, ABPSD, MOA

A Dickey-Fuller Unit Root test on each series suggests that the (logarithm) price series for the selected markets above are generated by a stationary process with a drift, except for the coarse rice price in Banke which is an integrated process of order one (i.e. first-difference stationary)⁷. The correlation matrix suggests that Morang and Banke market prices are closely related to the market price of Rupedia (India), with the correlation coefficients ranking from 70 to 74 percent. Therefore, a multivariate cointegration test was conducted on these three market prices to identify whether they are determined by a long-term adjustment mechanism in addition to the impact of short-term price changes on each other. Johansen tests for cointegration suggest a single cointegrating equation allowing for one-period lagged variables in the covariates.

Notwithstanding data limitations, the output indicates that the model fits relatively well, suggesting a long-term price adjustment mechanism between Banke and Rupedia market prices (table 13). The coefficients on Morang and Rupedia in the cointegrating equation are statistically significant (at 10 percent and 1 percent significance levels, respectively). The adjustment parameters on Banke and Rupedia are statistically significant as well. When the predictions from the cointegrating equation are positive, Banke is above its equilibrium value because the coefficient on Banke is positive. The estimate of the coefficient is -0.2. Thus when the price of coarse rice in Banke is too high, it quickly falls back toward the Rupedia level, certainly due to imports inflow. The estimated coefficient on Rupedia of 0.3 implies that when the price in Banke is too high, the price in Rupedia quickly adjusts toward the Banke level (demand effect) at the same time the Banke price is adjusting. The movement of prices in the Indian border markets is therefore a useful indicator of the rice market conduct in the Terai.

⁷ The series begin in January 2001 and go through December 2004, for a total of 48 observations. The relatively small sample size requires therefore caution in interpreting the results.

	Market Names					
Model Output Items	Banke	Morang	Rupedia			
	(Terai)	(Terai)	(India)			
R-square of Model	0.12**	0.03	0.16**			
Matrix of Adjustment Parameters (α)	-0.19**	-0.07	0.28***			
Matrix of Parameters of Cointegrating	1	0.89*	-1.55***			
Equation (β)						
Matrix of Constants (v)	0.008	0.003	0.006			

Table 13 : Johansen Vector Error Correction Model of Coarse Rice Price, Summary of Results

Source: FAMS estimates

Note: Significance level of the parameters at 1%, 5% and 10% are represented by (***), (**) and (*), respectively.

7.3 Seasonal Price Fluctuation and Inflation

The market arrival pattern of paddy from farmers to markets is similar across the main regional markets. The main paddy season (November-February) accounts for 70 percent of the paddy production, against 10 percent produced in the early paddy season (September-October). The marketed quantity of paddy in Mid and Far Western and Central regions (Nepalgunj, Dhangadhi and Birgunj) is estimated at 40 percent of production, against 70 percent in the Eastern region (Jhapa, Biratnagar and Lahan).

The seasonal price trend of rice is aligned with the market arrival pattern of rice, with low prices observed in January-February and August-October (Table 14 and Figure 8). These months are the main seasons for farmers to dispose of their stocks and marketable surplus of paddy from the main paddy harvest (November-February) and the early paddy harvest (September-October).

Table 13 : Monthly Cropping Pattern of Major Food Commodity

		Rice		Wh	Wheat		Maize		Milet		Barley		Potato	
	Region	Planting	Harvesting	Sowing/ Cultivation	Harvesting	Planting	Harvesting	Planting	Harvesting	Sowing/ Cultivation	Harvesting	Planting	Harvesting	
Eastern	Mountain	May - Jul	Oct - Dec	Nov - Jan	3rd week Mar - May	Dec - Apr	Jun - Sep	May - Jul	Oct - Dec	Oct - Nov	Mar - Apr	Dec - Feb	Jun - Aug	
	на	May - Aug	Sep - Dec	Oct - Jan	Feb - May	May - Sept	Oct - Dec	May-Aug	Oct - Dec	Sep - Nov	May - Jul	Dec - Mar	June - Aug	
	Terai	Apr - Aug	Oct - Nov	Sep - Dec	Mar - May	Apr-Jun	Jul- Sep	May - Jul	Sep - Nov	Sep - Nov	Apr-Jun	Summer Feb - Apr Winter Oct - Dec	Summer Jul - Sep Winter Feb - Apr	
Central	Mountain	May - Aug	Oct - Dec	Oct - Dec	Mar-Jun	Feb - Jun	Aug -Nov	Jun - July	Oct - Jan	Oct - Dec	Apr - Jun	Mar-Jun	Aug-Oct	
	Hill	May-Aug	Oct - Dec	Oct-Dec	Mar-Jun	Apr-Jun	Jun - Sep	May - Jul	Oct-Jan	Oct - Dec	Mar - Jun	Jul-Sep	Dec - Feb	
	Terai	May-Aug	Aug - Dec	Oct - Jan	Mar-May	Feb - May	May-Sep					Sep - Nov	Dec - Mar	
_	Mountain			Oct-Dec	May - Jul	Feb - Apr	Aug - Oct	Mar - May	Aug - Oct	Oct - Dec	May - July	Feb - May	Aug - Oct	
lester	Hill	May - Aug	Sep - Dec	Oct - Dec	Mar-May	Feb - Jun	Jun - Sep	May - Sep	Sep - Dec	Sep - Jan	Feb - May	Oct-Feb	Jan - Jul	
-	Terai	May - Aug	Oct - Dec	Oct - Jan	Feb - Apr	Apr - Jul	Jul - Sep	Jun - Aug	Oct - Dec			Sep - Nov	Dec - Feb	
hern	Mountain	Mar-Jul	Oct - Dec	Oct - Jan	Apr - Aug	Mar-Jun	Aug - Oct	Mar - May	Oct - Nov	Oct-Jan	Apr - Aug	Feb-Jun	Jun - Nov	
West	Hill	May-Aug	Oct - Dec	Sep - Dec	Mar-May	Apr-Jun	Aug - Oct			Sep - Nov	Mar-May	Oct-Feb	Sep - Dec	
Ņ	Terai	May-Jul	Oct-Dec	Oct-Dec	Feb - Apr	Apr - Jul	Aug - Oct	Oct-Dec	Feb - Apr	June -Jul	Sep - Nov	Sep - Nov	Dec - Feb	
	Mountain	Apr-Jun	Aug - Oct	Oct-Dec	Apr - May	Mar-Jun	Jun - Oct			Oct - Dec	Mar-May	Oct - Apr	Apr - Aug	
FarWestern	Hill	May - Aug	Sep - Nov	Oct - Dec	Mar-May	Apr - Jul	Aug - Oct	May -Jul	Sep - Nov	Oct - Dec	Mar-May	Summer Jan - Apr Winter Sep-Nov	Summer Jun - Sep Winter Feb - Apr	
	Terai	May - July	Sep - Nov	Oct-Dec	Feb - Apr	Summer May - Jul Winter Feb - Mar	Summer Aug - Sept Winter May - Jun	Jun - Aug	Oct - Dec	Oct - Dec	Feb - Apr	Sep - Nov	Dec - Feb	
Source: Department of Agriculture														

Seasonal Calendar



Figure 8: Seasonal price trends of rice in Nepal (Monthly Average 2000-2004, Rs/Kg)

In general, the monthly food availability pattern during a normal cropping cycle (Table 13) shows that paddy and finger millet production would meet part of the food needs from October to December in most of the regions. From February to July, food scarcity is acute, corresponding to post-harvest and planting seasons. Rice prices increase during this period, as shown in Figure 8 above. The harvests of wheat and barley would normally meet part of the food needs from May to July, but production levels are small compared to rice. From July to August, maize, varieties of millet, potato and collected wild edible plants would fulfill the food requirement. However, it may be noted that intermittently Nepal faces dry spells during the winter, which are generally damaging for wheat, maize and potato. The dry spells trigger additional months of food scarcity, which already amount to about 6 months or more in most districts (WFP Nepal, CFSVA 2005).

Interestingly, recent price development shows that the consumer price index (CPI) of cereals has declined as opposed to non-food items (Table 15). The price inflation of food items (cereals, pulses and vegetables) have slowed down both in nominal and real terms, except for sugar and oil. The price decline of cereals is less in the Hills than in the Terai and Kathmandu, in contrast to the price decline of vegetables which is higher in the Hills and the Terai than in Kathmandu. In general, the price inflation of coarse and medium rice declined over the last five years (2000-2005), as opposed to other cereals such as fine rice, wheat flower and lentils (Table 16)⁸. The import of cheap rice from India may have contributed to stabilizing the domestic retail price of coarse and medium rice in Nepal⁹.

⁸ Data from the Department of Agriculture indicate that retail transaction of maize is minimal.

⁹ The findings of Action Aid (2006) suggest a stagnation of rice prices.

		CPI	Cereals	Pulses	Vegetables	Oil	Sugar	Non-Food Items
National (2000-2005)	Nominal	3.5	0.1	2.2	4.3	6.8	6.5	4.8
	Real**	3.5	-3.5	-1.4	0.8	3.3	3.0	1.2
Kathmandu (2003-2005)***	Nominal	2.2	-0.7	-2.2	-6.6	9.1	4.4	4.4
	Real	2.2	-2.9	-4.4	-8.9	6.8	2.1	2.2
Terai (2003-2005)	Nominal	1.4	0.5	-0.1	-17.8	5.6	4.3	3.9
	Real	1.4	-0.9	-1.5	-19.2	4.2	2.9	2.5
Hills (2003-2005)	Nominal	1.5	0.9	-0.7	-12.1	5.7	4.3	3.5
	Real	1.5	-0.5	-2.2	-13.6	4.2	2.8	2.0

Table 15: Nepal, Average Urban Consumer Price Inflation (%) (2000-2005)*

Source: Estimates Based on Nepal Rastra Bank
* Figures on Mountain Area Not Available ** Deflated by CPL

***Available years for Kathmandu, Terai and Hills are 2003-2005

			Coefficient of Variation
	Average Price (Rs/Kg)	Growth Rate (%)	(%)
Rice Coarse	17.7	-7.8	6.2
Rice Medium	22.3	-2.4	4.6
Rice Fine	34.3	1.4	3.5
Wheat Flour	18.6	8.4	7.7
Lentil Broken	41.8	3.0	2.3

 Table 16:
 Nepal, Average Prices of Selected Cereals (2000-2005)

Source: Estimates Based on Nepal, Department of Agriculture, Agricultural Marketing Information Bulletins

7.4 Implication on Purchasing Power and Food Security

Several findings indicate that in recent years there have been changes in demand and supply, food market structure, dietary intake and consumption due to diversification of income sources. These developments have increased people's dependency on markets for food supply and impacted household food security.

While Nepal's domestic food production depends mainly on rainfall and is sensitive to frequent winter droughts, people living in the mountains and hills are more vulnerable due to food shortages and lack of market accessibility. There is an absence of any effective government strategy or action to remedy the problem, except NFC's subsidized food supply to remote areas. Multilateral agencies and international NGOs have been filling the gap, mostly under specific projects geared towards reducing poverty and improving the nutritional status of targeted groups.

In general, households living in mountain and hilly regions do not benefit enough from the food price decline due to their relative isolation from the functioning markets of the Terai, as reflected by high price differentials. On average, the retail prices of coarse and medium rice are higher by 71 and 58 percent in the mountain areas than in the Terai, over the last three years (2002-2005) (Table 17). The price differential ranges from one-third to one-fourth for coarse and medium rice, respectively, in comparison with the national average price. In addition to poor agricultural productivity and high transportation costs due to the difficult terrain, the high prices in these regions is compounded by long lasting conflict and frequent droughts affecting the area. With such high prices and per capita incomes estimated to be 28 to 33 percent less than the national average, the Mid West and Far West hilly and mountain areas have less access to markets.

	Region	Rice Coarse	Rice Medium	Rice Fine
Price (Rs/Kg)	Mountain (A)	27.3	32.2	45.0
	Hills (B)	18.2	24.5	36.0
	Terai(C)	16.4	20.8	30.8
	NEPAL (D)	20.7	25.9	37.6
Price Differentials (%)	(A-C)	70.8	57.6	53.7
	(A-D)	32.6	24.2	20.0
	(B-C)	13.1	19.5	21.3
	(B-D)	-11.9	-5.1	-4.2

Table 17: Nepal, Average Rice Price Differentials by Region (2002-2005)

Source: Estimates Based on Nepal, Department of Agriculture, Agricultural Marketing Information Bulletins

Given the low level of effective demand due to lack of purchasing power and the high opportunity cost of moving goods to the hilly and mountain areas, the volume of private trade is minimal in some locations like Mustang, Bajura. NFC is a major market player in these locations. During the field survey, the spot price of rice collected by ecological regions was compared with NFC price as shown in Figure 9 below. It appeared that the price of NFC is almost equal to the retail market price of coarse rice in the hilly and Terai regions. In the mountain areas the NFC price is clearly subsidized, as shown by the gap with the market price. Hence, it is likely that there is no price integration between the remote hilly and mountain markets and the source markets in the Terai, as the price transmission mechanism is distorted by intervention mechanisms and the absence of significant private trade volume.





7.5 Concluding Remarks

• Not much association is found between the cost of production of rice and the market price, as price determination is governed by local large millers and traders in the regional Terai markets who determine the rice price considering the expected price in Kathmandu and the price of paddy in the bordering Indian markets.

- Price cointegration analysis suggests a long term price adjustment mechanism between the Terai markets and Indian-border markets, as shown by Banke (Nepal) and Rupedia (India). Hence average coarse rice price in the Terai likely adjusts to Indian border markets in the long run. This price integration suggests that cash options would be more appropriate in targeting Terai vulnerable groups. As Indian prices are lower on average by 10 to 30 percent, they play an important role in stabilizing rice prices in the Terai and would therefore reduce the inflation due to an injection of cash.
- It is likely that there is no integration between the rice price of the mountain areas and the Terai due to the lack of food grain functioning markets and the high opportunity cost for traders to move goods into the mountains. As a result, NFC is a major stakeholder in subsidizing prices in these areas.
- Market participation of households living in mountain and hilly regions is limited due to their relative isolation from functioning markets and their limited purchasing power. Prices are higher by one-third to one-fourth and per capita incomes are lower by about one-third, compared to national averages. Seasonal price fluctuations are observed during market arrivals from September to January, with low prices of rice corresponding to harvest season but prices remain higher in hilly and mountain areas.
- Sustainability of the subsidized-price policy is in question given the weakening operational capacity of NFC. In addition to the needs for an improved road connectivity, appropriate measures aiming at improving the purchasing power of Households living in mountain and hilly regions through income generating activities could contribute to strengthening market integration and market functioning.

Chapter VIII: The Impact of Conflict on Markets and Food Security

This chapter analyzes the impact of conflict and socio-political agitations on agricultural production, trade, market functioning and prices.

8.1 Production, Trade and Market Disruptions

Since February 1996, Nepal faced a socio-political crisis triggered by the political agitations and armed rebellion of the Communist Party of Nepal/Maoist (CPN/M). During this period, economic activities have been disrupted by frequent work stoppages, or *bandhs*, closures of businesses, extortion and threats. Supply movements have been impeded by periodic blockades, which stop transport on key access roads in the border areas and hinterland. The most recent and visible of these blockades in April 2006 disrupted the movement of supplies into the Kathmandu Valley (mainly from the southern India-Nepal border), which resulted in considerable price increases on many food items. The psychological disturbances, including feelings of insecurity, fear, and frustration, experienced by stakeholders in the agricultural production and marketing systems (i.e. producers, processors, transporters, traders, and consumers) should also be noted.

Due to the ongoing conflict, the recently renewed Transit Treaty between India and Nepal¹ has restricted movement of highly sensitive goods to only 7 of 15 transit points. If identification of such "highly sensitive goods" includes agricultural products, this may affect the export pattern from Nepal to India.²

The armed conflict has also significantly affected agricultural production, processing and marketing (Upreti, 2005), and in turn household food security³ (Seddon and Adhikari, 2005). The field survey indicates that grain, fruit and vegetable markets have suffered from the conflict, as shown by the correspondence analysis in Chapter 6. Its effects, appearing greatest in the hilly and rural areas, are perceived to be primarily linked to the limitations placed on transportation through blockades, *bandhs* and strikes (table 18).

In 2004-2005, there were 21 days of nationwide blockade and *bandhs*. Accounts from the field show that the impact of these events was particularly pronounced for those in the production and trade of poultry, milk and vegetables. It was reported that, as local market prices drastically fell on these days, traders were forced to sell their produce at prices much lower than normal. During *bandhs*, vegetable farmers were not able to meet traders to sell their goods and they were not able to sell all of their produce in local markets. Others were required to pay certain amounts of their production to the CPN/M, ranging from 20-60 kg of cereals or seven days of

¹ The Transit treaty between Nepal and India, which was expired on 6 January 2006 and India had extended for 3 month was renewed on 31 March 2006 for 7 years.

² The Transit Treaty added another provision allowing India to use Nepalese territory to move goods from one Indian destination to another. This provision is likely to increase the competition with Indian produce. It will also require more efforts on Nepal side to manage the border-trade flows, especially the informal trade.

³ Details on the monitoring of the food security situation of 32 districts of Nepal can be found in various issues of the 'Food Security Bulletins' produced by the Vulnerability Assessment and Mapping Unit of the WFP Nepal.

household food consumption, while some still (mostly local landlords and village elites) were evicted from their villages and denied access to their cultivable land⁴. As mentioned in chapter 6, such manifestations of the conflict have reduced the income sources of farmers and made difficult for many traders to repay their loans.

	Ecological Regions		Locations		Commodities		
Issues	Terai	Hills	Mountains	Rural	Urban	Grain	Fruit and Vegetable
No problem at							
all	9	18	0	18	25	11	14
Conflict related							
only*	22	36	10	36	22	26	30
Conflict plus							
others**	69	46	90	46	53	63	56
Total	100	100	100	100	100	100	100
Sample Size		163 (1	00%)	77	(100%)	129	9(100%)

Table 18: Conflict and Market-Related Problems by Locations (%)

Note: 1. * Conflict related issues include: bandhs, strikes and blockades. 2. **Others include 'market structures and credit repayments. 3. The respondents were asked to list the top three problems they are facing. The problems listed from the respondents were grouped into three categories (conflict related, conflict plus other and no problem at all) for the purpose of analysis.

Source: FAMS Field Survey, 2006.

The perception of security among the food grain traders, presented in table 19, suggests that almost half of the traders surveyed feel either highly insecure or insecure due to the political situation. Twenty percent of respondents report feeling secure or highly secure.

No	Feeling of the respondents	Frequency	Percentage
1	Highly insecure	13	17.56
2	Insecure	20	27.02
3	Relatively secure	26	35.13
4	Secure	10	13.51
5	Highly secure	5	6.75
	Total	74	100.0

Table 19: Perception of Food Grain Traders on Security Situation

Source: FAMS Field Survey, 2006

8.2 Major Market-Related Indicators Affected

Transport Obstruction: Obstruction of food supply and transportation in rural areas has become a common occurrence in Nepal, with both the Security Forces and rebels obstructing food marketing within their areas of influence. As reported in various issues of the Food Security Bulletins published by WFP/Nepal, Security Forces had restricted the flow of dry foods or ready-made food stuffs to the rebel-influenced areas, while the CPN/M had restricted the supply or marketing of food and agricultural items from their areas of control to district headquarters. In addition, the field survey indicates that 40 percent of respondents report their businesses being frequently affected by conflict-related road damage, including 53% of wholesalers and 32% of retailers surveyed (Table 20).

⁴ WFP Nepal (2004), Food Security Bulletin No 7, November-December.

Focus group discussions in Chitwan revealed that transporters feel insecure because of the potential damage of their vehicles and commodity from landmines, confiscation by the CPN/M, and forced carriage of troops during *bandhs* and strikes. Some transport companies have even withdrawn their services from conflict-affected areas given increasing risk and threats from the conflicting parties. Though obstructions commonly used by both sides are not specifically targeted at civilians or trade, they do affect food supply and undermine food security in conflict areas and beyond.

<u>^</u>	Туре		
Extend of damage	Food grain wholesaler	Food grain wholesaler Food grain retailers	
Not at all	13.3	46.8	33.8
Rarely	33.3	21.2	26.0
Frequently	53.3	31.9	40.2
Total	100.0	100.0	100.0

 Table 20: Impact of Conflict through Damage of Road Infrastructures (percentage)

Source: FAMS Field Survey, 2006

Price Instability: The armed conflict has directly and indirectly affected prices of agricultural products and food commodities. Conflict-related factors affecting food commodity prices are:

- Price fixing by the CPN/M, at prices often less than market rates, in areas under their control.
- Price instability due to *bandhs* and blockades, with sudden price increases in final market points such as Kathmandu and decreases in production or collection centers.
- Price increase created by opportunistic traders and retailers who take advantage of shortages temporarily created by the crisis.
- Price increase, incurred from donations and taxes collected on transport and agricultural export. The levying of additional taxes and fees indirectly raise prices and/or reduce trade flow.

Social and Development Patterns: The social divide and erosion of trust encouraged by the conflict have decreased social capital. Crime has increased and rural communities isolated from development projects. As reported by the Agriculture Development Bank of Nepal (ADB/N) and Chitwan Poultry Association, farmers are losing income due to the conflict and are not able to meet their financial/loan obligations. Nearly 75 percent of small poultry farmers in Chitwan have closed their business. In addition, the ADB/N, Biratnagar reports its medium- and large-scale development programmes have all been suspended in the Eastern region due to the conflict.

Displacement due to the conflict has also increased, particularly after the breakdown of the peace talks in August 2003. As an example, it was reported that approximately 24,000 people of 3,500 households in the Rajapur area of Bardiya left their village due to the conflict⁵.

Changing Gender Participation in Economic Activity: The conflict has empowered and provided greater economic opportunities to women, as gender roles and social relations in affected rural areas have changed in light of the crisis (Ghale and Upreti, 2005). For example, due to the displacement of male household members in Dadeldhura, Achham and Doti, women have taken on additional responsibilities in crop production, livestock rearing and marketing of livestock,

⁵ See Samaya Weekly (Year 2, No 63, Ashad 17-23, 2062/1-7 July 2005) for the detailed story.

horticultural and agricultural products. In addition as their traditional spheres of activity, such as petty trade and road-side sales of vegetables and fruits, have been disrupted by frequent blockades and strikes, women are increasingly engaging in other functions previously performed by males—such as participation in community meetings and discussions, attending funerals, and dealing with security forces or insurgents.

8.3 Concluding Remarks

This chapter suggests that market functioning has weakened in conflict-affected areas due to market closures, induced shortage of goods and services, physical damage of goods and food stuff during transport through unsafe roadways, obstruction of production, processing, transportation and trading of agricultural commodities, damage to physical infrastructure, and price instability due to taxation, donation and transport strikes, blockades and *bandhs*, and feelings of insecurity.

The popular movement of April 2006, however, has brought major change to the socio-political environment and high expectations for an environment conducive to peace and development. With the restoration of Parliament, the nomination of a new government and the declaration of a ceasefire by both the rebels and the government, negotiations are in progress to end a decade of armed conflict and create a more inclusive, democratic and modern state.

In this changing environment, uncertainties remain regarding the sustainability of the current positive political momentum. Three basic scenarios for the future could be envisaged:

- Scenario 1—Negotiated settlement and Peaceful Transition: If the Government of Nepal and the Maoists can reach an agreement, peaceful political development could help improve Nepal's economic performance and living conditions. This optimistic scenario will require an increase of development assistance to consolidate the peace building process and improve market access and functioning in remote areas.
- Scenario 2—Prolonged Uncertainties: If the ceasefire continues but mistrust, tension and accusations between the Government of Nepal and Maoists increases, political uncertainty will persist, weakening the rules of law, delaying economic recovery, and fostering social discontent. Prolonged humanitarian response will be required for the transition period.
- Scenario 3—Deteriorating Situation: If a negotiated settlement cannot be reached and the ceasefire is broken, the country may face renewed economic hardship, with pronounced violence and *bandhs*. In this worse case scenario, markets will be obviously further disrupted, challenging the GON response capacity and increasing the needs for further humanitarian response.

Regardless of which scenario seems likely, it is advisable to continue monitoring and analyzing the socio-political situation through data collection on a few key indicators. This will help inform decision making and facilitate a better understanding of the available response strategies in case of an emergency food security situation. In addition to regular monitoring and analysis of security information and events conducted by the Field Security Officer, district level information on taxes, levies and donations, supplies of goods and their movement would also be useful. This information could be collected by WFP Field Monitors, using key informants interviews with District Agriculture Development Offices, Agricultural Marketing Unit, offices of the Federation of Nepalese Chambers of Commerce, and the Industries/Confederation of Nepalese Industrialists.

Chapter IX: Concluding Recommendations and Monitoring Indicators

The main objective of the WFP-FAO Joint Study on Food and Agricultural Market (FAMS) was to develop an agricultural market profile, providing a general description of how specific national food markets work and identifying the most recurrent crises that may affect markets for food. This concluding chapter summarizes key findings and provides a suggested list of indicators for food security monitoring.

9.1 Key Issues and Recommendations

Key issues related to food markets and food security are identified as follows:

Purchasing power remains low for the majority of the population. The income distribution is uneven with the bottom 80 percent of the population earning 47 percent of total income. Although, it is likely that the overall rural livelihoods have been maintained or improved during the last two decades (1985-2002) due to increasing per capita food availability, dependency on remittances seems to have increased in recent years. Monitoring the patterns of migration at household level is therefore worth pursuing.

The accession of Nepal to WTO is a challenge for the implementation of food sector strategies. Long and medium term food sector strategies and agricultural policies are well established through various national and sectoral plans and contain a clear objective of improving agriculture and food availability. However, the implementation of such policies and strategies is challenged by the accession of Nepal to WTO which requires further efforts in liberalizing, despite the relatively open trade regime. With a trade-to-GDP ratio of more than 50 percent, an average tariff rate of about 14 percent, and virtually no quantitative restrictions, Nepal is one of South Asia's most open and trade-dependent economies.

Foreign supply (mainly from India), either through private or public sources, plays a major role in complimenting the limited domestic food production resulting from low agricultural performance in Nepal. Nationally, Nepal is food insufficient due to limited cultivable soil, low productivity growth and frequent dry winters affecting crop production. It is observed that public intervention and international assistance remains an important source of food supply to Nepal, especially in remote food-deficit areas. Despite its high reserve potential, the operational capacity of NFC has been weakened due to the insurgency and closure of food depots in remote areas. As a result, the overall capacity of the country to meet the needs of vulnerable groups is limited, especially in areas where the private sector has a minimal reach. It is therefore, advisable to explore further partnership between international food aid agencies and NFC on field operations. Given that private traders are reportedly procuring from the Food Corporation of India (FCI) during the replenishment cycle of its buffer stocks, it is also advisable to explore the possibility of direct provision of rice from FCI for cost-effective public intervention.

Private sector involvement in food commodity trade in the hilly and mountain remote areas is limited by weak physical access to markets. Difficult terrain and consequently, weak road connectivity from the main roads and from the district headquarters to rural areas, especially in mountain and hilly areas, are cause of high in-country transportation costs and reduced reach of private traders. Hence, public market intervention through subsidized prices in mountain and hilly districts remains one response to the lack of functioning markets, though at a high operational cost.

The overall food grain market structure is relatively competitive in Nepal, except for large millers/traders. The food grain market channel is one of a tertiary market. It operates with a large number of stakeholders including farmers, *kantawalas*, rice millers, importers, wholesalers and retailers and consumers. Individual farmers are price takers in the marketing system because of their small marketable surpluses and the lack of cooperatives in food grain markets. Large millers/traders play a central role as they process the majority of the produce, accounting for more than 80 percent of traded grains in the market, and determine the rice price based on information collected on production, import and consumption patterns. In this context, some source markets such as Biratnagar and Birgunj and consumers markets such as Kathmandu and Pokhara are instrumental in the price information and transmission system and could be worth monitoring in food security surveillance.

Limited agricultural market facilities and infrastructure is seen as one of the major weaknesses in agricultural marketing at both ends i.e. production and consumption level in Nepal. This situation is posing difficulties in off loading produce to farmers and pick up produce to retailers as well as the consumers. A serious consideration is seen essential for the Government of Nepal and development partners to look into this condition and to improve this situation, in order to strengthen the agricultural marketing system in Nepal.

Price differentials are both seasonal and spatial, with a key role of Indian border markets in the price integration process. In general, the rice price is low during the market arrival months (September-February) which include the main rice harvest season. However, spatial price differentials remain high between the mountain and Terai areas throughout the year due to the relative isolation of the former from functioning markets. Low market prices observed in the Terai are likely due to the surplus status of the majority of these districts and the impact of Indian border markets on the price transmission mechanism to Terai markets. Coarse rice prices in the Terai and Indian border markets are found to be adjusting to each other in the long run.

The impact of the long-standing conflict has caused significant market disruptions. Overall, market functioning has weakened in conflict-affected areas due to market shutdowns, induced shortage of goods and services, physical damage of goods and food stuff incurred during transport on unsafe roadways, obstruction of production, processing, transportation and trading of agricultural commodities, damage of physical infrastructure, and price instability due to taxation, donation and transport strikes, blockades and *bandhs*. Although a worse case scenario cannot be rolled out due to uncertainties in the peace building process, recent progress could support increased economic activity and livelihood recovery.

9.2 Proposal of Monitoring Indicators

Though implementation will depend on priorities and issues of cost effectiveness (i.e. ease, simplicity, importance, frequency and level of disaggregation), a suggested list of indicators for agricultural market monitoring is provided below. It can be noted that most of these indicators

(and related analysis) are available through secondary sources. The existing food security monitoring system (FSMS) of WFP Nepal/VAM is experienced to fulfill both the task of collecting secondary as well as additional primary data, if necessary. However, outsourcing and partnership could be an option in order to minimize costs and burden of the additional workload.

Indicators	What to Analyze?	Where to Collect?		
Macro Environment				
Internal and external trade regulations and Tariffs between India and Nepal	Changes in trade policies related to food sector (including list of sensitive products) Changes in Tariffs Between India and Nepal	Customs; MOICS, Federation of the Nepalese Chamber of Commerce and Industry and other private trader/agro- industry associations		
Trends of Foreign exchange reserves	Most recent data (monthly if possible) on foreign reserves in terms of number of months of imports (comparison with last 3-year trend)	CBS, Nepal Rastra Bank, IMF, World Bank		
Trends of the Exchange rate of the Indian Rupee	Monthly average of official exchange rate (comparison with last 3-year trend)	CBS, Nepal Rastra Bank, IMF, World Bank		
Inflation (Consumer Price Index, CPI)	Monthly and region wise CPI (comparison with last 3-year trend, cereals vs others)	CBS, Nepal Rastra Bank, IMF, World Bank		
Food Availability				
Production trends for rice, wheat, maize and lentil	Most recent figures both at national level and sub-national level (comparison of current production estimates with production in previous 5-year average)	MOAC, FAOSTAT/FAO; USDA, district agricultural development office (DADO), WFP Food Security Monitoring (FSM), Interviews with DADO and farmers		
Prospects of food grain stocks (especially rice and wheat) in India	Trends analysis of FCI buffer stocks (Comparison of current stocks with production in previous 5-year average)	FCI website: http://fciweb.nic.in		
Formal import trends of food grains, especially rice and wheat from major sources such as India	Estimate of imported and exported quantities of main food commodities (specifying the origin or destination)	Customs; CBS, MOICS, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level		
Informal cross border import	Estimate of amount and direction of border trade with India	WFP FSM visit to border checkpoints and Customs		

Suggested Market Indicators for Food Security Monitoring
Market Information and Access						
Market Information and Acce Trends of rice prices from key international markets (India, Vietnam and Thailand) Wholesale and retail food prices	ss Trend analysis using monthly prices, including Indian border-markets Monthly prices for cereals on major market sources and destinations (Biratnagar,	CBS, MOICS, MOAC/Agricultural Marketing Information Bulletins, <u>www.agripricenepal.com</u> , <u>www.indiastat.com</u> , WFP FSM for border markets CBS, MOICS, MOAC/Agricultural Marketing Information				
	Birgunj, Katmandu, Pokhara and Sanfebagar) and local markets	Bulletins, <u>www.agripricenepal.com</u> , Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSM				
Changes in other main sources of income (including remittances)	Monthly changes in employment opportunities, migration flows and unskilled wage rates at district level	CBS household surveys and national accounts, WFP FSM				
Road and transport conditions	Changes of the refinituances Changes of the status of main roads and bridges during the rainy seasons; Changes in transport costs (including fuel prices)	Ministry of Transport, MOAC, MOICS, Federation of the Nepalese Chamber of Commerce and Industry and representatives at district level, WFP FSM				
Shock Monitoring						
Drought	Monthly Rainfall compared to average level of same month during previous 5 years	MOAC, Local weather stations and DADO.				
Conflict	Reporting on any abnormal events and reasons at district level or in rural areas which may affect the food security situation of the population	WFP Security Officer, WFP FSM, District Officers, DADO				

Indicative List of References

- 1. Action Aid (2006): Import Surge in Nepal, a Case Study of Rice, Katmandu, April.
- 2. Anderson, M. (1999): *Do No Harm: How Aid can Support Peace or War?* London: Lynne Rienner Publishers.
- 3. Asian Development Bank (2006), Rising Nepal, April 7. Manila.
- 4. Barrett C. B. (2005): *Spatial Market Integration*, The New Palgrave Dictionnary of Economics, 2nd Edition, London, Palgrave Macmillan, forthcoming.
- 5. Bishwamber Pyakural, Y.B. Thapa and Devesh Roy (2005): *Trade Liberalisation and Food Security in Nepal*, IFPRI, Market Trade and Institution Division, October.
- 6. Central Bureau of Statistics (2004): *Nepal Living Standard Survey, NLSS, 2003/04*, Statistical Report, Kathmandu.
- 7. Devendra P. Chapagain and Hari Phuyal (2003): *A Review of the Agricultural Policies and Legal Regime in Nepal*, FAO, Rome, July.
- 8. Donovan C., M. McGlinchy, J. Staatz and D. Tschirley (2005): *Emergency Needs* Assessments and the Impact of Food Aid on Local Markets, Michigan State University, prepared for UN-WFP, December.
- 9. Gersony, R. (2003): Sowing the Wind: History and Dynamics of the Maoist Revolt in Nepal's *Rapti Hills*, USAID/Mercy Corps International, Kathmandu.
- 10. Ghale, Y. G. and Upreti, B. R. (2005): *Impact of Armed Conflict on Environment and Human life: A Gender Perspective.* A paper presented at the 7th Asia-Pacific NGO's Environmental Conference 4-6 November 2005, in Kathmandu.
- 11. IDD (2005): Report on the Inter-Agency Internal Displacement Division (IDD) Mission to Nepal, 11-22 April 2005.
- 12. Ministry of Finance (2005): *Economic Survey*, Kathmandu.
- 13. MOAC (2002): Agricultural Sector Performance Review, Final Report, January.
- 14. MOAC (2004),): Statistical Information on Nepalese Agriculture, 2003/2004, Kathmandu.
- 15. National Planning Commission (2005): MDG progress report 2005, Kathmandu.
- 16. National Planning Commission: The Tenth Plan (2002-2007), Kathmandu.
- Pokharel, B. (2004): Cost of Conflict in Nepal. A Paper Presented at the Seminar of "Cost of Conflict in Nepal" organised by Nepal Foundation for Advanced Studies, June 9, 2004. Kathmandu.
- 18. Seddon D. and J. Adhikari (2005): *Conflict and Food Security. A Preliminary Analysis*, Kathmandu, RRN.
- 19. Seddon, D. and Hussein, K. (2002): *The Consequence of Conflict: Livelihoods and Development in Nepal*, London: ODI Working Paper 185.
- 20. Taneja, Nisha & Sanjib Pohit (2000): *India's Informal Trade with Bangladesh and Nepal: A Qualitative Assessment*, Indian Council for Research on International Economic Relations, New Delhi.

- 21. UNDP (2004): *Nepal Human Development Report: Empowerment and Poverty Reduction*, UNDP Nepal, Kathmandu.
- 22. Upreti, B. R. (2002): Management of Social and Natural Resource Conflict in Nepal: Realities and Alternatives, Adroit Publishers, New Delhi.
- 23. Upreti, B. R. (2004a): *The Price of Neglect: From Resource Conflict to the Maoist Insurgency in the Himalayan Kingdom*, Brikuti Academic Publications, Kathmandu.
- 24. Upreti, B. R. (2004b): Land Conflict in Nepal: Peasants' Struggle to Change Unequal Agrarian Social Relations. Journal of Community, Work and Family, Vol. 7, No 3, Pp. 371-394.
- 25. Upreti, B. R. (2005): *Working on Conflict: Peace and Conflict Impact Assessment of Commercial Agriculture Development Project in Eastern Nepal*, Asian Development Bank, Final Report, Manila.
- 26. WFP Nepal (2004-2005): Food Security Bulletins, Issues 1 to 10, Kathmandu.
- 27. World Bank (2004): *Multimodal Transit and Trade Facilitation Project*, Implementation Completion Report, Washington D.C., March 18.
- 28. World Bank (2005): Project Appraisal Document on a Proposed Grant to The Kingdom of Nepal for a Rural Access Improvement and Decentralization Project, Washington D.C., May.

ANNEXES

Annex I

List of Persons Contacted

HMG	Person and designation				
Agencies/Organisations					
MOAC	Ganesh K. K.C., Secretary				
	Dr. Krishna B. Shrestha, Joint Secretary				
	Mr. Diwaker Poudayl, Director Agricultural Market Development				
	Directorate				
	Director, DOA				
	RD's, DOA				
	Director, DOLDS				
	Dr. Bajracharaya, Marketing, DOLDS				
Regional/ District Offices	Chief District Officers, District Agricultural Development				
of HMG/N	Officers, Livestocks Development Officers				
	Regional Directors All the districts visited, annex III.				
FNCCI	Dr. Dev B Shakaya, Managing Director, AEC-FNCCI.				
USAID	Mr. Sribindu Bajracharaya,				
FAO	Laxman Gautam				
Nepal Food Corporation	Mr. Sundar Sharma,				
Asian Development Bank	Govinda Gyawali				
World Bank	Dr. Ram Baran Yadab				
Private sector businesses	Pradeep Agrawal,				
	Gyan Enterprises				
	Gyan Food Products				
	Dugar Brothers Concern				
	Jayshree trade and transport Ltd.				
	Golchha Organisation				
	Kedia Organisation				
	KL Dugar Group				
	ML Dugar Group				
	Karmacharaya Group				
	Surya Khadhya Udhyog, Damak				
	Puja Rice Mill, Nepalgunj				



Annex III

Profile of Market Players for Fruits, Vegetables and Livestock Products

- *Farmers:* Vegetable cultivation is becoming more commercial and most produces are destined to urban areas. In rural areas kitchen garden with the household remains a common source of supplies. Farmers grow vegetables in their farm and bring them to the collection/wholesale market, where either wholesaler or their agent purchase produce on price prevalent in the market fixed on private trait. Also, co-operatives established by farmers were found active in marketing of vegetable and provided scope for bundling produce in larger quantities.
- *Wholesaler/Wholesaling*¹: These include organized entrepreneurs who are engaged in getting produce from the farm to consumers using various linkages. The wholesalers based at Kalimati market play a dominant role in vegetable marketing as they are based in the central wholesale market of the country. They operate directly or have agents, buy produce from the traders, and the farmers.
- *Retailers/Hawkers:* Retailers for agricultural produce comprise fixed retail shops (often multi-purpose stores selling all types of grocery items), roofed sheds, and enclosed/lockable publicly owned market sheds and open street markets. Fruits and vegetables are sold by street hawkers, selling from bicycles, four-wheel carts, dokos, tokaris, kharpans, etc.

Figure below presents typical market channels for fresh agricultural produce to consumers. The marketing channel from farmers to consumer indicates various options are available to farmers to reach their produce to ultimate consumers. Agricultural products pass through different channels in reaching to the consumers' table from farmers' fields. Farmers may sell their produce to wholesalers, retailers, commission agents, institutions (schools, restaurants, etc.), cooperatives, or directly to the consumers.





¹ Major fruit and vegetable wholesale markets operating in urban area: 1 Biratnagar (Morang). 2 Janakpur (Dhanusa).
3 Birgunj (Parsa). 4 Narayangadh (Chitwan). 5 Kalimati, 6. New Baneshor, 7. Balaju 6 Butwal (Bhairahawa). 7 Pokhara (Kaski).

Major fruit and vegetable collection centers based in production area: 1 Birtamod (Jhapa), 2 Dharan (Sunsari), 3 Basantapur (Tehrathum), 4 Dhalkebar (Dhanusa), 5 Bardibas, Nawalpur and Lalbandi (Sarlahi), 6 Saruahatta (Rauthat), 7 Hadikhola (Makwanpur), 8 Charikot and Jiri (Dolakha), 9 Tamaghat and Tinpiple (Kavre), 10 Dharke and Dhusa (Dhading), 11 Damauli (Tanahu), 12 Lamahi (Dang), 13 Kapurkot (Salyan), 14 Kohalpur, Banke.

Meat and Poultry

Meat marketing channel is quite simple, in urban area butchers purchase live animals in the designated wholesale markets. In rural areas the butchers collect animals from the farmers in the village or farmers deliver animals at the butchers' shops. In rural areas, groups of villagers getting together, slaughtering animal and distributing meat is a common practice.

- *Farmers:* Commercial livestock raising is limited in the country and the farmers individually or in group bring animal to a common selling area or sell produce to a butcher or butchers pick up animals from the farm gate. Farmers get active selling animals directly to consumers during the festive seasons. Prominent livestock growing areas of Nepal include Lahan market network cluster, Kathmandu urban market cluster, Pokhara market network cluster area and Nepalgunj as well.
- *Collectors/ Collection agents:* these include entrepreneurs that import small ruminants from local area, India and Tibet and sell in larger cities like Kathmandu and Pokhara.
- *Livestock Importers:* These categories of traders are similar to collectors described above but have established contacts with Indian farmers. Based on these contacts, they collect animals in India and drive them to transit markets like Havaldarpur livestock market in Nepalgunj and similar market in Jitpur in Bara districts and other markets. These animals are further dispatched to major consumption centers, wholesale markets like Kathmandu or to their contacts in other consumption center.
- *Retailers:* Retailing of meat and poultry is often mixed and buffalo and pork are sold independently. They are scattered in different locations of urban areas. In these areas local butchers purchase live animal from the wholesale markets and slaughter in their shop and retail meat.

It was found that the majority of butchers are involved in selling mixed produce. 25 to 30 percent of the butchers involved in retailing mentioned that they specialized in selling goat meat. The details of findings are presented in the table below.

Ecological	Products dealt					
Region	Goat	Poultry	Fish	Mixed		
Terai	25.0	8.3	8.3	58.3		
Hills	30.8	23.1	7.7	38.5		

Table A3.1: Livestock Retailers and Products Dealt (N=28)

Source: AMS Field Survey 2006.

Figure A3.2 presents the meat marketing channel in Nepal.



Figure A3.2: Meat marketing Channel

Annex IV

Marketing Channel for Fruits, Vegetables and Livestock

Organized wholesale markets and collection centers exist for horticultural and livestock products. There are altogether 26 collection centers of which 3 centers are managed by co-operatives and remaining 23 collection centers are managed under the GON Directives 2053 BS. It may be noted that 11 out of 38 markets are based in Kathmandu. Livestock raising is more of backyard farming than a commercial venture except for poultry and there are limited markets.

However, the physical conditions of these wholesale or sub-wholesale markets are beset with problems. Poor conditions for the sale of produce are common in almost all municipalities. Facilities are limited, usually with limited market sheds and no provision of water supply or toilets. Even where limited facilities are available, the demand for space is high and the traders spill-out on to adjacent streets. Produce is mostly sold directly on the ground and exposed to the weather, with consequent spoilage, resulting in high losses and hygiene and sanitary threat for consumers.

Fruit and Vegetables

In the urban areas the demand for fruits and vegetables is increasing due to increase in income and rising health consciousness. Correspondingly, GON has been encouraging crop diversification which is increasing domestic vegetables production base catering the urban and sub urban area demand. Almost all quantities of vegetables required for consumption in Nepal are produced domestically. However, the major quantity of fruits is imported. For example apples come from China and India. During November to February, citrus is locally available but in other months orange and lemon are imported from India. Some quantities of banana, papaya and pineapple are produced within the country but the available local quantities are far from adequate to meet the domestic demand.

The field survey identified the sources of produce to these stakeholders. The findings indicate that fruits wholesalers purchase 70 percent of bananas from large wholesalers of the regional markets and remaining 30 percent is purchased from the import markets. A large quantity (62%) of the bananas is purchased by the fruits retailers from wholesaler/regional market source. About 33 percent of bananas is purchased by the fruits and vegetables wholesalers in the Terai ecological zone from each source such as farmers' delivery, local market/collection center and wholesaler/regional market.

More quantity of apples (51%) is found to be purchased from import markets by the apple wholesalers. Whereas, 88 percent of the fruits retailers indicated that they purchase apples from wholesaler/regional market. Overall, 78 percent of the apples are found to be purchased from the large wholesalers and regional market. The wholesaler and regional market source was found equally important source for orange as well. This is evident from the fact that 63 percent and 82 percent of the amount of orange purchased is reported by fruits wholesalers and retailers, respectively. Thirty-three percent of the wholesalers and 11 percent of the retailers were found purchasing orange from import markets.

Livestock

Livestock raising for meat is at infancy stage in Nepal and much of the demand is met through imports. Urban areas constitute major markets for meat products. The village traders and district markets constitute the dominant source of goat in Terai as opposed to farmers' delivery and village traders in the Hills and Mountain. As for buffalo, the main market sources are farmers' delivery, village traders and regional/national market centers for the Terai, regional/national market centers for the hills, and farm gate and village trader for the mountains. Farmers' delivery is the most important source for poultry.

Marketing of livestock is not organized in Nepal. In eastern and central Terai many weekly operating livestock markets exist where all the farmers and village level livestock traders bring animals to livestock market and the traders from the major consumption area like Kathmandu, Pokhara and Hetauda make purchase at these markets. Pricing is done on private trait on head counts based on the estimated live weight. Thus, it is difficult to neither determine the margin taken by the wholesalers nor determine the numbers of traders involved in wholesale business besides the volume of transaction. It is found that all the transactions depend on bargaining power of farmer, trader and retailers.

Livestock	Ecological zone	Sources (%)					
products		Farm	Farmers'	Village	District	Regional/National	Import
		gate	delivery	trader	Market	market	
Goat	Terai	15	8	37	35		5
	Hills	19	35	21		13	13
	Mountain		40	60			
Buffalo	Terai	10	30	20	15	20	5
	Hills		10			80	10
	Mountain	50	10	40			
Poultry	Terai	14	70	3	3	10	
	Hills	14	39	26	14	7	
	Mountain		66	7	27		

Table A4.1: Sources of Livestock for Livestock Retailers

Poultry Marketing: Poultry sector development initiatives were taken by GON some 40 years back, to convert poultry keeping from scavenging system for subsistence to commercialization. The combined efforts of GON and the private sector poultry have resulted in increasing commercialization of the produce. The poultry industry provides employment to an estimated 65 thousand people, per capita egg availability is 25 per year and poultry meat consumption is around 0.7 kilogram² per capita per year. The central region is the largest producer of chicken meat and egg in the country. However, the industry is still characterized by the predominance of backward type small farms.

Marketing channel for poultry is quite complicated as there are many intermediaries involved: i) feed suppliers who provide feed on credit with buy back arrangements for birds after fattening; ii) brokers/wholesaler play a role in providing chicks and take bird after fattening; iii) hatcheries who provide chicks and feed also have buy back guarantee for birds. The marketing channel for poultry meat is presented in figure A4.1 below. It is observed that all stakeholders secure marketing

² MOAC (2003/2004), Statistical information on Nepalese agriculture.

Food and Agricultural Markets in Nepal

right from farmers and farmers normally do not get involved in marketing chickens or egg directly. There are no wholesale markets for poultry in Nepal.



Figure A4.1: Chicken meat marketing channel

Annex V Geographical Settings in Nepal







Annex VII WFP Coverage in Nepal



FOOD AND AGRICULTURAL MARKETS IN NEPAL

