CDRI - Cambodia's Leading Independent
Development Policy Research Institute

Annual Development Review 2008-09

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Annual Development Review 2008-09

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List of Acronyms and Abbreviations

2SLS	Two Stage Least Square
ADB	Asian Development Bank
AFD	Agence Française de Développement
AIG	American International Group
ASEAN	Association of South East Asian Nations
BCR	Benefit-Cost Ratio
BMI-age	Body Mass Index for Age and Sex
CAS	Center for Advanced Study
CBNRM-LI	Community Based Natural Resources Management Learning Institute
CDRI	Cambodia Development Resource Institute
CEDAC	Cambodian Center for Study and Development in Agriculture
CPI	Consumer Price Index
CPP	Cambodian People's Party
EEPSEA	Economy and Environment Programme for South-East Asia
EIU	Economist Intelligence Unit
FAO	Food and Agriculture Organization
FDI	Foreign Direct Investment
FGD	Focus Group Discussion
GDP	Gross Domestic Product
GPS	Global Positioning System
HH	Household
ILO	International Labour Organization
IMF	International Monetary Fund
IRR	Internal Rate of Return
JPY	Japanese Yen
MAFF	Ministry of Agriculture, Forestry and Fisheries
MOPS	Moving Out of Poverty Study
NGOs	Non-Government Organisations
NIEs	Newly Industrialising Economies

NIS	National Institute of Statistics
NPV	Net Present Value
NTFP	Non-Timber Forest Products
OECD	Organisation for Economic Co-Operation and Development
OLS	Ordinary Least Square
OPEC	Organization of the Petroleum Exporting Countries
PDS	Poverty Dynamics Study
PV	Present Value
RGC	Royal Government of Cambodia
SRP	Sam Rainsy Party
Std. Dev	Standard Deviation
USD	US Dollar
WFP	World Food Programme

Khmer Terms Used in the Text

Achar (អាចារ្យ)	assistant to monks
Achnhathor (អាជ្ញាធរ)	authority
Euv (ឪ)	father
Khum (ឃុំ)	commune
Me euv (ម៉ែឪ)	parents
Okhna (ឧកញ៉ា)	title given by the king to people who have made charitable donations worth at least $100,000[1]
Phum (ភូមិ)	village

1 Duong Sokha, "Donations to become Oknha" (in Khmer), written on 14 April 2008, available at www.ka-set.info

Foreword

This new edition of CDRI's *Annual Development Review* is being released at the third annual Cambodia Outlook Conference, a partnership between CDRI and ANZ Royal Bank, held in Phnom Penh on 12 March 2009. The Outlook Conference, on the theme "Cambodia and the Global Crisis: Impact, Policy Responses and Action", again brings together leaders from government, the private sector, research and civil society organisations and the international development community to consider Cambodia's achievements and its future. The opening keynote address of the conference will again be delivered by Samdech Akka Moha Sena Padei Techo Hun Sen, prime minister of the Royal Government of Cambodia.

The conference has this year taken on an added significance, coming at a time when the impacts of the global financial and economic crisis are being felt both in our region and in Cambodia. The conference provides a unique opportunity to share knowledge and to debate the already apparent, and likely, impacts of the crisis, particularly for key sectors of the Cambodian economy—agriculture and rural development, tourism, infrastructure and energy, manufacturing, real, estate, property and construction—and for the poor and vulnerable in Cambodian communities, and priorities for policy response and action.

This 2008–09 *Annual Development Review* is the fourth annual review of significant development issues for Cambodia. This year's review provides a detailed analysis of the impact of high food prices and related policy implications, a micro-view of the impact of rising food prices at village level and some findings of recent CDRI research on leadership in local Cambodian politics, along with an overview of the potential impact of the global financial crisis on the Asia broadly and on Cambodia, particularly on the poor and vulnerable. It also covers issues surrounding the development of rubber plantations in Cambodia and the relationships between hours worked and children's health in rural agricultural communities. The English-language version is accompanied by Khmer-language summaries of each chapter, contained in a separate volume, to broaden the review's audience and accessibility.

At CDRI we hope that the annual Cambodia Outlook Conference, along with the *Annual Development Review* and its associated Khmer summary materials, will continue to make a significant contribution to the broader dissemination of quality development policy research on issues critical to Cambodia's future.

Larry Strange
Executive Director, CDRI
March 2009

Introduction

By: Hossein Jalilian

CHAPTER 1

Introduction

Three major events took place during the last year that would have considerable impact on the economy and social welfare in Cambodia. Two of these, food price increases and the more recent global financial crisis, had global origins and impacts. The third, border issues between Cambodia and Thailand, would have a much narrower regional or local effect. Although a political issue, the last event could potentially have a significant long-term effect for Cambodia because of the resource allocation implications[1] and possible effects on investor sentiment. The focus of this issue of *Annual Development Review,* however, is on the first two events. The first three articles deal with the food price increases, while the fourth addresses the wider regional and local effects of the global financial crisis. The other three articles in this issue deal with important topics that researchers at CDRI have been engaged in.

The article by Jalilian[2] in the second chapter deals with the lessons that can be learned from the food price changes and their consequences for vulnerable groups. Food price increases over the last few years generated considerable debate as to what caused them and how to mitigate their negative impacts on the well-being of the poor and relatively poor everywhere. The article points out that the financial crisis, which started shortly after the most recent food price increases, diverted attention from food. Although the problems caused by the price increases have subsided somewhat due to the reversal of the trends, in some ways they are also compounded by the financial crisis that followed. In particular, financial commitments by some organisations and donors to deal with food price increases' impacts on the poor are not expected to be fully honoured, jeopardising efforts to deal with the problems. In some cases financial crisis has led to the curtailment of food support programmes in poor countries. The objective of the paper is to look briefly into the causes of food price increases and consider their impact on vulnerable groups in general and Cambodia in particular, emphasising the lessons from the changes that have taken place.

The third chapter is a contribution by Chan Sophal[3] on the impact of high food prices in Cambodia. The paper aims to explain the impact of high food prices for both consumers, especially vulnerable groups, and producers. Efforts were made to identify opportunities and obstacles for farmers to benefit from the general increase in agricultural prices. The report draws on both secondary data and primary data generated by a nationally representative sample survey conducted by CDRI in June

1 In his inaugural speech at the third Economic Forum of Cambodia, the prime minister emphasised increased defence spending in the current budget. Arguably, defence competes for resources with economic and social programmes.

2 Hossein Jalilian is the director of research at CDRI.

3 Chan Sophal, until recently a senior research manager at CDRI, is now a research adviser.

2008. Analysis of price trends is based on systemic price collection in Phnom Penh and the provinces by the National Institute of Statistics, the Ministry of Commerce and the Ministry of Agriculture, Forestry and Fisheries. The last collects wholesale prices of agricultural commodities and major inputs in various provinces. To gather the primary data, two types of household survey were conducted. In addition, focus group discussions complemented the household surveys.

Chapter four, by So Sovannarith,[4] deals with the impacts of rising food prices on poverty in the nine study villages that are covered in the Moving Out of Poverty Study. The article focuses on drawing out the lessons on how Cambodia and its farming communities can be better prepared and can better respond to regional and global economic crises. It also reflects the extent to which the survey villagers have benefited from the recent government policies and coped with the rising prices. It attempts as well to explore the short-term consequences of rising prices, which are likely to increase the extent and severity of poverty if unchecked. In the long term there is a bright side, however, for a country with a potentially large surplus of agricultural products; the impact is likely to be positive, provided that steps are taken to ensure that resources, particularly land, are utilised efficiently.

The fifth chapter, written by Jayant Menon,[5] deals with the local and regional impacts of the global financial crisis. He argues that the world is in the midst of an unprecedented financial crisis. We have already witnessed the collapse or near-collapse of several large financial institutions, the weakening of the financial system due to increasing losses on impaired and illiquid assets, rising uncertainty regarding the availability and cost of funding and the further deterioration of loan portfolios. Many warn that there is worse to come. Despite substantial liquidity injections by monetary authorities across the globe, money markets and financial conditions remain stressed. So far, the ASEAN+3 region has weathered the turmoil better than most parts of the world. While the latest IMF projections for 2009 GDP are for the US and the euro zone to contract by 0.7 and 0.5 percent, respectively, developing Asia is still expected to expand by 7.1 percent. Even the newly industrialising economies, all of whom are currently in technical recessions, are expected to rebound and grow by 2.1 percent in 2009. For Cambodia, it appears that growth is likely to remain within the 3-4 percent range for 2009 and 2010. Although this is a sharp fall from the double-digit rates of the past few years, it is nevertheless a healthy and sustainable rate that will ease inflationary pressures. In fact, a silver lining of the growth slow-down and the associated drop in oil and other commodity prices has been the taming of inflation in Cambodia, which had been looming as a major problem before the global crisis hit.

The article by Thon Vimealea[6] *et al.* in chapter six deals with leadership in local politics in Cambodia. Using the state-society gap as its assumption and point of departure, the study seeks to identify different kinds of local leaders (including women leaders)

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4 So Sovannarith is a research fellow at CDRI.

5 Jayant Menon is principal economist at the Office for Regional Economic Integration, Asian Development Bank. He is a member of CDRI's board of directors

6 Thon Vimealea is a research associate at CDRI.

and their associated characteristics and elements of legitimacy in order to see whether and how they can help bridge this gap, in the midst of the decentralisation and deconcentration reform. Interviews with villagers and identified leaders were carried out in six villages of three communes in three rural provinces. For the literature review, the concepts of power, authority and legitimacy were explored in classic and general international literature and the concept of patron-client system, which shapes leadership and governance in south-east Asia, was examined before reviewing Cambodia's history of governance and leadership.

The study found that, for voters, significant leaders are village chiefs, commune councils, elders and *achar* and economic leaders. Knowledge leaders and community-based organisations are virtually absent and not relevant from villagers' point of view. Village committees and commune councils have an average education lower than is needed to carry out their mandates and responsibilities, and the majority are aged 49 and older. Women leaders on average have higher education than their male counterparts and are younger, but they are very new to leadership and so face many challenges, including family attitudes. Administrative leaders have to be associated with a political party if they want to be legitimate because they are dependent upon backing and financing from parties to carry out commune development. Economic leaders are usually more educated and have the wealth needed to contribute to commune development, and so are becoming increasingly powerful and influential. They have networks that link them to national levels, which gives them the benefits of by-passing local authorities, of monopolies and of running their businesses, including illegal activities, smoothly. Elders and *achar* are especially helpful in bridging the gap between authorities and the people via their roles in mobilising labour and contributions for various projects, including religious activities, in helping solve minor domestic conflicts and in participating in commune planning with local authorities. They get along with virtually every actor in their villages and communes. Knowledge leaders emerge only when their possessions are among the resources being threatened. Development assistance leaders usually only provide material assistance and function in a very sporadic manner; they are usually not based in the communes.

As a result of the D&D reform, it was found, the gap between state and society is being bridged, albeit very slowly, unevenly and narrowly. To boost the progress of the reform, functions and the power to carry out their stated mandate and the right to collect taxes should be fully devolved to commune councils. Careful implementation of the organic law will help guarantee this. The Commune/Sangkat Fund should be reconsidered to help curb the distortions that party politics and financing have created in commune councils' accountability and responsiveness. Better, not necessarily more, training is needed to help commune councils. An enabling working environment, including a better pay system, should be created to attract more candidates and reduce petty corruption among commune councillors. Finally, gender promotion should include adequate attention to promotion of women's livelihoods, not just to counting women in councils and training women leaders.

Rubber plantation development in Cambodia and the costs associated with it are the topic of chapter seven. Dararath Yem[7] *et al.* argue that deforestation is one of the most important global environmental issues. The development of rubber plantations is generally considered a major cause of deforestation in developing countries. Gradual increases in the area under rubber are to be seen in many countries in the region. The increasing demand for natural rubber and the high price of latex have been main driving forces of the expansion of land for rubber. The study compared the direct and indirect values of previous land uses with those of rubber plantations, using estimated returns from established rubber plantations of different ages in Kompong Cham and Kompong Thom provinces. One hundred and sixty-four households were randomly selected in seven villages located within or surrounding selected plantations to capture variations in natural resources and rubber income before and after the development of rubber plantations. The fieldwork took place in 2007.

The research findings indicated that after the establishment of the plantation, livelihoods changed rapidly. People lost their main sources of income because they were not allowed to collect timber and non-timber forest products, as they had in the past. Crops lands were lost, and rice yields decreased. Not only were people's movements restricted, but their livestock were banned from grassland within the plantation. However, the company established infrastructure, especially roads, a school and a hospital. Findings from the study included: (1) with no estimate of the costs of environmental damage from their establishment, large rubber plantations could generate slightly more economic benefits than forest conservation; (2) the environmental damage due to forest conversion to rubber plantation is huge; consequently, an environmental service payment should be established for forest conversion schemes; and (3) a social component of forest conversion schemes should receive top priority, especially for economic land concessions, so that benefits can reach local people.

The final article in this edition, written by Han Phoumin,[8] deals with hours worked and children's health in rural agriculture. The paper weighs the empirical evidence and policy implications for working children, using data collected from a field survey in October 2006 to investigate the hours of child agricultural labour and their effect on child health. Furthermore, given that current child labour in agriculture has negative effects on health, the study aims to establish the average hours of child agricultural labour that can be performed without interrupting growth and health. The study finds that agricultural labour has negative effects on children's health if it exceeds 2.5 hours per day. It is also suggested that child health is strongly affected by access to media such as radio, television and newspapers, and to water and sanitation. These findings have policy implications for child agricultural labour, as well as for broader social policy that the paper attempts to deal with.

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7 Dararath Yem is a research fellow and the programme coordinator for the Natural Resources and Environment unit at CDRI.

8 Han Phoumin was a research fellow and programme coordinator for the Social Development unit at CDRI.

Food Price Changes and Their Consequences for Vulnerable Groups: What Lessons Can Be Learned?

By: Hossein Jalilian

CHAPTER 2

Chapter 2 - Food Price Changes and Their Consequences for Vulnerable Groups: What Lessons Can Be Learned?[1]

2.1. INTRODUCTION

Food price increases over the last couple of years, particularly for rice, which is a staple in many countries, generated considerable debate about causes and how to mitigate the negative impacts on the well-being of poor and relatively poor people everywhere. Unfortunately, the financial crisis, which began shortly after the most recent food price increases, diverted attention from food. Although the problems caused by the food price increases have subsided somewhat due to the reversal of the trends, in some ways they are also compounded by the financial crisis. In particular, commitments by some major organisations and donors to deal with the aftermath of food price increases are not expected to be fully honoured, jeopardising efforts to deal with the problems. In some cases, the financial crisis has led to the curtailment of food support programmes. In Cambodia, for example, the World Food Programme abruptly halted its rice distribution to schools, leading to a national appeal for rice donations to compensate.

The immediate impact of the financial crisis on countries that are not fully integrated into world financial markets, or whose financial sectors are not developed and integrated, is not likely to be that severe. Over the medium term, however, the impact may be more severe through the indirect impact on trade and investment flows, for example. The slowing of economic activities in major economies like the US, Europe and Japan will negatively impact export to these economies as well as investment outflows from them; this would also be the case for other OECD members, such as South Korea, which is a major player in East Asia. In Cambodia, this indirect impact may be more severe than the direct impact; garment exports, which form over 90 percent of total goods exports, have already slowed, and with this, garment workers have been laid off (*Phnom Penh Post,* 9 December 2008). Employment in this sector is a major source of income for a large number of workers and their families; loss of employment by these workers would increase hardship for a large number of vulnerable households.

The objective of this note is briefly to look into the causes of food price increases and recent reversals and consider their impact on the vulnerable in general and in Cambodia, emphasising the lessons from the changes that have taken place.

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1 This article is written by Hossein Jalilian, the director of research at CDRI. The author thanks So Sovannarith and particularly Chan Sophal for their useful comments on an earlier version of this paper.

2.2. FOOD PRICE CHANGES IN HISTORICAL CONTEXT

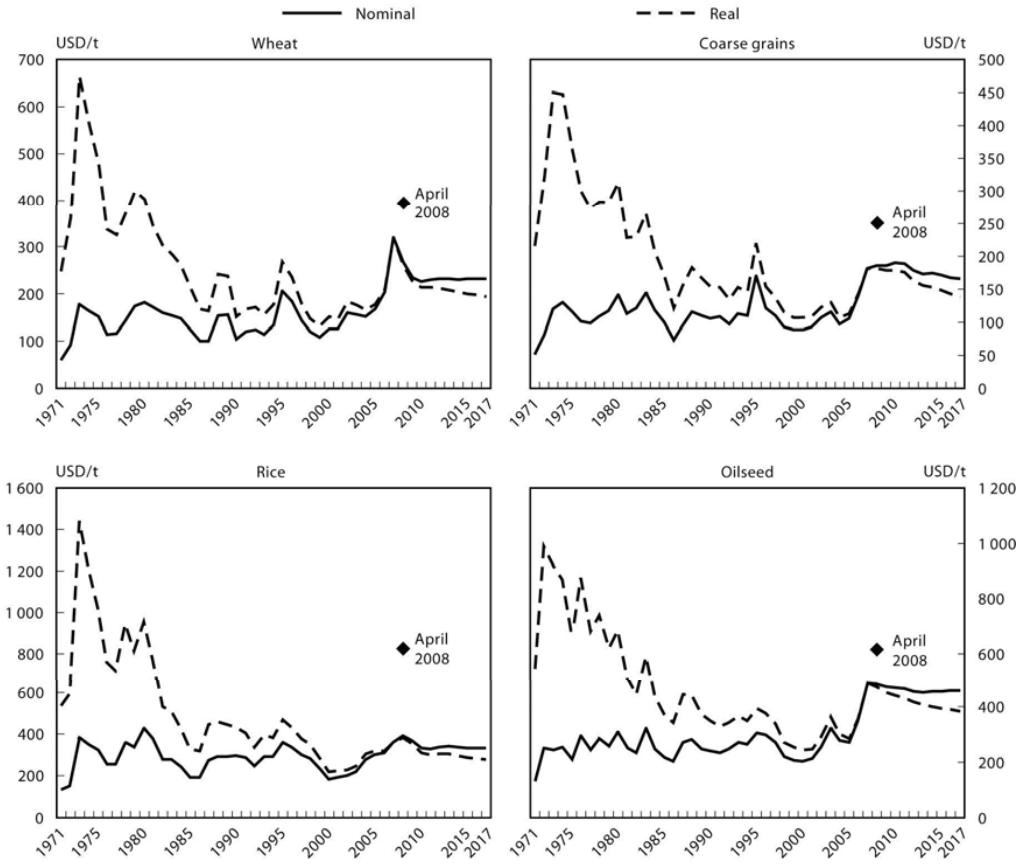
The historical trends of food prices have been downward since 1971, as illustrated in Figure 2.1. Over the period, although there have been sharp increases in real prices of the commodities at certain points, food crops have followed a historical downward trend. Therefore, from a longer term perspective, increased prices do not seem out of line with what has happened in the relatively recent past.

Note that the forecast by OECD-FAO (2008) for the most recent increase in prices of all commodities shown was well below the actual prices in April 2008. As with any forecast, the scenario presented was based on assumptions regarding the movement of variables that affect prices of food crops. In this case the forecasters made certain assumptions about changes in demand that originates from direct and indirect consumption of households, changes in the industrial demand and changes in supply conditions, input prices and productivity. The spikes in prices shown here were generated by factors that could not have been forecast, leading to an underestimation of price increases for the March–April period as well as their sharp decline shortly after.

Going back to the historical movement in prices, the recent increases show one significant difference from what has happened since 1971. The recent increase in prices happened in a period in which food prices have been on an upward trend. As is evident in Figure 2.1, all of the commodities shown have experienced an upward trend since the late 1990s. It is too early to comment on what may happen in the longer term, but the upward trend is expected to continue for the foreseeable future given the changes that have take place in the demand for most directly or indirectly consumed food crops. OCED-FAO (2008) projects that prices of crops such as cereals, rice and oilseeds will be 10 to 35 percent higher for the next 10 years than in the last 10 years. A number of factors have led to the increased demand for food products. Chief among them are demand from some of the fast-growing economies, including China, India, Brazil, Indonesia and South Africa. Others include biofuel production and speculation. Poor weather in recent years has also contributed to the uncertain availability of agriculture commodities.

Increased domestic demand in some fast-growing developing countries has had both direct and indirect impact on the international demand for food crops and subsequently their prices. The increased demand has been either direct because of increased consumption or indirect through demand for products that use agricultural products as inputs. Given the size of increased demand in international markets and the lack of sufficient supply response in the short term, international commodity prices came under pressure to rise.

Figure 2.1: Food Commodity Prices, 1971-2007 with Projections to 2017



Note: Real prices deflated by USA GDP deflator; 2007 = 1 (April 2008: monthly price quotation).
Source: OECD-FAO Agriculture Outlook 2008-2017

Along with the increased direct and indirect demand for food crops, there has been a substantial increase in demand for crops such as corn for industrial use as biofuel. According to OECD-FAO (2008), ethanol production tripled over 2000–07. The same source points out that more than half of the increase in use of both coarse grains and vegetable oil in the recent period was due to their increased use in biofuel. The driving force behind production of ethanol is the biofuel subsidy in the US and other incentives provided in Europe in order to reduce reliance on oil. This has had a direct impact on the price of some crops, and indirectly has led to increased prices of other land-competing products; land used for produce such as wheat, for example, has been converted to corn and maize production to take advantage of the buoyant market for biofuel crops.

The third important factor accounting for the most recent increase in prices, as well as their volatility, is increased speculation.[2] This has been made possible partly by the greater integration of world markets and changes in technology that make it easier to trade. Increased speculation in part was due to the uncertainties generated by poor weather conditions as well as uncertainties in demand.

2.3. CAUSES OF RECENT INCREASES IN FOOD PRICES AND THEIR REVERSAL

If markets operate efficiently and competitively, changes in commodity prices will be driven by supply and demand; demand in this case includes speculative demand and supply includes stockpiles. The supply of agricultural products is also subject to uncertainties because of their sensitivity to weather. Changes in commodity prices in this case are driven by changes in demand, variations in supply or a combination of the two. All of the above factors have played a role in changes in prices of food crops internationally. In what follows we first deal with the causes of increases in food prices and then their reversal.

2.3.1. Increase in Prices of Food Crops

The price increases experienced recently can be explained partially by a combination of increased demand for food grains and contraction in the supply of these products. Factors behind these changes are discussed separately below.

2.3.1.1. Changes in Demand

In addition to the changes explained in the previous section, a major recent impact on food prices originates from speculative demand and hedging for some of these commodities. The uncertainties in demand and supply conditions provide strong incentives for speculation and hedging. Some agricultural products have been subjected to uncertainties in both demand and supply, leading to substantial speculative demand for them in futures and spot markets. Another factor is the increased demand for some food crops used in the biofuel industry. A substantial increase in the price of oil over the last few years was a major factor behind this increased demand.

2.3.1.2. Supply Constraints

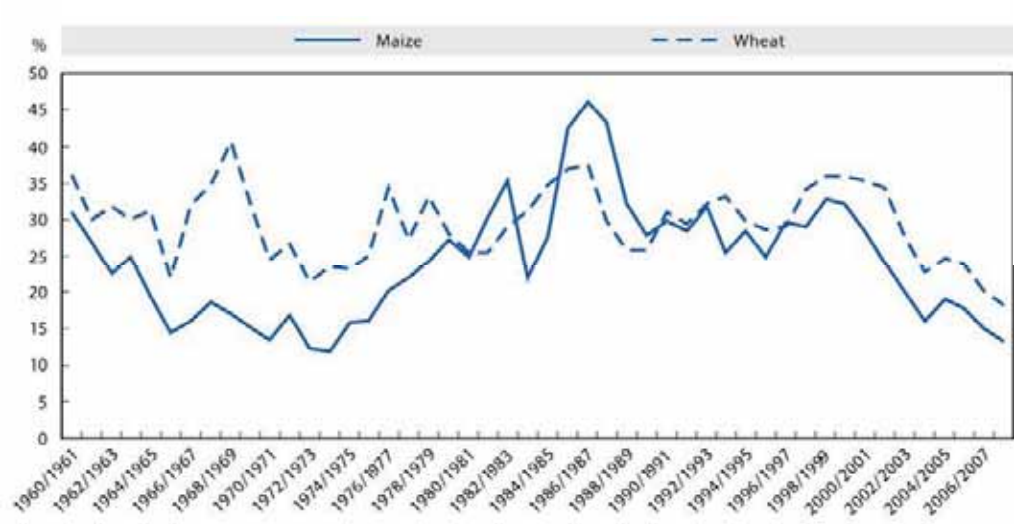
A number of factors have led to a contraction in the supply of some agricultural commodities. Floods and cyclones in parts of North America and Asia were expected to cause considerable damage to production of a number of crops, including food crops. Although not directly affecting the supply of food crops at the time, futures market transactions pushed prices upward to reflect this expectation. In addition, changes in the relative prices of some commodities, in places such as the US and Argentina,

2 According to OECD-FAO (2008), long-time participants in US derivative markets have been surprised by daily price changes in these markets in 2008. "New market participants are seen to bring vast amounts of money and some observers question if they contribute to both the direction and variability of prices in these markets" (p. 37).

caused some of the land allocated to food crops such as wheat to be converted into production of energy crops, further reducing production of food crops.

Other factors have also played a role in the overall availability of food crops. Partially due to the historical decline in prices of most food crops, there has been a reduction in stockpiles. In 2008 in particular, most have been kept low, leading to a lower availability in the market. Figure 2.2 illustrates the case for wheat and maize. Stocks for the two commodities show an overall declining trend since around 1986, and have been falling sharply since 1999.

Figure 2.2: Stocks-to-Use Rations of Maize and Wheat



Source: Adapted from OCED-FAO (2008)

An important contributor to commodity price increases has been the increase in the cost of inputs, particularly energy. In the recent past, prices of energy, particularly oil, have risen to an unprecedented level. There have also been increases in the prices of oil derivatives such as chemical fertilisers. In many developing countries in particular, wage rates are directly linked to food costs; as food prices have risen, so have wage rates for the labour force. This has added further pressure on commodity prices, including food. A recent survey by CDRI reveals that over the last year, average fuel costs have increased by 50–80 percent, fertilisers by 80–200 percent and day labourers' wages by 40–50 percent. These changes have led to increases in production costs of 30 percent for dry-season rice, 70 percent for wet-season rice and 45 percent for maize, cassava and soybeans (CDRI 2008).

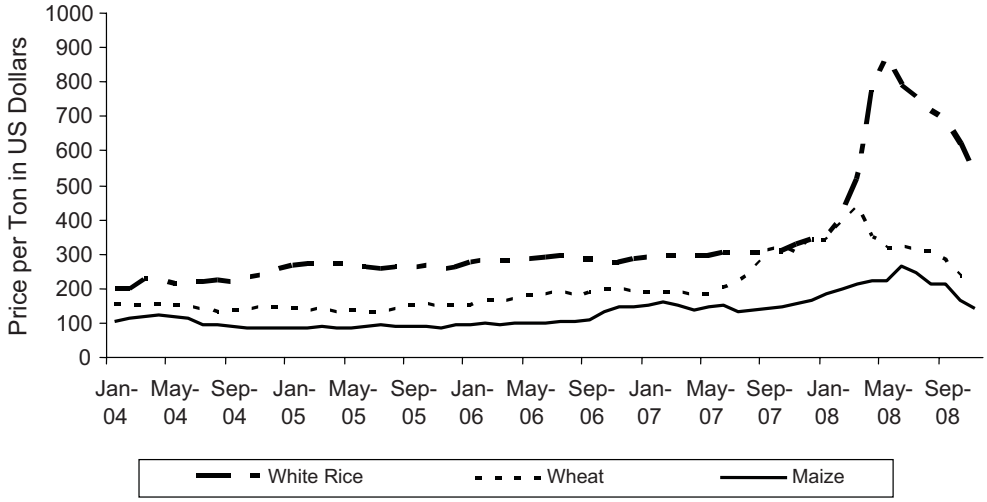
Another cause of increased prices was the substantial depreciation of the US dollar against most other major currencies, particularly in countries that have pegged their currency to the dollar. Quoting recent World Bank studies, Brahambhatt and Christiaensen (2008) argue that rising energy and fertiliser prices, combined with the depreciation in the dollar, contributed about 35 percent of the rise in world food prices.

Hoarding and a ban on the export of some food crops, particularly rice, were other factors contributing to the spike in prices. Hoarding led to domestic shortages of food commodities; export bans reduced the international availability of some. Both led to further panic buying, hoarding and increases in prices. (In Cambodia, hoarding occurred only in the second quarter of 2008.)

2.3.2. Recent Reversal of Prices of Food Commodities

Figure 2.3 shows the change in international prices of three food crops from January 2004 to September 2008. For most of the period, the price of grains shown was relatively stable. In the most recent period, however, they all show a steady increase in prices, which continued till March 2008. The price of rice increased sharply from January 2008, reaching its high point, along with maize, in April–May last year. Since then all prices have declined substantially, although the rice price is still above its March level. What accounts for this reversal?

Figure 2.3: Grain Prices



Source: FAO (2008)

The same factors that explain increased prices can also explain their reversal; that is, changes in demand and supply conditions, including expected changes. Expectation in this case seems to have played a much bigger role than actual changes. The substantial reduction in prices of some commodities that were subjected to heavy speculation was due to the reversal of expectations about future demand and supply. The worldwide financial crisis also had a critical role in this reversal; the expectation was that economies worldwide would slow down, and as a result demand for agricultural products would fall. It was also expected that the prices of important inputs, such as oil and fertiliser, would follow the same trend, leading to lower production costs and therefore improved supply. The oil price at present, for example, is more than 60 percent lower than earlier in 2008. The fall in the price of oil may also have dampened demand for biofuel and

additives such as ethanol, leading to a drop in the price of cassava and corn. Another factor explaining the drop in prices is that damage to crops by natural calamities was not as bad as expected.

To what extent the fall in price of food crops is an overreaction to market conditions and rather pessimistic expectations of future demand remains to be seen. However, given the heavy speculation in most of these commodities and the subsequent over-selling, the present reduction in prices may not last long.

2.3.3. Food Prices in Future

Demand conditions are expected to remain strong although the recent financial crisis is expected to dampen the increases; most of the countries that have been behind the directly and indirectly increased demand, such as China and India, are expected to grow fast albeit not at fast as they did until recently. However, more and more bad news seems to be coming out of China

In regard to speculative demand, forecast shortages did not materialise. Shortfalls in production seem to have been far less than expected. Therefore the speculative attack is expected to moderate, as seems to have happened already.

In terms of supply, core factors of production include land, water, energy, fertiliser, seeds and institutional, governance and management issues. Any change in the amount of production would be directly linked to change in one or a combination of these inputs. Arable land worldwide is relatively scarce, although its distribution varies between countries; in Cambodia, land is relatively plentiful. The relative land abundance here and in a few other countries of the region has attracted investment in agriculture from land-scarce countries such as Saudi Arabia and Kuwait. Cambodia and Laos also have policies of land concessions to foreign investors engaged in agribusiness.

Water is another scarce commodity worldwide, although again there is considerable variation between countries. In Cambodia it is not water availability but its control and management that are limitations. A better management of this resource and land would considerably improve agricultural productivity.

Energy prices, particularly oil, have a direct and indirect impact on the cost of production. Variation in oil prices not only affects its use in production but also that of its derivatives such as chemical fertilisers and tar, which is an important input for road infrastructure. Given the reduction of prices of oil and oil derivatives, these supply constraints are likely to be relaxed. There is again a question mark as to whether the current decline in price, which is partly due to a pessimistic outlook about future economic activities, will be sustainable. As the upward trend in price was driven partly by speculation, the downward trend also seems to have been affected by that factor.
In the medium to long-term outlook for food crop production, any increase would have to come from better management of resources and/or increased productivity based on biotechnology. Because arable land and water resources are in relatively short supply worldwide, increases in overall world production would have to come

from improved production techniques and improvements in seeds and yields. There has already been considerable improvement in biotechnology and particularly the improvement of seeds, which is expected to continue.

Resources management and the institutional and governance contexts within which production take place are severe constraints in some countries. In Cambodia they have imposed considerable limitations on productive activities, including agriculture. These relate to the diffuse ownership of land, lack of an appropriate management structure for the control and use of water resources and problems of governance and institutional support for productive activities in general. There is also considerable variation in the use of hybrid seeds and fertilisers by farmers, an area that requires careful attention. Various CDRI publications highlight these problems (see Fitzgerald & So 2007; Ballard 2007; CDRI 2007a; CDRI 2007b; Horng & Craig 2008; Pak & Craig 2008).

In summary, various factors are likely to affect both supply and demand conditions internationally and locally. Given that supply responses (in the short run) are likely to be much slower than demand changes, and that demand for food crops is likely to continue an overall upward trend, prices of these commodities over the short to medium term are likely to trend upward. At present, however, due to various demand reversals, prices of most food commodities are on the decline. These price changes should be seen as a market correction for the recent unprecedented and unwarranted increases in prices of some crops. In the longer term, both demand and supply for food crops are likely to increase. Increased prosperity, particularly in developing countries, and the changes in diet that this will bring would lead to direct and indirect increases in demand for food. Supply of these commodities will also increase, developing countries contributing significantly to this. These increases will come about not so much from increased allocation of land to production, but from more effective use of resources and particularly improved yield. What happens to prices depends on the rate of growth of demand and supply for the commodities concerned; energy price changes, particularly oil, play an important role in this. The consensus is that nominal prices of some key commodities, such as rice and maize, will continue their upward trends although at a more moderate rate.

2.4. IMPACT OF FOOD PRICE INCREASES ON THE POOR

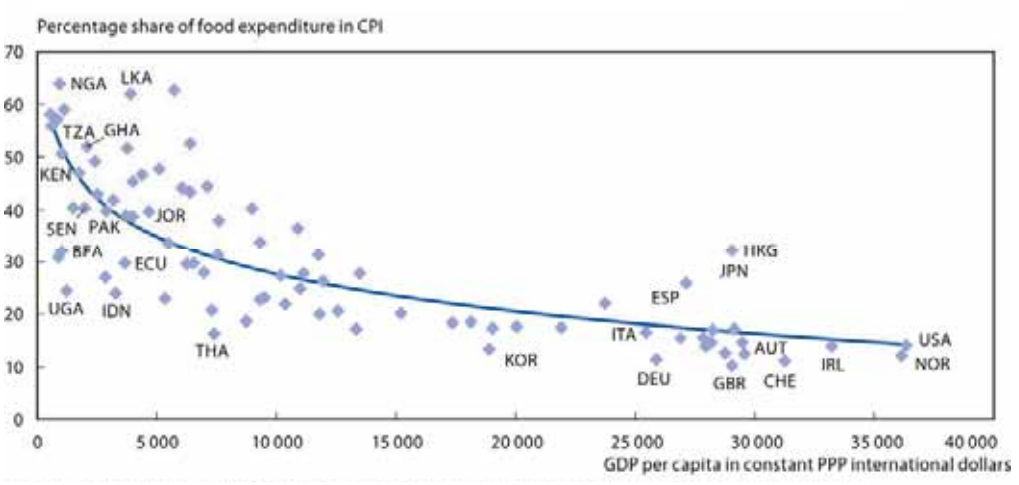
The impact of any price increase on consumers varies inversely with the extent of their possibility of substitution for the commodity in question. When the price of a commodity increases, consumers may switch to cheaper substitutes. However, when the change in price affects a bundle of goods, such as food commodities, the degree of substitution is reduced, and therefore coping mechanisms are different. With food commodities, the degree of substitution for the poor in particular is very limited.

Substitutions at times may generate further undesirable outcomes. Increased food prices may divert consumption away from grain to alternatives such as fish, leading to depletion of this resource. This appears to be the case in Cambodia; over-fishing that is partially due to increased grain prices has led to a considerable reduction in

fish stocks in the Tonle Sap Lake and in rivers. (Decline of fish stocks has also been attributed to fish exports to Thailand and other countries in the region.)

The degree to which households are affected by increased food prices depends largely on the proportion of their income allocated to food. Poorer countries and households generally spend a larger proportion of their income on food than richer nations and households. As indicated in Figure 2.4, food expenditure as a percentage of per capita income declines as income increases; on average poorer countries spend a much a larger share of their income on food than richer countries. According to Brahambhatt and Christiaensen (2008), east Asian households on average spend between 2 and 3.5 times more on food than those in developed economies such as the US and Europe. For the region as a whole, food represents 30–50 percent of total consumption. In Cambodia, the food share for urban consumers is 40 percent and for rural households 59 percent. According to the recent CDRI survey, in the two lowest income quintiles in Cambodia, food accounts for 70 percent of the total household expenditure.

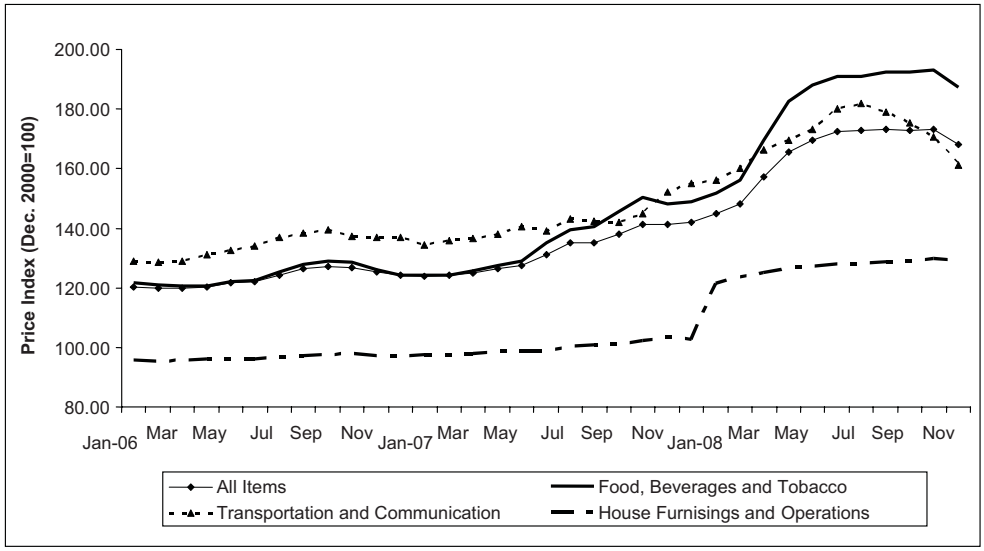
Figure 2.4: Food Expenditure Shares and per Capita Income



Source: Adapted from OECD-FAO (2008)

To the extent that rates of inflation for food and non-food items are different, different household groups would be affected differently by increased food prices. Given the recent substantial rise in prices of food, it is to be expected that the poorer section of society would be affected more severely than better-off households. Figure 2.5 shows consumer price indices for a few major consumption items in Phnom Penh. It is clear that food price inflation has been much higher than for non-food; the picture is similar in Cambodia as a whole. If not compensated or supported, the poor would be severely affected by the price rises. CDRI (2008) provides ample evidence of this.

Figure 2.5: Consumer Price Index by Major Commodity Group



Source: NIS (2008)

Change in food prices is also directly linked to wage rates; as prices increase, wages are likely to increase as well, with some lag. As wages increase, so do the overall earnings of the household and therefore its command over commodities. Therefore, in order to consider effects of food price increases, it is also important to consider whether they have been accompanied by changes in wages or income. For Cambodia as a whole, a recent survey indicated that unskilled wages had gone up by about 50 percent over the previous year (CDRI 2008).

Another factor is the role that policy makers, donors and NGOs may play. In some countries, when the poor face increased hardship, they are assisted directly or indirectly by government, donors and NGOs. This support may come in kind or as price subsidy, food ration, food coupons, work for food, school meals etc. In the most recent price increases, after delays in some cases, international donors and NGOs started support programmes in some developing countries. However before some of the programmes had begun, the financial crisis occurred, imposing considerable constraints on the resources available to deliver the promises made. For example, the World Food Programme, facing financial difficulties, cut some of its existing support programmes such as provision of school meals, further pushing some families into destitution. Bilateral and multilateral assistance to help some hard-hit countries was cut in some cases. In Cambodia, however, USD40 million was allocated to food emergency assistance for poor households by the ADB (USD35 million) and government (USD$5 million). Free food was distributed in October 2008

In most developing economies, particularly where a large section of the population is rural and engaged in agriculture, a factor to consider is the extent of self-sufficiency of households. Increased food prices, in the absence of other changes, will not have any impact on subsistence farmers, for example. However, as already discussed, the increase

of food prices in this case has been associated with a substantial increase in prices of energy and fertilisers. Subsistence farmers who use inputs whose prices have increased would be adversely affected. In cases where a household is in food deficit, other things being equal, increased prices of food would impact on its well-being and poverty status. The urban poor, in the absence of wage increases to compensate fully for food price increases, are expected to face severe food shortages and therefore increased poverty and depth of poverty. Given the limited employment alternatives of the rural poor, they may face a more severe situation; their coping strategies would be limited. According to Brahambhatt and Christiaensen (2008), 25.8 percent of smallholders in Cambodia are net purchasers of food, as are 11.5 percent of the rural landless and 8.4 percent of the urban poor. These groups would be among the hardest hit by food price increases. CDRI's most recent survey on this issue estimated that 65 percent of rural households are net food buyers (20 percent landless, 45 percent land poor). CDRI (2008) found increased poverty and poverty depth, greater indebtedness and sale of assets, particularly land, to cover food shortfalls among the marginal groups. Sale of land and other productive assets is particularly serious since it may jeopardise future livelihood.

Wodon *et al.* (2008), looking at the impact of increasing food prices on the poor in some countries of sub-Saharan Africa, found increased poverty and poverty depth in all the countries under study. Based on simulations for different increases in prices of selected food items, they came to the conclusion that a 50 percent increase in prices of these items increased the poverty average for this region between 2.5 and 4.4 percentage points. Given differences in the coping strategies between rural and urban poor, their study suggests an average increase of between 3.7 and 5.2 percentage points in urban poverty and 2.2 and 4.1 percentage points in rural poverty. If poverty in the region is increased by 3.5 percentage points, this implies an extra 30 million poor. However, the study found that poverty depth would increase much more in rural areas than in urban areas.

The groups likely to benefit are food surplus countries or groups within a country. This depends on the extent of the surplus, since the increased price of outputs is accompanied by increased input prices. Since input price increases are applied to all production, there is a surplus threshold beyond which they would benefit.[3] For many food surplus households in Cambodia, the surplus is relatively small, below the threshold to make them better off. CDRI (2008) found that only 35 percent of rural farmers have a potential surplus to sell. Another factor to consider relates to the role of market intermediaries; increased prices may not go directly to the farmers, being

3 For example, if a household is producing (1000+a) units of a crop, requiring 1000 units for own consumption, then if input costs have increased by 50 percent and output prices by 100 percent, the threshold can be calculated from the following relationship: (1000+a)*50 = a*100, giving a=1000. The left hand side of the relationship gives the extra cost of production and the right hand side extra revenue; the threshold is where the two are equal. The household in the example would benefit from the food price increase if it produces more than 1000 extra units.

at least partially extracted by intermediaries. There is considerable evidence of this in Cambodia.[4]

2.5. POLICY IMPLICATIONS

Although food prices are declining at present, the adverse effects of increases on the poor continue. The worldwide financial crisis has exacerbated the problem and can be expected to worsen the condition of some poor countries and poor households. Given that governments and policy makers in developing countries were mostly caught unprepared, what can be learned from the experience that may help avoid similar problems in the future? The policy responses and implications that follow from the recent problems are likely to be the same under any economic shock. The poor in the region suffered badly from the Asian financial crisis; many are likely to suffer from the current world crisis. The fallout from the recent financial crisis may be as serious if not more so. Vulnerable groups, because of their economic and social status, are among the first to suffer from any sort of shock.

The policy implications of dealing with the problem will be different in the short and long term, and possibly different for different countries. Table 2.1 provides a summary policy responses from different countries in the region.

Table 2.1: Near-Term Policy Responses to Rising Food Prices

Country	Economy-wide policies					Existing social protection programmes			
	Reduce Import Tariffs	Export Restrictions Export tax	Reduce Food grain taxes	Price Controls Consumer Subsidies	Increase Supply Using Stocks	Cash Transfer	Food for work	Food Ration Stamp	School Feeding
Cambodia		x	x		x		x		x
China	X	x	x	X	x	x			x
Fiji	X		x	X					
Indonesia	x	x	x	X	x			x	
Laos									
Malaysia				X	x				
Mongolia			x	X	x				
Papua NG									
Philippines				X	x				x
Solomon Islands	x			X					
Thailand				X					
Timor Leste				X	x		x		x
Vietnam		x							

Source: World Bank staff assessment, as reported in Brahambhatt & Christiaensen (2008)

4 A study under way at CDRI on the Greater Mekong Sub-region agricultural trade provides some evidence. The study should be ready for publication soon.

It is clear from the table that country responses to the crisis were different in different countries within east Asia; some adopted a more interventionist approach than others. The policy responses do not seem to be directly linked to the state of poverty in the country, although those with a larger absolute level of poverty, such as China and Indonesia, seem to have introduced more policy changes than others. Whether the policy changes are appropriate to deal with poverty in the long run is another issue. Empirical studies have produced mixed results although generally confirming the proposition that trade restrictions, if not properly designed and monitored, may harm the economy and the poor in the longer term although possibly provide a short-term respite (Wodon *et al.* 2008).

Given the extent of vulnerability of poor households, it is important that short-term steps be taken to protect them. These steps include direct support through distribution of food and food vouchers, food rationing, income support, food for work, school meals and establishment of food banks, the last being more of a medium-term policy option. Foods banks are likely to be a good investment because they reduce the considerable transaction costs involved in trade of food crops. Price controls, export bans and similar tools are likely to have long-term adverse effects on both the economy and the poor.

Longer term steps should be taken to improve food security and reduce vulnerability. Improving growth along an "inclusive" path is the surest way of achieving this. Given that the poor in many developing countries mostly live in rural areas, particular attention should be paid to the state of agriculture. High prices of food grains are expected to continue in the short to medium term. As well as producing challenges that have already been discussed, this presents opportunities for the agriculture sector in some countries. Increased prices will provide incentives to make better use of land and improve efficiency in production. This presents an opportunity for policy makers to engage more fully in the agriculture sector, assisting in the introduction and uptake of better and improved seeds, improving irrigation facilities, distributing fertilisers at reasonable prices, improving rural technical and vocational education; the list is endless. Rural communities face considerable transaction costs in production and trade of agricultural commodities. Infrastructure development—physical, social and financial—will help to reduce these heavy costs and improve productivity.

There is also scope for improving international cooperation and trade, particularly regionally, in key food crops such as rice. Thailand and potentially Cambodia are major producers and exporters of rice within the region, while a number of Middle Eastern countries and some in sub-Saharan Africa are major importers. Multilateral or bilateral agreements between exporters and importers may be a way to reduce destabilising uncertainties regarding international trade in these commodities. It was recently reported that Iranian and Thai officials are discussing trade of oil for rice, which may prove beneficial to both. Cambodia recently signed an agreement with Senegal to export a portion of its rice surplus to that country (*Economics Today,* Vol. 2, No. 28).

A serious constraint on policy making and implementation in most poor countries is bureaucratic capacity in designing and, particularly, implementing appropriate policies.

To improve the situation, a certain level of decentralisation and empowerment of regional and local authorities is required to deal with location issues. In Cambodia, enactment and implementation of the "organic law" may be a significant step in relaxing some of the administrative and bureaucratic burdens that the rural population in particular is facing (see RGC2008)

2.6. CONCLUSION

Food price rises have now subsided, but the problems that vulnerable groups within a large number of developing countries faced initially still continue and are likely to get worse. The world financial crisis is likely to add to the hardship and make it more difficult to address the problems of the poor.

Poor or marginal groups and countries are likely to be the first to be adversely affected when an economy is hit by any type of shock. They are the first to lose their livelihoods or face financial hardship when prices of essential commodities increase; the causes of these shocks are secondary issues. Their coping mechanisms are very limited, and any shock is likely to push them further into poverty. Some strategies, such as the sale of assets, may increase their vulnerability. To prevent this, it is important that policy makers, donors, NGOs and others move fast to implement short and medium-term policies to assist the poor. The best long-term strategy is to lift the vulnerable group well above the vulnerability level. This is easier said than done. Vulnerability and poverty are symptoms of larger developmental problems; dealing with these requires careful design and implementation of policies that are lacking in many poor countries, including Cambodia. The surest way of coming out of poverty is to encourage an "inclusive" growth that provides equal opportunity to participate in the growth process. Given the concentration of the poor in rural areas, particular attention should be paid to the state of agriculture. These are medium to long-term strategies to lift the economy and the poor. With unforeseen shocks such as the food price rises or the financial crisis, it is important to respond quickly and efficiently in the short term as well. Some of the short-term options may have adverse long-term effects on the economy and the poor that should be avoided, although resources required for tackling short-term problems may have to come from those planned for longer term investment.

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Impact of High Food Prices in Cambodia

By: Chan Sophal

CHAPTER 3

Chapter 3 - Impact of High Food Prices in Cambodia[1]

3.1. INTRODUCTION

Prices of food and oil rose rapidly in Cambodia in the first half of 2008, only to slow in the second half of the year. Year-on-year inflation as measured by the consumer price index went from a high of 13.7 percent in January to 25.7 percent in May and gradually declined to 13.5 percent in December, according to the National Institute of Statistics (NIS), which suspended the release of the CPI for some months until the national elections in July 2008 were over.[2] The CPI for food items rose most rapidly, by 36.8 percent in July, slowing to 23.2 percent in December. The price of rice, the most commonly consumed staple, jumped by approximately 100 percent in May and remained 70 percent higher than a year earlier in December. Fuel prices skyrocketed and plunged according to the international prices. The high inflation was largely attributable to international forces because Cambodia is a price taker for fuels that also receives high prices for agricultural exports. For instance, prices of rice in international markets were up by about 180 percent between July 2007 and June 2008.

While surplus producers and traders made handsome profits from the sudden rise in prices of agricultural commodities, a chief concern was the food security status of the Cambodian poor, who still accounted for about 31 percent of the population or 4 million people in 2008.[3] Food consumption for the poorest two quintiles is 70 percent of total household expenditure. Moreover, 65 percent of rural households are either landless or land poor, according to the 2004 Cambodia Socio-Economic Survey (20 percent landless and 45 percent owning one hectare or less). One hectare of rice land produces a bare minimum of rice for a household of five, assuming the whole product can be kept for consumption.[4] Therefore, the majority of rural residents do not produce a surplus but are net buyers of rice. Even among the net producers of wet season rice, much of the paddy was sold soon after the harvest, in November and December 2007, when the price had not yet increased significantly.

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1 Chan Sophal, until recently a senior research manager at CDRI, is now a research adviser.

2 Inflation would have been above 30 percent during the second quarter of 2008 if the new method of calculating, which gives more weight to food and gasoline, had been used.

3 The poverty rate in 2004 was 34.7 percent according to the World Bank (2006). No other figures on poverty have been produced since then. Assuming poverty reduction at 1.2 percent per annum, as in World Bank (2006), the poverty rate in 2008 would be 30 percent.

4 One hectare of rice land produces 2.5 tonnes of paddy rice on average. Production costs account for roughly 50 percent, thus leaving 1.25 tonnes for five people to consume at the average rate of 250 kg of paddy per year. Many households sell part of their produce soon after harvest although the whole produce is not sufficient for a year's consumption, and buy back milled rice in the period leading up to the next harvest.

Cambodia was not alone in experiencing this unusually high inflation. Von Braun (2007), World Bank (2008) and FAO (2008) expressed a strong concern about the impact of high commodity prices on developing countries, especially on the net food importers, mostly located in sub-Saharan Africa, and on the poorest sectors of the population, characterised by a higher percentage of basic food expenditure in total expenditure. At the same time, high international commodity prices may be a unique incentive to boost agricultural production in many developing countries, favouring rural development and supporting sustainable rural livelihoods. Whether this is actually happening, and under what conditions this would favour smallholder production, would be of study interest.

This report aims to explain the impact of high food prices for both consumers, especially vulnerable groups, and producers. Efforts were made to identify opportunities and obstacles for farmers to benefit from the increase in agricultural prices. The report draws on both secondary data and primary data generated by a nationally representative sample survey (CDRI 2008). Analysis of price trends is based on price collection in Phnom Penh and the provinces by NIS, the Ministry of Commerce and the Ministry of Agriculture, Forestry and Fisheries (MAFF). MAFF collects wholesale prices of agricultural commodities and major inputs in various provinces. For the primary data, two types of household survey were conducted for different objectives. Focus group discussions complemented the household surveys. Details of each data generation method are summarised below.

The nationally representative survey selected 2235 households on a random, probability proportional to size, method. Covering 24 provinces and 149 villages (15 households per village), the survey was used to assess how high food prices affected the households in different locations and what coping strategies were being employed by adversely affected households. It also attempted to capture a dynamic picture of the agricultural situation in the aftermath of rising costs and prices. In addition, 14 "target villages" were selected to represent special areas of interest such as the urban poor, the rural poor, wet-season rice farmers, dry-season farmers, fishing communities and cash crop producers, which theoretically have been affected differently by high prices. In each target village, about 70 households were randomly chosen for interviews and thus a total of 991 households were in the sample.

Following the introduction, Section 2 present the data on price trends based on various data sources. Section 3 assesses the impact on household food security and Section 4 discusses the responses households adopted to cope with rising prices. Section 5 addresses the potentials for and constraints on increasing food production to increase farmers' incomes. Section 6 concludes with policy recommendations.

3.2. PRICE TRENDS

Cambodia has faced rising prices of consumer and producer goods, essentially food, fuels and labour. The consumer price index in May 2008 was up 25.7 percent from May 2007 and remained relatively high at 13.5 percent in December 2008 (Table 3.1).[5] The

5 Year-on-year inflation in 2006 was 5.1 percent. By the end of 2007, overall inflation was 10.8 percent, while the prices of food and beverages were up 21.3 percent.

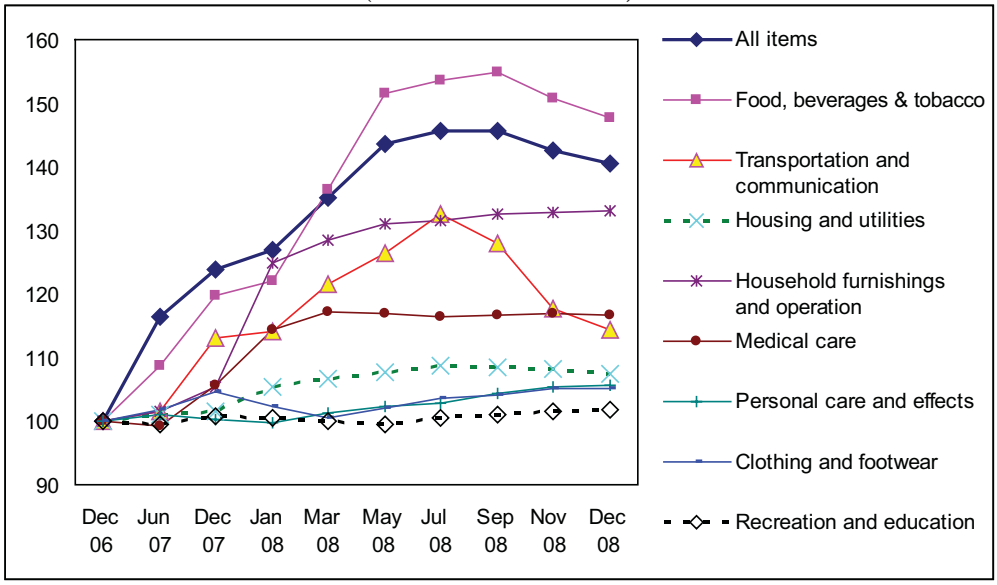
category food, beverages and tobacco contributed the most to inflation throughout 2008; inflation in this category was as high as 45.8 percent in May. Due to the sharp rise in oil prices, the cost rise of transportation and communication was above 20 percent in the second quarter. The price index of furniture and household operations was up more than 20 percent for most of the year. At the low end were personal care and effects, clothing and footwear, recreation and education (Figure 3.1).

Table 3.1: Inflation Rate in Phnom Penh, December 2007 to December 2008
(%, year on year)

	Dec 07	Jan 08	Mar 08	May 08	July 08	Aug 08	Oct 08	Nov 08	Dec 08
All items	10.8	13.7	20.3	25.7	22.3	22.6	18.1	15.7	13.5
Food, beverages & tobacco	19.8	22.2	34.9	45.8	36.8	36.9	28.7	26.3	23.2
Transportation and communication	13.0	16.3	22.0	23.4	27.1	25.8	17.6	6.0	1.1
Housing and utilities	1.6	5.3	6.5	7.2	8.1	7.9	7.4	7.0	5.8
House furniture and household operation	5.4	24.6	27.7	29.1	27.3	27.4	26.9	25.0	26.1
Medical care	5.5	14.4	17.2	16.5	16.2	11.2	11.1	10.8	10.6
Personal care and effects	0.4	(0.4)	0.8	1.4	2.3	2.2	5.3	5.2	5.3
Clothing and footwear	4.6	2.3	(1.4)	0.8	1.3	0.8	0.2	(0.0)	0.5
Recreation and education	0.9	0.6	(0.3)	(0.7)	(8.1)	(0.5)	(1.3)	0.2	0.9

Source: NIS, Ministry of Planning

Figure 3.1: Consumer Price Index in Phnom Penh, December 2006 to December 2008
(December 2006 = 100)



Source: NIS, Ministry of Planning

Table 3.2: Retail Prices of Essential Food Items in Phnom Penh Markets from January to December 2008 (riels, per kg unless otherwise specified)

Essential Food Item	Jan 08	Feb 08	Mar 08	Apr 08	May 08	Jun 08	Aug 08	Oct 08	Dec 08
Rice (top quality)	1650	1750	2320	2820	3100	3150	3180	3150	2670
Rice (2nd quality)	1420	1530	2010	2460	2600	2650	2676	2670	2430
Pork without fat	17,050	17,250	18,250	19,000	19,550	19,650	18,750	18,300	15,950
Pork with fat	13,250	13,545	14,200	15,650	16,100	15,800	15,250	15,000	13,900
Beef No.1	18,200	18,450	18,500	20,500	21,300	22,150	22,600	22,700	22,925
Dressed chicken No 1	15,275	15,450	15,800	16,700	16,850	17,800	18,075	17,800	16,950
Mud fish (large)	13,400	13,525	14,275	14,600	13,620	13,670	14,175	14,700	12,750
Mud fish (small)	10,025	10,550	11,250	11,000	11,325	11,600	12,100	12,575	11,450
Cat fish	10,250	10,550	11,000	10,975	11,150	11,075	11,250	11,500	10,075
Sea fish (small)	6895	7000	7260	7325	7640	7700	7813	8150	7350
Shrimps	22,600	21,100	22,025	22,300	23,275	23,410	23,480	24,400	23,750
Crabs	18,950	18,050	18,900	20,600	21,800	22,300	22,025	22,450	22,265
Smoked fish	960	1000	1040	1140	1240	1260	1280	1320	1270
Fish paste (Prahok)	4285	4300	4565	5200	5700	5790	5875	6000	5830
Dried fish	23,550	23,150	24,250	25,200	27,500	28,000	29,070	30,500	30,200
Chicken eggs (one)	360	370	380	420	430	440	440	450	450
Duck eggs (one)	430	440	480	520	530	540	540	550	530
Trakun (watercress)	1450	1530	1605	1745	1780	1825	1835	1845	1780
Cabbage leaves	2125	2240	2255	2210	2330	2365	2400	2482	2598
Tomatoes	2340	2245	2005	2170	2190	2200	2195	2320	2398
White gourd	1355	1395	1480	1410	1400	1420	1470	1435	1460
Cucumbers	1425	1445	1555	1670	1760	1780	1780	1850	1870
Bean sprouts	1260	1280	1310	1370	1420	1430	1470	1600	1620
Long green beans	2010	2120	2210	2370	2360	2375	2260	2210	2240
Bananas (bunch)	1500	1565	1610	1710	1750	1780	1750	1810	1823
Oranges (dozen)	6950	7285	7950	8025	7950	8005	8000	8000	7913
Pineapple (one)	1250	1290	1355	1370	1430	1455	1450	1470	1450
Lime (one)	120	120	120	130	130	130	130	130	130
Papaya (one)	2106	2180	2045	2100	2110	2120	2125	2150	2150
Sugar, refined	1950	1980	2100	2090	2100	2120	2140	2190	2180
Sugar, brown	2150	2220	2155	2070	2110	2150	2180	2240	2300
Garlic	2520	2765	2820	2390	2310	2345	2370	2380	2358
MSG (0.5 kg)	3720	3825	4110	4090	4110	4170	4190	4350	4260
Soy sauce (bottle)	1380	1370	1430	1450	1455	1480	1471	1450	1480
Fish sauce (bottle)	1660	1680	1690	1730	1750	1800	1800	1875	1850

Source: NIS, Ministry of Planning

Since food prices rose most and food matters most for the poor, it is important to examine the movement of the prices of a number of essential food items consumed by the poor. Table 3.2 provides retail prices in Phnom Penh. It is to be noted that not all essential food items became significantly more expensive during the high inflation period. This provided room for people to choose between substitutes. However, the most staple food, rice, increased the most in price. The price of top quality rice almost doubled, from 1650 to 3100 riels/kg in May and remained high until it came down to 2670 riels in December, when wet-season rice was harvested. Substantial increases also occurred in the prices of meat, poultry and eggs, and to a lesser extent for fish and vegetables. For space reason, figures for July, September and November, which are not of significant difference in the trend, are not presented.

Table 3.3 presents the international prices of rice in several exporting countries. The peak period for all types of rice was in May 2008, when average prices rose to about USD1000 per tonne. Prices then came down gradually to between USD400 and USD700 per tonne. The trend is similar to that in Cambodia.

Table 3.3: International Prices of Rice (USD/tonne)

Type of milled rice	Market	Dec 07	Jan 08	Feb 08	Mar 08	Apr 08	May 08	June 08	Aug 08	Sep 08	Oct 08	Nov 08
10%	Thailand	361	368	475	480	..	..	..	685	698	636	491
	Vietnam	..	373	460	528	..	..	..	590	567	480	382
	Argentina	455	473	524	594	660	1050	968	807	798	724	685
	Uruguay	460	480	529	598	665	1065	971	826	812	734	692
100%	Thailand	377	399	488	573	906	1025	938	711	724	668	555
	Vietnam	..	370	465	552	850	1058	1100	600	574	504	414
15%	Thailand	357	364	472	478	875	..	..	675	688	619	461
	Vietnam	..	368	456	522	..	..	..	575	551	434	341
	Argentina	445	450	515	..	..	..	..	..	..	..	..
	Uruguay	450	455	520	..	..	..	..	..	..	..	..
25%	Thailand	352	360	465	..	..	..	..	665	672	596	429
	Vietnam	..	358	455	..	..	..	..	..	..	408	317
	Pakistan	350	357	438	489	575	767	800	561	493	414	350
	India	..	455	..	..	..	..	..	..	..	..	..
4-5%	Argentina	465	476	533	602	675	1085	981	817	808	734	695
	Uruguay	470	500	538	608	680	1085	981	836	822	744	702
	California	625	636	650	662	723	..	..	1175	1175	1163	1140
5%	Thailand	367	493	594			..	867	695	708	647	524
	Vietnam	..	475	543	634	817	850	..	608	..	..	..
	Pakistan	..	..	..	..	..	..	..	..	542	480	394

Source: Ministry of Commerce

The steep increase in the first quarter of 2008 prompted rice export bans in some countries aimed at containing domestic food prices. However, this limited the supply and thus further fuelled price increases, as indicated in Table 3.3. On average, the price of rice in the world market escalated by an unprecedented 180 percent from July 2007 to June 2008.

In Cambodia, a rice export ban was in effect between 23 March and 23 May, which contained the increase or even reduced the price of rice by about 10 percent immediately when it was introduced. The ban was short-lived because much of the dry-season harvest in April and May had nowhere to be stored, and Cambodia produced more than 2.5 million tonnes of paddy in surplus, having achieved 6.7 million tonnes in 2007/08 (MAFF 2008). This intervention reduced the potentially higher profit of producers and traders of dry season rice but cut down the cost of rice for consumers, especially the poor, who far outnumber the producers and traders.

Wholesale prices of paddy rice collected by the Marketing Office of the MAFF increased slightly less than those of milled rice, 75–100 percent, between May 2007 and May 2008. The paddy price increase took place in all the provinces surveyed by the MAFF. The average price in May 2008 ranged between 1150 and 1500 riels per kilogram, compared with 500–900 riels a year earlier. As of December 2008, soon after the harvest, the prices of paddy rice came down slightly but were still good for farmers. The top quality paddy was sold at USD285 per tonne, the second quality at USD200–220.

One kilogram of paddy rice is equal to 0.65 kg of milled rice, so the price of paddy should be 65 percent of that of milled rice, without considering transport and other costs. The price ratio of lower quality rice such the IR variety tends to be reasonable. However, the retail prices of higher end milled rice are more than double paddy (3500 riels/kg, compared with 1500 riels/kg). This indicates bigger margins between wholesale and retail prices for better off consumers.

Table 3.4: Reasons for Increased Prices of Milled Rice Provided by Group Interviews (%)

		Trade (or market)	Input costs increased	Price of paddy rice increased	Rice demand increased	Increased cost of labour	More farm land sold	Migration, leaves rice farms idle	Other
Coastal	Rural	61.4	19.3	1.8	3.5	1.8	-	1.8	10.5
	Urban	22.2	33.3	11.1	11.1	-	11.1	-	11.1
Plains	Rural	36.8	51.5	-	2.9	2.9	-	-	5.9
	Urban	57.1	28.6	-	-	-	14.3	-	-
Plateau	Rural	35.7	19.6	14.3	8.9	1.8	-	-	19.6
	Urban	25.0	-	-	50.0	-	-	-	25.0
Tonle Sap	Rural	57.9	19.3	-	5.3	3.5	-	-	14.0
	Urban	41.7	33.3	8.3	-	-	-	-	16.7
P. Penh	Rural	100.0	-	-	-	-	-	-	-
	Urban	76.0	16.0	-	4.0	-	-	-	4.0
Cambodia	Rural	47.9	28.3	3.8	5.0	2.5	-	0.4	12.1
	Urban	54.4	22.8	3.5	7.0	-	3.5	-	8.8
	Total	49.2	27.3	3.7	5.4	2.0	0.7	0.3	11.4

Source: Focus Group Discussions by CDRI in June 2008

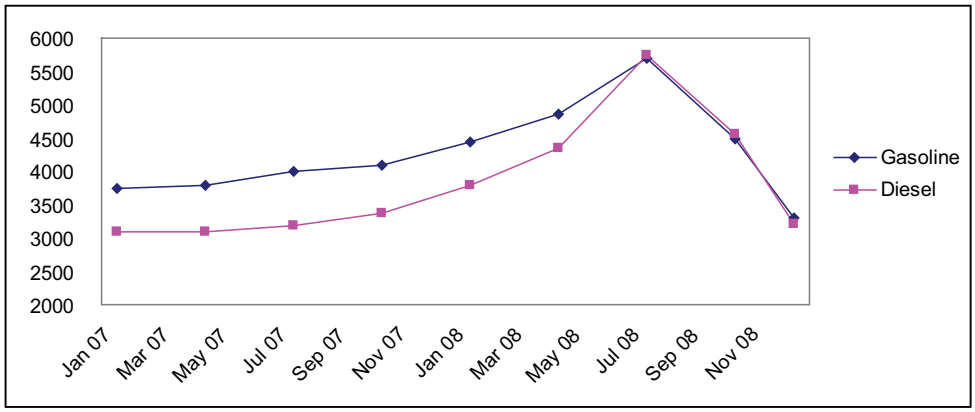
In our group interviews with village representatives or key informants, attempts were made to document how people understand the reasons that the prices of milled rice had increased remarkably. As summarised in Table 3.4, most respondents mentioned trade factors or something to do with market forces, followed by rising costs of inputs.

The focus group discussions found doubts whether prices would remain high when people sold their paddy in November–December. It turned out to be true that prices came down compared to May and June.

The prices of consumer goods have been rising along with producer goods, and it is difficult to determine causality. In theory, rising costs of inputs such as fuel and labour push up the prices of output. It is also true is that rising demand (including external demand) can pull up the prices of consumer goods, and then workers demand higher wages. When wages rise, production costs increase, raising inflation. Cambodia is purely a price taker for fuel. Because fuels are inputs for agricultural production and transport, the rise in world fuel prices has directly affected production and marketing costs.

As illustrated in Figure 3.2, the price of gasoline in Phnom Penh increased by 41 percent from July 2007 to July 2008 before it plummeted to the lowest level in two years. The price of diesel, which is more commonly used for agricultural machinery, rose 77 percent before falling. Tax rates on fuel have been constant for more than 10 years. Therefore, the increase in fuel prices has been solely due to international factors. Recently, many farmers have replaced draught animals with hand tractors or tractors. This has caused them to suffer from the drastic increase in the price of diesel especially, in the first half of 2008.

Figure 3.2: Retail Prices of Fuels in Phnom Penh (riels/litre)



Source: National Institute of Statistics

Many farmers were adversely affected by the steep increase of fertiliser prices, according to the focus group discussions and household surveys. Prices of fertiliser increased by about 1.5 times in the first half of the year. Wet-season rice farmers, who were yet to benefit from the better prices for paddy, now faced a steep rise in fertiliser cost. There was concern that they might cut back the amount used and therefore harvest less. However, based on our study, farmers would rather take a cash loan or buy fertiliser on credit because they did not want to reduce their yield when the price of paddy was high. The Ministry of Agriculture found a remarkable variation between provinces of prices of the same kinds of fertiliser in the same month (Table 3.5). Unlike fuels, the prices of fertiliser did not decrease significantly in November–December.

All chemical fertilisers are imported, mostly through Vietnam. The costs of fertiliser and fuels were the major concerns of farmers. In the past, fertiliser was subsidised by the government. The subsidy did not last because it did not work well; farmers still ended up paying market prices. Any attempt to make the fertiliser subsidy work would be much welcomed by farmers. Anecdotally, there is room for improvement in the import of fertiliser. This business seems to be monopolised by a few traders.

Table 3.5: Prices of Fertiliser in Different Provincial Markets in Cambodia
(thousand riels per sack of 50kg)

Type of fertiliser	Dec 08	Jan 08	Mar 08	Apr 08	May 08	June 08	July 08	Aug 08	Nov 08	Dec 08
Chamkar Kor (Banteay Meanchey)										
15.15.15	86	82	83	127	156	165	165	159	160	-
16.20.0	85	81	81	121	140	159	154	147	150	-
18.46.0	110	101	131	223	267	268	288	273	273	-
46.00.00	77	78	83	108	138	160	167	171	170	-
Takhmao (Kandal)										
15.15.15	78	83	139	142	154	164	160	164	198	146
16.20.0	80	88	126	124	146	155	162	156	165	128
18.46.0	113	131	216	225	260	258	248	243	198	155
Urea	178	78	113	132	150	168	170	177	163	109
Bos Khnaor (Kompong Cham)										
15.15.15	103	114	141	143	152	164	167	168	180	160
16.20.0	85	89	120	120	148	148	153	144	167	130
18.46.0	103	110	179	176	240	253	272	294	290	215
46.00.00	82	92	117	118	115	118	129	132	140	92
Daun Kaev (Takeo)										
15.15.15	95	99	150	180	155	..	175	185	185	172
16.20.0	84	87	130	136	130	..	162	170	170	160
DAP	115	127	166	240	240	..	280	273	266	200
Urea	75	80	100	120	..	..	161	185	186	180

Another crucial variable for farming is labour. Day wages are both income for workers, most of whom are poor, and a cost for farmers. Most of the poor rely on day labour for subsistence; it is said they "live from hand to mouth". Day wages had increased by 35 to 67 percent over one year by the time of the survey in June 2008. While this contributed to rising prices of products, it was essential in compensating the poor. In May–June, the median daily wage was 10,000–13,500 riels (Table 3.6). The annual increase was about USD1 per day or 45 percent on average, confirmed by the village checklist and focus group discussions. This is significant for maintaining the purchasing power of the poor.

According to many sources, it is most unlikely that rising prices of food will be reversed to the level of a few years ago, because the supply faces physical constraints while global demand keeps increasing due to rising income, especially in China and India. The big rise in the second quarter of 2008 was fuelled by speculative demand, precautionary demand for food stocks, policy responses of exporting countries, rising energy prices, energy intensity of agriculture and diversion of cereal to bio-fuels (ADB 2008).

Table 3.6: Median Wages for Day Labour (riels per person per day)

	2007	2008	2008	% increase
Task	Wet season (Jul–Dec)	Dry season (Jan–Apr)	May–June	July–Dec 2007 to May–June 2008
Transplanting	6000	9250	10,000	67
Harvesting	7500	9000	11,000	47
Weeding	7500	9000	11,000	47
Planting	8000	10,000	11,000	38
Clearing bush or degraded forest	9000	12,500	13,000	44
Construction	10,000	11,000	13,500	35

Source: National survey of 2235 households in June 2008

High food prices are undermining poverty reduction. As in other developing countries, expenditures for food are a large part of total expenditure. The share is even larger for those who live near or below the poverty line. Food price inflation has seriously eroded their purchasing power, increasing food deprivation and malnutrition. These effects will worsen if high food prices persist. Moreover, higher expenditures on food reduce expenditures on health and education and squeeze spending on agricultural inputs, such as fertilisers, that are needed to expand food production.

Fortunately, wages have been raised to compensate workers for having to pay more for the same quantity of goods. The problem is that not everyone has equal access to employment or even day labour. The demand for labour is not being met in some areas where there are new opportunities for farm expansion or land clearing. On the other hand, some areas do not have these opportunities, and people are desperate for employment. This suggests a mismatch in labour markets and a need for better information and labour flow.

Higher food prices invite higher inflation. Since wages also have risen, inflation could spiral, causing inflationary expectations to become embedded. Higher food prices may dampen economic activity. Inflation will reduce real income, savings and investment, which may combine to slow aggregate demand. Should interest rates rise to contain inflation, aggregate demand may be further constrained. Much is determined by factors not under Cambodia's control.

3.3. IMPACT ON HOUSEHOLD FOOD SECURITY

The main focus of this study is the impact of the high prices on household food security. Given the limited resources and time for the study, it was not possible to

measure direct food consumption in the way that the Socio-Economic Survey of Cambodia did. The assessment of food consumption was limited to how frequently households consumed the identified essential food items and how they obtained them within the previous seven days. Standard scores developed by the WFP were then applied to determine whether households were food poor or not.

Diets in Cambodia are as diverse as cultural beliefs and livelihood systems. Rice is the main staple food. In order to examine the food consumption pattern, the sampled households were asked to determine how many days they consumed a series of food items in the week prior to data collection and the sources of foods consumed. In nutrition, different food items are divided into a number of groups, of which a combination should be consumed daily to ensure an adequate diet. The key food groups are cereals and tubers, pulses, meat and fish, vegetables, fruit, milk, sugar, oils and fats.

The survey found that the rural households have, on average, a poorer food intake than the urban households. In general the primary position of Phnom Penh emerges, but no big differences can be noted between the capital and other urban areas. More than 300,000 households (about 1.7 million individuals or 13 percent of the population) were food insecure, as classified by the WFP method, in May–June 2008.

Food insecurity in Cambodia is mainly a rural problem; more than 1.5 million of the rural and more than 150,000 of the urban population[6] are food insecure. The "chronically food insecure", who are least prepared to cope with high food prices, require particular attention. People in this category are most at risk of entering a dispossession spiral leading to social marginalisation and serious food insecurity.

According to the survey, 4.3 percent of Cambodian households were chronically food insecure or had poor food consumption. This corresponds to more than 600,000 people living in more than 120,000 households. Nearly 50 percent of the poor food consumption is located in rural Tonle Sap, followed by plains (38 percent). The plains ecological zone is the only one (aside from Phnom Penh) where poor food consumption households are present in urban areas. The survey found that landlessness is significantly higher among food-poor rural households than in the overall rural population.

The food-poor households in rural areas have more children and more elderly to be cared for. The other urban areas and particularly Phnom Penh enjoy a more favourable situation of fewer dependants.

Ninety-two percent of the surveyed households declared that their expenditure had increased since December 2007. The highest proportion of expenditure increase and newly incurred debts were found among food-poor households. The consequences can be dramatic, because this category is the most affected by debts. Perhaps even more worrying is that they had incurred many more debts than the overall population in the

6 Including Phnom Penh.

previous few months (since March 2008). The proportion of poor food consumption households that contracted new debt was more than 50 percent, higher than for the overall rural population.

The drop-out rates of primary schoolchildren were highest among the food-poor households. Between January and June 2008, their drop-out rate almost doubled, affecting more than one-fifth of the food-poor children in primary school. However, there is no direct evidence that this increase was due to price increases.

Our survey also identified "borderline consumption households"—those considered vulnerable to becoming food insecure should a small decrease in their access to food occur. This category should be attentively monitored during the next months, as it is highly sensitive even to small changes in prices.

This category currently corresponds to more than a million people living in more than 200,000 households. Borderline consumption households are more scattered throughout the country than the poor consumption households. More than 90 percent of the borderline households are in rural areas. A small number of borderline households were in urban Tonle Sap and very small numbers in the urban coastal and plateau zones.

3.4. HOUSEHOLD COPING STRATEGIES

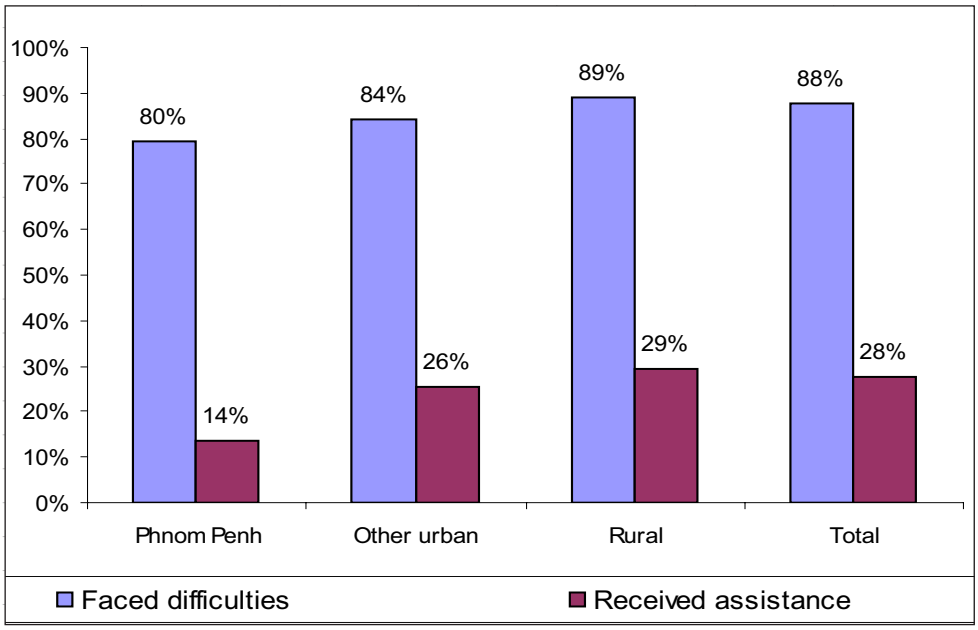
The large amount of information provided by surveyed households about their coping mechanisms during the previous 30 days is very useful contribution for understanding the impact of rising prices and the seriousness of their immediate and long-term effects. The most frequent measures for coping related to access to food.

Many coping mechanisms cannot be compared between rural and urban areas. However, within rural areas a comparison can provide some significant results. The "destitution processes" (selling land, fixed assets, animals) apparently did not show differences between poor food consumption household and the overall rural population. However, it should be considered that the majority of food-poor households are landless: this can affect the result, and a more fine-tuned analysis will be necessary.

About 88 percent of households reported that they had faced difficulty in May 2008. However, 76 percent said they did so in May 2007, implying that high food prices might have affected only 12 percent. Again, answers to this kind of question should be taken with a grain of salt, because the degree of difficulty may be different.

The major difficulties reported in May 2008 included the high prices of food (53 percent of responses) followed by sickness or health expenditures (27 percent), high fuel prices or transportation costs (25 percent) and repaying outstanding loans (19 percent). The proportion of households that reported lack of money to buy food and cover essential expenses increased more rapidly in Phnom Penh and other urban areas—from 37 to 79 percent and 46 to 91 percent, respectively, between May 2007 and May 2008.

Figure 3.3: Proportion of Respondent Households That Faced Difficulties and Received Assistanved Assistance in the Previous 6 Months



Households had adopted various ways to cope with difficulties (Table 3.7). Many people first bought cheaper food or reduced the amount of food consumed, especially for female adults and elderly members. Many purchased food on credit or relied on help or loans from friends and relatives. Many households in rural areas increased their exploitation of natural resources.

In the 14 target villages, 62 percent of villagers reported that they did not have enough money to buy food or cover essential expenses in June 2007, and in June 2008 this number rose to 69 percent. The change was quite significant among fishing and land-abundant villages, the former increasing from 66 percent in 2007 to 98 percent in 2008 and the latter from 64 percent to 88 percent. Villages with the least number of people with inadequate money, about 49 percent, were cash-crop villages.

About 37 percent of villagers reported that they never relied on less preferred or less expensive food, while 24 percent replied that they often did and another 24 percent that they sometimes did. The reliance on less preferred and less expensive food was highest among fishing communities.

About 26 percent sometimes borrowed food or relied on help from friends or relatives, while 60 percent had never used this strategy. About 38.5 percent sometimes purchased food on credit or incurred debts to cover expenses, while 42.5 percent had never done so.

Table 3.7: Measures Used to Cope with Difficulties (% of households)

	Every Day	Often	Sometimes	Once in a while	Never	Total
Rely on less preferred and less expensive food	6	29	32	4	29	100
Purchase food on credit, incur debts	1	14	39	6	41	100
Reduce food eaten	2	15	29	7	48	100
Restrict consumption by adults in order for small children to eat	1	11	25	6	57	100
Mothers and elder sisters eat less than others	1	10	24	6	59	100
Increase exploitation of common property resources	3	9	9	1	79	100
Borrow food, or rely on help from friends or relatives	1	8	27	8	57	100
Seek alternative or additional jobs	3	11	12	2	73	100
Mothers and elder sisters skip more meals	1	4	14	3	78	100
Plant more or new crops	3	7	8	2	80	100
Decrease expenditures for health care	1	7	22	5	66	100
Decrease expenditures for fertiliser, pesticide, fodder, animal feed, veterinary care	1	3	10	2	85	100
Increase migration for work or food	1	2	6	2	90	100
Sell more animals than usual	0	1	6	2	92	100
Sell jewellery	0	1	5	1	93	100
Take children out of school	1	1	4	2	92	100
Consume seed stocks	0	1	5	1	93	100
Sell domestic assets	0	0	1	1	97	100
Sell productive assets	0	0	1	1	98	100
Sell land	0	0	1	1	98	100

Source: National survey of 2235 households in June 2008

About 34 percent often or sometimes reduced the amount of food consumed. This was considerably more common in fishing villages than in others, as about 29 percent would do this every day. In 23 percent of target households, adults had sometimes restricted the amount of food they consumed in order for small children to eat.

In 21 percent, mothers and/or elder sisters had to eat less than other household members. More fishing and poor villagers used this strategy. In the worst cases, mothers and/or elder sisters skipped meals, and around 8 percent of them had skipped more than one meal. About 12 percent of households had sometimes decreased expenditure for health care and 12 percent had sought alternative or additional jobs. Thirteen percent sometimes or often increased exploitation of common property resources. Land-abundant villages did this least, while fishing villagers did it most, 42 percent of households there having done so from often to every day.

About 12 percent of villagers sometimes planted more or new crops to cope with high food prices, about 10 percent doing so quite often. Cash-crop villages did this most

often, while fishing and land-abundant villages did so least. About 15.5 percent of the target households had members who were working elsewhere; the percentage of males was a bit higher than of females. About 7.5 percent of these migrants worked in urban areas and another 5 percent in rural areas in Cambodia; the remainder worked in Thailand. The main reasons for migration were to find income and to cope with high food prices. Other reasons included seasonal migration.

During the previous six months, about 90 percent of the target households had faced difficulties, the main ones being high food prices, 28 percent; sickness or health expenditures, 17 percent; debt payments, 11.5 percent; and high fuel or transportation prices, 11 percent.

Around 48 percent of the villagers had received assistance, 40 percent as free health care from NGOs, micro-credit and cash transfers from social programmes. However, villagers responded that they would most prefer free health care and drugs from NGOs, cash transfers from social assistance and free food. Rice growing villages also preferred seeds and fertiliser; cash-crop villages preferred agricultural tools; fishing villages preferred food for schoolchildren; and the poor preferred free food for the household.

Selling Land and Other Assets

Table 3.8 shows that many households had been forced to sell their livestock when they needed cash.

Table 3.8: Reasons for Selling Animals by Households Facing Difficulties

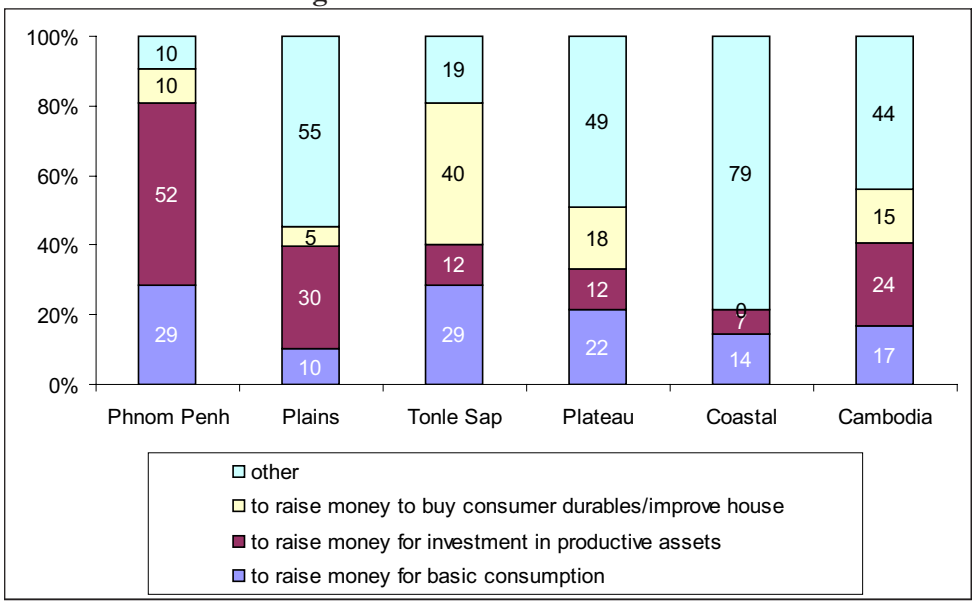
	Cows/buffaloes		Pigs		Poultry	
	No. of HH	%	No. of HH	%	No. of HH	%
It was normal time to sell them			70	41	98	28
Need for money	122	70	84	49	234	66
Old age/sickness	25	14				
Infertility	4	2				
Lack of fodder/animal feed/ pasture	3	2	10	6	11	3
Other reason	21	12	8	5	9	3
Total	175	100	172	100	352	100

The households with difficulties reporting sales of cows or buffaloes were 48 percent in the coastal zone, 30 percent in the plateau, 38 percent in the Tonle Sap and 37 percent in the plains. The proportion of households selling pigs showed a similar trend, being highest (59 percent) in the coastal zone, followed by the Tonle Sap, the other zones being not more than 35 percent.

Selling livestock and productive assets, however, is not the way for households to recover from family shock or crisis. Not all households possess such assets, and very few households reported selling animals to cope with difficulties.

Many households may run out of assets to cope with shocks, especially if food prices continue to rise. A large proportion of households had to purchase food on credit and very often reduced food consumption, especially for adult female and elderly family members. The impacts of high food prices, according to the responses by affected households, will be further natural resource depletion and increased migration, indicated by the considerable number of households that were looking for alternative or additional jobs. Children will then be taken care of by the elderly or more burden put on females, who already tend to have poor food consumption. Within just a few months of high food prices, more of the food-insecure households withdrew their children from school, probably to help in earning or because they could not afford to pay for schooling. It is difficult to draw conclusions from these very few responses, but the survey does suggest that more female than male children are withdrawn from school to help their parents cope.

Figure 3.4: Reasons for Households Facing Difficulties and Planning to Sell some Agricultural Land in the Next Season



The survey also revealed the number of households planning to sell their land in the next season if they could not cope with their difficulties. Although very few households had sold land, 478 planned to sell some of their agricultural land in the next season. The number was highest, 274, in the plains, 14 in the coastal zone and 119 in the Tonle Sap.

Loans as a Way of Coping

Fifty-three percent of households reported that they had debts at the time of the national survey, and 32 percent of the total had incurred debts in the previous six months (Table 3.9). This is quite alarming and requires thorough analysis.

Table 3.9: Household Loans

Phnom Penh	Plains	Tonle Sap	Plateau	Coastal	Total
Percentage of households having debts					
33	52	63	44	50	53
Percentage of households contracting new debts in past 6 months					
20	23	49	34	29	32

Source: National survey of 2235 households in June 2008

Of the households facing difficulties, 57 percent reported having outstanding loans in June 2008. Among these, 35 percent took new loans between March and June 2008. Reasons for taking loans are presented in Figures 3.4a and 3.4b.

A large number of households (42 percent) in Phnom Penh took loans for business expansion. By contrast, a majority of the households in the four ecological zones used loans for non-productive purposes. More people have been pushed to take new loans to buy food in Tonle Sap (49 percent), plateau (47 percent) and costal zones (31 percent).

Although the hardships reflected in borrowing are not all due to high food and commodity prices, almost half of the new borrowers lacked cash to cover health expenditures and food. Rising food prices to some extent also created opportunities; 18 percent of households took loans to enlarge their businesses. However, the survey did not ask about the types and returns of businesses.

Migration as a Way of Coping

Of the total survey, about 19 percent of households reported having members working elsewhere. The percentage of households with migrant members was much higher in rural than in urban areas. The survey found that households in the urban plateau had the highest percentage of migrants, followed by rural plains and rural Tonle Sap families.

The percentage of men leaving villages in search of employment is higher than that of women. Table 3.10 shows that 67 percent of migrant members in urban areas are men. In rural areas, the percentage of male migrants is 54 percent. Interestingly, in the urban plateau, the percentage of female migrants is higher.

The majority of migrants—47 percent of urban migrants and 58 percent of rural migrants—went to work in urban areas in Cambodia, regardless of where they were from. The second main destination was rural Cambodia, the third Thailand. The percentage of urban migrants working in Thailand is much higher than that of rural migrants, suggesting a big gap between the two groups in access to employment in Thailand.

The survey found that most migrants, urban and rural, left to earn money for their households. The urban plateau had the highest percentage in this category. The second

major reason was to cope with high food prices. The urban plain was where most people cited high food prices as the factor pushing them to migrate.

Figure 3.4a: First Reason for Taking Loans since March 2008
(reported by 716 households that faced difficulties in previous 6 months)

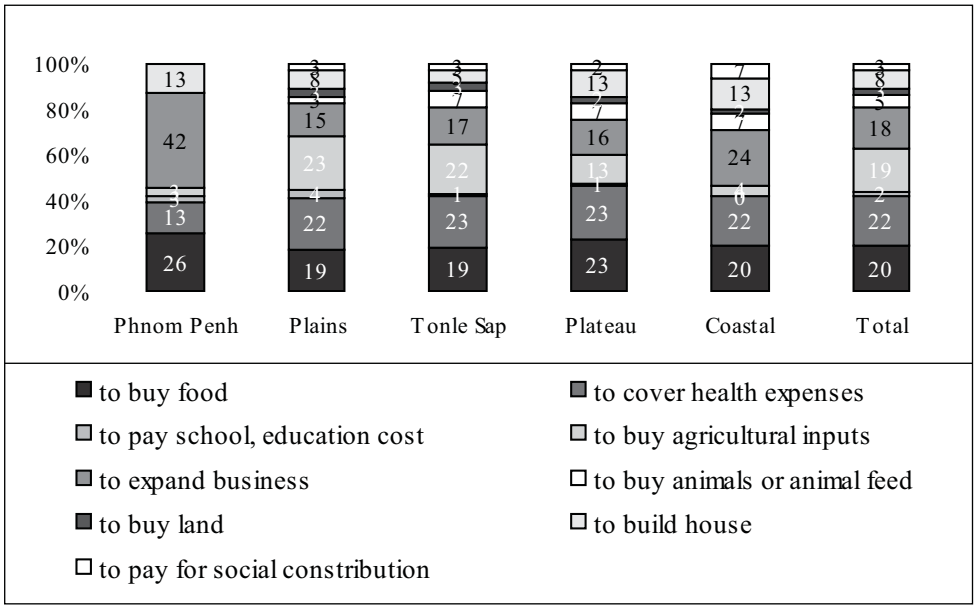


Figure 3.4b: Second Reason for Taking Loans since March 2008
(reported by 550 households that faced difficulties in previous 6 months)

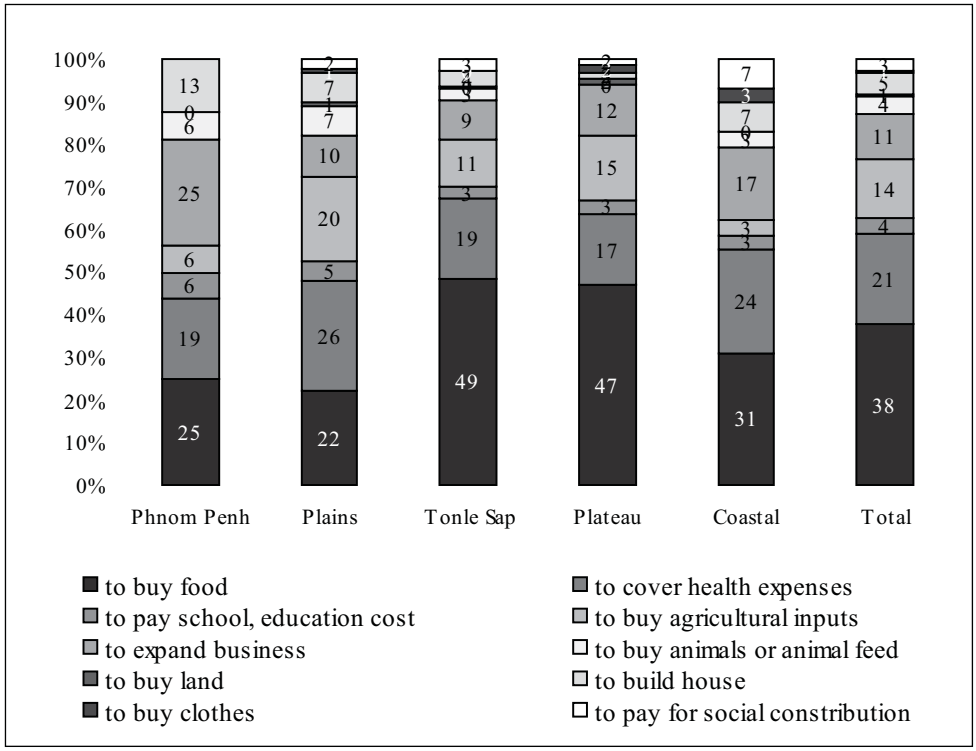


Table 3.10: Migration (%)

	PPenh	Plains		Tonle Sap		Plateau		Coastal		Cambodia	
	U	U	R	U	R	U	R	U	R	U	R
Households having members working elsewhere as migrants											
	5	9	25	12	22	27	11	10	17	9	21
Gender											
male	60	76	54	78	53	33	58	75	55	67	54
female	40	24	46	22	47	67	42	25	45	33	46
Where they work											
rural Cambodia	22	39	26	6	26	60	42		29	27	27
urban Cambodia	22	61	69	39	33	40	50	100	62	47	58
rural Thailand	11		1	50	24		5		3	17	8
urban Thailand	22		2	6	16				3	5	6
other countries	22		2				3		3	3	2
total	100	100	100	100	100	100	100	100	100	100	100
Main reason											
seasonal migration	10	12	6	5	36	10	26		9	8	16
to cope with high food prices	20	53	35	32	25		45	20	26	30	33
time to migrate and find income	30	24	43	47	23	80	11	80	50	46	36
other	40	12	15	16	16	10	18		15	16	16
total	100	100	100	100	100	100	100	100	100	100	100

Source: National survey of 2235 households in June 2008

Assistance Preferred by Households

Table 3.11 shows responses of 481 out of 1894 households that answered the questions about assistance received in the previous six months. Assistance from friends or relatives and of free health care or drugs from an NGO were most significant, followed by cash transfers from social assistance programmes.

Table 3.11: Type of Assistance That 481 Households in Difficulty Received in Previous Six Months

Type	%
From friend or relatives	36
Free health care/drugs from an NGO programme	36
Cash transfers from social assistance programme	23
Micro-credit	14
Free food ration for the household	12
Food for schoolchildren	9
Food for work	6
Seeds, fertiliser	5
Veterinary services	5
Fodder, animal feed	4
Agricultural tools	3
Food for young/malnourished children or for pregnant/lactating women	3

Source: National survey of 2235 households in June 2008

Table 3.12 summarises the preferred assistance to cope with increasing food prices. People preferred short-term humanitarian assistance. Fewer mentioned longer term aid such as micro-credit, agricultural tools or veterinary services. People have to deal with urgent problems first. Although rising food and commodity prices had affected the majority of people in the survey villages, they are short-sighted about long-term coping strategies.

Table 3.12: Most Preferred Assistance

Type of assistance		Phnom Penh	Other urban	Rural	Total
	HH		%		
Free food rations	359	25	23	17	19
Free health care/drugs, from an NGO programme	352	29	19	16	19
Cash transfers from social assistance programme	234	11	15	12	12
Fodder, animal feed	229	0	8	16	12
Seeds, fertiliser	186	2	2	13	10
Micro-credit	95	10	10	3	5
Agricultural tools	82	1	0	6	4
Food for work	76	9	2	3	4
Food for schoolchildren	73	6	1	4	4
Food for young/malnourished children or for pregnant women	54	3	4	3	3
Veterinary services	15	0	0	1	1
Other assistance	140	5	16	6	7
Total	1895	100	100	100	100

Source: National survey of 2235 households in June 2008

3.5. POTENTIAL FOR AND CONSTRAINTS ON INCREASED FOOD SUPPLY

The survey found that a large number of target rural households owned at least one plot of agricultural land. However, about 21 percent of them did not hold any land. Those in plains areas constitute most of those who do not own land. Of owned plots, about 69 percent were used for wet season rice, around 15 percent for dry season rice and 12 percent for *chamkar* or other crops besides rice.

Some 43 percent of landowning respondents received their land through inheritance or as gifts from relatives, while the remainder acquired it either through allocation by authorities or through purchase or forest clearance. Around 39 percent did not have any legal documents proving their ownership of the land. Some had application receipts and some held other documents. Those in plains and coastal areas were more likely to have application receipts or land titles, while more of those with no documents were from Tonle Sap and the plateau. Although documentation was scarce, almost no respondents reported serious conflict over their possession or use of land.

While around 43 percent reported a decrease in their production, those in plains, Tonle Sap and plateau regions did not suffer this as much as coastal areas, where all respondents claimed a production decrease. Despite this, only about 2 percent planned to sell their land within the next six months. The percentage was lowest in the plateau. This is not surprising since the land market is not very active in those rural areas.

During the last season, about 91 percent of the land was cultivated. On top of this, quite a number of those in plains and Tonle Sap regions also used their land for sharecropping or left it idle or for someone else to cultivate for free. There was a small increase in the number of those who planned to cultivate their land in the next season, while some of those in plains and Tonle Sap also planned to let it. Although the change was quite small, it demonstrates some changes of attitude in response to increased prices of agricultural commodities.

Wet Season Rice

Sixty-nine percent of agricultural plots had been used to cultivate wet season rice during the previous season. Wet season rice farmers, on average, owned 0.9 hectares, which produced 1068 kg of paddy rice with a value of USD278. Money had to be spent on inputs. The average farmer spent a total of USD86 on production costs, a large part of that on seed, land preparation and transplanting. Subtracting the costs, they had a net profit of USD192 from growing wet season rice during the survey period.

In the 12 target villages, the average farmer owned 1.9 ha and produced about four tonnes of paddy rice. Farmers in those villages put a relatively large amount of money into production: a total of USD358 to cover the cost of seed, ploughing, transplanting, harvesting and so on. At the end of the season, they earned a net profit of around USD417. The farmers in the special village sample earned more than those in the national sample simply because they had more farmland.

Disaggregation of production according to land size also yields an interesting result. On average, those who had more land to grow wet season rice had better harvests and higher net profit. However, in spite of this, large landholders tended to use land less productively than small landholders: the yield per hectare decreased considerably as the size of land increased.

According to the survey, 58.6 percent of wet season rice producers might face rice shortages before the next harvest.[7] The plateau has the highest proportion of rice shortage households, 67.6 percent, followed by Tonle Sap (63.3 percent) and coastal (58.4 percent).

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7 Rice shortage here refers to households that have less milled and paddy rice than the estimated amount needed for household consumption until the next harvest. A new variable is constructed to capture rice shortage using the following formula: rice sufficiency = amount of milled rice + 0.6 * amount of paddy rice – number of months till next harvest * amount of rice needed per month. Those households that have negative rice sufficiency are considered at risk of food shortage

Dry Season Rice

Dry season rice production took up about 15 percent of agricultural plots. Households that engage in dry season rice production average about one hectare of agricultural land. During the survey season, they were able to collect 3145 kg of paddy rice, which is equivalent to USD708 in cash. Dry season rice, however, is much more costly to produce than wet season rice because of the need to pump water and purchase fertiliser. The total production cost averaged USD334 during the last season. Hence, an average farmer gained approximately USD374 profit.

Farmers in the target villages possessed 0.5 hectare and produced 2213 kg of paddy rice or around USD458 per plot. After taking all production costs into account, an average farm household growing dry season rice earned about USD271.

Consistent with findings on wet season rice production, dry rice farmers with more land were found to generate higher net profit per plot but tended to use land less effectively than small landholders. In general, dry season rice producers had the highest degree of rice sufficiency: 57.4 percent had sufficient stock for consumption until the next harvest. The highest percentage was found in the Tonle Sap region.

Maize

The average plot size was 0.8 hectare, which produced 1051 kg of maize during the previous season. Maize provided a higher profit than wet season rice, and its production cost was reasonable, estimated as USD46 per plot, consisting largely of seed, land preparation and planting seedlings. During the previous season, maize producers generated profits of about USD191 per plot.

In the studied villages, an average farmer produced around 17 tonnes of maize from five hectares and earned as much as USD2500 from it. Production costs totalled USD1300, leaving USD1200 as profit.

Cassava Production in Target Villages

Cassava cultivation attracted more attention from Cambodian farmers due to the triple in price in early 2008. In the sample survey, the average cassava farmer possessed two plots of 1.6 ha each, with an estimated value of around USD4700 per plot (or USD2937 per ha). Land for cassava seems to have a higher value than any other type of agricultural land.

The average cassava harvest during the previous season was 4378 kg per plot, worth USD550. A total of around USD130 was required for ploughing, harvesting, processing, transporting and other costs. Cassava is easier to plant and care for than rice or maize. Yet it also provided a profit of around USD537 per ha during the high price in early 2008. Despite this higher income, the majority of cassava growers perceived a threat of having no paddy in stock.

Constraints on Increased Production

Table 3.13 summarises constraints facing farmers during the previous season. The three major constraints reported were lack of money for fertilisers, irrigation issues and lack of household labour or draught animals. Other constraints included insufficient capital to hire labour or ploughing, not enough machinery, flood or drought and inadequate knowledge or training to use inputs and technology more productively. Policies to remove these constraints may result in an increase in production and help reduce the poverty and vulnerability of farmers.

Productivity could be marginally increased by resolving land conflicts. In the survey, about 2 percent of plots were reported to be in conflict. Land conflicts are an issue because farmers cannot use the land to its maximum potential. The study showed that about 44 percent of conflicted plots were associated with declines in productivity.

The percentage of farmers who would grow crops on their idle farmland during the coming season was small and the percentage of farmers who would grow for business purposes was still lower. Only 10.6 percent of households would increase production solely for sale, against 47 percent that would use extra harvest for household consumption. This indicated that not many farmers saw high food prices as an opportunity yet.

Table 3.13: Constraints on Increasing Production, by Crop (%)

	w.s. rice	d.s. rice	maize	cassava	others	total
Not enough HH labour/draught animals	10.4	6.5	10.3	15.8	13.4	10.2
Not enough machinery	5.9	6.8	1.1	21.6	6.9	6.5
No time/have other job	0.5	0.2	2.3	2.2	1.6	0.6
Not possible to irrigate	15.6	7.6	19.5	2.2	11.2	14.1
Not enough money for seed	3.8	7.4	8.0	2.9	4.4	4.4
Not enough money for fertiliser	25.1	26.4	18.4	13.7	18.4	24.2
Not enough money for pesticides	9.2	16.7	4.6	5.8	7.8	9.8
Not enough money to hire labour	5.7	6.3	9.2	18.7	5.3	6.3
Not enough money for irrigation	2.7	8.0	5.7	1.4	2.5	3.3
Cannot obtain credit	0.4	0.3	1.1	2.2	1.2	0.5
High interest rate	1.2	0.9	1.1	1.4	1.9	1.2
Lack of transport	2.4	2.3	2.3	2.9	3.1	2.5
Lack of access to market	0.4	0.2	1.1	0.0	1.9	0.5
Do not have knowledge/training	4.0	1.7	8.0	5.8	10.3	4.2
Land conflict/fear of land conflict	0.1	0.0	0.0	0.0	0.3	0.1
Flood/drought	9.3	3.1	5.7	1.4	5.3	7.9
Other	3.4	5.6	1.1	2.2	4.7	3.8
Total	100	100	100	100	100	100

Source: National survey of 2235 households in June 2008, adjusted for populations of ecological zones

3.6. ANALYSIS AND RECOMMENDATIONS

Many attribute high world food prices in most of 2008 to greater demand for food and fuels in China, India and other countries, while sizeable portions of land have been allocated to bio-fuels. Cambodia is an open and small economy that produces surpluses of a few major crops such as rice, soybeans, maize, cassava, cashews, sesame and rubber. Higher prices for these crops mean Cambodia earns more from exports. The survey found that dry season rice farmers and cassava farmers had benefited from the increase in prices, while wet season rice farmers and others who would harvest in November–December 2008 also stood to benefit if prices remained high. However, as Table 3.14 shows, the prices of most crops came down by November and December 2008, according to the data collected by the MAFF. In general, production costs in 2008 were about 50 percent higher than in 2007 but farm gate prices at the end of 2008 fell by 7 to 57 percent, except for rice, which continued to be 11 percent more expensive than a year earlier. This resulted in gross margins declining dramatically. Gross margins for wet-season rice went down by 10 percent. Gross margins for cassava were reduced by 166 percent, causing farmers to lose USD180 per ha. Cassava producers had been encouraged by the sharp price rise in early 2008 as cassava was used for bio-fuel production. It could be inferred that poverty is likely to increase in 2009 as a result of the pervasive fall in agricultural prices after farmers had already incurred high production costs in 2008.

Table 3.14: Impact of Price Changes on Profitability of Crop Production
(per hectare per season)

Commodity/item	Dry Season			Wet Season		
	2007	2008	% change	2007	2008	% change
Rice						
Yield (tonnes)	3.7	3.7	0	1.9	1.9	0
Price (USD/tonne)	180	250	39	225	250	11
Gross Revenue (USD)	663	921	39	427	475	11
Total Production Cost (USD)	233	350	50	150	225	50
Gross Margins (USD)	**430**	**571**	**33**	**277**	**250**	**-10**
Maize						
Yield (tonnes)				4.0	4.0	0
Price (USD/tonne) (Nov. 07 and Nov 08)				150	140	-7
Gross Revenue (USD)				600	560	-7
Total Production Cost (USD)				205	280	37
Gross Margins (USD)				**395**	**280**	**-29**
Soybeans						
Yield (tonnes)				1.5	1.5	0
Price (USD/tonne) (Nov. 07 and Nov 08)				550	450	-18
Gross Revenue (USD)				825	675	-18
Total Production Cost (USD)				260	375	44
Gross Margins (USD)				**565**	**300**	**-47**
Cassava						
Yield (tonnes)				8.0	8.0	0
Price (USD/tonne) (Jan. 08 and Jan. 09)				70	30	-57
Gross Revenue (USD)				560	240	-57
Total Production Cost (USD)				288	420	46
Gross Margins (USD)				**272**	**-180**	**-166**

Source: Households surveys for rice; focus group discussions for other crops, and MAFF for recent price data

The survey found that net food consumers were losers unless they had jobs with rising wages to compensate for high prices. For the very poor, both urban and rural, obtaining sufficient food is a matter of daily struggle. Making up 20 percent of the population, these people live "from hand to mouth" as they use their USD2–3 daily income to buy rice and other essential food day by day. About 50 percent of the households reported cutting food consumption. This threatens their nutritional status and worsens their health, which may result in lasting adverse impacts. The largest proportion of food-insecure people was found in Tonle Sap, plains and plateau zones. During the lean season, the number of food-insecure individuals could increase significantly, to about 2.8 million. Using the WFP's definition, the survey found that 12 percent of households, about 1.7 million individuals, were food insecure and most affected by high food prices at the time of the survey. About one million more people were at the borderline of food insecurity and needed attention as well.

Fortunately, wages from day labour, which are the main income source of the landless and land poor, increased by about 50 percent in 2008 compared to the previous year. This market-based wage adjustment kept many in the status quo throughout 2008, not falling into destitution as might be expected. Nevertheless, some households were unable to generate higher incomes due to a lack of employment in their locality and were therefore hit hard by high food prices. These people tend to be located in the poorest areas, where there is little potential for agricultural production or income generation.

Of particular concern, fishing communities were among those most severely affected. Doubled rice prices pushed fishing households into deeper poverty. Their average daily income declined while their daily expenditure increased. Although the price of their produce was rising, the rise was only about 20 percent and was accompanied by rising costs of inputs, while their catch was smaller.

Many farmers needed to borrow more money to meet rising production costs, essentially fertiliser, pesticides, machinery and labour. Some could obtain loans, mostly at high interest rates, to maintain production. This plus borrowing for consumption put about half the households in debt, which is a worrying sign. Now they could be in trouble as most prices of agricultural products went down, seriously cutting back or negating their gross margins. It is imperative for government and development partners to help these worst hit people. Food assistance or other kinds of social protection should be introduced to avoid an increase in malnutrition and negative coping strategies of food-insecure households—just as if they had been hit by droughts or floods, damaging their crops.

There should be a way to reduce the price of fertiliser, which increased two- or three-fold over the previous year. All chemical fertilisers are imported, reportedly through highly inefficient channels that rely heavily and informally on Vietnamese and Thai traders. Directly importing fertilisers in bulk might cut costs considerably.

Lack of water or irrigation is a fundamental problem, although there has been a significant increase in public provision of and commitment to irrigation. A controlled

water supply, which is now available for less than 30 percent of rice fields, provides stability and certainty to crop production. It is a critical prerequisite for farmers to apply other inputs such as fertiliser and higher yielding seeds. A reliable water supply enables crop intensification and reduces the costs of production. Without irrigation, production in many areas is impossible or too risky to apply good inputs.

A long-term strategy should include a better land allocation and management policy. A current goal of maintaining forest cover at 60 percent of the country area is perhaps desirable but not realistic when demographic and economic pressures are paramount. Because of this goal, new agricultural lands have an unclear legal status, which tends to favour those with the financial means, power or backing to take them—not necessarily for production.

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Impacts of Rising Prices on Poverty in Nine Study Villages: Some Preliminary Findings

By: So Sovannarith

CHAPTER 4

Chapter 4 - Impacts of Rising Prices on Poverty in Nine Study Villages: Some Preliminary Findings[1]

4.1. INTRODUCTION

Cambodia is struggling to respond to abnormal inflation in global markets to sustain its social and economic development for poverty reduction. Although the country produces a rice surplus of about 2 million tonnes for export, the recent rise in prices of food and other basic consumer goods affects the food security of many (Chan 2008). While a large proportion of the population is struggling to earn enough to buy food, only a small proportion, mainly large landholders, merchants and traders, can benefit from rising prices. Contemporary studies suggest that a large majority of small farmers are net buyers of food in rice surplus areas. While higher prices may stimulate agricultural intensification and diversification, a lack of saving, ineffective extension services and imperfect markets are obstacles to agricultural development or small landholders remaining producers. Most of the findings from the Poverty Dynamics Study (PDS) funded by the World Bank discussed in this article support stronger commitment and timely intervention to support small farmers. (The PDS surveyed rural households to analyse determinants of poverty and factors that influence movement out of and into poverty, between 2001 and 2008.)

Recently rising prices in Cambodia were mostly driven by international changes in food and oil prices. The prices of food historically have been highly volatile; they have risen along with oil prices since 2003. The upward trend continued and reached double digits between 2007 and 2008 in most developing countries (ADB 2008). The underlying causes of the price spikes in late 2006 included droughts in grain-producing nations and rising oil prices. Oil price rises increased the costs of fertilisers, food transport and agricultural production. Other causes were the increasing use of bio-fuels in developed countries and an increasing demand for a more varied diet (especially meat) across the expanding middle-class populations of Asia. These factors, coupled with falling world food stockpiles, contributed to the dramatic worldwide rise in food prices. Short- and medium-term causes and impacts on poverty reduction in developing countries remain a topic of debate. The impacts of rising prices may include structural changes in trade and agricultural production, agricultural price supports and subsidies in developed nations, diversions of food commodities to high-input foods and fuel, commodity market speculation and climate change.

This article focuses on how Cambodia and its farmers can be better prepared and can better respond to regional and global economic crises. It will also reflect the extent to which the survey villagers have benefited from recent government policies and coped with rising prices. It attempts as well to explore the short-term consequences of rising prices, which are likely to increase the extent and severity of poverty. In the long term, however, for a country with a potentially large surplus of agricultural produce, the

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impact is likely to be positive, provided that steps are taken to ensure that resources, particularly land, are utilised efficiently.

Policy debates and responses to the food price crisis now are modified by the global financial crisis, which has lowered the oil price and demand for products. Therefore, any finding or discussion of the impacts of rising prices on poverty may be dated. However, this study is still relevant for policy because prices are still higher than a year earlier.

This article is divided into eight sections. Section 2 outlines the research methodology and data. Section 3 summarises the recent government and donor policy responses to rising food prices and food insecurity, while section 4 discusses trends in prices of food and other necessities in urban and rural areas. Section 5 depicts the impacts of rising prices on different well-being groups and rural coping strategies. Section 6 elaborates the impacts of rising prices on agricultural production, intensification and diversification. External assistance is presented in section 7. Section 8 presents the conclusions.

4.2. METHODOLOGY

The analysis focuses on the negative and positive impacts of rising prices that can be explored and explained using PDS data. In the short and medium terms, rising prices can slow poverty reduction. High food prices may increase landlessness. The landless poor, who must buy food, may face food insecurity. Because they have to increase spending on food, they have limited money to invest in their children's education, in which case they cannot benefit from opportunities to increase household income. On the bright side, if food prices stay high in the medium term, it provides an opportunity for Cambodian farmers to increase agricultural production and diversification. It may also attract investments in agriculture that generate employment and higher wages for the rural poor. The gains from increased agricultural production and marketing may help Cambodia to achieve faster growth and poverty reduction.

These hypotheses can be explored and explained from PDS focus group discussions and household surveys in 2004–05 and 2008. The household surveys contain data on (1) land ownership and sales, (2) net buyers and sellers of rice, (3) the price of their agricultural produce in village markets, (4) income and expenditure and (5) access to government and NGO services. A price survey captured prices in village, district and provincial markets of 106 food and non-food items that rural households commonly consume.

Quantitative and Qualitative Methods of Data Collection

The PDS was specifically designed to build on the longitudinal data of nine study villages and about 1000 households that were interviewed in 2001, 2004–05 and 2008. The two earlier surveys did not ask about the impact of food prices, but this was included in 2008. The main purpose of the PDS is to analyse poverty determinants and factors that influence household mobility into and out of poverty and the growth

and development of selected villages. The PDS uses the same research framework and mixed (quantitative and qualitative) methods of data collection that were used in 2004–05. In each survey, data were collected in two rounds, in March and September, to capture a complete year of household social and economic information. Households were asked to report their consumption within one week and expenditure, income and other information between October 2007 and March 2008, and in September household information between April and September 2008. The research team completed three survey rounds and built up socio-economic information on 829 households.

To complement the quantitative data, focus group discussions were added to the surveys in 2004–05 and 2008. As part of the comprehensive information about social and economic and political participation and development events, the research team asked about people's experiences in relation to rising prices and the impact on their well-being in FGDs in each village. The definition of the poverty line in the study villages is not yet completed. The discussion of the impact of rising food prices on the well-being and coping strategies of different groups and on agricultural development is mainly derived from qualitative data and information provided by those FGDs (Table 4.1).

Sources of Price Information

The trends in prices are drawn from various sources, including the Phnom Penh price index released by National Institute of Statistics, and secondary data from CDRI publications. For the change in prices of food and other necessities in rural areas, CDRI conducted two follow-ups on a price survey that was originally conducted in October 2005: the first in March 2008 and the second in September 2008. This gives a picture of changes in prices of major items in rural areas, compared to the national official figure for the same goods, mainly in Phnom Penh. For the CDRI price survey, the enumerators spent a few days visiting village, district and provincial markets to collect the prices of 106 commonly consumed items.

Purposive Sampling and Focus Group Discussions

Table 4.1 shows the number of households interviewed and selected for wealth ranking and FGDs in each village. A total of 1022 household were interviewed in both March and September. The sampling frame was predetermined by the baseline study in 2001 and the Moving Out of Poverty Study in 2004–05. The criteria for village selection were primarily the livelihoods of the people. The survey aimed to revisit as many as possible of the households sampled in the two previous studies in order to gauge the direction and magnitude of change in living standards. Systematic random sampling was originally used to select households in 2001. Since then each village has experienced demographic changes that make the sample now unrepresentative. Given the sampling frame, the research team had limited opportunity to include new households in the survey in 2004–05 and 2008. To fill such gaps, systematic random sampling selected households for wealth ranking. For all villages, 1350 (48 percent) out of 2811 households were selected to include in wealth ranking.

Table 4.1: Sample Size and Village Characteristics

Villages	Total HH	Number of HHs interviewed	Wealth ranking households	FGDs*	Location and criteria for selection
Andoung Trach	209	87	130	4: moved up, unchanged poor, female-headed households and village leaders	In Battambang province, Sangkae district; substantial amount of wet season rice grown in flooded Tonle Sap, high emigration
Krasang	247	120	170	4: moved up, unchanged poor, female-headed households and village leaders	In Battambang province, Thma Koul district; substantial amount of wet season rice grown in flooded Tonle Sap, high resettlement of returnees from border camps
Dang Kdar	460	130	160	4: moved up, unchanged poor, female-headed households and village leaders	In Kompong Thom Province, Santuk district; low yield, wet season rice and substantial forest dependence in plateau
Khsach Chi Ros	360	121	179	4: moved up, unchanged poor, female-headed households and village leaders	In Kompong Thom province, Kompong Svay district; floating rice plus substantial fishing in flooded Tonle Sap
Kanhchor	264	124	174	4: moved up, unchanged poor, female-headed households and village leaders	In Kratie province, Chhloung district; dry season rice and substantial forest dependence in Plateau
Prek Kmeng	366	120	121	4: moved up, stagnate poor, female-headed households and village leaders	In Kandal province, Lvea Aem district; dry season rice and substantial fishing in Mekong plain
Ba Baong	589	128	188	5: moved up, moved down, unchanged poor, female-headed households and village leaders	In Prey Veng province, Peam Ro district; substantial dry season rice in Mekong plain
Trapeang Prei	69	69	65	4: moved up, unchanged poor, female-headed households and village leaders	In Kompong Speu province, Odongk district; low yield, wet season rice and dependence on hiring out labour in plateau
Kompong Tnaot	247	123	163	5: moved up, unchanged poor, female-headed households, moved in and village leaders	In Kampot province, Kampot district; low yield wet season rice, coastal fishing and salt mining
All Villages	2811	1022	1350	38 FGDs	

** There were 5–10 participants in each FGD. In addition, the team also interviewed the commune council to capture special development events and livelihood improvement.*

Half of the households for wealth ranking were selected randomly from those interviewed in 2001, 2005 and 2008; the other 50 percent were randomly selected from the village list or households not included in the household survey. In every village, wealth ranking was done with village leaders in order to classify households into social and well-being groups. This also identified mobility groups that were included in the FGDs. The impact of rising prices on the well-being, production and earnings of each group were the main focus of the PDS. The characteristics of each well-being group were defined by both formal and informal village leaders according to local conditions of growth and development. Therefore, the impacts of rising prices on well-being, poverty reduction and agricultural development are mainly drawn from FGDs.

4.3. GOVERNMENT AND DONOR RESPONSES

The government and donors have been working together to respond to food crises and sustain growth for poverty reduction. The policy measures include a government and ADB fund of USD3.5 million for food security and a temporary ban on the export of paddy in order to increase internal stocks and keep the rice price low for the poor before the national election. To support labour migration, the government decided to issue passports free of charge to cross-border migrants and to encourage recruitment companies to pay the visa fee for migrants, recovering it from the migrants when they are employed in late 2008. The poor can also benefit from health equity funds. The government has a policy of subsidising imports of agricultural machinery and has committed to boosting agricultural growth through infrastructure development.

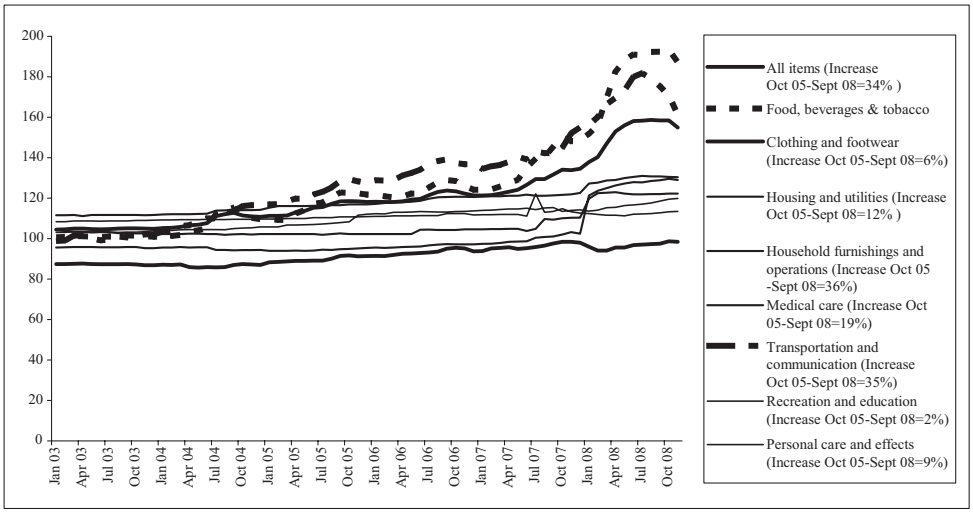
4.4. TRENDS IN PRICES OF FOOD AND NON-FOOD ITEMS

4.4.1. National Trends

The official CPI in Cambodia remained stable between 2000 and 2003. However, the prices of all items have risen since June or July 2004, reaching their highest between May and October 2008 and then starting to decline in the following month (Figures 4.1 and 4.4). The price of food in November 2008 was still 32 percent higher than a year earlier. For poverty reduction, the main focus should be on food.

In "other urban" (outside Phnom Penh) areas, cereals account for 25 percent of total household food expenditures, fish and seafood for 21 percent and meat and poultry for 16 percent, according to the 2004 Cambodia Socio-Economic Survey. In rural areas, the figures were 35 percent for cereal, 20 percent for fish and fish products and 15 percent for meat and poultry. When the price of food is high, many households decide to reduce food consumption or to buy cheaper food. Common concerns are the impact of rising prices on poverty, especially on those poor who rely on wage labour or are net food buyers.

Figure 4.1: Phnom Penh CPI July-December 2000=100



Source: NIS, Ministry of Planning

The key issue for food security and poverty reduction is the price of staples, especially the price of rice. Official statistics show the rice price becoming more stable or declining. However, the average price of rice in November 2008 was 2780 riels per kilogram, still 77 percent higher than a year earlier, while meats were 17 percent more expensive. The pressure was then relieved by the dry season rice harvest. In addition, increasing the bank reserve ratio from 8 percent to 16 percent in late March 2008 is viewed as an important measure to control inflation and mitigate the impact of the global economic and financial crisis.

4.4.2. Rising Prices in Rural Areas

The official rural CPI is still not available. Therefore, CDRI relied on data from its price surveys conducted in October 2005 and March and September 2008. The surveys suggest that the rural inflation rate is much higher than the national rate based on Phnom Penh. Prices of all consumer goods in rural areas have increased by 86 percent in three years, a more alarming rate than the 34 percent reported by the official CPI in Phnom Penh (Table 4.2). Higher transaction and transportation costs to rural areas might explain such differences.

Table 4.2 shows that the average prices of food and food items were 94 percent or 71 percent higher in September 2008 than in the same month in 2005.

Table 4.2: Inflation Rate (%) since October 2005

	Food		Non-Food		All items	
	Mar 08	Sep 08	Mar 08	Sep 08	Mar 08	Sep 08
Andoung Trach	56	79	38	67	50	75
Krasang	73	90	41	79	61	86
Khsach Chi Ros	109	93	49	64	93	86
Kanhchor	109	114	44	66	90	100
Prek Kmeng	77	81	68	96	74	86
Ba Baong	90	96	69	95	81	95
Dang Kdar	82	87	60	92	75	88
Trapeang Prei	81	87	43	80	67	84
Kompong Tnaot	61	74	47	76	56	74
All Villages	81	94	41	71	68	86

Source: CDRI price survey

While the remote villages of Khsach Chi Ros and Kanhchor experienced the highest inflation of food prices over the three years, the average price of rice doubled for all villages. Khsach Chi Ros is a fishing and rice farming village. Kanhchor is a forest-dependent village in transition from shifting culture to permanent cultivation of cash crops. Prices of food in these villages are also affected by increasing connections with urban markets and rural road construction. Since most of the study villages produce their own food, the positive impact of rising prices may outweigh the negative impact. The extent to which rural households can gain will depend on their productivity and ability to seize economic opportunities. In the nine study villages, about 50 percent of households had no agricultural land in 2008. They can be considered as net food buyers although some of them are able to farm either by renting or by being allowed by landowners.

4.5. IMPACTS OF RISING PRICES ON WELL-BEING AND POVERTY REDUCTION IN RURAL AREAS

About 25 percent of Cambodian households were poor in 2008, assuming a 1 percent per year reduction from 2004. About 92 percent of the poor households are rural. The food security and well-being of the rural poor are more likely to be affected by high prices. The poor are generally landless or land poor (a maximum of one hectare of rice land) (Chan 2008; Fitzgerald and So 2007) Only families that cultivate two or three hectares are able to produce a surplus for sale. Only 24 percent of 1009 PDS households have two hectares or more of rice land or a surplus for sale. Most of these farmers, however, sold their rice before the price rose. Only dry season rice farmers in the PDS villages could benefit from the rising price.

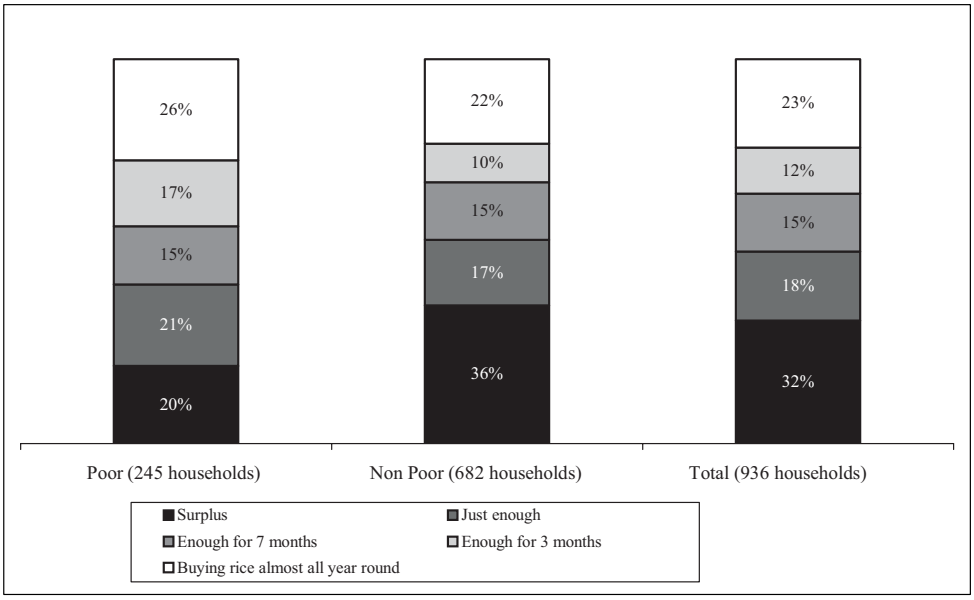
In the PDS villages, 46 percent of households were considered poor according to the wealth ranking exercises. The poor, who are net buyers of food, are hit hard by rising food prices if their incomes cannot keep up. In addition, income generation and livelihoods of different groups could be impacted by rising prices of transportation and communication, and of housing and utilities, which in one year were up by 26 percent and 12 percent respectively. An increase in the number of poor is only part of

the story. A more profound but less visible impact relates to those already poor falling more deeply into poverty, with long-term effects on health, education, productive assets, indebtedness, child labour and migration.

4.5.1. Impact on the Chronic Poor and Their Coping Strategies

While rising prices hit everyone, they make the poor become poorer. People who were poor before the price increases reduced their food intake and access to health care and education. In the PDS villages, about 35 percent of the households were poor and 11 percent very poor in 2008.

Figure 4.2: Rice Harvest and Household Consumption, 2008
(% of panel households)



Only 55 percent of non-poor and 41 percent of poor households produced enough rice for their own consumption in 2008, while 26 percent of the poor and 22 percent of the non-poor had to buy rice almost all year (Figure 4.3). The food security of at least 43 percent of poor and 32 percent of non-poor households was severely affected when the price of rice doubled between May and October. Box 1 summarises characteristics and coping strategies of unchanged poor rural households. Most of them are net food buyers. Although the wages of labour are now two or three times higher than two or three years ago, the demand for labour is seasonal and irregular. It is difficult for the poor to secure employment throughout the year.

Box 4.1: Views of Andoung Trach Leaders about Factors Holding Back the Unchanged Group

The stagnant poor are mostly landless, have many small children who cannot help earn money, often become sick, have no regular occupation or income and do not see a way out. Some of them have a little farmland; they sold a large part of their harvest to repay money they borrowed to treat their illnesses and buy food, so they have little paddy left for their own consumption. People in this group often fall ill and have serious problems feeding their children. Grown-up children who migrate to Thailand or sell labour along the border often earn only enough for themselves or are cheated by employers and so have no money to send home. Families become poorer when they have to borrow money to bring their children home.

Village leaders in Trapeang Prei: High food prices have an adverse impact on home consumption. The villagers here pay more for the same amount of food. The prices of milled rice increased to 2500 riels per kilogram for low quality rice and to 3000 riels per kilogram for good quality. Many people in this village rely on selling labour. Construction workers earned 15,000 riels a day and need to spend 5000 riels for their own food, leaving only 10,000 riels to feed the other family members. The situation was quite different in 2005–06, when most of them earned around 12,000 riels and spent only 2000 riels for themselves. In addition the price of gasoline increased from 3000 to 6000 riels per litre, increasing travel costs. As a result, they have to reduce their food expenditure by half in order to keep some money for travelling in search of work.

Female-headed household group in Kompong Tnaot: The food price is double now compared to 2005. One kilogram of milled rice was only 1300 riels and has increased to 2500 riels. This is bad for us as seasonal labour sellers. We do not have work and often cannot earn enough to live. We have to take loans in cash or kind or work for rice. We used to eat one kilogram of rice but now only 0.5 kg a day.

Very poor and poor groups in Trapeang Prei: In order to have food for our children, we try to do as many jobs as we can, e.g. construction worker, selling labour for farm work. Or we borrow rice from others, and borrow money from other people in the village.

When there are not enough jobs and before taking a loan from either relatives or micro-finance institutions, the very poor reduce their food consumption by half when the price of rice doubles, according to FGDs. Poor children often do not have enough food and are taken out of school in order to help earn income. Such strategies are commonly mentioned by daily wage workers. In addition, the rising food price has pushed the poor to take loans to buy food. The very poor, who often can not access micro-finance, have to buy rice on credit with the promise to repay in labour. According to FGDs, however, the growth in the last two or three years of micro-finance loans at 3 percent a month interest has helped them to cope with food prices, especially when they have no income or job. No participants in FGDs with unchanged groups or female-headed households were happy with rising prices. They all wanted the price of rice and gasoline to go down.

4.5.2. Impact on the Non-Poor and Their Coping Strategies

About 15 percent of the 1350 households in the PDS wealth ranking were able to make a good profit from the rising prices. They are mostly large farmers, traders or credit providers, categorised as the "better off and rich" groups. The "average households" own 1.5 ha of rice land and often sold some of their paddy immediately after harvesting to repay loans or meet the family social expenditure. The remaining harvest is often only enough for four or five months' consumption. These households often became food buyers during the cultivation period between May and November 2008. Combined with other shocks, this caused about 10 percent of average households to become worse off, and if prices continue rising, village leaders say they will fall into poverty. Although 12 percent of the average households were able to maintain their well-being status, many of them reported becoming landless due either to land sale or gifts to newly married couples. They rely on irregular returns from selling labour.

Box 4.2

FGD with mixed group of households in Ba Baong: Farming and fishing are the main sources of our income. Our incomes are not much different from two or three years ago. Our incomes are not high enough to cope with the rising food price. Only the better off are able to make better income from fishing or rice cultivation because they have tools or money to invest. Although the demand for rice and fish is high, fishing equipment is expensive and unaffordable for us.

Eight of us (10 participants) have migrated to Phnom Penh in search of construction work since 2000. In 2008, males earned 11,000 riels a day while females earned 10,000 riels, a bit higher than the 8000–9000 riels a day for males and 5000 riels a day for females two or three years ago. Although the wage is higher than in previous years, we cannot afford the same food. Before we spent 5000 riels for food; the same food now cost us up to 10,000 riels a day. In addition, jobs are not easy to find, so our income is not stable. Unlike before, we often cannot send money home, although we try to eat cheaper food. We don't think our lives will improve if the price of food stays high. We have more children to feed. We can not move out of poverty. There is hope of improving our livelihoods only when the price of food comes down.

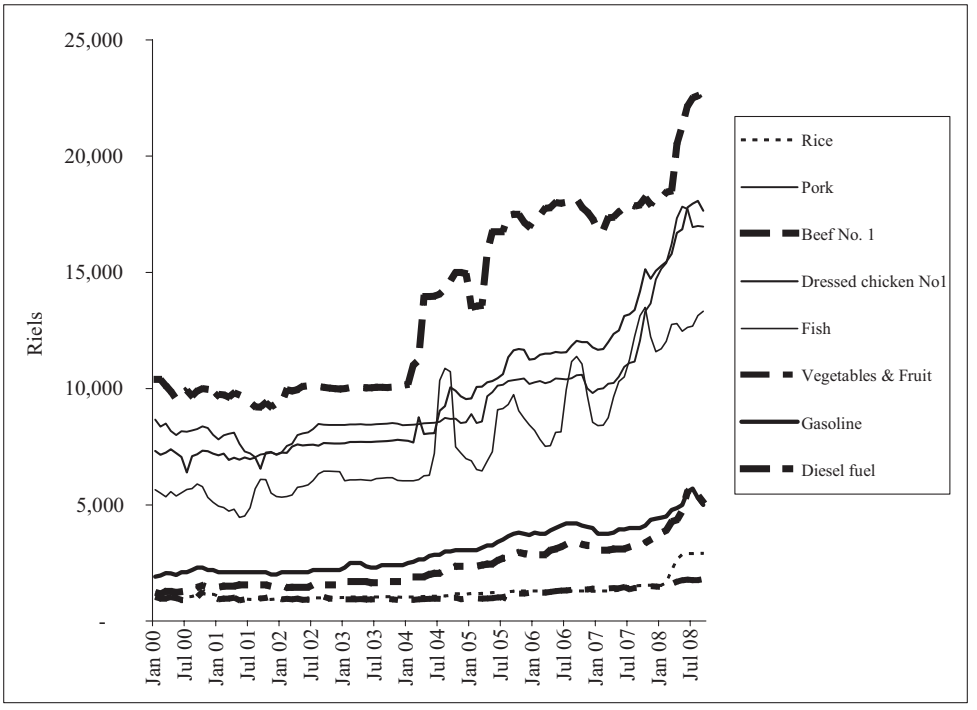
Chea Sopath is one of the 12 FGD participants with the unchanged group in Ba Baong: My family is poor because I sold all 1.5 hectares of rice land in 2007. I sold my farmland because I borrowed money from local moneylenders for rice farming, but the yield was not enough to repay the loan. My wife became seriously ill. I borrowed to take my wife to the hospital but her condition has not improved. Therefore, I decided to sell my land for eight *chi* of gold to pay the debt. Recently, I earn just enough for each day but cannot save for tomorrow. The rising food prices cause chaos for us.

4.6. IMPACT OF FOOD PRICE INCREASES ON AGRICULTURAL PRODUCTION AND DIVERSIFICATION

Cambodia has rapidly integrated into regional and global markets since the mid-1990s. The demand for and prices of agricultural produces have become highly volatile as part of recent regional and global economic phenomena. This global phenomenon of rising prices has provided opportunities and obstacles for agricultural development and poverty reduction in Cambodia. According to the statistical yearbook produced by the NIS (2006), the area of cultivated land and production of crops and livestock have increased remarkably since 2000. As a result, Cambodia produced about 2 million tones of paddy rice for export in 2007 and 2008.

The prices of selected agricultural products in Cambodia rose since mid-2005 along with oil (Figure 4.4), and the increases in demand for cereal and oil in international markets (FAO April 2008. High and low price events are not rare in agricultural markets in Cambodia. High prices are often short-lived compared with low prices. What distinguishes the current situation is the concurrence of higher prices of nearly all major foods and other necessities and the possibility that the prices may remain high.

Figure 4.3: Price of Selected Agricultural Products, 2000-2008



Source: Official CPI, NIS

A rise in energy prices increases the cost of crop production for several reasons but provides small returns, for small farmers in particular. First, there is a direct increase in the price of fertilisers and pesticides, which are mostly imported from neighbouring countries. Costs of seed and other inputs also increase due to the rising cost of transport. A long-run cost increase would be expected due to an increase in the cost of manufacturing, capital and replacement items. Unfortunately, the producers have limited ability in the short run to pass these costs on to consumers, (Fitzgerald & So 2007). Agricultural market integration and development are progressing with infrastructure development in Cambodia. With limited access to affordable credit and effective extension services, farmers often had to bear high transaction costs of production and received small gains from their farming.

4.6.1. Impacts on Agricultural Production and Poverty Reduction in PDS Villages

There were mixed experiences of the impact of rising prices on agricultural development and diversification among the PDS villages. At least three of the villages were able to seize opportunities generated by increasing prices of agricultural commodities to intensify or diversify their farming activities. These were the forest-dependent villages of Kanhchor and Dang Kdar, and Khsach Chi Ros, a fishing community, where land is still available for conversion to cultivation. Rising prices have promoted the growth of both cash crops and dry season rice, while production of livestock is mostly depends on being competitive with imported animal products from neighbouring countries.

4.6.2. Cash Crops

In Kanhchor and Dang Kdar, cash crops such as cassava, soybeans and maize have increased remarkably in the last three years, although this production has not yet reached its full potential. Cultivation of cash crops in the area was initiated by outsiders who have mainly come from Kompong Cham and Prey Veng since 2006. They have good information about the demand and prices of crops and encroach on or purchase two to five hectares of forest from local authorities for cultivation. Each newly arriving household can make a remarkable profit of USD800–1000 a year from growing cassava and an additional USD200–300 per hectare from cultivating soybeans. Many indigenous farmers have joined the new production, abandoning shifting culture for permanent cultivation of cash crops.

While this trend is expected to result in substantially improved wealth for both new and indigenous people, large companies and elites are also competing with subsistence farmers to convert forest land for commercial cultivation of rubber or cassava. This has led to increased demand for and wages of labour, from around 5000 riels per day in 2005 to 15,000 riels in 2008. Poor people with no means to pay for land conversion can therefore also benefit.

Conflicts over access to land for subsistence and commercial production have occurred and not yet been properly resolved, and have limited the growth of cash crop production in the area. Such conflicts are more severe in Dang Kdar, where all households in

Kraya commune were involved in a conflict with a Vietnamese company that received an economic concession from the government. The commune council and village leaders have been trying to resolve the problem through negotiation and a plan of social land concessions for landless indigenous people. However, the social concession has been proceeding slowly. The plan has not yet been approved, while the company is already putting up fences. This limits access not only to land for subsistence cultivation but also and more importantly to the traditional area for grazing their animals and foraging. Because of uncertainty of access to land and the relaxation in control of illegal forest activities before the national election in July 2008, people decided to collect as many forest products as possible before stronger enforcement resumed.

In November 2008, cassava growers wondered whether they would be able to gain as much from their farming as they had a year earlier, because the price of cassava was down. The price dropped to only 200–250 riels per kilogram of dry cassava from 800 riels a year earlier. This was just a promised price, and no one had yet come to buy their produce, while the price of labour remained high. In addition, growers often take loans for farming, and if the price is still low, they may not harvest because the price of wage labour remains high and farmers will not make any profit, according to village leaders. Cassava grown here is mainly exported to Vietnam. The drop in demand and price may be due to the global financial crisis. While it is not possible for the PDS to collect further information, it is important to conduct a study of the impacts of the financial crisis.

4.6.3. Dry Season Rice

In Khsach Chi Ros, the rising price of rice encouraged farmers to change from wet season (floating) rice to dry season rice, which has a yield of 3–4 tonnes per hectare, two times higher than the average of their traditional floating rice since 2005. As in the forest-dependent villages, massive conversion of flooded land has occurred since 2005, especially rapidly during the one or two years before the national election. At the same time, conflicts over water between local farmers, fishing lot owners and newcomers who built a large dam for irrigation have not been settled. Most converted lands have been used to grow high-yield rice variety IR 66. As a result, Khsach Chi Ros has become a dynamic dry season rice growing area and surplus producer. This was cited as the main source of livelihood and well-being improvement for many.

Not all rice growing villages had the same ability as Khsach Chi Ros to benefit from food prices. In other villages, rice productivity tended to be more stable due to good weather in the previous three years. On average, the rice yield in 2008 was slightly higher than in 2004–05 (Table 4.3). This was due mainly to good rainfall and, in Ba Baong and Khsach Chi Ros, improved access to irrigation. In these two villages, farmers were able to increase the yield of their dry season rice by 16 percent and 21 percent respectively. However, rising prices of inputs limited the ability of small rice farmers to increase their productivity. Large farmers, who are often in the "better off" group, were able to increase their yields.

Table 4.3: Total Average Production of Wet and Dry Season Rice, by Landholding Groups, 2004-08

Landholding size	Average total rice production in 2008 (kg/hh)	Average yield of rice in 2007-08 (kg/ha)					
		Dry Season Rice			Wet Season Rice		
		2004-05*	# of HH 2008	2007-08	2004-05*	# of HH 2008	2007-08
Not cultivated	0						
<0.5 ha	662	3564	49	3281	1721	97	2099
0.5-0.99 ha	1221	3006	70	2893	1462	138	1582
1-1.99 ha	2726	3163	75	3319	1573	131	1475
2-2.99 ha	5560	3161	39	3871	1123	61	1505
>=3 ha	12323	-	52	3825	-	51	1906
Total	2680	3281	285	3376	1535	478	1682

** The figures are from 890 households surveyed in 2004-05.*

Unable to cope with rising prices of agricultural inputs and lacking irrigation, most people in Trapeang Prei and Prek Kmeng—where urbanisation and land speculation were busy—engaged in land sales in the two or three years before the national election. Fortunately, with permission to access land from the new owner, many people invested some money in growing rice for subsistence. On average in all survey villages, about 15 percent of the landless households—50 percent in Khsach Chi Ros and 36 percent in Kanhchor—were able to rent land to cultivate rice for household consumption.

As in other villages with poor soil such as Kompong Tnaot (90 percent of villagers) and Dang Kdar (68 percent), a large majority (86 percent) of households in Trapeang Prei still grow rice and obtained a higher yield (1.5 tonnes per hectare during 2007–08, compared to only 1 tonne in 2005). Unlike dry season farmers, the farmers in those villages gain nothing from the rising price of rice while most of the produce is kept for consumption. In order to cope with rising prices of inputs, the dry season rice growers decided to reduce expenditure on labour by changing from labour-intensive transplanting to less labour-intensive sowing of seeds.

4.6.4. Livestock Production

Because of good prices of livestock, more poultry and pigs were being raised for sale in the study villages. However, only a very few people with good savings in each village could afford to do this since 2005. Livestock in the study villages are often subjected to strong competition of imports from neighbouring countries. However, livestock raisers still reported small gains, or considered livestock as a way of saving capital. The prices of pigs and chickens were high in 2007 and early 2008, after the government enforced strict control of imports. However, many people in Kompong Tnaot decided to stop keeping pigs for piglets, which offered good income between 2005 and 2007, because they could not afford more expensive inputs. In conclusion, livestock production has not changed much in the last three years, even when the price of agricultural commodities was high. Besides being unable to compete with cheaper imports, livestock rearing is still done in traditional ways, involving high risk of animal

death due to lack of know-how to control disease. Very few pig keepers have had good incomes.

A difference with regard to animal raising was observed in Prek Kmeng, where a large majority of people stopped rice farming between 2007 and 2008. Besides intensifying fishing, people used the money from land sales or micro-loans to grow more fish in cages. Fishing and fish raising, in addition to land sales, were the main sources of livelihood and well-being improvement here in the previous two years.

4.6.5. Consequences of Rising Prices of Farm Inputs on Landless Households

Small farmers still make hardly any profit. With the rising prices of farm inputs, land productivity of small landholders (less than 0.5 ha) even declined for dry rice farmers while increasing slightly for wet season farmers due to good weather in 2008. In the absence of effective extension services, some small farmers viewed small plots as unprofitable and decided to sell them. Table 4.4 shows the percentage of landless households, which has increased more rapidly than from 2001 to 2005. The recent land speculation and high prices tend to be the most important reason for deciding to sell land.

Table 4.4: Percentage of Agricultural Landless Households and Non-Farming Households during Crop Year 2007–08

Village	2005	2008	% change 2005–08	Non-farming households
Krasang	37	41	3	33
Andoung Trach	39	70	31	41
Trapeang Prei	10	57	47	14
Khsach Chi Ros	4	16	12	10
Dang Kdar	3	66	63	32
Kompong Tnaot	7	50	43	10
Prek Kmeng	30	72	42	83
Kanhchor	20	65	45	31
Ba Baong	8	12	5	13
Total	17	49	32	30

Table 4.5: Percentage of Households That Decided to Sell Their Lands 2005–08

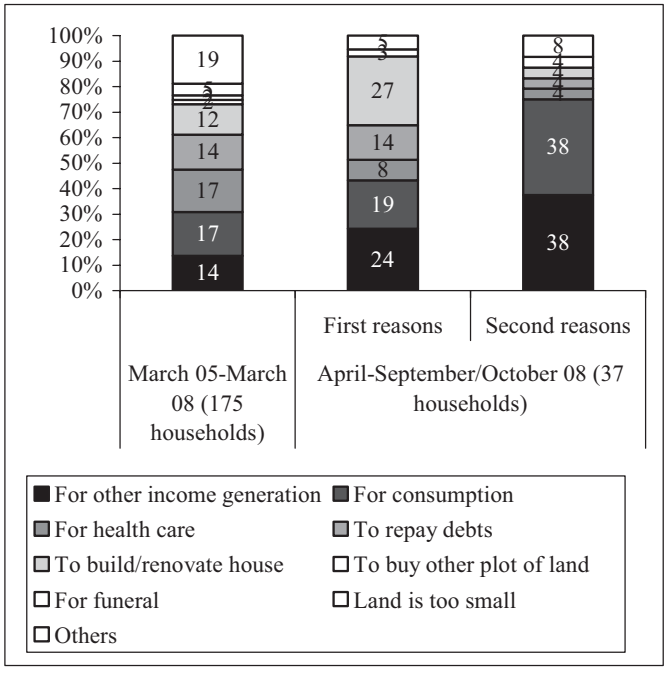
	March 2005–March 2008	April–September/October 2008
Krasang	8	0
Andoung Trach	8	0
Trapeang Prey	**52**	5
Khsach Chi Ros	4	5
Dang Kdar	**24**	4
Kompong Tnaot	12	2
Prek Kmeng	**46**	**13**
Kanhchor	3	1
Ba Baong	12	2
All villages	17	4

Source: 1009 households in 2008

The rapid increase in landless households tends to suggest ineffective implementation of government strategy to support small farmers. Table 4.5 shows that a remarkable proportion of households decided to sell their land in three villages. Among the highest reasons for land sales were setting up alternative income generation and buying food (Figure 4.5).

According to FGD participants, the prices of farm inputs were two times higher than two or three years earlier. This increase and limited access to quality extension services are fundamental constraints that have limited farmers' ability to intensify and diversify. As a result, urban and cross-border emigration increased in the PDS villages.

Figure 4.4: Reasons for Selling Agricultural Land

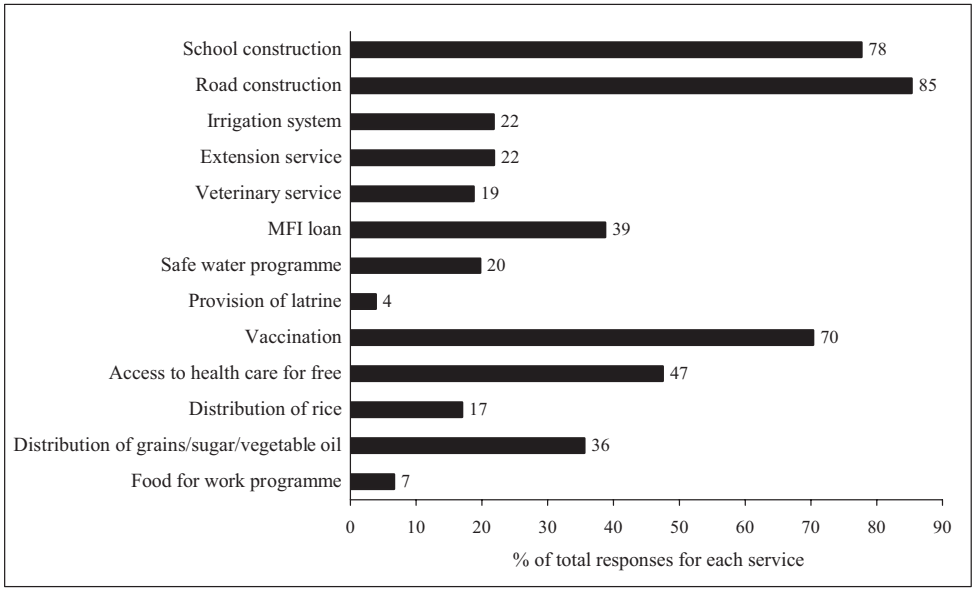


The association between inability to afford farm inputs and land sale is high. Small farmers have scant hope of good profits, even if the price of rice doubles or there are good prices for other agricultural produce. They receive marginal or even no benefits from their farming and therefore have few savings for the next season. Small farmers often have to take loans, which adds to the cost of production. They lack market information and therefore have limited choice of what to produce and poor bargaining power for their produce. This was among the main reasons for land sales in the study villages. However, the findings from the PDS urge stronger efforts to support small farmers to overcome their challenges, continue producing and be better able to seize benefits.

4.7. SCANT EXTERNAL ASSISTANCE TO COPE WITH RISING FOOD PRICES

Figure 4.5 shows the percentage of households that had basic services between March 2005 and March–April 2008. Most of the services here are development assistance rather than responses to the price crisis. However, 17 percent of households received milled rice and 36 percent grains, MSG, sugar and vegetable oil, mostly from political parties in late 2007 or early 2008. In the case of milled rice, each household received 50 kilograms, less than one month's consumption of a family of five. According to the FGDs, food is distributed only to people who are present at the time. The very poor are often not able to receive that assistance because they are mobile workers.

Figure 4.5: Percentage of Households That Had Access to Services between March 2005 and March 2008



However, the poor groups interviewed appreciated receiving free health services at the commune health centre or hospital since early 2008. By combining children's and

mother's vaccinations from the commune health centre, they have more time to earn a living. This has helped them a lot during the prices increase, although the service is often not free but cheaper. In addition, at least 85 percent appreciated the improved roads within the villages or nearby areas. The female group interviewed in Kanhchor, a forest-dependent village, stated:

"Our income would be rather good and we would have severe food insecurity if the road was as bad as in the early 1990s. At least now we can go faster to a place where we can earn money or buy food because the price is extremely high for us here … We would die if we waited for a god to help or those who come to offer us rice …We would be grateful if the government allowed us access to forest land or our ancestral places for growing cassava or soybeans."

4.8. CONCLUSION

The prices of consumer items in 2008 were much higher than two or three years earlier. Overall inflation in rural areas was higher than urban inflation. Rising prices of food and production goods hit the poor hardest. In response to rising prices, the poor reduced the quality and quantity of food and non-food items that they normally consume. A more profound impact is that the already poor fell more deeply into poverty. Another consequence of rising prices was a rapid increase in the number of landless households.

About half of rural households in the nine study villages are net buyers of rice and other basic foods. Only a few people in rural areas can make good income from rising food prices: large landholders, traders and cash crop and dry season rice growers. The demand for wage labour also increases, but jobs are seasonal and irregular. High prices of agricultural produce are often short-lived compared to low prices. Inability to grasp opportunities to diversify sources of income has created greater pressure on common property resources and over-exploitation of forest in the forest-dependent villages and depletion of fish stocks beyond their regeneration capacity.

Despite considerable efforts to assist the poor to have better food security at a time of rising food prices, the interventions had not reached the poor in the nine study villages. If there is any intervention, it often comes in the form of political distribution of rice during an election campaign or a health equity fund. While development of a social safety net is critical, it may be more timely and effective if it is implemented through local authorities, or if the capacity of commune councils can be built to implement the national policy.

Greater efforts and commitment from government, donors and the private sector are needed to support small farmers. Social concessions and ensuring access to productive assets and land for smallholders is obviously logical if the production constraints on small farmers can be removed. This study also recommends faster demarcation and land titling for both social and economic concessions in areas where much land has already been converted.

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Global Financial Crisis: Local and Regional Impacts

By: Jayant Menon

CHAPTER 5

Chapter 5 - Global Financial Crisis: Local and Regional Impacts[1]

Abstract

The world is in the midst of an unprecedented financial crisis. We have already witnessed the collapse or near-collapse of several large financial institutions, the weakening of the financial system due to increasing losses on impaired and illiquid assets, rising uncertainty regarding the availability and cost of funding and the further deterioration of loan portfolios. Many warn that there is worse to come. Despite substantial liquidity injections by monetary authorities across the globe, money markets and financial conditions generally remain stressed. So far, the ASEAN+3 region, and its component countries and sub-regions—Japan, China, the NIEs, ASEAN-4, Lao PDR, Vietnam and Cambodia—have weathered the turmoil better than most other countries or parts of the world. While the latest IMF projections for 2009 are for the US and the euro zone to contract by 1.6 and 2.0 percent, respectively, developing Asia is still expected to expand by 5.5 percent. The NIEs, all of which are currently in technical recessions, were expected to rebound and grow by 2.1 percent in 2009 when the IMF released its assessment in November 2008, but by January 2009, the projection is for a 3.9 percent contraction. For Cambodia, it appears that growth may still come in within the 3–4 percent range for 2009 and 2010. Although this is a sharp fall from the double-digit rates over the past few years, it is nevertheless a healthy and sustainable rate that will ease inflationary pressures. In fact, a silver lining from the growth slowdown, and the associated drop in oil and other commodity prices, has been the taming of inflation in Cambodia. Inflation had been looming as a major problem in mid-2008, before the global crisis hit, but is now under control.

5.1. INTRODUCTION

The world is in the midst of an unprecedented financial crisis. Almost daily we find reminders in the press of how the impacts of this crisis are the worst since the Great Depression, and some forecasting that it may soon be even worse. We have already witnessed the collapse or near-collapse of large—and in some cases systemically important—financial institutions, the weakening of the financial system due to increasing losses on impaired assets, rising uncertainty regarding the availability and cost of funding and the further deterioration of loan portfolios (IMF 2008c). This is a crisis that not only started in the US, but whose causes are rooted in decisions taken by US agents associated with the banking and financial sector. So, how did it all begin?

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It started in the US sub-prime[2] mortgage market. Basically, a lack of regulation and prudential controls on mortgage lending led to significant risk-taking behaviour, and a lot of potentially bad loans being made. When the US real estate bubble burst, rapid devaluation of mortgage-related assets led to massive write-downs on financial institution balance sheets. The capital base of these financial institutions was slashed almost overnight. Mounting losses on impaired or illiquid assets first claimed highly leveraged hedge funds—the collapse of two Bear Stearns funds in June 2007 marked the overture of the sub-prime saga. The crisis took a disastrous new turn in September 2008, when Lehman Brothers filed for bankruptcy, Merrill Lynch was bought by Bank of America, and American International Group (AIG) received a rescue package from the US Federal Reserve, all within a few days of each other. A number of significant financial institutions failed, and bail-outs have thus far led to dramatic changes in the global financial landscape, evoking unprecedented policy interventions to arrest the growing panic. Major banking systems worldwide have thus far written down sub-prime-related losses reaching almost a trillion US dollars since July 2007. Deterioration in the credit quality of sub-prime mortgages spread quickly to broad asset classes held by a wide spectrum of investor groups around the globe.

By now it seems to matter little *where* it started— although the *why* bears important lessons for all, to avoid a repeat of history—as the impacts have spread quickly and widely. Major industrial economies are slipping into recession, the International Monetary Fund (IMF 2009a) now projecting that GDP growth in advanced countries will be -0.3 percent in 2009—after an estimated growth of 1.4 percent in 2008. This would be the first annual contraction by advanced countries in the post-World War II period. This is also the first time in this period that we are witnessing a synchronised contraction of the G3 economies—US, euro zone and Japan. The ongoing financial crisis has also intensified its grip on global money and credit markets, choking off credit to the private sector. As the process of financial de-leveraging continues, the knock-on effects on cash-strapped households and the broader economy will increase significantly. While measures taken so far by authorities around the globe should help reduce the severity and duration of the crisis, the damage to global credit conditions is considerable, and recovery will take a long, but still uncertain, amount of time.

In this paper, we try to assess the impact that the global financial crisis is likely to have on the region. By region we mean ASEAN+3. But ASEAN+3 is highly diverse, so manageability requires that we examine some sub-groupings and some constituent countries separately. The countries that we consider individually include Japan and China, because of their size and the role they play in the region as well as in the world

2 Sub-prime lending, also referred to as near-prime or second chance lending, involves financial institutions providing credit to borrowers who do not meet prime underwriting guidelines. Sub-prime borrowers have a heightened perceived risk of default, such as those who have a history of loan delinquency or default, with recorded bankruptcy, or with limited debt experience. Although there is no standardised definition, in the US sub-prime loans are usually classified as those for which the borrower has a Fair Isaac Corporation or FICO score below 680.

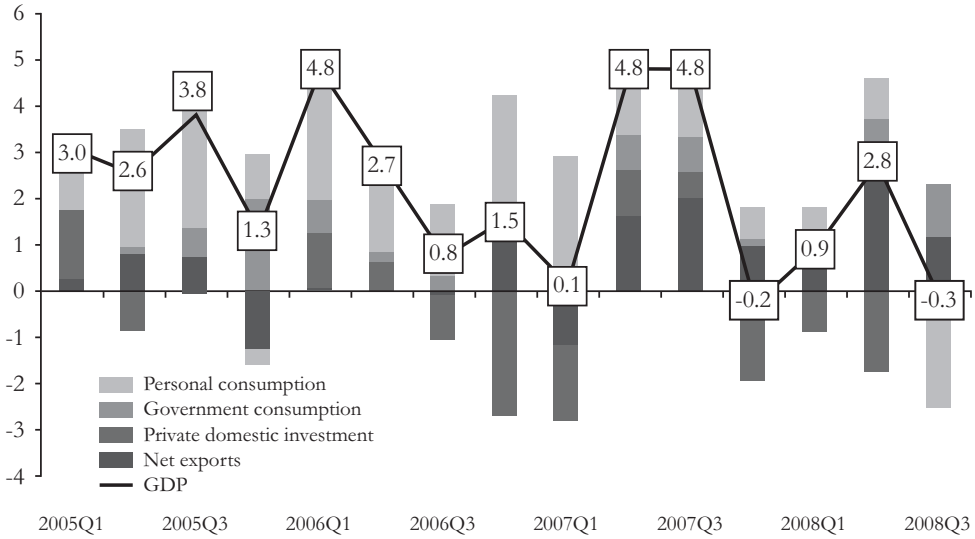
economy, and Cambodia, given the interests of the readership. We also consider the CLV subgroup, which combines Cambodia and its immediate transitional neighbours, Laos and Vietnam. The remainder of the ASEAN+3 grouping is broken down into two sub-groups: the newly industrialising economies or NIEs (South Korea, Hong Kong and Singapore) and the four middle-income ASEAN economies, or ASEAN-4 (Indonesia, Malaysia, Philippines and Thailand). To be able to examine the impacts on the ASEAN+3 region and its various components, it is critical first to come to grips with what is happening in the rest of the world.

Thus we begin in Section 2 by examining the outlook for the external environment, assessing prospects for the US and the euro zone separately. We continue in Section 3 to examine two other countries that play key roles in the world economy, but are part of the ASEAN+3 region: Japan and China. Section 4 focuses on the NIE grouping, while Section 5 considers the ASEAN-4. In Section 6, we examine the situation in two of Cambodia's key economic and strategic partners, Laos and Vietnam, before focusing on Cambodia itself in Section 7. A final section concludes.

5.2. THE EXTERNAL ENVIRONMENT: US AND EURO ZONE, AND WORLD TRADE AND COMMODITY PRICES

The economic outlook for the US seems to get worse with every new bit of information or data that is released, the most recent being unsurpassed unemployment levels. The US economy contracted by 0.3 percent (quarter-on-quarter seasonally adjusted annualised rate) in the third quarter (Figure 5.1), and is expected to contract further in the first quarter of this year. Private consumption expenditure dropped 3.1 percent from June through September, as consumers retrenched amid the continuing housing slump, mounting job losses and the intensifying credit crunch. The IMF (2009a)

Figure 5.1: Contributions to Growth—US*

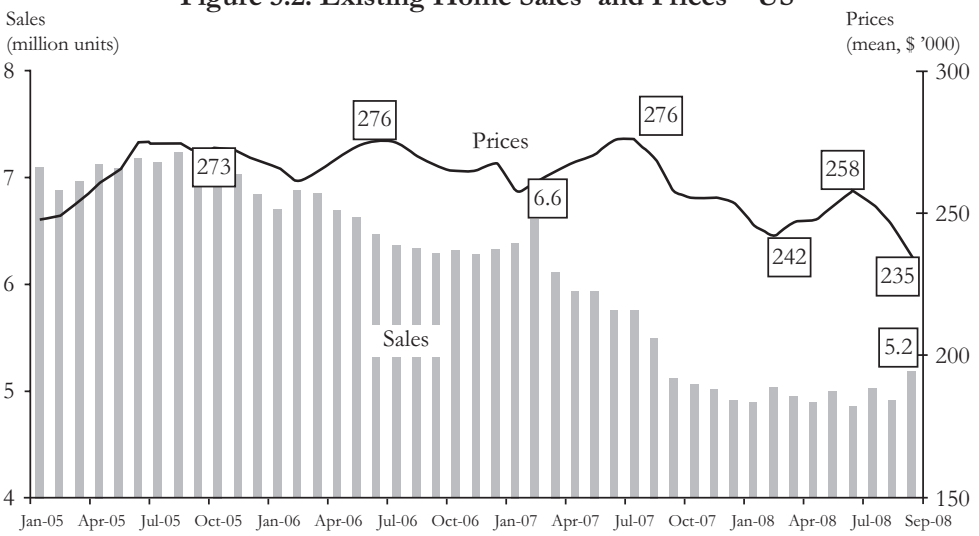


Source: US Bureau of Economic Analysis

** Seasonally adjusted, annualised, quarter-on-quarter percentage change.*

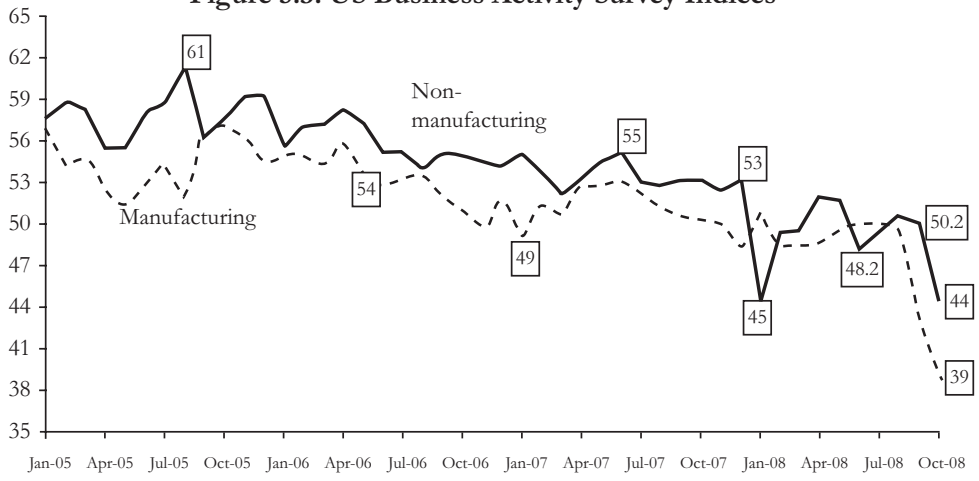
revised its forecast downward in January 2009 to a 1.6 percent contraction in GDP in 2009, from a 0.7 percent contraction it expected in November 2008 (IMF 2008b). By 2010, however, growth is expected to come in at 1.6 percent. Home prices continue to fall, with inventories high and sagging demand rapidly spilling over into business activity (Figures 5.2, 5.3).

Figure 5.2: Existing Home Sales* and Prices—US



** Seasonally adjusted; annualised.*
Source: CEIC

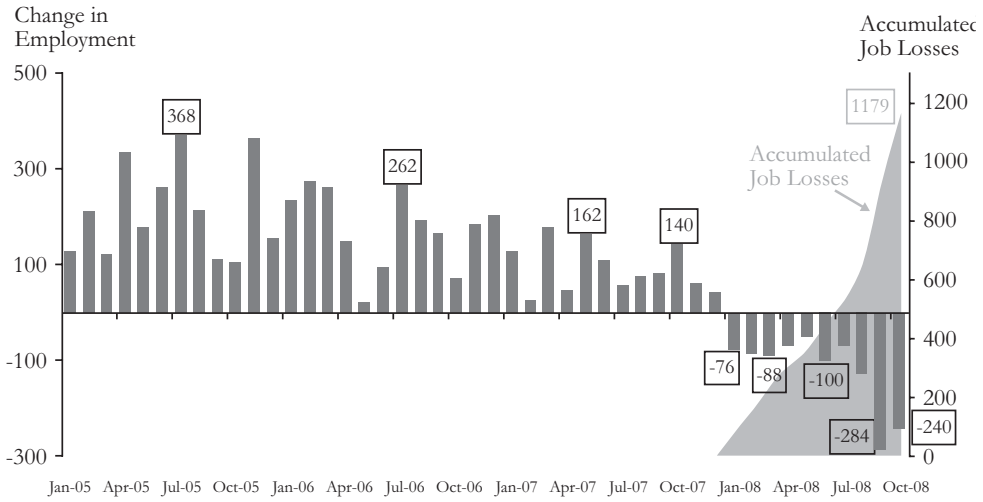
Figure 5.3: US Business Activity Survey Indices*



** Data survey from the Institute for Supply Management. The indices are a summary measure showing the prevailing direction and scope of change. An index above 50% indicates that the manufacturing or non-manufacturing economy is generally expanding; below 50% indicates that it is generally declining.*
Source: Bloomberg

Unemployment jumped to a 14-year high of 6.5 percent in October, according to the Bureau of Labor Statistics (Figure 5.4). But things have become worse since then. Unemployment rose to 6.8 percent in November, and then 7.2 percent in December 2008. Between November and December, the number of unemployed persons increased by 632,000 to 11.1 million. Payroll employment fell by 524,000 in December 2008 alone, and by 1.9 million over the last 4 months of 2008. Since the start of the recession in December 2007, the number of unemployed persons has grown by 3.6 million, and the unemployment rate has risen by 2.3 percentage points.

Figure 5.4: Change in US Non-Farm Employment
(thousands)



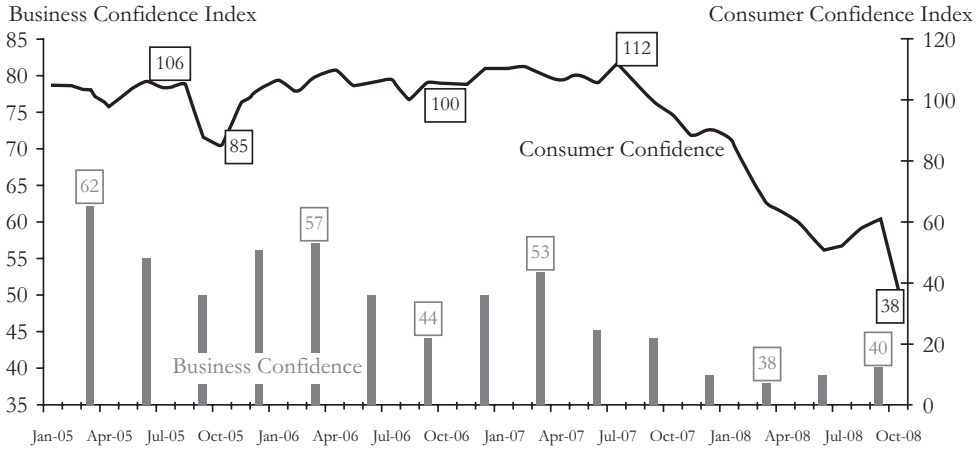
Source: OREI staff calculations based on US Department of Labor Bureau of Labor Statistics data

This is a resilient slump that has so far withstood massive monetary and fiscal boosts. Leading indicators also suggest the downturn will likely be prolonged, despite these interventions (Figure 5.5). In monetary policy, the US Federal Reserve slashed its target policy rate by 50 basis points to 1 percent on 29 October and by 75 basis points to 0.25 percent on 16 December 2008. This last cut not only represented the 10th consecutive reduction since September 2007, but also brought the target funds rate to the lowest level in the history of modern monetary policy. Clearly the interest rate cut in October failed to stimulate as much lending as regulators and policymakers wanted to see. In announcing this historic rate cut, the Federal Open Market Committee had the following to say: "Since the Committee's last meeting, labor market conditions have deteriorated, and the available data indicate that consumer spending, business investment, and industrial production have declined".

Fiscally, a second stimulus package is under discussion following the $150 billion package approved in February 2008. This is on top of the $700 billion financial rescue bill passed in September 2008. Slowing economic activity is keeping price pressures at bay, as headline inflation eased to 3.7 percent in October 2008, down from the 5.6 percent July peak. Core inflation, which excludes food and energy, also eased to 2.2

percent from 2.5 percent in September. The US trade deficit narrowed again in the third quarter as the effect of past dollar weakness was carried over, but the dollar's recent strength may reverse the trend in coming quarters.

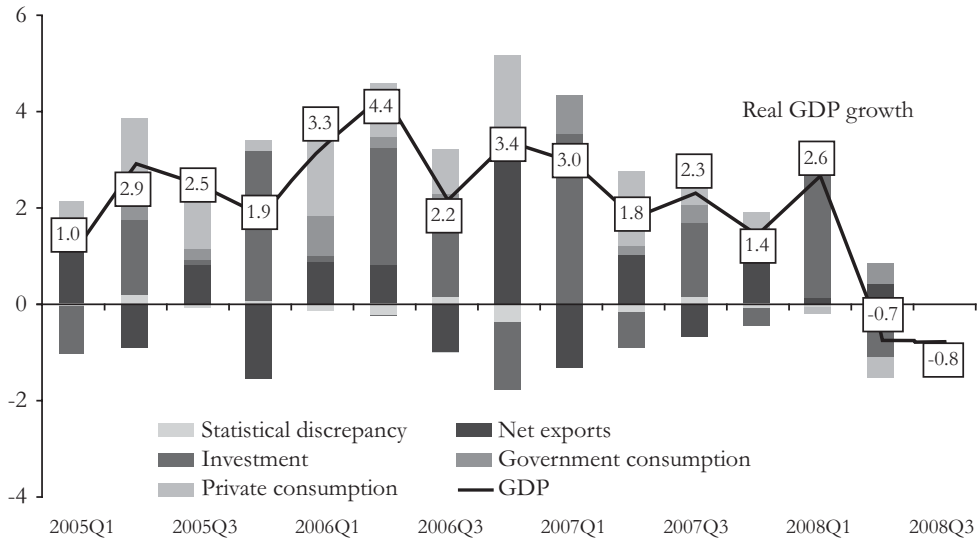
Figure 5.5: US Business and Consumer Confidence Indices



Notes:
** Consumer confidence (1985 = 100)*
*** A business confidence index above 50 means there are more positive than negative responses.*
**** Consumer confidence is monthly, business confidence is quarterly.*
Source: Bloomberg

The euro zone is already in recession after many financial institutions became direct casualties of the financial crisis, industrial production declined and retail sales fell. The region has been battered by a series of shocks over the past year or so, including financial turbulence, high oil prices, and significant housing price declines in several countries (Figure 5.6). High inflation eroded real incomes, hurting consumer spending, and business investment weakened amid heightened uncertainty. Financial systems have been visibly shaken in the aftermath of the intensified crisis since mid-September, as many European banks were caught with severely damaged balance sheets. Belgium, France, Germany, Luxembourg, the Netherlands and the United Kingdom took extraordinary measures to rescue banking systems, while Denmark and Ireland announced blanket deposit and debt guarantees for their banking systems. But the effect of financial de-leveraging continues to reverberate through the real economy, as banks reduce lending and credit conditions tighten.

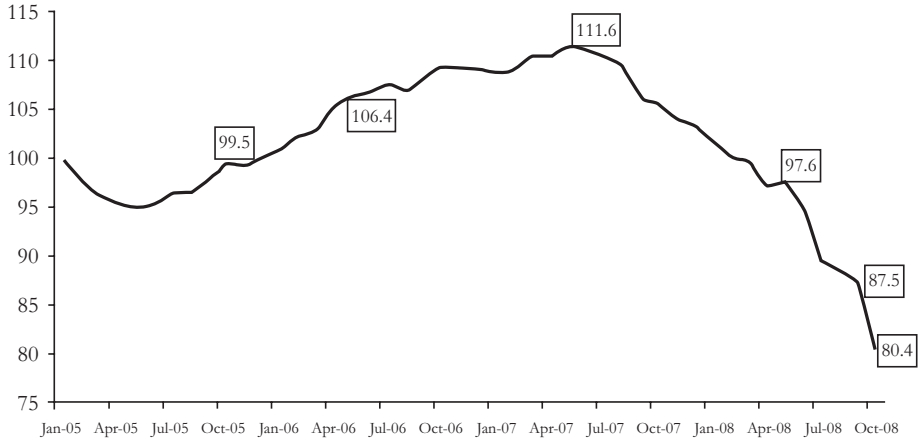
Figure 5.6: Contributions to Growth—Euro Zone
(seasonally adjusted, annualised, quarter on quarter % change)



Source: Eurostat web site

Economic activity is likely to weaken further with consumer and business confidence down sharply (Figure 5.7). The IMF expects the euro zone to contract by 2.0 percent in 2009, but rebound to grow by 0.2 percent in 2010 (IMF 2009a). Retail sales remain depressed, and industrial production has slumped, reflecting a drop in exports (Figure 5.8). The global downturn will likely dampen external demand further, partly offsetting the effect of the recent weakening in the euro and declines in oil and other commodity import bills. Inflationary pressures are subsiding on falling oil prices and the shrinking economy, which gives some room for monetary easing. On 8 October, the European Central Bank joined the global move to inject liquidity and cut interest rates by 50 basis

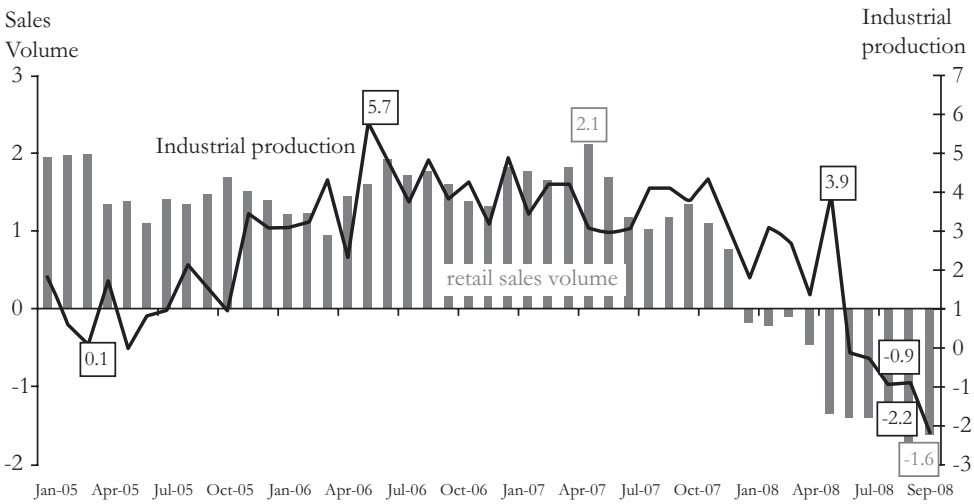
Figure 5.7: Economic Sentiment Indicator*—Euro Zone



** The economic sentiment indicator is a composite index of business and consumer confidence indicators based on surveys of overall economic assessment and expectations in the euro zone. Source: Bloomberg*

points in an attempt to restore confidence in financial markets. More stimuli will likely come over the course of the year to counter sagging demand.

Figure 5.8: Retail Sales and Industrial Production—Euro Zone

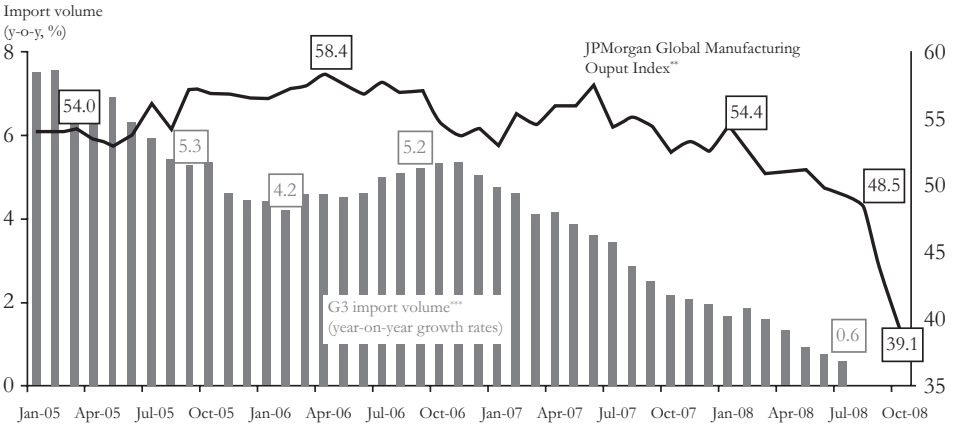


** Seasonally-adjusted, year-on-year growth rate of 3-month moving averages.*
Source: OREI staff calculation based on CEIC data

World Trade and Commodity Prices

World trade growth is slowing sharply as demand from major industrial countries slumps, reducing export production in emerging market economies. A synchronised

Figure 5.9: Global Manufacturing Output and G3 Import Volume*

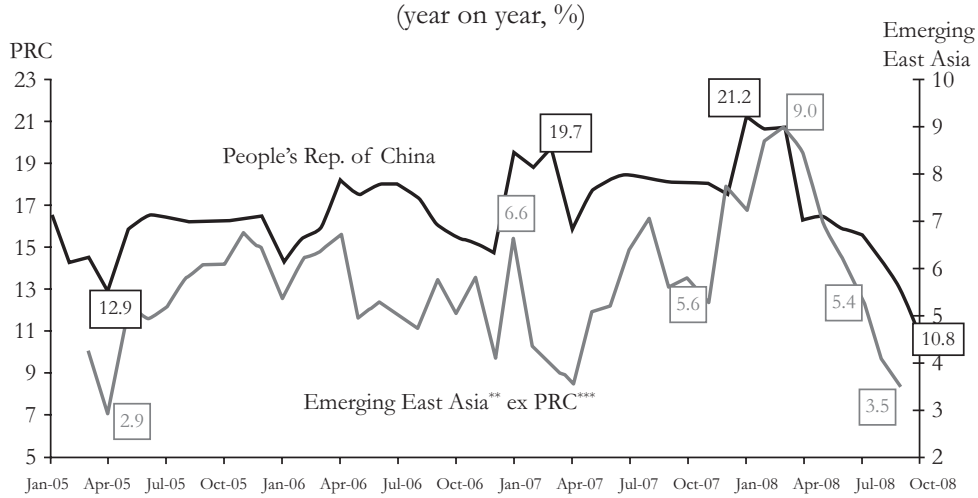


** Annual growth rate.*
*** A component of the JPMorgan Global Manufacturing Purchasing Managers' Index (PMI), which serves as an indicator of global manufacturing business conditions, based on data collected from surveys around the world. A reading above 50 indicates an increase in the variable sice the previous month and below 50, a decrease.*
**** Import values deflated by import price indices.*
Source: OREI staff calculations based on data from International Financial Statistics, International Monetary Fun; Bollmberg; and JPMorgan

downturn in advanced economies is adding increased pressure on world trade. Global manufacturing outputs have slumped, with G3 import demand growth slowing rapidly (Figure 5.9). Growth in world trade has been slowing (Figure 5.10), and the World Bank estimates trade volume will contract by 2.5 percent in 2009, from an estimated 5.8 percent increase in 2008.

Figure 5.10: Industrial Production Growth*

(year on year, %)

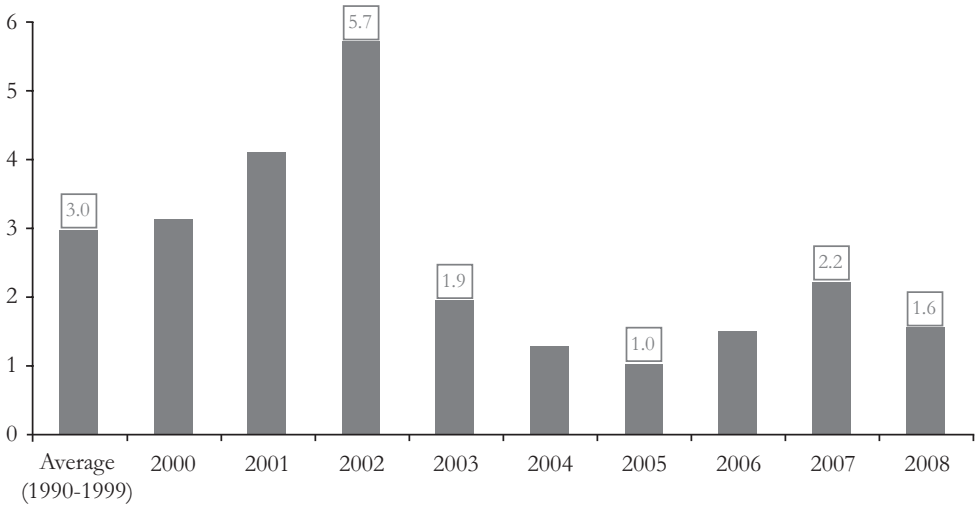


** 3-month moving average.*
*** Refers to ASEAN-4; South Korea; Singapore; Thailand; Brunei Darussalam; Cambodia; Laos; Myanmar; and Vietnam, for which monthly data are not available.*
**** PRC = People's Rep. of China*
Source: OREI staff calculations based on CEIC data

Global oil and commodity prices have fallen sharply—some from record highs—amid fears of a global recession and the strengthening US dollar. Crude oil prices dropped below USD60 per barrel, down more than 60 percent from the USD150 per barrel peak reached in mid-July 2008. Expectations of a significant economic downturn have also reinforced the sense of an easing in market balances brought on by Saudi Arabia's oil production increase during July–August 2008 and the signs of slowing oil demand in response to extremely high prices in recent years.

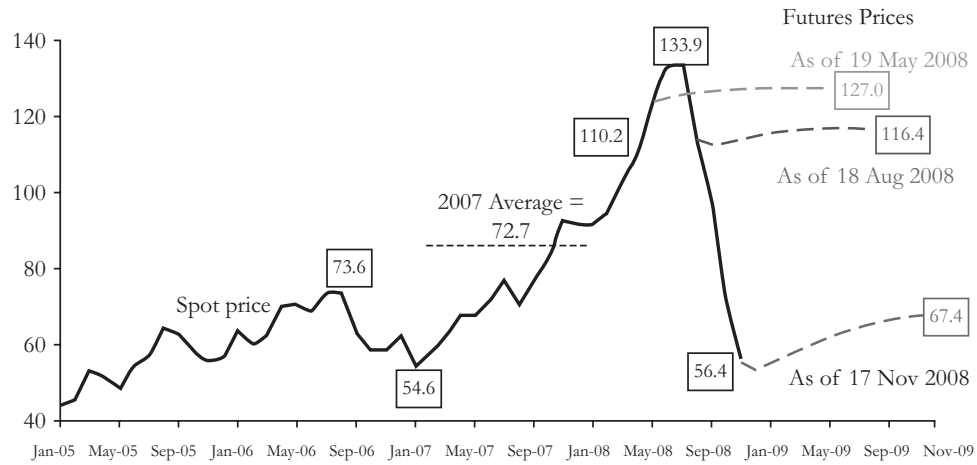
However, the market balance remains tight, particularly with the recent decision by the Organisation of Petroleum Exporting Countries (OPEC) to cut production by 1.5 million barrels per day from 1 November and given the relatively low surplus capacity in OPEC (Figure 5.11). The Israeli attack on the Gaza Strip in January 2009 has heightened tensions in the region and added further uncertainly to the near-term outlook. Nevertheless, the focus of commodity markets is on rapidly deteriorating world demand. Futures suggest that crude oil prices will likely remain subdued, moving back up toward USD70 per barrel only well into 2009, while prices of non-oil commodities have also dropped sharply on slowing demand (Figures 5.12, 5.13). Softening import demand from China, combined with the prospect of deteriorating world demand, will continue to place downward price pressure on agricultural raw materials and base metals—at least in the short run.

Figure 5.11: OPEC Spare Capacity
(million barrels per day)



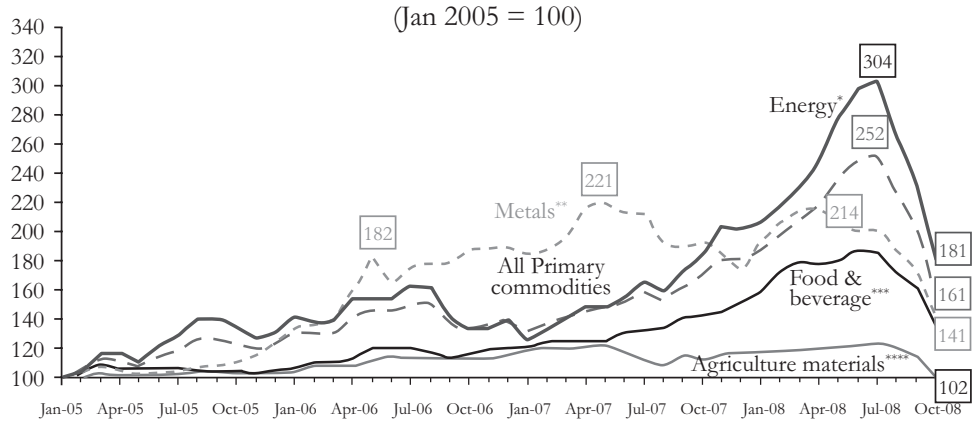
Source: US Energy Information Administration

Figure 5.12: Brent Spot* and Futures Prices
($ per barrel)



** Monthly average of daily spot prices.*
Source: Bloomberg

Figure 5.13: Primary Commodity Price Indices

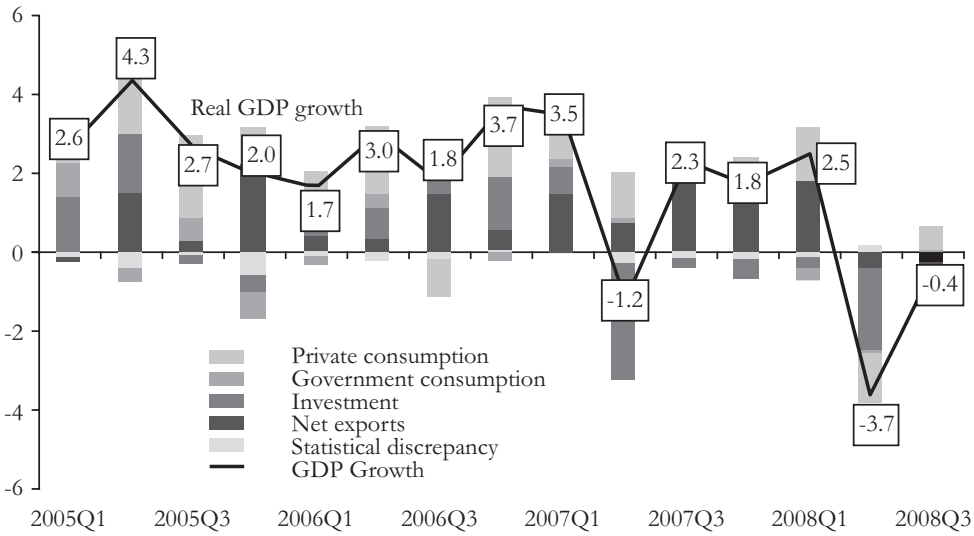


** Crude Oil, natural gas, coal.*
*** Copper, aluminium, iron ore, tin, nickel, zinc, lead, uranium.*
**** Cereal, vegetable oils, meat, seafood, sugar, bananas, oranges, coffee, tea, cocoa.*
***** Timber, cotton, wool, rubber, hides.*
Source: OREI staff calculations based on data from the IMF Primary Commodity Prices, International Monetary Fund

5.3. JAPAN AND CHINA

The Japanese economy—hurt by declining external demand and continued sluggish domestic consumption—has fallen into recession, GDP now expected to contract by 0.2 percent in 2009. The Japanese economy contracted by a seasonally adjusted, annualised 0.4 percent in the third quarter of 2008, after a 3.7 percent drop in the previous quarter (Figure 5.14). Exports are expected to further weaken as the global downturn takes hold, while declining corporate profits and household income drive

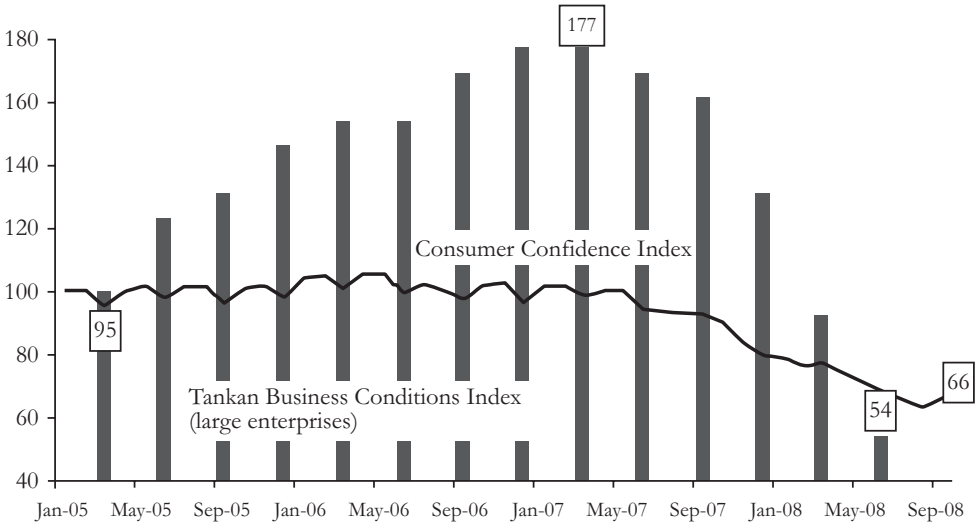
Figure 5.14: Contributions to Growth—Japan*



** Seasonally adjusted, annualized, quarter-on-quarter, % change*
Source: Cabinet Office, Government of Japan.

business and consumer sentiment down, suggesting that domestic demand will also likely remain weak (Figure 5.15).

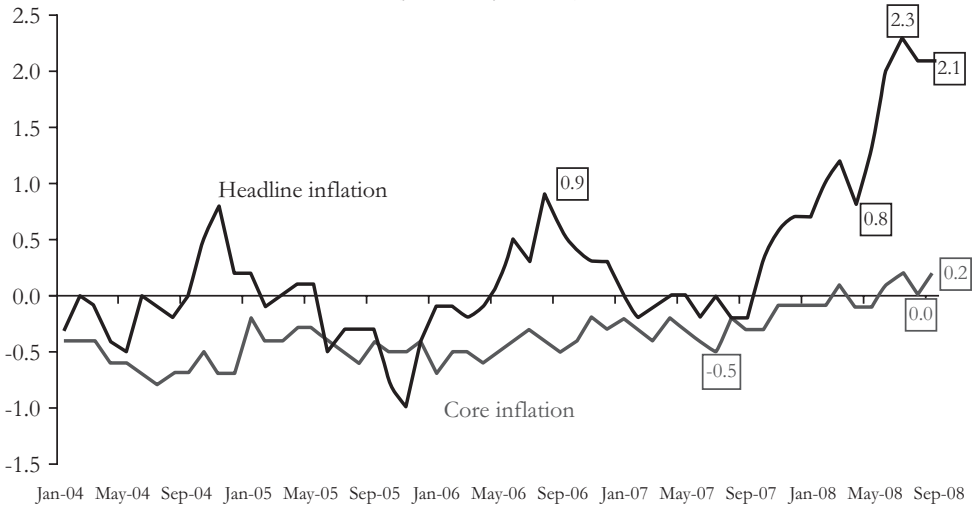
Figure 5.15: Business and Consumer Sentiment Indices—Japan
(Jan 2005 = 100)



Source: OREI staff calculations based on Bloomberg data

The recently strengthening yen and plunge in Japan's stock prices—to a 26-year low—also cast a shadow over this year's economic performance. However, falling commodity prices should support consumption, and solid growth in emerging economies may still help Japan's exports. But concerns are rife that the global financial turmoil may

Figure 5.16: Inflation—Japan
(year on year, %)



Source: OREI staff calculations based on CEIC data

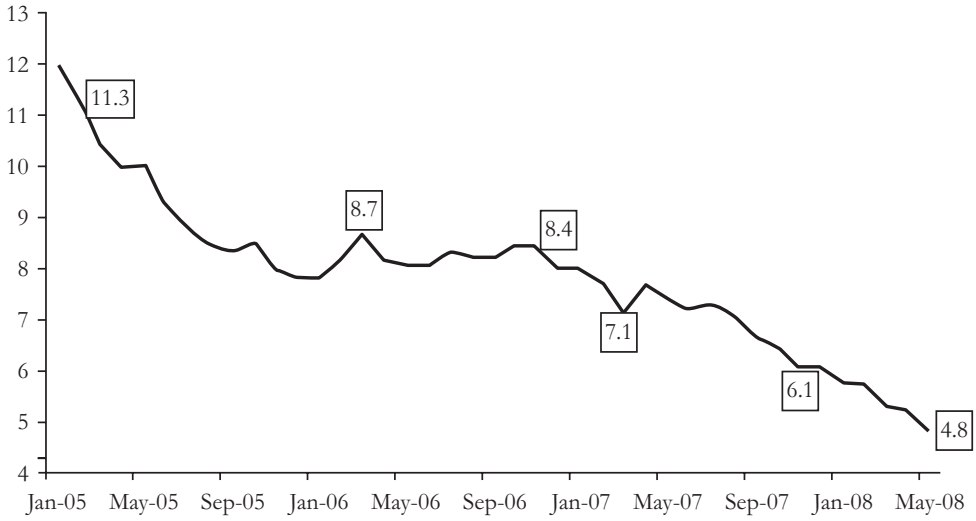
depress consumer and investor sentiment further, particularly if the US economy contracts more significantly and emerging economies experience a hard landing. Headline inflation has risen above 2 percent in recent months due to high food and energy prices, but is expected to fall in 2009 on reduced commodity prices and the effects of recession (Figure 5.16).

The Bank of Japan cut its policy rate to 0.3 percent on 31 October after having kept rates steady since February, reflecting both the softer economic activity and a more cautious stance given recent financial market volatility. The government unveiled another JPY27 trillion (USD275.7 billion) stimulus package, including expanded credits for small businesses and a total of JPY2 trillion ($20.4 billion) in cash disbursements to households in October, following the introduction of the JPY11.7 trillion ($107.4 billion) stimulus package approved in August (see Appendix).

Following five years of double-digit GDP growth, the Chinese economy has slowed to an estimated 9.0 percent growth in 2008 and is expected to ease significantly further to 6.7 percent in 2009 (IMF 2009a), due to the marked weakening in the external environment caused by the global financial turmoil. The outlook for China would be weaker without the RMB4 trillion stimulus program recently announced by the government (Appendix). GDP growth has been slowing for five consecutive quarters—reaching 9.0 percent in the third quarter of 2008—mainly due to tightening measures that were implemented from 2007 to end-June 2008—to rein in inflation and to cool what appeared to be an overheating economy.
As noted, growth is expected to decelerate significantly this year, after growth in 2008 underpinned by robust private consumption and solid net exports. After contributing about 2 percentage points to GDP growth in 2007, net exports are expected to contract in 2009 as external demand slows sharply. Industrial output growth in China eased to 8.2 percent (year on year) in October 2008, bringing the three-month moving average to 10.8 percent compared with an average 18.3 percent in the first half (Figure 5.17). Weaker export orders, softening investment demand, and factory closures during the Olympic Games were key factors behind the slowdown. Stock prices in China continued a marked decline. The Shanghai composite index fell 30 percent from July to end-November 2008, despite government measures to stimulate growth and restore investor confidence. The Chinese renminbi remained relatively stable during the period.

Macroeconomic policy has now shifted to spurring domestic demand to offset the expected weakening in exports and private investment growth. Monetary measures already adopted include cuts in interest rates and reserve requirements as well as lifting lending quotas for banks. Apart from the massive fiscal programme (primarily infrastructure and social spending), the government has cut taxes, boosted subsidies to agriculture and accelerated spending (Appendix). Strong fiscal and trade positions should allow further initiatives to support economic growth in 2009, if needed.

Figure 5.17: World Trade Volume (year on year, % increase)*



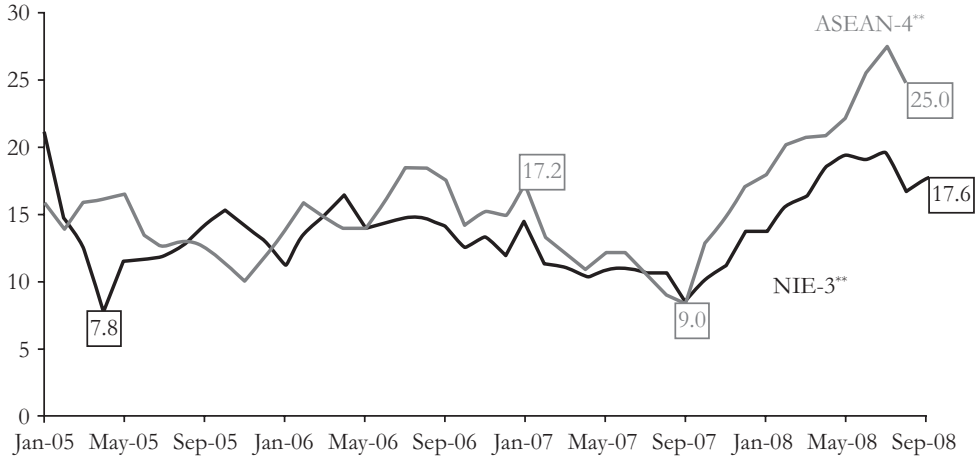
** 12-month moving average; import values deflated by their respective price indexes.*
Source: OREI staff calculations based on data from International Finacial Statistics, International Monetary Fund

5.4. THE NEWLY INDUSTRIALISING ECONOMIES

The rapid transformation of South Korea, Hong Kong and Singapore from developing to newly industrialising economies (NIEs) owes a lot to their openness to trade. As highly trade-dependent economies, the NIEs are extremely sensitive to changes in the global economic environment. The impact on exports is already being felt, but because of various lags, worse may be yet to come (Figure 5.18). GDP for the group as a whole is projected to contract by 3.9 percent in 2009, down from the 2.1 percent increase in 2008, mainly as a result of the export slowdown (IMF 2009a).

In recent months, falling stock prices and a weak won have undermined economic expansion in South Korea. The authorities have taken various measures to ease financial stress and to stimulate demand, to little avail. Measures include guarantees of USD100 billion of local banks' foreign borrowings, and an USD11 billion fiscal stimulus package. Given the prospect of falling external demand and the reluctance of banks to lend, growth is expected to fall to 3.3 percent in 2009. Hong Kong's economy contracted again in the third quarter and is expected to remain weak this year, reflecting its extensive trade and financial links with industrial countries. GDP growth is forecast to slow to 2.1 percent in 2009 from an estimated 4.0 percent last year. The outlook for Singapore, which is already in recession, is also bleak as growth is projected to slow to 2.0 percent in 2009 from 3.0 percent expected in 2008. The growth forecasts for the individual NIEs do not take into account the significant downgrading in prospects for the world economy and the NIE group as a whole by the IMF in January 2009.

Figure 5.18: Export Growth*—NIE-3 and ASEAN-4 ($ value, year on year, %)

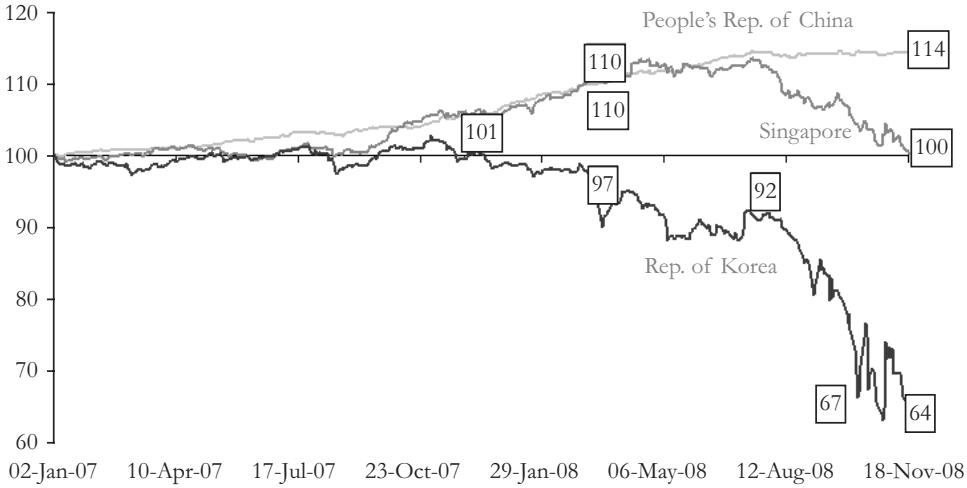


** 3- month moving average.*
*** ASEAN-4 includes Indonesia, Malaysia, Philippines, and Thailand;*
NIE-3 includes Hong Kong, China; Republic of Korea; and Singapore.
Source: OREI staff calculations based on CEIC data

The plunge in stock prices may further slow private consumption and investment. In South Korea and Taiwan stock market indices fell by 35–40 percent amid the worsening growth outlook as credit conditions tightened, export demand for technology products softened, and overseas investments incurred substantial losses.

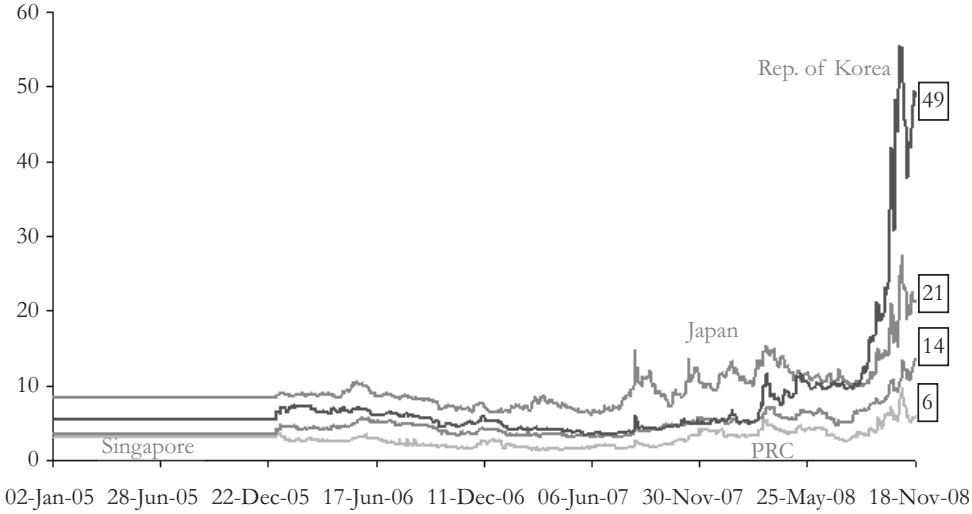
Since the freeze in global credit markets beginning mid-September, most currencies in the region have depreciated sharply against the US dollar. The Korean won depreciated most—more than 30 percent since July 2008—on a widening current account deficit and a sharp withdrawal of foreign portfolio investment (Figure 5.19). It has also been the most volatile (Figure 5.20). The Singapore dollar depreciated by about 10 percent, although it has been relatively stable. Hong Kong maintains a zone pegged exchange rate through its currency board arrangement. The Hong Kong dollar stayed at the strong side of the convertibility zone, triggering injections of liquidity into the banking system by the Hong Kong Monetary Authority in response to growing demand for Hong Kong dollar funds.

Figure 5.19: Exchange Rate Indices—PRC, Korea and Singapore
(vis-à-vis US dollar, 2 Jan 2007 = 100)



Source: Bloomberg

Figure 5.20: Implied Volatility of Exchange Rates—PRC, Japan, Korea and Singapore (3-month ATM)*

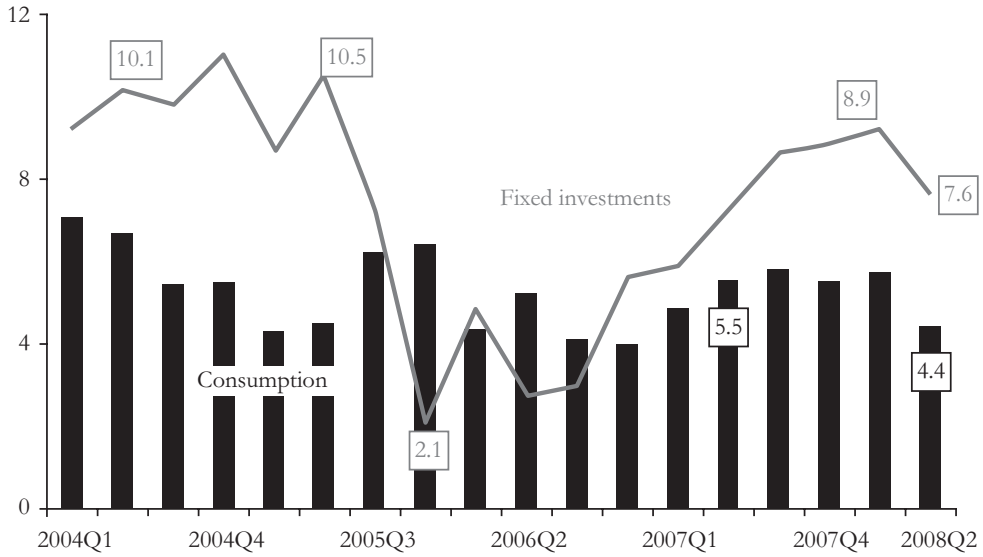


PRC = People's Rep. of China
** At the money*
Source: Bloomberg

5.5. THE ASEAN-4

The four middle-income ASEAN economies grew strongly in the first half of 2008, but growth will moderate in 2009 due to the global downturn, with Malaysia slowing more than Indonesia, the Philippines and Thailand. Domestic demand is likely to keep the ASEAN-4 countries in relatively good shape amid the weakening external environment (Figure 5.21). Aggregate GDP growth is expected to ease to 5.3 percent in 2008 and fall further to 2.7 percent in 2009 (IMF 2009a). In Indonesia, GDP growth is projected to moderate to 5.0 percent in 2009, after reaching 6.1 percent in 2008—its best performance since the 1997–98 Asian financial crisis. In Malaysia, falling commodity prices are likely to weigh down economic activity, but domestic demand will be supported by increased public spending. Nevertheless, growth is expected to slide to 3.5 percent in 2009, from an estimated 5.0 percent in 2008. After slowing in the first half of 2008, Philippine GDP growth is expected to remain sluggish at 3.5 percent in 2009—down from 4.5 percent in 2008—as a result of weak exports and slower private consumption. In addition to the global financial turmoil, political uncertainty continues to be a drag on the Thai economy, economic growth being projected at 3.5 percent in 2009. As with the NIEs, the growth forecasts for the individual ASEAN-4 countries do not take into account the significant downgrading in prospects for the world economy and the ASEAN-4 group as a whole, by the IMF in January 2009.

Figure 5.21: Domestic Demand Growth—ASEAN-4 (year on year, %)



Source: OREI staff calculations based on CEIC data

As a share of GDP, the current account surplus of the ASEAN-4 narrowed to 4.0 percent during the first half of 2008, from 5.9 percent in 2007. It appears the ASEAN-4 current account narrowed further in the third quarter, as the aggregate trade surplus, at USD15 billion, was USD3 billion less than in the same period of 2007. Export growth is showing clear signs of slowing (Figure 5.18).

Equity markets in the ASEAN-4 continued their downward trend in 2008 on heightened risk aversion and worsening global economic prospects. The sharp fall in stock market capitalisation across the region—representing seriously reduced asset values and thus wealth—will hurt consumption and investment as well, further exacerbating the economic slowdown. Among the region's economies, Indonesian and Thai stock price indices fell by nearly 50 percent. Indonesia's stock market index plummeted as investors shunned local assets and remained concerned that a weaker rupiah might stoke more inflationary pressure. Thailand's main index fell dramatically on worries that the political crisis would delay policies to support the economy amid the global financial crisis. Benchmark indices in other ASEAN economies also dropped, share prices in Malaysia and Philippines being down by 18–26 percent from July to November.

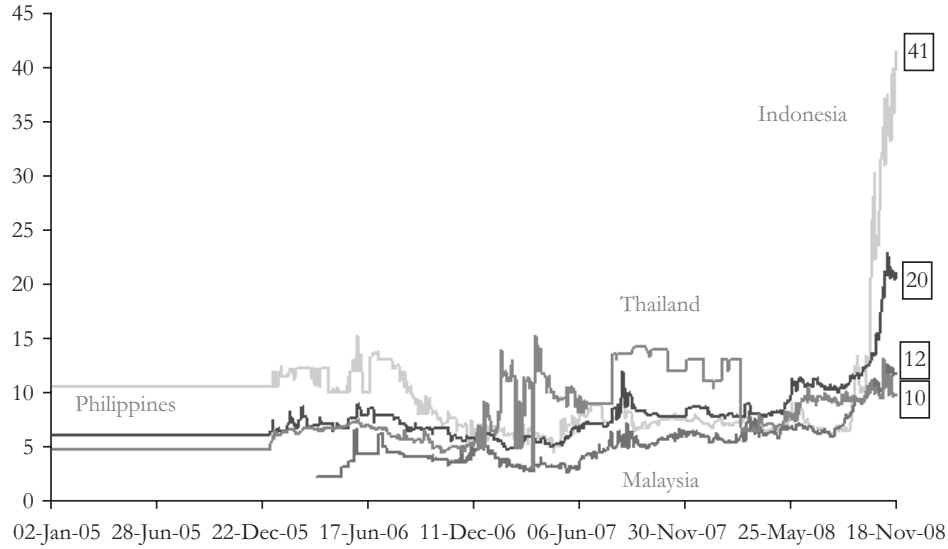
Of the ASEAN-4 currencies, the Indonesian rupiah has been the hardest hit by the crisis. It fell by more than 25 percent during the period on foreign portfolio de-leveraging and flight to safety (Figure 5.22). It has also been the most volatile of the ASEAN-4 currencies (Figure 5.23). The Malaysian ringgit and Philippine peso depreciated by about 10 percent as demand for the region's assets and exports weakened. The peso has been quite volatile, however, second only to the rupiah (Figure 5.23), having fallen by almost 20 percent at one point before Central Bank support and remittance inflows enabled it to stabilise somewhat. Despite domestic political uncertainty, the Thai baht has remained surprisingly resilient, having fallen the least, by less than 10 percent.

Figure 5.22: Exchange Rate Indices—ASEAN-4
(vis-à-vis US dollar, 2 Jan 2007=100)

Source: OREI staff calculations based on Bloomberg data

Figure 5.23: Implied Volatility of Exchange Rates—ASEAN-4

(3-month ATM)*



** At the money*

Source: Bloomberg

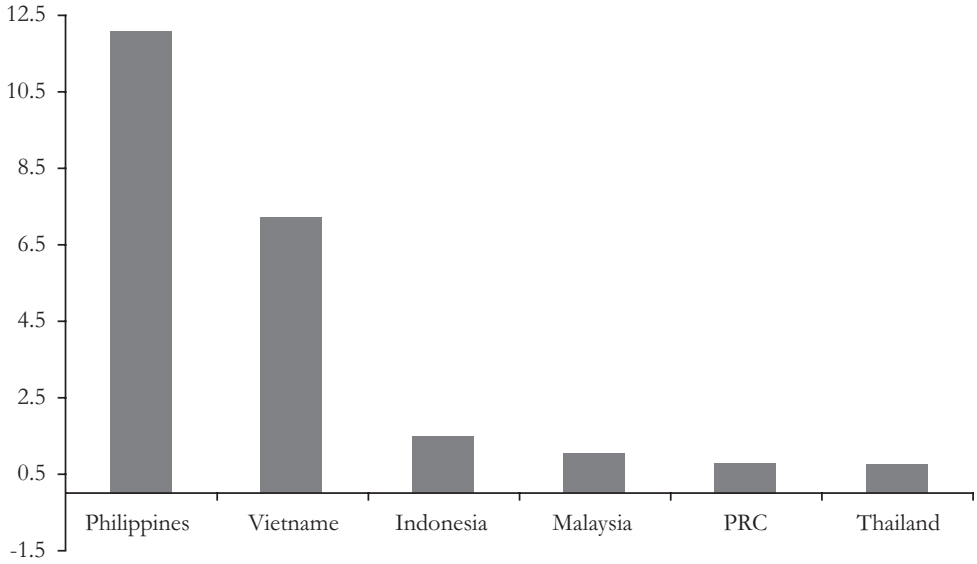
5.6. THE LOCAL REGION

Next we turn to the transitional economies neighbouring Cambodia.[3] Growth in Laos and Vietnam, as in all other countries in the region, is expected to slow in response to the difficult global environment. After accelerating over the past few years, Vietnam's GDP growth is projected to moderate to 6.3 percent in 2008 and 5 percent in 2009—on slowing industrial activity and investment. Domestic demand slowed, retail sales rising (in real terms) by only 7.5 percent in the first 10 months of 2008, compared with 15 percent in the same period of 2007. It is likely that it has slowed further since then and into 2009.

Faced with this slowdown, the government recently announced a stimulus package amounting to USD1 billion, around one-half of which will be spent on infrastructure projects, while also proposing tax cuts. However, it is unlikely that such fiscal measures will be sufficient to enable the government to achieve its GDP growth target for 2009 of 6.5 percent. Nevertheless, an important cushion against the domestic slowdown is a relatively healthy inflow of remittances. In 2007, these inflows amounted to almost 7 percent of GDP (Figure 5.24). Although the volume of these inflows is unlikely to be immune from the impacts of the global slowdown, the reduction is likely to be less than falls in domestic income.

3 Due to data limitations, we do not consider Myanmar in our grouping of neighbouring transitional economies. Data restrictions also account for the fact that ADB forecasts are unavailable for Myanmar.

Figure 5.24: Overseas Remittances (% of GDP, 2007)



Source: World Development Indicators, World Band; Balance of Payments statistics Yearbook; International Monetary Fund; and national sources

The Laos economy has benefited from strong power and commodity prices in the recent past. However, with commodity prices falling, economic growth is forecast to slow to 6.5 percent in 2009 from an expected 7.5 percent in 2008. An important factor in determining the impact of the global crisis in Laos will be the extent to which FDI inflows to its thriving mining and energy sectors will be affected. Although FDI is likely to be affected, a gradual slowing will mean that it would be able to come through the crisis relatively unscathed. With most multilateral agencies expecting a growth rate of around 6.5 percent in 2009, Laos is likely to be one of the fastest growing economies in the world. The Economist Intelligence Unit (EIU 2008b), in its December 2008 country report, downgraded its 2009 growth forecast to 5 percent, however, representing Laos' lowest rate of growth since the late 1990s. The EIU expects a pickup to 6 percent in 2010.

5.7. THE LOCAL ECONOMY

The Cambodian economy is estimated to have grown by 6.5 percent in 2008. This was a sharp reduction from the 10.1 percent recorded in 2007, as well as the double-digit growth experienced for the three years prior to that (Table 5.1). Growth is expected to slow further in 2009 and 2010. The extent of the slowdown will depend mostly on world demand conditions. Following the release of the October 2008 *World Economic Outlook* containing forecasts by the IMF for the world economy, forecasts for growth in Cambodia for 2009 had ranged from 6 percent (IMF 2008a) to 6.4 percent (EIU 2008a) to 7 percent (ADB 2008a). Then the IMF (2008b) further downgraded its forecasts of world economic growth in a revision to its *World Economic Outlook* in November 2008. Following this downgrading, forecasts for Cambodia for 2009 were

also revised down to 3.0 percent (EIU 2008b) and 4.7 percent (ADB 2008b). The EIU (2008b) presents forecasts for 2010, and expects growth to remain low at 3.6 percent. The further downgrading of world growth by IMF (2009a) in January could affect Cambodia's growth projections as well, but these have not been incorporated as yet. Thus it is possible that Cambodia's growth may come in at the lower end of currently available projections, or even lower still, given the heavy reliance of its trade on growth in industrialised countries.

Table 5.1: Cambodia: Selected Economic Indicators, 2007-2010F

	2007	2008E	2009F	2010F
GDP growth (% change)				
ADB	9.6	6.5	4.7	na
IMF	10.2	7.00	6.0	na
EIU	10.1	5.0	3.0	3.6
Industry sector growth (% change) (EIU)	15	8	2	4
Services sector growth (% change) EIU)	10.2	4.8	3.1	3.7
Agriculture sector growth (% change) (EIU)	5	2	4	3
Exports (US$ billion) (EIU)	4.1	4.5	4.3	4.6
Imports (US$ billion) (EIU)	5.4	6.5	6.1	6.6
Trade balance (US$ billion) (EIU)	-1.3	-2.0	-1.8	-2.0
Current account balance (% of GDP) (EIU)	-5.9	-8.7	-5.8	-6.2
Inflation/CPI average (% change) (EIU)	5.9	20.1	4.8	5.9
M2 money supply growth (% change) (EIU)	61.8	23.3	-1.1	14.3
Fiscal balance (as % of GDP) (EIU)	-1.8	-2.1	-2.7	-2.8
Total debt outstanding (US$ million) (EIU)	3,890	4,317	4,366	4520
Debt service ratio (as % of exports) (EIU)	0.111	0.111	0.110	0.11
Foreign exchange reserves (US$ million) (EIU)	2,143	2,374	2,069	2234
Exchange rate at year-end (CR:US$1) (EIU)	3,999	4,176	4,077	4227

Sources: ADB (2008a), Asian Development Outlook Update 2008, Manila, ADB
ADB (2008b), Asian Economic Monitor, December 2008, Manila, ADB
EIU (2008) Cambodia Country Report, EIU (December).
IMF (2008). World Economic Outlook, October, IMF, Washington, DC.

Notes: E = estimate; F = forecast.

Most forecasts point to a slowing in the growth of garment exports in 2008-09 as a major factor in the slowing of overall growth (Menon 2009). The planned lifting of restrictions on Chinese garment exports to the US and the EU at the end of 2008 is likely to affect significantly Cambodia's garment exports. This increase in competition comes on top of a slowing world economy, and therefore a reduction in demand from major markets. Services will continue to thrive, supporting continued growth,

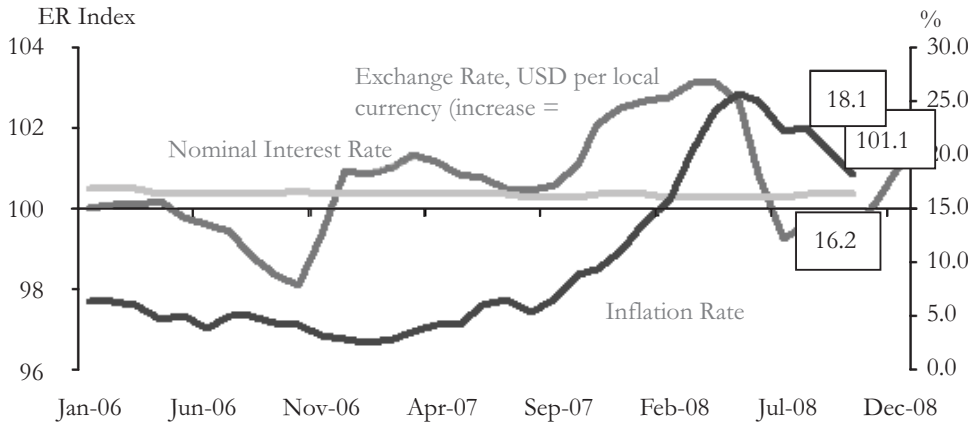
with continued increases in finance and trading and, to a lesser extend, tourism, which has already been showing signs of moderating; there has been a sharp drop in tourist arrivals from South Korea, the main source country.

Consumer prices rose by 22.3 percent year on year in July 2008, with food prices up by 36.8 percent. They have started trending downwards since then, however, reaching 20.27 percent in September 2008 and 18.12 percent in October 2008. The EIU (2008b) estimates that annual inflation was about 20 percent in 2008, the highest since 1995. Rice prices rose because of domestic supply shortages, and prices of other food items also rose, especially meat (pork and chicken). This was a reflection of rising world prices, as well as in response to rising domestic consumption and a ban on meat imports from Vietnam to prevent the spread of animal diseases. Apart from higher global fuel prices, the weakening of the US dollar, which is widely used in Cambodia, added to inflation pressure.

Dollarisation also impairs the ability of monetary authorities to implement monetary policy in an independent or effective manner because capital inflows or outflows automatically change the money supply when a foreign currency can be used as a medium of exchange (Salvatore *et al.* 2003; Watanabe 2006; Menon 2008a; b). An outflow of foreign currency contracts the money supply, while an inflow expands it. An outflow of foreign currency could be deflationary, while an inflow could be inflationary. The impact of these movements of capital on the money supply and domestic activity could be offset if the National Bank of Cambodia could conduct open market operations, for instance. The lack of monetary instruments in the form of riel-denominated interest-bearing assets prevents banks from conducting open market operations. Even if they could issue riel-denominated interest-bearing assets, the lack of confidence in these currencies would limit their subscription. Other monetary instruments, such as changes to the reserve requirement, are likely to be blunt instruments of monetary policy because dollarisation allows capital inflows to become part of the money stock while bypassing the financial system. Thus, the ability to maintain an independent monetary policy depends on both addressing dollarisation and improving the financial system—both long term challenges.

With limited macroeconomic policy instruments as a result of dollarisation, inflation was looming as a major problem without a domestic solution. But that was before the global crisis hit. A silver lining from the growth slowdown, and the associated drop in oil and other commodity prices, has been the easing of inflationary pressures in Cambodia. Inflation is expected to ease further in 2009 as food and fuel prices decelerate, although it may stay at an elevated level, with money growth still strong at 40 percent in June 2008 (Figure 5.25). Nonetheless, tighter credit in a slowing global economy may slow previously robust FDI inflows and hurt domestic credit conditions more severely. Reflecting these downward pressures on inflation, the December 2008 Cambodia Report of the EIU (2008b) slashed its 2009 inflation forecast from 9.3 to 4.8 percent.

Figure 5.25: Nominal Interest Rate,* CPI Inflation, and Exchange Rate
($ per local currency)**



** Average of rates on foreign currency loans to private enterprises.*
*** Jan 2006=100*
Source: OREI staff calulations based on data from Bloomberg, CEIC, and IMF

5.8. LOOKING FORWARD AND CONCLUSIONS

Despite substantial liquidity injections by monetary authorities across the globe, money markets and financial conditions generally remain stressed, and a recovery will take place only gradually. Since mid-September 2008, the world's major central banks have taken measures of unprecedented scope and magnitude—including coordinated massive injections of liquidity into institutions and markets and extending agreements on foreign exchange swaps—to stem the crisis and rebuild public confidence. But market volatility remains high, and markets for bank funding remain under severe stress. Flight to quality and liquidity during the market sell-off has compressed US, UK, and euro government bond yields to historic lows on the short end, thus steepening yield curves. The cost of protecting against corporate defaults, which shot up amid heightened risk aversion among global investors, will likely remain high or rise further, as corporate default rates are expected to increase amid worsening economic conditions. If global financial stress intensifies further, the effect of tighter domestic credit on overall economic activity will be substantial for emerging east Asia, where firms rely heavily on banks for funding.

So far, the ASEAN+3 region, and its component countries and sub-regions have weathered the turmoil better than most other parts of the world. While the latest IMF projections for 2009 are for the US and the euro zone to contract by 1.6 and 2.0 percent, respectively, developing Asia is still expected to expand by 5.5 percent. The NIEs, all of whom are currently in technical recessions, were expected to rebound and grow by 2.1 percent in 2009 when the IMF released its assessment in November (IMF 2008b), but in January 2009 the projection is for a 3.9 percent contraction (IMF 2009a).

Finally, a qualification regarding forecasting in the current environment. Forecasting with accuracy is always a difficult task, but this time it is perhaps more difficult than during any of the previous global crises. The transmission mechanisms associated with this financial crisis are difficult to trace fully, measure and project forward. Furthermore, it is too early to be sure how economies will respond to the massive interventions of governments to try to ameliorate the impacts of the crisis. It is also unclear what new measures may be introduced in the future—in a sense, the forecasts presented here have had to assume that there will be no more new interventions, since the nature or magnitude of any such future actions cannot be predicted with any accuracy. But one thing appears to be relatively clear: financial conditions continue to present more downside than upside risks, and so the predictions presented here are likely to approximate an optimistic rather than a pessimistic scenario. This is unfortunate but true.

Appendix
Government Responses to the Financial Crisis

	Deposit Guarantee	Government Stakes in Banks	Regulatory Forbearance	Monetary Policy (Policy Rate and Reserve Ratio)	Exchange Rate (New Arrangement & Government Intervention)	Stock Market Intervention	Fiscal and Administrative Measures
Cambodia				Doubled reserve requirements for private banks from 8.0% to 16.0% in Jul 08. Implemented measures to strengthen banks' financial status in Oct 08: (a) increased capital requirements for commercial and specialized banks to 150 billion riels (US$37.5 million); and (b) reserves of at least 10 billion riels and 30 billion riels will be required from rural specialized banks with single and multiple shareholders, respectively.			Banned rice exports in the second quarter 2008 and subsidized fuel [ongoing].
China, People's Republic of		China Investment Corporation took stakes in key banks to support their shares.		One year lending rate and deposit rates were cut 27 bps to 6.66% and 3.60% respectively as of 29 Oct 08. Cut reserve requirement by 100 bps for small banks on 15 Sep 08, followed by 50 bps cut to 17% applicable to all banks on 8 Oct 08. Separately exempted interest paid on bank deposits from tax on 8 Oct 08. Announced on 5 Oct 08, the restarting of the program that allows non-financial companies to raise funds in interbank market by issuing medium-term notes. Imposed a hike in lending quota to provide additional financing for small and medium-scale enterprises in Jun 08.		Eased rules on share buybacks in Sep 08 and eliminated stamp duty on stock purchases on 23 Apr 08. Approved a trial program for margin trading and short-selling on Oct 08.	Announced a fiscal stimulus package of 4 trillion yuan over the next 2 years or about 7% of GDP in new spending per year, on 9 Nov 08. Implemented changes to the property market, e.g., reduction of the down payment requirement for first homes, cuts in mortgage interest rate & reduction of VAT on land sales, on 22 Oct 08. Tax rebates raised on 3,486 industry items on 22 Oct 08.
Indonesia	Guaranteed deposits up to 2 billion rupiah (about US$200,000) in 14 Oct 08 announcement.	Approved a bailout of an overseas subsidiary of Bank Indonesia in Amsterdam with a capital injection of EUR546 million (US$700 million) on 27 Oct 08.	Exempted banks from mark-to-market accounting for debt during announcement on 9 Oct 08. Passed a rule that gives the central bank and deposit guarantee agency more powers to decide on bailing out lenders and insurance companies on Oct 08.	Monthly interest rate hikes since May 08 that saw the rate rise to 9.5% through Oct 08. Cut reserve requirement ratio to 7.5% from 9.08% for rupiah deposits on 9 Oct 08, and for foreign currency deposits, to 1% from 3% on 14 Oct 08. Lowered overnight repo rate and hiked the rate on bank deposits with the central bank. Expanded the range of collaterals domestic banks are allowed to put up to secure short-term loans from the central bank on 15 Oct 08. Extended the FX swap tenor up to 1-month from 7 days from 15 Oct 08.	Introduced a wave of measures to improve USD/IDR demand and supply balance on 28 Oct 08: remove palm oil levies, tighten control against illegal importation and provide post-shipping guarantees to exporters. Proposed a clearing house to manage the supply and demand of foreign currency among state-owned enterprises and urged the latter to place their forex receipts in onshore banks.	Suspended trading on 8-9 Oct 08 (first time in 8 yrs). Imposed ban on short-selling for month of Oct. Eased rules/cap for firms to buy back shares.	Government, together with the central bank, announced to buy back 4 trillion rupiah of government bonds on 28 Oct 08. Announced plans to borrow $2 billion from WB and $3 billion from other multilateral institutions in Oct 08.

Korea, Republic of	Guaranteed banks' external debt taken up from 20 Oct 08 to 30 Jun 09 for three years with total value of guarantees capped at $100 billion.		Announced plans to implement selective lifting of real estate regulations on 21 Oct 08.	Established on 30 Oct 08 a $30 billion swap line with the Federal Reserve available until 30 Apr 09. Benchmark interest rate cut by 25 bps on 7 Nov 08, preceded by 75 bps on 27 Oct 08 and 25 bps cut on 8 Oct 08. Introduced a competitive auction swap facility from 20 Oct 08 for onshore FX swaps with the central bank. Additional dollar liquidity of $30 billion in won-dollar swap market by utilizing foreign exchange reserves after an initial $10 billion on 6 Oct 08. Cut interest rates on special loans to 2.5% from 3.5% to small and mid-sized companies. Raised aggregate ceiling to SMEs to KRW9 trillion (US$7.5 billion) effective Nov 08.		Imposed temporary ban on short selling on 8 Oct 08.	Announced increased spending of KRW10 trillion for 2009 on 3 Nov 08, which includes infra expenditure, financial support for small and medium-sized business and tax cuts. Invested KRW1 trillion (US$840 million) to expand capital base of Industrial Bank of Korea and provided US$5 billion to SMEs via Korea Export Import bank from 1 Oct 08. Announced a support package of KRW8 trillion (US$6.7 billion) for the real estate/ construction sector on 24 Oct 08. The National Pension Service will buy up to KRW10 trillion (US$8.3 billion) in new bonds from local banks and high-rated companies.
Lao People's Democratic Republic				Bank rate unchanged at 8% since the first quarter.			
Malaysia	Blanket guarantee on all deposits until Dec 2010 in 16 Oct 08 announcement.			Overnight policy rate unchanged at 3.5% since Apr 06. Allowed insurance companies and takaful operators to access funds from the bank's liquidity facility on 14 Oct 08.		Announced plans to infuse additional Rm5 billion in a state agency to buy undervalued stocks, on 20 Oct 08.	Announced a MYR7 bn fiscal stimulus package on 04 Nov 08. Reduced subsidy on gas and diesel in Jun 08, followed by cuts in gas and diesel prices in Aug and Sep.
	Deposit Guarantee	**Government Stakes in Banks**	**Regulatory Forbearance**	**Monetary Policy (Policy Rate and Reserve Ratio)**	**Exchange Rate (New Arrangement & Government Intervention)**	**Stock Market Intervention**	**Fiscal and Administrative Measures**
Myanmar					Waived a policy on forex entering the country to ease conditions on aid inflows on Sep 08 .		Restricted exports and domestic trade of rice on Aug 08.

Philippines	Announced plans to raise deposit guarantee from P250,000 to P1 million, pending Congress approval, on 21 Oct 08.	Allowed financial institutions to reclassify their investments in debt and equity securities from 23 Oct 08 to end-2008.	Policy rates kept at 6% since Jun 08. Opened a US$ repo window to ensure dollar liquidity with the banks' US$-denominated Philippine sovereign binds as underlying collateral.	Massive intervention in the forex market in Jul 08.		Postponed planned 2008 budget balance to 2010 in Mar 08. Imposed domestic petrol price rollbacks in the third quarter of the year.
Singapore	Blanket guarantee on all deposits until Dec 2010. in 16 Oct 08 announcement.		Established on 30 Oct 08 a $30 bn swap line with the Federal Reserve available until 30 Apr 09. Injected liquidity via market operations in Sep 08 and committed to provide further liquidity if necessary on 10 Oct 08.	Abandoned its appreciation policy (first since 2003) in favor of a neutral stance on 10 Oct 08.		Announced on Aug 08, additional 50% increase in utility rebates and second installment of growth dividends, on top of special transfers disbursed earlier in the year.
Thailand	Blanket guarantee already in place since 11 Aug 08 as a temporary move during the formation of the Deposit Protection Agency, but coverage to decrease gradually to a final level of THB 1 million (US$29,400) in five-year time.		Policy rate kept at 3.75%. Plans to convince commercial banks to extend loans equivalent to THB400 billion (US$11.4 billion) and THB50 billion (US$1.4 billion) from state-run banks or at least 5% loan growth in 2009, announced on 14 Oct 08.		Established Bt10 billion matching fund linking the Stock Exchange of Thailand and financial institutions on 14 Oct 08.	Announced on 4 Nov 08 a spending boost of Bh100 billion during the fiscal year to be financed locally. Implemented a $1.4 billion six-month stimulus package on Aug 08.
Viet Nam			Key policy rate was cut by 100bps to 12% on 3 Nov 08, preceded by the 100 bps cut on 20 Oct 08. Lowered reserve requirement ratio to 10% from 11% on 3 Nov 08. Lowered refinancing rate to 14% from 15% and discount rate to 12% from 13% on 21 Oct 08.	Expanded the trading band by 3% on either side of the fixed rate on 7 Nov 08.	Announced plans to set up a stabilization fund to contain volatility and support shares, scrap foreign investment in listed companies, strengthen prudential/disclosure norms, delaying IPOs in Mar 08.	Controlled price increases in power, coal, cement & steel until Jun. Lowered domestic petrol price for the 3rd time in 21 Oct 08. Imposed a ban on rice exports that was lifted early Jul 08. Postponed non-urgent public projects & imposed at least 10% cut in state agencies spending in 31 Mar 08.

Source: Country write-ups as of 27 October 2008, Economic Observatory of BBVA as of 29 October and the RGE Monitor (for some countries) and various analyst and financial institutions reports

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Leadership in Cambodian Local Politics

By: Thon Vimealea and Ou Sivhuoch

CHAPTER 6

Chapter 6 - Leadership in Cambodian Local Politics[1]

6.1. INTRODUCTION

Although Cambodia now has local elections that enable citizens to choose their commune representatives, with numerous candidates to choose from and with new faces being introduced and elected, Cambodians still seek out former leaders, former chiefs or councillors, for help.

As a number of scholars have argued, the country has not yet left behind its post-conflict era, which is marked by weak state institutions, poverty, an unconsolidated democratic regime and other problems (see Kim 2009). Frequent regime changes have resulted in confusion and lack of trust in state institutions; thus the gap between voters and leaders remains wide.

The government embarked on decentralisation in 2002 with the stated objectives of promoting local pluralist participatory democracy through the creation of popularly mandated local governments and contributing to poverty reduction through improved service delivery and economic development accessible to the poor.[2] Participatory democracy will empower citizens to voice their concerns and ideas to local government leaders and civil society. The reform is also intended to incorporate women into local politics and has recently allowed an increase in the number of women in both commune councils and village committees throughout the country.

Such modern liberal democratic reforms have so far rendered Cambodia a "hybrid" state in which informal and traditional practices dominate formal structures within state institutions. Cambodia thus remains a weak state with weak governance and limited expression of demands by citizens. This study assumes that the gap between state and society remains wide and that in order for it to be bridged, there is a crucial need for responsive leaders at the lowest levels of government and assertive leaders among civil society who can represent the people in posing demands on local authorities. As a result of decentralisation and deconcentration, the lowest levels of government, which are closest to the people, become important for better governance. But at the same time, the presence, guidance and assistance of assertive individuals in civil society

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1 Thon Vimealea and Ou Sivhuoch are research associates at CDRI. This article is based on a bigger study, Leadership in Local Politics, one of the projects of the Kechhnay programme of CDRI's governance unit. The full study comprises two major phases. This article synthesises an upcoming CDRI working paper as part of the first phase of the study. Members of this project are Thon Vimealea, Ou Sivhuoch, Eng Netra and Ly Tem, with Caroline Hughes as research adviser. The authors also thank Kim Sedara for his comments and supervision of our work.

2 Summarised from a thematic paper presented at the National Symposium on Decentralisation and Local Governance, 15–16 May 2002, by Deputy Prime Minister Sar Kheng, cited in Rusten & Öjendal 2003.

and among ordinary people are crucial in bringing people closer to their state leaders including local leaders.

6.1.1. Research Objectives and Questions

This study seeks to identify local leaders and the significant factors associated with them to see whether and how they can represent the people and help bridge the gap between state and society. To do so we:

1. identified formal and informal local leaders;
2. identified leader characteristics that are perceived as significant by the people;
3. examined leaders' roles and activities and how they do or do not represent the people;
4. explored the legitimacy of different leaders and how they can transform authority into actions;
5. explored how gender in politics is changing and the opportunities and challenges women leaders encounter.

The research questions are:

1) What kinds of leaders are there?
2) What is their authority and legitimacy based on?
3) How do they transform authority into action? What are the constraints they face?
4) How does gender affect the above questions?

6.1.2. Structure of the Paper

The empirical section will start by discussing the findings on who leaders are and what kinds of leaders are emerging in selected communes. Then it will explore the elements of their legitimacy and authority. Local leaders' legitimacy and authority originate from different and varying features. The study explored leaders' institutional positions, characteristics, networks and motivation as the significance of determining factors that most shape their legitimacy and authority. With respect to positions, we will examine whether leaders from a particular domain of power tend to be more legitimate and armed with more authority than others and, if so, which one(s). We hypothesise that today administrative leaders are increasingly legitimate; however, within Cambodia's hybrid political system, it is also believed that they would need both legal-rational and traditional authority in order to be seen as legitimate.

In terms of characteristics, three crucial aspects will be analysed: education, age and experience and gender. Previous leadership experience is important in assisting people to be recruited or elected to current positions, and may also help leaders to gain villagers' trust. Previous studies often found the education of leaders to be quite low. However, does little formal schooling matter much from the people's perspective? In the same vein, it is often observed that leaders tend to be quite old. Is this an accident?

Do they need to reach a certain age to be accepted by the villagers? Regarding gender, the main question is how women and men leaders' legitimacy and authority differ. This is also a matter of old and new because, up to 2002, local leadership was very predominantly male.

There are various kinds of network observable in Cambodian villages. They can arise from political party affiliation, patron-client ties or kinship. Can the need to serve one's patron in a hierarchical network, such as those associated with parties and patronage, conflict with benign and responsive leadership of villagers? The motivations of leaders stem from various factors: kinship legacy, tangible and intangible benefits, the sense of patriotism, protection etc. Proper motivation may translate into good performance and, in return, the people and those to whom the leaders are accountable, such as political patrons, may over time legitimise the leaders more.

But in a hybrid system, even legitimate leaders may face complications in transforming their authority into action. The article will examine what leaders actually do on a regular basis, the strategies they employ and whether there are resources and opportunities for them to do their work. Finally, the article will study the constraints they face from higher authorities, political parties, family etc. Throughout the discussion, we analyse the influence of gender on the issues.

Following the empirical section, a synthesis of the findings will be discussed within the concepts of power, authority and legitimacy, patronage politics and gender. Conclusions and their implications for decentralisation and deconcentration will be drawn towards the end of the article.

6.1.3. Research Methodology

Qualitative methodology was used for this study. Therefore the results are indicative rather than representative. Fieldwork was conducted in three communes of three provinces selected on the following criteria:

1. a balance of geographical locations;
2. the balance of commune resources — natural resources, farms and markets;
3. CDRI's previous studies and established rapport with local authorities;
4. a balance between political affiliations: one commune is headed by a Sam Rainsy Party (SRP) chief, and the other two by Cambodian People's Party (CPP) chiefs;
5. a different mixture of gender in commune councils: one commune is headed by a woman who has long been the chief; another is headed by a newly elected woman chief; the last is headed by an all-male council.

The study was divided into two phases.

1. A small-scale survey used stratified sampling to identify the voters' leaders. Roughly 20 percent of the households were selected for interviews. Villagers were chosen to balance between well-off, moderately rich and poor (including

destitute) households; between different ethnic groups; between farmer and different business families; between different age groups; between men and women informants; and between male- and female-headed households.
2. In-depth interviews were conducted with identified individual leaders.

6.1.4. Scope and Limitations of the Study

These are case studies of a few selected communes. Also, interviews with leaders could not cover what they did before and during the Pol Pot regime because the information was not volunteered. When information was volunteered, the researchers tried to make use of it to track leaders' experiences and changes of roles and activities.

6.1.5. Research Framework

Leadership is a complex term. Leadership in Cambodia is even more complex given its many regime changes and turbulent past. Leadership used to be associated with someone who has power. Historically, Cambodia is more familiar with authoritarian rule, whose leaders are decided by traditional nomination, through which they are granted power, authority and legitimacy. But power today is not perceived as it was. Those with power might no longer have authority. These terms may be understood and interpreted differently, according to different cultural and social milieus. In today's rapidly changing political context, these concepts and the way people understand or accept their leaders might not be the same as they were a decade ago. Therefore this study needs to have a comprehensive look at how these three terms are defined and understood, in both the international literature and the local context.

Power, Authority and Legitimacy

Power is a highly contested concept. Scholars have long debated its definition and how to identify powerful actors. This study chose the explanations and definitions of a selected group of scholars as discussed below.

Max Weber defined power as the probability that someone could get others to do what he/she wants despite resistance (cited in Lukes 1974). In one of the most influential works on the concept of power, Steven Lukes (*ibid*) described power as the ability of A to get B to do something that A desires but which B would not otherwise have done. How are we to understand power at work? In his most famous theory, Lukes stated that power not only involves what is concrete or observable (decision-making power) and the power to deter something from being brought up (non-decision-making power) but also involves what shapes people's perceptions and beliefs, a more subtle and abstract form of power (ideological power) (*ibid*).

Authority and legitimacy are related concepts that describe the way in which power can be exercised. A exercises authority rather than raw power in circumstance where B does what A desires because B respects or accepts A's moral right to decide (cf. Lukes 1974). What helps A's authority to be perceived as legitimate by B? In the study of legitimacy, one cannot avoid studying Max Weber's classic categorisation of legitimacy,

which many later works are based on. According to Irving Louis Horowitz, "in the study of legitimacy we are the children of … Weber" (cf. Ellis 2006). Weber argued that legitimacy exists only when people believe power to be just. He classified three broad types of legitimate authority: legal-rational, traditional and charismatic. Leaders with legal-rational legitimacy are accepted because of the office they hold. They can be either elected or appointed. Those with traditional legitimacy are tied to tradition and custom. They are accepted according to traditional rules or status. Those with charismatic legitimacy have personal strengths and innate ability that can persuade people to follow them.

The above discussion helped this study to identify leaders, where power actually lies, who can exercise power, what kinds of authority they have and what elements their legitimacy is based on.

South-East Asian and Cambodian Cultural Context

Both power and legitimacy operate under belief systems; this suggests that cultural context is vital in shaping power and legitimacy (Hughes & Öjendal 2006; Pye 1985). In south-east Asia, respect for established authority is a powerful social norm and is rarely challenged (Pye 1985). They readily accept authoritarian rule (*ibid*). Kinship and patronage are dominant factors in deciding leaders.

Patron-client networks are a dominant feature of politics and leadership in south-east Asia. Traditionally, patrons are wealthy persons whom villagers depend on for material assistance (such as money lending), jobs etc, while they need villagers for their labour, political support etc. Traditionally patrons are obligated to help villagers in need and villagers in return provide them support and assistance. This dependent and reciprocal relationship reinforces what is already a persistent factor in south-east Asian culture, inequality and hierarchy. At the same time it provides considerable security and stable power within the societies (Pye 1985). In a neo-patrimonial state, these rich men increasingly join or influence politics, using weak public institutions as instruments for their private enrichment. This system distorts other public functions and core services; once institutionalised, it is highly resistant to reform (Pak *et al.* 2007).

Cambodia's Local Leadership

A feature of Cambodian politics is centralised rule and centralised planning (Mabbett & Chandler 1995). Along with its patrimonial features, Cambodian society contains strict social hierarchies, kinship, patronage and informal personal relations (Pak *et al.* 2007; Kim 2009). Öjendal and Kim (2006) showed that power for Cambodian rulers has never rested on popular votes.

An early account of Cambodia's local leadership from May Ebihara's study of Svay village (1968) emphasised a lack of institutionalisation of local leadership. The personal qualities and dynamism of particular individuals were regarded as more important than rules or norms regarding officials. District administrators were visited infrequently

by villagers, largely because, being appointed by the central government, they were considered impersonal, aloof and socially superior.

This is the only account of local leadership from the pre-war era. In the postwar era, the few studies conducted suggest that the moral capacities of commune and village officials are less important in determining their relationships with villagers than the institutional setting within which they operate. Evan Gottesman (2003) described the appointment of village and commune authorities in the 1980s as entrenching patronage systems on the part of particular party leaders, although he also pointed out that these authorities were not particularly disciplined in terms of following the orders of their patrons. Collins' (1998) examination of the role of commune chiefs in the 1990s concurred with Ebihara's account in regarding them as crucial links between the local level and the threatening sphere of the state. However, his work suggested that the reluctance of villagers to deal with state officials higher than the commune disempowered villagers who might otherwise be more forthright in challenging commune officials' authority. A further study, by Joakim Öjendal and Kim Sedara (2008), regarded the commune elections of 2002 as ushering in a new relationship between villagers and commune officials, in which fear is less important than respect. However, CDRI's study of decentralisation suggested that commune councillors tend to look upwards rather than downwards for advice and instructions (Rusten *et al.* 2004). Conversely, other studies of the impact of the SEILA programme in Cambodia have suggested that commune and village chiefs have become more accustomed to consulting villagers and listening to their views.

These studies suggest that the status of village and commune chiefs between political and state masters and local constituents is contested, and is probably changing rapidly in the context of decentralisation reforms, creating different opportunities and constraints for leaders, different relationships with outsiders and perhaps eliciting different types of leader with different personal qualities.

With regard to civil society leaders, a recent study, Justice for the Poor, conducted by the World Bank in 2006 on the emergence of social movements of the poor in rural Cambodia suggests a role for the morally influential individuals Ebihara describes in the non-governmental sphere. The study describes opinion leaders in Cambodian villages, who are able to mobilise the community over particular issues. These leaders would appear to possess a charismatic form of authority, their status as opinion leaders suggesting that they transform rather than represent villagers' interests.

Historically, local leadership in Cambodia is predominantly male. Women have played important roles in promoting human rights and advocating legislation on violence against women, contributing to forging cross-party ties and building civil society partnership with the government (McGrew *et al.* 2004). Significant improvements have been observed since the decentralisation reform, the percentage of women commune councillors increasing from 8.5 percent in 2002 to 14.6 percent in 2007.

Much literature nonetheless shows that more needs to be done if true representation is to be achieved. First of all, it is argued that political parties are pressured to

choose women candidates (McGrew *et al.* 2004). The inclusion of women is more an "afterthought" rather than a reflection of mainstreaming because it is mainly the donors who are the driving force behind the promotion of women *(ibid)*. Second, gender in Cambodia is hierarchical (Lilja 2007). Women leaders are therefore resisted by men and the prevailing cultural belief that they should be submissive to men and should stick to domestic roles (Ledgerwood 1996; McGrew *et al.* 2004). Third, for many women, taking up an official leadership role means taking on a double workday in which their domestic role remains the same but to which their administrative role is added (Peterson & Runyan 1999). There has not been much success in the renegotiation of roles and responsibilities between husbands and wives. Fourth, while the quota system may increase the number of women, it is still rare to see women being put at the top of party lists (McGrew *et al.* 2004). Also, voters are not yet accustomed to having women leaders. Finally, Frieson (2001) argued that although they are not publicly active, Cambodian women tend to be significant behind the scene, intruding or interfering in their husbands' political affairs for their own interests. Similarly, Lilja (2007) observed a strong sense of family-oriented political participation, especially among women. As a result, ideal democracy is undermined and the distinction between public and private spheres cannot be made because the private sphere "decides who has power in the public sphere".

Grouping of Leaders

Trying to adapt Weber's classification of legitimate authority, Benedict Anderson (1990) argues that in south-east Asia it is close to impossible to distinguish the last two forms of legitimacy because they often overlap and charismatic features are found integrated into the traditional domain. Further, Ledgerwood and Vijghen (2002) grouped local Cambodian power domains into six types: administrative (officials such as commune councillors, village leaders), religious (elders associated with a pagoda), knowledge (covering professionals including teachers and health workers), spiritual (such as traditional healers), economic-political (rich and powerful people) and development assistance (development workers). We would expect leaders in different domains to have different kinds of legitimacy. In the cases studied, we argued, based on the perceptions of the villagers, that local leaders can be meaningfully categorised into four domains:[3] administrative, social/religious/spiritual (because leaders were seen to possess these multiple roles), economic-political and knowledge and development assistance domains. The study discusses and analyses the cases based upon this categorisation.

6.1.6. Profiles of Communes

Thorough interviews on commune backgrounds were conducted during the fieldwork, but for this article we chose to identify only issues that are highly relevant to the

3 Kim (2009) argues that there are fundamentally two broad types of power in rural Cambodia: those of political elites and the rich business people, both of which occupy the administrative, economic and political spheres. People in the religious, knowledge, spiritual and development domains possess only indirect power but hold traditional and informal authority.

empirical discussions below. We include natural resources, commune leadership and types of conflicts as significant. Names of informants, communes and provinces are not given to respect informants' confidentiality; the three communes and provinces are identified under the names of A, B and C.

Commune A. This commune is rich in natural resources, namely forests. Recent logging of this resource has caused migrants to flock into the commune. The major economic activities are farming or logging-related. The commune is headed by a woman SRP chief, who replaced the male CPP chief in 2007. Villagers voted against a CPP candidate newly placed at the top of the party list while their beloved former chief was demoted to third in the list. The commune seems to be dominated by an *oknha* who has been doing business with a forest and later land concession company. Both the *oknha* and the company routinely bypass the commune council. As a result of the concession, councils are no longer informed or clear about their own boundaries. Many conflicts arise between villagers and the concession company over logging and the use of cleared land, and councils are frustrated by what they cannot do about this.

Commune B. The commune is partly covered with bush. The majority of the villagers are farmers and/or fishers. Some produce household or kitchen tools as off-farm activities. The composition of commune councillors has been exactly the same in both mandates, headed by a male CPP chief. During the past two years, as a result of rising land prices and the activities of many outside speculators, serious land grabbing and sale of common land by local authorities have occurred.

Commune C. Located along a national road, the commune has a medium-sized market and rice and other farming communities. The villages are stable, with low immigration, and tightly knit. The commune in both mandates has been led by a woman from the CPP. One central official from the ruling party keeps very close contact with local leaders and frequently interacts with villagers. This patron is highly interested in agricultural productivity and the development of local infrastructure to enhance agriculture.

6.2. WHO ARE THE LEADERS?

The study was conducted in three communes with varying backgrounds and characteristics. However, some patterns emerged across the three cases. This article describes these patterns and points out key variations in particular communes.

During citizen's survey, we found varying attitudes among different types of villagers towards local leadership. From our interviews, we identified that the relatively more educated villagers and well-off people are well informed and curious about local politics. The majority poor prefer to remain distant from the local authorities (See also Kim 2009 about the rationales behind such attitudes). The vulnerable or destitute groups do not bother about local political affairs but devote all their attention to survival. The ethnic Chinese pretend not to understand such issues but pay bribes to the local authorities where necessary for their businesses.

Overall, the citizens' survey indicates four types of leaders viewed in the following order of significance: village chiefs, commune chiefs and councillors; traditional, social and spiritual leaders; economic leaders; and development and knowledge leaders, who are sporadically significant.

6.2.1. Administrative Leaders

Authorities

Scott (1972) contends that people in south-east Asia accept the power and status of people in their society as legitimate. In Khmer, *achnhathor* (authority) is defined as the officials who represent state institutions' power and legitimacy, laws and regulations. The study found that villagers in the studied areas use different terms (*achnhathor* and *me euv,* meaning parents) to refer to administrative leaders. The villagers clearly distinguish *achnhathor* from the notion of parents. When they accept *achnhathor* as parents, they imply a mixture of fear and respect. They respect good leadership and leaders' characteristics, but their authority creates some fear in the villagers, which distances them from their leaders. If they refer to officials as *achnhathor* only, they imply that they do not feel close to or do not like the leaders. One reason is that the leaders use only laws and regulations to deal with the villagers, showing neither affection nor understanding, as would a parent-child relationship. Second, there may be hostility caused by misdeeds of the leaders.

Village Chiefs

About 80 percent of the Khmer population live in the countryside and survive by farming. As discussed earlier, kinship is the most important tie of Khmer peasant society; there is no clear separation between private and public domains (Ebihara 1968). It is therefore not surprising that the villagers in all the communes studied relate mostly to their village chiefs, for they see them as more familiar and closer than commune councils while possessing enough authority to solve most of their minor problems. Villagers are usually not afraid of village chiefs. In some conflicts (for example, domestic), they do not expect solutions from the chiefs but want to have their case heard so that hostility between the parties is reduced. In such cases, village chiefs are important because villagers feel that at least there is somebody who is supposed to take care of them and is informed about their resentment.

The survey observes how the villagers refer to their village chiefs. Usually village chiefs are identified as *achnhathor phum* (village authority) or *me phum* (village chief) or in some cases *euv* ("father"—female village chiefs being rare). When the people refer to the village chief as *achnhathor,* they imply rules and regulations that they must conform to, and also a distance from them. It also highlights a clear line between the public domain and the traditional sphere. *Euv* is what children and the general public traditionally call their father[4] and implies love and respect for a figure of honesty and

4 Nowadays, most of Cambodian children, especially those settling in the capital or towns, call their father *Pa*, which is adopted from the French word "papa". Only in rural areas is *euv* used.

leadership who is also a breadwinner or family leader. Importantly, when the villagers call the chief *euv,* they accept that, while possessing public authority or position, he leans more to the traditional domain.

The villagers in all the three cases approach the chiefs mainly because they are close and not frightening. Out of six chiefs in the six villages studied, five, according to the villagers, are just *achnhathor*. Only one chief in commune C is considered *euv;* he is well respected and trusted, and for these reasons the villagers cooperate with him, particularly when resources and labour are needed for the development of local infrastructure, albeit not in bigger development initiatives. The implication is that the villagers prefer their chiefs to lean to the informal domain, in which love and care are given in exchange for respect and the acceptance of authority. However, villagers also express admiration for younger authorities with more potential and outspoken personalities. But as these are relatively new, villagers do not have as much interaction with them as with the more familiar faces.

Commune Chiefs and Councils

When they fail to get their problems solved in the village, villagers usually resort to the commune for help. The procedure is that the villagers first reach the village chief, and if the problem is not solved, they take the case to the commune authorities. The fieldwork found that villagers use different terms for commune councils; while the majority call them *achnhathor*, some describe them as parents (*me euv*).

Achnhathor khum (commune authorities) possess more formal authority than *achnhathor phum* and thus can solve more serious problems and are more distant. Our survey shows the lack of familiarity and contact keeps the villagers more fearful of *achnhathor khum*.

The villagers in the three communes often equate good *achnhathor* with *me euv*. The *achnhathor* who fail to fulfil tasks expected of them are not the people's *me euv* but just *achnhathor,* if not bad *achnhathor*. In commune A, generally speaking, the villagers, although they voted for a new chief, do not welcome the change (the arrival of the new female chief from the SRP) and often resort to other council members or the former chief, whom they trust or are familiar with, for assistance. Overall, the villagers interviewed feel they are not taken cared of appropriately; the current chief and councillors function as *achnhathor* but lack the traditional side of being *me euv*. In commune B, the situation is much worse because of a scheme of the commune chief's group to grab the people's land. The villagers surveyed expressed that they are helpless, and their expectation of good treatment from the commune is gone. Here also, the commune council is just the *achnhathor* which the people try to avoid as much as possible. In commune C, the influence of a CPP patron seems to make things different. CPP councillors who act in accordance with the patron's advice are viewed relatively well by the villagers, or at least meet no serious antagonism.

6.2.2. Religious, Social and Spiritual Leaders

In Khmer society, respect for elders and for hierarchy represents one of the core values (Ebihara 1968; Kim 2009). The survey reveals that, aside from administrative officials, two kinds of local leaders traditionally dominate: elders and the religious officials known as *achar*. The respected elders are all Buddhists, and the majority of them gain knowledge from and are affiliated to pagodas (see also Kim 2006). Sometimes a village chief, such as the one in commune C whom the villagers call *euv*, is an elder as well. The elder aspect of the chief makes him more accepted by villagers. What is interesting is that he is loved by the people for his charisma, and while his village *achnhathor* counts, it is less influential than the traditional value he possesses.

In the resource-abundant commune, when people started to exploit the resources, which attracted migrants and made the area less stable, traditional leaders were eclipsed. In commune A, only one *achar* performs well, being able to attract large funds, mostly from powerful party-affiliated individuals, to build the local temple in four years. However, he concentrates only on pagoda-related activities. In commune B, which is quite stable and lacks natural resources, *achar* and elders are equally active in small development work inside and outside pagodas. Similarly, in commune C, where natural resources are scarce and which attracts almost no migrants, the people, especially in one particular studied village, are mostly kin; hence elders are even more effective in mobilising the young people to build local infrastructure. At the time the survey was conducted, the construction of a long dirt road crossing several villages had just been completed and the people surveyed expressed great appreciation of the local elders for their initiative and efforts to mobilise the villagers to construct the road. In short, traditional leaders, especially the *achar,* play humble yet significant social roles in attracting funds for local development.

6.2.3. Economic-Political Leaders

The study found two types of economic leader—the very rich, who remain apart from the people but provide assistance as a form of social obligation—and leaders who are better off than common citizens but stay mingled with the farmers.

The aloof. Economic leaders generally distance themselves from common citizens as well as local authorities. They are usually among the richest in their community. It is interesting to observe their communication with the villagers. The leaders provide financial assistance to village development or religious activities when asked, but they tend to be quiet and let their money do the talking. These leaders see their help as a social obligation to take care of the poor, particularly financially; if they did not fulfil that obligation, they would be socially dishonoured in the eyes of the general public. Aside from concrete assistance, they employ local people in their businesses. However, it is also increasingly seen that once they build good networks with higher levels, the social pressure on their behaviour seems no longer operative, and they may exploit village resources and monopolise business.

Grassroots local leaders. Another type of business leader remains with the farmers; they are not as rich as the above type but may possess land and major farming implements. They are wealthier than ordinary villagers and run businesses. They may be seen as local patrons who may give small loans and have more interaction with the people through their businesses. The status deriving from their better economic status allows them to "have salty spit" (be listened to by the people and perhaps be influential with authorities).

In commune A, an aloof economic leader, an *oknha,* owns 1500 hectares of rubber plantation and has a large road construction business that owns a number of big and expensive machines. He has donated USD150,000 for local public and religious developments. This enormous contribution and financial power make the local people and authorities feel detached from and a little fearful of him. Another is a female grassroots economic leader who stays very close with the villagers. She stands out among the leaders mentioned by the villagers. Although a widow, she managed to become richer than her neighbours, has built a big house and owns some ceremonial equipment for the villagers to hire. She is also a moneylender and is often depended on by her neighbours. For these reasons, she was spotted by the CPP and invited to join the party, being elected a commune councillor in 2007. In commune B, no significant economic leader was singled out by the villagers. In commune C, a dominant gas seller does not project himself as being as strong as the above *oknha,* but puts himself above village and commune authorities. He rarely comes into contact with those leaders, but to ensure the smoothness of his business, he seeks favouritism from higher authorities by giving rents.

6.2.4. Knowledge and Development Assistance

To the people interviewed, although NGOs and community-based organisations are in general seen as key in the provision of economic assistance to villagers, they are of little importance in representing the people or finding solutions to their social problems.

6.2.5. Female Leaders

With the introduction of decentralisation, which favours women's participation in local politics, the number of women councillors rose from 8.5 percent in 2002 to 14.6 percent in 2007. However, their impact remains to be seen. The focal person attached to each commune council does not function in any of the communes studied. In contrast to their commune counterparts, the village gender focal persons studied, who are mostly female, and the deputy village chiefs, who can be female as well, are quite active.

In commune A, the female chief, from the opposition party, is in the midst of challenges. Other councillors affiliated to different parties mostly do not cooperate meaningfully with her, leaving the commune work fragmented, ineffective and inefficient. However, female voters interviewed have started to appreciate her because they can discuss their issues, which they could not do with her predecessors. In commune B, not a single

woman won election in either of the two mandates. (According to a council member, there were women in the party lists, but their names were put at the bottom. He said that the parties felt that these women lacked the capacity to be at the top of the list.) Commune gender issues are ignored. However, female villagers are quite active in helping village chiefs. In commune C, the female chief has held the office since 2002. The villagers accept her and pay no attention to the fact that she is a woman. It seems she is more involved in different activities than her male counterparts. She is usually busier than them because she is asked to deal many different women's issues and attends many gender meetings.

6.3. LEADERS' CHARACTERISTICS

Three critical aspects were chosen to identify leaders' characteristics: educational attainment; age and experience; and gender.

6.3.1. Education

Administrative leaders. From the surveyed villagers' point of view, education is an important aspect of commune councillors' legitimacy. The Law on the Administration and Management of Communes/*Sangkat* requires commune administrative officials to have at least some primary education. Our study in the three communes found that 40 percent of commune authorities possess some primary education while another 60 percent have some junior or senior high school education. Although their level of education is higher than the average of ordinary villagers (see also Rusten *et al.* 2004), the low level of their education compared to their increased responsibilities is constraining commune councils' work. Within this small sample, female councillors had more education than their male counterparts and they were starting to gain recognition and legitimacy based on their knowledge, outspoken personality, bravery and determination.

The educational attainment of village authorities is much lower than their commune counterparts, 71 percent having some primary education and another 29 percent having some junior or senior high school education. Women are gradually joining the village committees, but their education varies. Slocomb (2004) shows that selection of village chiefs was based on personality, trust from the people and knowledge of villages and local settings, indicating that formal education is not a requirement of legitimacy or position.

Religious, spiritual and social leaders. Elders and *achar,* most being over 60 years old, lived through a time in which the pagoda was a common means of attaining education, so it is difficult to categorise their levels of education. These individuals are knowledgeable in ethics and religious principles, which provides them popularity among the younger generation. Almost all of these respected and trusted elders are men. From our findings, women elders have to have specialised knowledge, for example in nursing or traditional healing, in order to be respected and considered leaders.

Economic and political leaders. The more aloof business owners, who are usually the richest in their communes, have some of the highest education in the communes as a result of their ability to afford it. The grassroots type, however, shows a mixture of educational attainment, similar to the characteristics of commune councillors.

The gap between the education of *achnhathor* and some of these business people could possibly reinforce the gap between state and society because the more educated individuals are usually uninterested in engagement with the commune. With their wealth and status, they are already bypassing the commune in many of their endeavours. Scott (1972) suggested that knowledge and skills are more sustainable than other patronage resources, such as real property and office-based property. The low education of local leaders suggests that local leadership has not yet made use of or co-opted formal educational elements, as opposed to the more frequent co-optation of economic elites.

6.3.2. Age and Experience

The commune law specifies that Cambodian citizens over the age of 25 are eligible to stand for election to commune councils. Our study found that 76 percent of commune council and village committee members are over 49. This finding is quite consistent with CAS and Pact surveys, which found that 77–80 percent of commune leaders are over 49 years old (Pact 2008). Women administrative leaders are younger; our survey found that half of the women leaders are under 49. However, throughout the three communes studied, all female councillors are either widows or divorcees. Traditional figures such as elders and *achar* are much older, whereas economic and newly emerging leaders are quite young.

The local leadership elite in our studied communes has remained remarkably stable over the past 30 years, despite an extremely turbulent political history and many national regime changes. Many of the *achnhathor* found have held some position in the public domain since 1979: village chiefs, teachers, militia members etc. Some even had important roles such as village chief during the Khmer Rouge regime. Their age and experience suggest that they have experienced many regime changes and are more used to centralised rule. One question is whether this stable leadership of the past will be adequate to cope with the economic and social transformation caused by Cambodia's current economic growth.

Women *achnhathor* are younger and very new to leadership positions. Villagers still often seek out elders and *achar* for advice. Administrative leaders also seek their advice on commune or village geography and history.

What is interesting is that the more large-scale business owners in our cases studied had experience with district, provincial or even national government administrative work. Through this, they have built the knowledge, skills and networks to be able to smooth their business transactions and get away with illegal activities. The smaller scale, grassroots types inherit their business careers or pursuits from their ancestors

and are interested in keeping peace with villagers so as to have their businesses run smoothly.

Detailed work and life experiences of some of the different types of leader are provided in the full version of the study.

6.3.3. Gender

As the descriptions above indicate, leadership is still largely male. Administration has experienced an increase in female participation, which is strongly encouraged by development policy; however, the percentage is still too low to make much difference. The power status quo has not changed, and women leaders continue to be marginalised.

As discussed earlier, Ebihara's 1968 study of Cambodia's local leadership showed that the personal dynamism of leaders is more important than rules and norms. Based on our findings, this has not changed much. The level of education of commune councillors has not increased greatly, while their age and experience show that the importance of traditional legitimacy still lingers. Slocomb's 2004 study described a past selection of village chiefs based on trust and respect, and while these leaders remain, it confirms the great significance of traditional legitimacy of leaders. During a presentation workshop, Leng Vy, deputy director general of the Department of Local Governance of the Ministry of Interior, stressed that it is still difficult to attract young candidates into commune councils because of the low salaries compared to the increased roles and responsibilities (Leng 2007). The main change is that among economic and administrative leaders there is a younger and more educated component of commune councillors, although this does not come without cost.

6.4. NETWORKS

Patronage networks and informal personal relations are argued by many scholars to have been strengthened within the past decades within Cambodian politics. They report that the ruling party has been most able to use its position of "domination of state machinery" to cultivate strong patronage and party political links to voters, administrative officials and business tycoons (Hughes 2003; Hughes & Conway 2004; Gottesman 2002; Pak *et al.* 2007; Un 2004, 2005). As a result, party politics has been strengthened; local leaders need to attach themselves to particular networks or political backers as a way of seeking legitimacy.

Deep in the relations and connections of leaders, a complex but very interesting picture of network clusters is revealed. Overall, it was found that the CPP is the centre of gravity, since virtually all village committees and commune councillors in the communes studied are CPP-affiliated. This is consistent with the National Election Committee figure that 98.6 percent of commune chiefs are from the ruling party. Patron-client networks on party lines are strong. This makes for strong competition among CPP candidates, while other parties face a shortage of good candidates.

Active and popular female leaders are increasingly being co-opted into politics. Some use their husband's or relatives' networks to join, such as a village focal person in commune C who joined the village committee because her husband is a commune councillor.

Elders are themselves ordinary villagers and so gain legitimacy not just from villagers but also from commune councils, which occasionally seek advice and information from them. They also have good relations with and are often members of the local pagoda committee. *Achar* are increasingly building networks with powerful national politicians, especially of the ruling party, because only such a link can win contributions and legitimacy for their pagodas. Without party affiliations, it is difficult for pagodas to attract contributions.

Because of their business pursuits, economic aloof types forge links with higher *achnhathor*, powerful and influential people, specifically politicians, and other important business people, while they also have good reputations with local pagodas. The more grassroots types are more interested in building good relations with villagers, commune councils, village committees and other groups within the community, while also striving to associate with the ruling party. These people sometimes belong to ethnic groups, and when they are co-opted into party politics, they are able to represent their group.

The high degree of competition among CPP candidates has both good and bad effects. It can bring good people to commune councils. However, if the process is not transparent and fair, many issues can arise. For example, in commune A, candidates paid bribes to be listed on the top of the party list, and this caused some to opt out. These said that they would like to serve the community, but if they have to pay bribes to do so and receive a low salary in return, they would rather stay home. Those willing to bribe do so only if there is opportunity for petty corruption and rent-seeking to compensate them. At the same time, economic leaders can buy positions for their relatives and use this for their business advantage, as seen in commune A.

The full version of the study elucidates this network of connections in much more detail.

6.5. MOTIVATION

The low salaries of commune councillors and village leaders indicate that they have other motivations. From our interviews with local leaders in the three communes, motivations commonly found are status and pride, kinship (continuation of leadership roles of ancestors), personal benefits (such as rents, benefits from the party network, children's education), gratitude and loyalty to the party, nationalism and protection. Female leaders particularly feel motivated by having a good reputation and pride.

Elders and *achar* seem generally enthusiastic about developing the community and building good karma. Elders are also motivated by their role encouraging younger people to join in. This is partly their social obligation and partly the way to make

youths feel obligated. Some *achar,* as is obviously the case in commune B, took up a religious life to compensate for their bad karma during the Khmer Rouge regime.

The economic and political leaders, as patrons of their villages and communes, feel obliged to help the community with material or financial assistance when asked. Doing so helps them build and retain their patron status. This eases doing their business and satisfying their party's expectations. In commune A, for example, the *okhna* needs villagers' labour for his logging and rubber plantation and provides assistance when asked, while he has to satisfy his national political network and backers by contributing to pagodas and other projects in the name of the party.

6.6. ACTIVITIES

This section examines how leaders transform their authority into action, the problems they face and the implications these have for gender.

Administrative leaders. The overall findings indicate that the currently assigned tasks are too large for the capacity, experience and resources of commune councils (see also Rusten *et al.* 2004; Kim 2009). Their roles and responsibilities are not well supported structurally or with resources. They receive around USD8000 a year from the Commune/Sangkat Fund, which can cover only basic salary and administrative costs. For development purposes, they resort to party patronage and carry on employing traditional authority. Interviews with leaders from all studied communes indicate that they are frustrated by their inability to deliver development projects and other tasks stated in their mandates. They have to associate themselves with the right network to get private funding. During our interviews, a commune councillor in commune B proudly admitted that he has resorted to his own uncle living abroad to help fund the commune's dam project. Such recourse to informal help is a common pattern in a weak state whose formal system is relatively absent, according to Scott (1972).

The time of commune authorities is reportedly taken up by administrative work, dispute resolution and carrying out of commune development plans. For this study, we focused particularly on their involvement with resource mobilisation and collection of local contributions, planning, dispute resolution and gender.

It was found that commune authorities use the assistance and support of village authorities to collect and mobilise resources, and if the latter cannot complete their mission, the commune authorities take on the work. Planning is felt as something new. They are not familiar with the process, and it is difficult to get villagers' participation and contribution. They understand the indicated steps of the planning process, but a genuine planning with people's participation and expression of needs has not occurred (see also Horng & Craig 2008). Usually there is a monthly meeting in which officials talk and villagers listen. Advice and ideas about village issues and events are sought through village chiefs and elders. Leaders resort to informal and small meetings, which have been more effective in getting the voice and participation of the people. Participation and enthusiasm are greater for political party meetings. The reasons for low participation, discussed in previous studies and reported by commune councils,

include the practice of distributing gifts for participation (which de-motivates villagers to participate in meetings in which no gifts are given), villagers being unaccustomed to participating and voicing their needs and their scepticism about what is likely to be achieved.

Conflict resolution is mainly carried out in cases of domestic violence and land conflicts. With respect to domestic violence, councils lack the institutional support and knowledge to do this job effectively and have to resort to other means such as Buddhist principles and their traditional authority to make people listen. Thus far in most cases the outcome has been compromises and no actual "resolution". In resource disputes over forestry and fisheries, as is the case in two of the communes studied, councils have no power to make decisions or take up the issue. In the case of commune A, the councils are frustrated since the encroachment and enclosure of common property occur without their consent or knowledge. Decisions on forestry and land concessions are made at higher levels, while they are not kept abreast of what goes on. Complaints brought to the councils by villagers just cause them more frustration, while their inability to help villagers creates more distrust in local authorities. In commune B, councils have to close one eye to illegal large-scale fishing by outsiders who are backed by district or provincial police. Not only do these police protect these illegal fishers, but they also arrest and fine ordinary villagers for family fishing. An average fine would be around 100,000, riels, according to our interviews. In contrast to their having no power to deal with this issue, the commune councillors (except for one CPP and one SRP councillor), being allied with or related to certain village chiefs and having good networks with the district authorities, use raw power over villagers to grab common land.

Although it was not one of the intended issue areas of focus, we found that commune councils are increasingly busy certifying land deals and providing credit guarantees because land prices are rising quickly and more micro-credit institutions are reaching very rural areas. Some councillors or their spouses use their official titles for land deals or brokering.

Gender activities are almost absent throughout the communes studied. During our field study we looked into past and present projects of commune councils. No project had a gender lens. The only gender activities regularly implemented are training and meetings on gender and domestic violence supported and initiated by the Ministry of Women's Affairs and occasionally by different organisations.

Councillours are seen to be increasingly busy attending training and workshops provided by local and international organisations. There are complaints that training programmes are incoherent and overlapping and are taking much of their time from work. While this is becoming a problem for commune councils in general, it poses even more challenges for female councillors, who are often invited to gender workshops in addition to all the others.

Village and commune are not two separate bodies. Although village authorities are supposed to present their needs to the commune, the current institutional arrangements

and mandates do not allow them to do so. They remain accountable to the communes and act mainly as extra eyes and arms of the commune, providing it assistance on request. Generally they are asked to collect local contributions, disseminate information, distribute ID cards and party cards, mobilise villagers for and attend meetings and solve minor conflicts. Where villagers trust and respect their village chiefs, the collection of local contributions is very effective, as it observed in one studied village in commune B and C. In commune planning, they mainly raise common issues their villages are facing to. This is still a new experience for them, and they are yet to have effective means to solicit more villagers' participation and expression of issues. Informal and small-group meetings are still being used.

Female members of the village committee are seen as more likely to progress their work and interact with villagers. Similar to female commune councillors, they receive more pressure than men.

Religious, spiritual and social leaders. Elders and *achar* are important in mobilisation of labour and resources for community development (especially infrastructure) and pagodas—internal and external donations. They are also involved in local help groups for such things as emergency help and funerals. Informally and traditionally, they are occasionally sought for advice on family issues, especially by those who know them well. In villages where there is little migration and kinship is still strong, as in some villages visited in communes B and C, the roles and significance of elders remain influential. Their participation and guidance are guaranteed to encourage increased participation by villagers. This contrasts with commune A, whose natural resource extraction has attracted many immigrants. This creates distrust among villagers and distorts the potentially critical role of elders. In this commune, there were almost no elders active and helpful in everyday activities and village development.

On the surface, these elders seem to function independently; nonetheless, the current system is so arranged that they increasingly need back-up and financial support from influential people and state authorities. Within such networks, they play an important role of bringing the people closer to these powerful individuals.

Economic and political leaders. While their endeavours bring them wealth, economic strength and influence, the more aloof business people provide assistance to the community as a social obligation. Their roles are to provide employment, contribute to or take charge of road development, provide big donations to pagodas and finance political party projects. They also contribute to commune council projects as necessary. They benefit in return from bypassing local authorities, smuggling and tax evasion. The more grassroots type, who are closer to the people, are sought after for small loans and advice on domestic issues and conflicts.

During our fieldwork in the three communes, we also encountered some business people who came from outside and had networks with district, provincial and national authorities. There were land speculators and owners of irrigation businesses. However, they were not mentioned as leaders by villagers because they do not participate in

or contribute to any village or commune projects. Business people were regarded as leaders only if they came from the commune originally.

Knowledge and development assistance. Some community-based organisations are led by elders and *achar*. They function quite informally and are small-scale but well known and well mentioned and seem more sustainable than other organisations. Being led by elders and *achar*, they are not leaders in knowledge and development assistance. On the contrary, another type of community organisations, established by external bodies such as NGOs, has elected management. They function under external funding. However, not many villagers know or can identify individuals working with these organisations; their work is predominantly a "one-way street". They go to villages at set times and dates, carry out their projects and leave. This finding is consistent with CDRI's study that found that civil society and community organisations are extremely weak in rural Cambodia and that the "organic" ones function better and are more sustainable than the "mandated" ones (Kim & Öjendal 2007). In commune B, some leaders helped represent the people to district authorities over land conflicts with village and commune authorities. However, they function in a very sporadic manner and emerge only when their immediate possessions are threatened. They were disengaged from other issues, and so the weight of this finding is too small to affect the overall finding on this domain. Overall, the knowledge and development assistance domains do not offer any perceived local leaders with significant activities.

Previous studies and the discussion above indicate that local leadership is now functioning in a softer form, departing from authoritarian style and from a role of protecting people against rebel raids to focus on administrative and representational work. The seeking of advice from elders by commune councils and their cooperation on local development projects are other positive signs. However, councils' lack of power and resources, the sameness of work actually performed (which still centres on conflict resolution and petty administration), unfamiliarity with planning, the influence of rich individuals on leaders' activities and the weakness of civil society organisations still pose threats for councils, affecting the pace and effectiveness of decentralisation and deconcentration.

6.7. CONSTRAINTS FACED BY LEADERS

The identified leaders face different constraints. The administrative type tends to the target of many demands expectations (families, voters, party, peers and other external actors), thus more attention should be on this category. The traditional group often does not have to worry much while the economic leaders perhaps have to deal with a lot of financial requests.

6.7.1. Administrative Leaders

Village and commune administrative leaders are often caught in a difficult position—balancing different demands from villagers, other colleagues, higher authorities and political parties. It should also not be forgotten that their own families are another

immediate constraint in the context of meagre financial incentives. The constraints are particularly strong for women leaders.

Pressure from family and colleagues. Most councillors are in their 50s or older, are married and have several dependent children. Only a few are relieved from family financial constraints because their children are married. The majority depend largely on rice farming and one or two side jobs. The monthly salary of commune councillors is 100,000 riels for the chief and less for the others. Their families are unable to live on the minimal pay, making petty corruption pervasive. At the same time, councillors often have to spend a lot of time at the commune and at home responding to voters' needs. In commune A, which is led by the opposition, all the councillors complain about the low benefits, but corruption is not tolerated by the chief; councillors from other parties are not pleased that they do not manage to profit from the work. The female chief says her male peers often express prejudice against her. However, in commune B, where the ruling party seems to have relaxed its grip on the councillors, the chief has made a lot of money out of commune work. Other councillors, attached to and not attached to the chief's party, complain fiercely about the unfair distribution of the money garnered. One village chief in this commune says that his family is worse off since he started serving the village. In commune C, where the party patron oversees the commune and village work, corruption is curbed as well. This commune's female chief, although relieved of family burdens, is much in demand by her political party, NGOs and the Ministry of Women's Affairs, so she is very busy. One of the village gender focal persons who has worked for one year wants to quit the job because she does not have enough time to take care of her family.

Pressure from party and other higher levels. Political parties in one way or another pressure commune councils to follow their agendas or be accountable to them. Council and village committee members' lives are particularly hectic around election times. In addition, both commune councillors and village chiefs have to listen to patrons who are assigned by the relevant political party to take care of the commune. A good example is commune C, where a high-profile patron very often meets the commune councillors and village committee members and ensures that his party's guidelines are obediently implemented.

Pressure from villagers. Local leaders find it is not difficult to understand the needs of the voters (Kim 2009), to whom they have to be accountable and responsive. Under decentralisation and deconcentration, local leaders are also expected to be humble and caring for villagers, which is very challenging for most of them, who, in earlier regimes, used naked power, command and force (Kim 2009). The lack of devolved power and the limited Commune/Sangkat Fund do not allow any commune councils to be appropriately responsive and accountable to the voters, but often they can make the voters understand the limitations (see also Kim 2009). The striking difficulty for village and commune leaders, found in the three cases, is to lobby people to pay the local contribution fees. Although some villagers are beginning to understand that their minor contribution allows them to feel ownership of the local development, the rest, who are used to receiving gifts rather than contributing, are still not convinced. The worse case is the land grabbing by the chief and his team in commune B, and higher-

than-usual petty corruption in the same commune seems to upset the voters the most. The repercussions of leaders' actions often visit them.

Major constraints on women administrative leaders. In all three communes, women leaders were divorcees, single or relieved of family burdens. Only a few are married, and they have little commitment to other work. The main obstacle for these women leaders is household burdens and husbands who find it difficult to accept their wives' involvement in politics. For instance, in commune A, the husband of the SRP chief threatened her with divorce if she participated in politics. She chose that, saying that her ambition and love for her party were more important. The study found that only with the husband's approval or when he is inferior to the wife can women function well in local politics. We discovered a single case in commune A in which a female village focal person is the family's breadwinner and the husband seems not to challenge her public work (she is more educated); all her children are married. She is in one of the best positions to participate in local politics. In commune C, the commune chief entered politics after her husband's death, while one of her deputy village chiefs is a single woman.

6.7.2. Spiritual, Social and Religious Leaders

These traditional leaders are usually elderly and released from family burdens and they often lead social and religious activities on a voluntary basis to gain merit and status and who are not expected to fulfil demands of any specific group. Therefore, constraints are the least among local leaders. In commune B, the burden of one *achar* is his poor living standard, but he seems not to see it as a constraint, saying that he can just manage his time well. That *achar* and another in commune A have pointed out that politicians often convince them to lobby the elderly Buddhist followers to vote for their respective party in exchange for further economic assistance for the local temple construction, but in the interviews they seem not to see it as serious pressure.

6.7.3. Economic Leaders

Local politics represents a minor expense to wealthy business people. Although they are identified as leaders by villagers in the survey, they sponsor local development to maintain social status and networks that are important for their business; however, they are not subject to the same degree of expectation and pressure as administrative leaders. Aloof leaders may face financial pressure from local people, *achar* and political parties. However, the leaders interviewed manage this with ease. For the grassroots leaders, the challenge is to be involved in local politics once they are spotted and co-opted. Nevertheless, in commune A, the leader seems to enjoy her participation in local politics, seeing it not as a constraint but an opportunity.

6.8. SYNTHESIS OF KEY RESEARCH THEMES AND EMPIRICAL FINDINGS

This section responds to the four main research questions posed at the beginning, namely: (1) What kinds of leaders are there? (2) What is their authority based on? (3)

How do they transform authority into action? What are the constraints they face? (4) How does gender affect the above questions? It does so under the key themes raised in the introduction: power, authority, legitimacy, private and domestic domains and patronage politics, which operate in a hybrid situation in which Western political concepts are blended with local political culture. Key characteristics of Khmer society incorporate patronage ties, kinship-based social relations, acceptance of social inequality and of karma accumulation as the basis of legitimacy and the pervasive influence of the private domain over the public. People respect seniority and hierarchy and are not used to challenging the existing order (Ebihara 1968). This study reveals that such a political culture remains intact in rural settings and is the base to which decentralisation has attached itself; the reform thus progresses unevenly and uneasily. The study has unearthed a few observations relevant to these concepts in the past seven years.

Power. Of the three main categories of leaders, we discovered that villagers attach the most significance to village and commune administrative authorities. They also prefer to be led by the same leaders; changes are not very welcome. Elders and *achar* have proven to be very effective and efficient in promoting and attracting small local development projects. (We also found them to be increasingly politicised, particularly during election times. A big percentage of local contributions from economic leaders and party politicians flow into pagodas rather than to overall development.) Further, economic leaders are emerging, particularly in resource-rich communes. Although administrative leaders were found to be the dominant type among them, the evidence is that decision-making power still rests at the centre while the party still dictates local leaders; the public sphere of power is dwarfed by the private one. Also, influence over decisions and policy is increasingly associated with business people.

Authority and legitimacy. Because seniority is culturally valued, all types of leaders tend to be old (50 or older). Also, since people tend to prefer the same leaders to new faces, most administrative leaders have a lot of experience from involvement with previous governments. Two important features of their experience should be noted. While they are familiar with commune work and history, their past may also include negative aspects such as the exercise of raw power (being used to commanding, coercing people) and centralised working habits. For leaders who are used to practising military-style leadership, adjusting to the reform remains a big challenge. In addition, networks (especially political party and other patron-client ties) represent another crucial factor for local leaders because they have to be part of the system to seek legitimacy. While their mandates remain unclear and their delegated power is not complete, they need to resort to their "group" for help. More importantly, villagers expect leaders to lean toward the traditional domain of social norms, understanding and intimacy rather than the formal sphere of state rules and laws. Hence, traditional legitimacy constitutes the backbone of leaders. The argument concurs with the old study of Ebihara (1968), showing that Cambodia's leadership has not changed much after four decades despite changes of regime and the adoption of democratic reforms.

Patronage politics. While the introduction of multiparty politics has increased the space for cooperation, patronage politics remains pervasive. Commune councils,

with meagre funding, cannot carry out local development projects and need to work via party lines to attract party philanthropists for assistance with local development. Funding by business patrons guarantees local development but also guarantees their monopolies over businesses and natural resource extraction, rendering government efforts to tackle resource management issues "hollow" (Hughes & Un 2007).

Pye (1985) shows that, in patronage politics, leaders legitimise themselves via religious and symbolic rituals, not through delivery of services. Our findings indicate that Cambodian leaders now have to conform to both standards because people's expectations have gradually altered as a result of decentralisation, although the former standard remains dominant over the latter. Concurring with Pye, Kent (2003) reiterates that development and democratisation are fighting with Khmer culture. Kent sees Khmer Buddhism as being reinvented. She makes it clear that politicians who realise the importance and necessity of traditional legitimacy are patronising temples in order to gather divine power and moral legitimacy. Our empirical findings agree with Kent that the reform process is threatening to the values and unity of the Khmer world view and the autonomy of peasants. However, we see that it is not the reform *per se* that is the threat but how those in power fit the reform process into their patronage politics.

Gender. Gender concepts introduced by the reform seems to have been planted in infertile political-cultural ground. Rural villagers and male leaders are not culturally accustomed to accepting women as leaders. Because they are not seen as legitimate by the culture, and political parties include women largely to respond to the pressure from donors, rather than devolving real power to them, women leaders and the solution of gender issues are still hampered in conditions marked by isolation from male colleagues and a lack of cooperation to tackle gender issues (for instance, gender workshops are attended mostly by women). To enhance their acceptance and legitimacy, women leaders tend to work harder than their male counterparts. The literature argues that women contribute a lot to forging cross-party ties and building civil society partnerships with the government; however, we found that local women leaders are more or less the same as men leaders in these activities. It was also found that wives of men leaders are influential, often pressuring their husbands; such invisible power may penetrate patronage arrangements and the public and private domains of legitimacy. Another result of the reform is the co-optation of more women leaders who are either better off or knowledgeable and are popular among the villagers. However, some aspects of gender work, especially those introduced or established by external agencies, do not function—a good example being the commune focal persons, who were mostly absent during our field visits.

6.9. CONCLUSION AND IMPLICATIONS FOR DECENTRALISATION AND DECONCENTRATION

Khmer political culture and the country's turbulent past have helped widen the gap in state-society relationships. With the introduction of decentralisation in 2002, the gap seems to have narrowed slightly as more and good leaders, including economic leaders, have emerged and multiparty politics allow voters more choices (see also Ann 2008).

Local politics has been softened, local leaders no longer resorting to authoritarian styles of rule. Party patronage networks have helped local infrastructure development through private donations and off-budget party funding. More women leaders are joining local politics. The co-optation of different types of leaders may increase the variety of representation of different groups and the diversity of background among commune councillors. Villagers increasingly understand the importance of their votes and that they can vote out a candidate they are not happy with. These trends show that decentralisation and deconcentration are en route to deepening democracy in Cambodia.

However, our findings also signify that state-society gap is still significant. First of all, there is still much room for assertive intermediary leaders within the villages to help bridge this gap. NGOs and community-based organisations, on their side, should focus more on developing rapport with villagers and making their projects more systematic with a long-term focus.

Second, the characteristics of leaders—their age, low educational attainment, low salaries—all slow the pace of the reform. Training is inadequate, not in frequency or quantity, but in quality: its coherence, effectiveness, relevance and practicality.

Third, party politics is increasingly undermining local leaders' formal mandates, which remain unclear, especially on natural resource management. While decision making is still in the hands of higher authorities, commune councils' roles and mandates remain ambiguous. Also, there is a large potential revenue that could be tapped if commune councils were granted the right to tax local businesses and natural resource use. Deconcentration and granting of taxing rights to commune councils should be prioritised, as previous studies have urged.

Fourth, to increase the accountability of elected councillors, commune council funding has to be reconsidered. The present reliance on donations from party patrons not only shifts the accountability of councillors but also undermines the meagre Commune/Sangkat Fund and translates into meagre salaries that make it difficult to attract younger, more qualified individuals. At the same time, while party politics dominates local leaders, they will not be able to meet citizens' demands or their mandated tasks effectively. This situation distorts the efforts towards a checks-and-balances political system and limits the possibility of the commune being an independent institution that can represent people's needs.

Finally, some aspects of gender work have not functioned. Public awareness and appreciation of the roles of women outside the home are still limited. The mechanisms for including gender in politics and other gender-related work still centre on Western

perceptions rather than assimilating local perceptions. Also, recent research on the importance of informal economy in Kompong Cham shows that 97 percent of informal vendors are female,[5] but this significant role of women has not been recognised or promoted. The promotion of gender has so far focused mainly on the inclusion of gender in politics and addressing domestic violence, but there has not been enough focus on improving rural women's lives with regard to hygiene, informal household economy, health care, child care and the like. These are all practical and essential areas that could boost the confidence and hence empowerment of women. It is up to the government, civil society and NGOs to decide on strategies to improve the currently non-existent or extremely few gender-related commune projects and the activities and focus on gender and women's livelihoods.

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5 Based on a case study of market vendors in Kompong Cham town (PowerPoint presentation by ADI at CDRI, 21 November 2008). However, this is also true at the national level; it is estimated that 80 percent of the female workforce is in the informal sector of the economy (see "A Fair Share for Women: Cambodia Gender Assessment and Policy Briefs", Ministry of Women's Affairs, April 2008).

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Rubber Plantation Development in Cambodia: At What Cost?

By: Yem Dararath

CHAPTER 7

Chapter 7 - Rubber Plantation Development in Cambodia: At What Cost?[1]

7.1. INTRODUCTION

This article analyses trade-offs related to rubber plantation development in Cambodia, based on a cost-benefit analysis. The study also compares the direct and indirect values of previous land uses with those of rubber plantations, using estimated returns from established rubber plantations of different ages in Kompong Cham and Kompong Thom provinces. Current policy on economic land concessions is also discussed, considering whether a policy of natural forest conversion is economically viable.

The study is expected to provide information on the perceptions of local people regarding the land development being promoted by the government and the impacts of the conversion of forest land to rubber plantation on local communities. In addition, it provides data on the economic value of different types of land use, the cost and benefit of land use changes and future scenarios regarding latex prices, rubber plantations and forest land. The results provide important messages for policy makers considering the expansion of rubber plantations. They contribute to discussions of whether economic land concessions and other kinds of rubber development can make a significant contribution to poverty alleviation and economic development in this country.

Deforestation is one of the most important global environmental issues. The development of rubber plantations is generally considered a major cause of deforestation in developing countries (Liu *et al.* 2006). Gradual increases in the area under rubber are to be seen in many countries in the region. The increasing demand for natural rubber and the high price of latex have been the main driving forces of the expansion of land for rubber.

In Cambodia, rubber plantations are divided into three categories of ownership: state, household and private industrial. In 1985, the total area of rubber plantings was more than 51,000 ha. The area gradually increased to 63,000 ha by 2005. State-owned plantations are mainly located in Kompong Cham province, comprising 63 percent of total rubber plantation land, and are controlled by seven state companies (Khun 2006). In 2001, the Chup company was granted permission by the government to expand

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into Kompong Thom province (Tum Ring commune), clearing more than 6000 ha of forest. The NGO Forum (2005) studied the impacts of this development and argued that the plantation had caused economic, social and environmental problems.

Household-owned plantations (smallholder rubber plantations) began in 1990 (SOFRECO & CEDAC 2005). In August 2000, the government announced a policy of promoting family-scale rubber plantations with the aim of ensuring livelihood security and land tenure and increasing rubber development (RGC 2000). In addition, the government's rectangular strategy stressed promotion of smallholder rubber to assist in poverty alleviation and economic development (RGC 2004). Following this announcement and encouragement, areas under smallholder plantation increased rapidly, from 10,000 ha in 1995 to 18,600 ha in 2006 (MAFF 2006). SOFRECO and CEDAC (2005) projected that areas under smallholder rubber will increase to 35,000 ha by 2010. Although no detailed report on land use types before the establishment of rubber plantations is available, it is believed that rapid expansion of such plantations has been and will continue to be one threat to natural forest land.

More privately owned plantations are currently granted under an economic land concession scheme, initiated by the government in 1992. These concessions comprise agro-industrial plantations, including cash crops (palm oil, cashew nuts, cassava, beans, sugar cane, rice and corn), fast-growing trees (acacia, eucalyptus, pine) and other valuable trees such as rubber and teak. Since then, about 907,000 ha have been approved for development under 50 concessions (MAFF 2006). Of the total area, about 13 percent (approximately 120,000 ha) was granted partly for growing rubber trees. Rubber seems to be one of the main crops currently planned to be cultivated. Between January 2005 and July 2006, 10 of the 25 concessions signed by the MAFF planned to establish rubber (MAFF 2006). However, only a limited number of plantations are actually in operation; for others, it remains unknown whether rubber trees have been planted.

Based on MAFF (2006), large parts of many concessions fall within areas covered by natural forest, as was found by tracking the coordinates of concessions in contracts using the digital land use map produced by the Forestry Administration in 1997. This means that these forests are subject to clearance for rubber plantations. Consequently, it raises critical issues regarding land use changes and serious questions about the economic costs and benefits and the social and environmental impacts of such changes.

The government has recently expressed a strong commitment to economic land concessions and rubber development. Such large-scale agro-industrial concessions have been used to generate income for the state, stimulate private enterprise and create jobs for rural communities; they are therefore argued to contribute to poverty alleviation. However, in the case of Tum Ring, there is little evidence that development objectives have been achieved so far. It has been reported that the livelihood of the commune is generally worse and the environment within and surrounding the concession has been adversely affected (NGO Forum 2005). Thorough research on the costs and benefits of conversion to rubber plantation is therefore crucial.

Although many land concessions have been granted, so far only about a dozen have implemented their plans. During implementation, many conflicts emerged between concessionaires and local communities. This is because the concessions were approved at the centre, without proper consultation with local communities or completion of social or environmental impact assessments. Pheapimex's concession, for example, was granted in 2000 over an area of 315,028 ha in Pursat and Kompong Chhnang. Since then, the company has initiated many attempts to clear forests for pulp wood plantations of acacia and eucalyptus. However, the plans were halted by local opposition (Ironside *et al.* 2004).

In 2004, the Wuzhishan LS Group received permission in principle to establish a 199,999 ha pine tree plantation in Mondolkiri. This company has also experienced many conflicts with local people. If all 50 concession companies implement their investment plans over areas of about one million hectares, large areas of forest may be cleared and it is possible, even likely, that there will be further conflicts with local communities.

Relevant government agencies such as the General Directorate of Rubber Plantations, the Cambodia Rubber Research Institute and the Forestry Administration have declined involvement in the issues and never conducted any thorough assessment of the impacts of the economic concessions and rubber development. Only a few studies have looked into these issues. Most of them are qualitative studies, mainly focused on social issues and policies in relation to land reforms. Only one study, by NGO Forum in 2005, focused on the impacts and emerging issues of rubber plantations on local communities and rural livelihoods. However, the plantation covered by that study is relatively young (about five years old) and limited to Tum Ring commune.

Taking into account the limitations of previous studies, the current research takes a closer look at land conversion to rubber plantation by analysing the economic costs and benefits of conversion scenarios at different locations. In addition, a value flow model developed by CDRI's Natural Resources and Environment Unit (Hansen & Top 2006) has been applied to carry out parts of the analysis. Results from this study aim to provide useful information and indicators for policy makers. Furthermore, they can contribute to policy discussion on the role of rubber development in poverty alleviation and economic development in Cambodia.

7.2. METHODOLOGY

During the initial research, information related to economic land concessions, forest land, and rubber plantations was collected, along with relevant documents. This was done through a literature review, communication with relevant institutions and discussions with key people in the research area. The key institutions for data collection and discussion are the General Directorate of Rubber Plantations, the Cambodia Rubber Research Institute, the Forestry Administration and the National Institute of Statistics.

Field investigation collected data related to the history of rubber development, costs and benefits of rubber plantation and pre-rubber land uses, people's perceptions of land use changes, alternative cropping systems, impacts of land conversion on local livelihoods, costs of establishment and maintenance of rubber plantations and so on. The fieldwork was divided into three phases.

Phase I included selection of sites, general observation and positioning of the selected plantations using GPS. This kind of information is useful for tracking the location of plantations and previous land use, using the land use map of 1998 produced by the Forestry Administration and ArcView 8.3 software. Apart from natural forests, additional baseline land use was defined at this stage depending on results of the visit. Phase II included testing and revision of the questionnaire. Phase III included selection of respondents, household surveys, plantation holder interviews and key informant interviews.

Since the duration of the project was relatively short (one year), it was not possible to measure directly a number of variables of rubber plantations and baseline land uses, such as standing stock, timber productivity, non-timber forest products (NTFP), latex yield and rubber wood. Results from existing studies (Hansen & Top 2006; Khun 2006) and information from key informant interview were used for the assessment. In addition, other data, such as latex prices and the value of environmental functions of forests and rubber plantations, including carbon sequestration, soil erosion control and watershed protection, were obtained from existing literature (including Yamashita *et al.* 1999; Balsiger *et al.* 2000; Hansen & Top 2006; Khun 2006; ACI 2005).

A household survey collected data on local impacts of rubber plantations. It involved face-to-face interviews using a semi-structured questionnaire. The questionnaire was pre-tested and revised. The enumerators or interviewers were trained before going into the field.

The interviews collected information on changes in livelihoods in the communes before and after the establishment of rubber plantations. The information included the income generated from natural forests and rubber, the contribution of rubber plantations to improving livelihoods, the direct and indirect values of rubber plantations, reasons for local people's decisions whether or not to plant rubber and past and current prices of latex. People's perceptions of land use changes and the impacts of land conversion on local livelihoods were also collected. Seven villages located within or surrounding selected plantations were chosen for survey. Approximately 10 percent of the total households in each village were randomly selected for interviews. The total population of the seven villages is 1490, and the respondents of the household survey numbered 164.

The plantation holder interviews were conducted in parallel with the household survey. Plantation holders included owners of both small and large plantations. Around 20 small and four large plantations in different locations were selected. Of the four large plantations, two were visited for interviews.

Key informant interviews were conducted with chiefs of villages or communes and officials or workers in the plantations. Other relevant people working in the communes and nearby areas were also considered for interviews where appropriate.

7.3. RESULTS

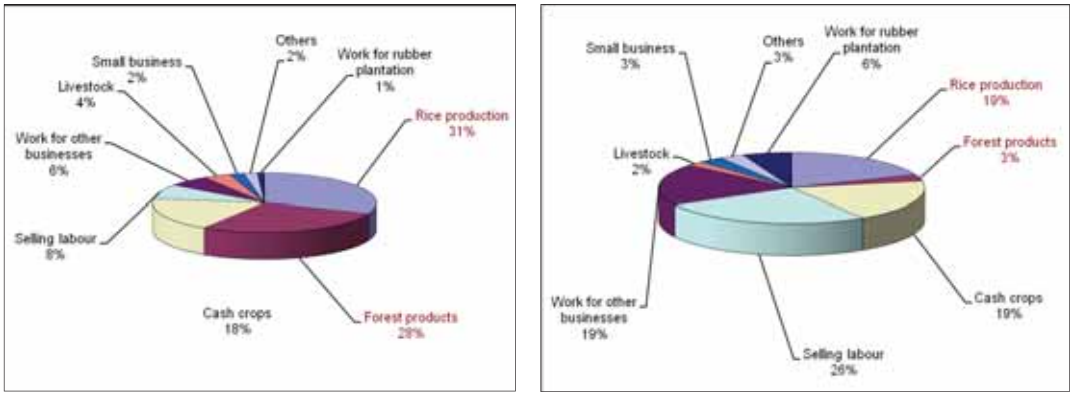
7.3.1. Development of Land Conversion

Tum Ring rubber plantation is located in Tum Ring commune, Sandan district, Kompong Thom province, which is about 230 km north of Phnom Penh. There are eight villages in the commune: Tum Ar, Roneam, Ronteah, Samraong, Sralau Tong, Khaos, Leaeng and Kbal Damrei. It had a population of 3721 inhabitants (795 households) in 2005. The commune is located in the middle of one of Cambodia's largest remaining pristine forest areas, with a large number of wild animals. However, the forest was logged by concession companies (Colexim, Mien Ly Heng and GAT). According to NGO Forum (2005), the local people were traditionally dependent on forest resources, lowland rice and shifting cultivation. Additionally, they tap resin trees and collect other NTFP such as rattan, vines and wild fruits. These activities continued until the last day of forest conversion to rubber plantation.

A very small area (approximately 2 ha) was initially cleared for agriculture by an immigrant seeking red soil in the early 1990s (Yet Hun, personal communication). He then gradually introduced rubber trees on his land. By the late 1990s, security was better after the last Khmer Rouge defection in 1998. Then roads were improved by the forest concession companies. Many more people could access the areas and see the potential of red soil for either agricultural crops or rubber.

In early 2000, the government awarded the Chup company 6200 ha of basaltic soil to develop rubber. In November 2000, a study by the Kompong Thom Department of Agriculture found that the forest land assigned to Chup was degraded to the point of having no commercially valuable trees. In 2001, the government issued a sub-decree withdrawing the red land from the forest concession and allocating 6200 ha to Chup

Figure 7.1: Source of Income before (left) and after (right) Rubber Plantation



for developing an industrial-scale rubber plantation, of which 1841 ha were offered to local people to develop family rubber plantations.

However, the company did not give any training in rubber planting and did not provide land titles to people in the project. There is no written agreement between the company and the local people on family rubber plantations. In 2007, the company had planted rubber trees on 4359 ha of basaltic soil out of the 6200 ha allocated by the government.

Moreover, compensation is a major problem for people who lost their land to the plantation. The Tum Ring Rubber Company failed to honour its engagement to pay compensation of USD125 per ha. In fact, company compensated affected families with between USD12 and USD75 per ha. Moreover, 20 to 30 families did not receive any compensation.

7.3.2. Livelihoods before and after Arrival of Plantation

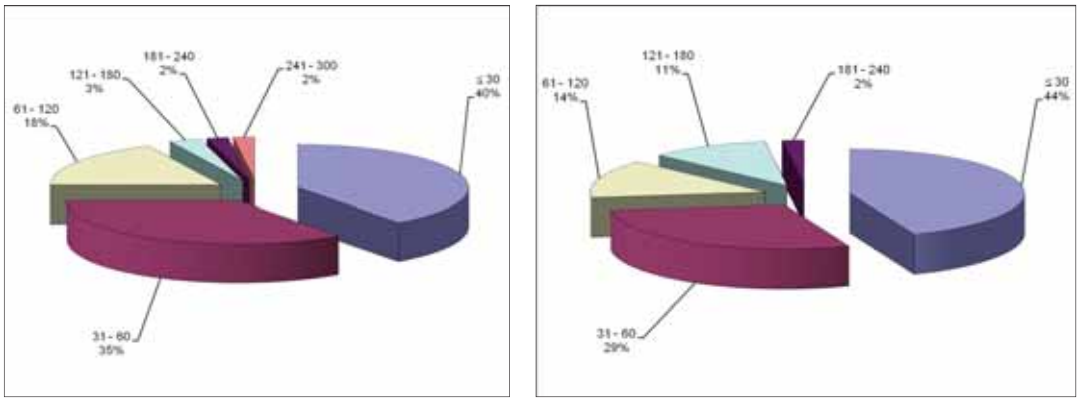
With the rich fertile soil and water resources, villagers in the area live from shifting agriculture and NTFP collection. Before the rubber plantation, surveyed households depended mainly on forest products, wet rice and cash crops. Thirty-one percent of respondents described wet season rice production as their main source of income. About 28 percent stated that forest products were the main source. They tapped resin trees, hunted and collected fuel wood and NTFP including vines, rattan and wild fruits. Some people depended on small business, livestock and selling labour.

After the establishment of the plantation, livelihoods in the area changed rapidly. Because the forest had been converted into rubber plantation, only 3 percent relied on forest products as the main source of income. Only 19 percent relied on rice production because part of their farmland was expropriated. Some of them did not receive the 3 ha of land promised under the conversion scheme.

According to NGO Forum (2005), the average rice yield after the establishment of the rubber plantation dropped from 864 to 696 kg/ha. Moreover, the company did not allow farmers to grow any other crops and stopped all activities on the land until it was converted to rubber. Some farmers started to sell their livestock as the result of a USD75 penalty imposed by the company if cattle entered rubber areas. This occurred in Ronteah village. Seventy-seven percent of surveyed people stated that their income was not enough to buy food for family consumption after the establishment of the plantation. Again, this finding corroborated the study conducted by NGO Forum in 2005.

The result of the 2007 survey of 65 households shows that incomes generally decreased after the establishment of the plantation. Despite the decrease in the number of households earning less than USD30 per moth from 44 per cent to 40 per cent, there was a significant decrease in households earning between USD181 and USD240 (from 11 per cent to 3 per cent).

Figure 7.2: Household Income before (left) and after (right) Rubber Plantation Development



Respondents who had forest-related activity, rice farmers and unemployed respondents were more affected by rubber plantations than other categories.

Many respondents said that most benefits from the plantation go to the Tum Ring Rubber Company. The company in an interview stated that benefits also went to labourers, local administration, government tax and the national economy. Moreover, the company emphasised that since the introduction of the rubber plantation, social security and traffic safety have improved. The company financially supports a school and health centre.

Sixty-eight percent of respondents stated that the plantation owners did not play a role in improving local livelihoods, against only 17 percent who said that their livelihood was improved by the plantation. They did not have a direct connection to the rubber plantation, but observed that since the arrival of the plantation, new houses were erected in the area. Only 5 percent of respondents stated that the plantation contributes significantly to poverty alleviation, while 67 percent said that it contributes little.

The most frequently mentioned negative impact was loss of agricultural land, followed by depletion of forest resources. Lost income ranked third among negative impacts, followed by economic migration into and out of the commune. The respondents most frequently listed decreased malaria as a benefit of the rubber plantation, followed by employment opportunities, inter-cropping and livelihood improvement.

Because Tum Ring is one of the most pristine forest areas, people were happy with their traditional lifestyle. Most people in the area generate only subsistence incomes. People knew that rubber development could change their lifestyle. They got 3 ha of red soil in compensation for the establishment of the plantation. In the deal, the company was to train them to operate a family rubber plantation. Some families did not receive any compensation and lost their agricultural land.

Without a proper support programme, having lost agricultural land and sources for supplying daily needs, many households do not have the ability or capital to develop a

rubber plantation that will generate income only in six years. They had been looking for short-term benefits from year to year. Their income was generated from annual crops, which they could plant during the first three years of the plantation. Most households were reluctant to convert their crop land to rubber, citing the uncertainty of future income from rubber and their lack of experience and skills. Therefore, most households in Tum Ring opposed the forest conversion.

The 2007 survey found that 57 percent of respondents believed that the conversion of evergreen forest into rubber plantation was a bad idea. This figure fell to less than one-third for the conversion of other types of forest. This reveals respondents' reluctance to change their livelihoods. Evergreen forest provides them more benefits, including construction materials, vegetables, fruits and meat. Evergreen forest has the richest diversity of both fauna and flora.

The conversion of crop land into rubber plantation was considered a good idea by 18 to 26 percent of respondents. Excluding the respondents with no opinion, this figure represents from 42 to 53 percent. The good perception of crop conversion is due to the possibility of inter-cropping in the rubber plantation, with a yield similar to the situation before the establishment of the plantation.

7.4. DISCUSSION

7.4.1. Overview

The conversion to rubber in Tum Ring caused many problems for the local population, because the social element was not properly carried out. Valuable forests were cleared without serious consideration of people who traditionally depended on forest products. Some people lost their crop land without adequate compensation. The high-profile 3 ha land distribution also failed to meet the requirements of all affected people.

After the establishment of the plantation, livelihoods changed rapidly. People lost their main source of income because they were not allowed to collect timber and NTFP as they had in the past. Crops lands were lost and rice yield decreased. Not only were people's movements restricted, but their livestock were banned from grassland within the plantation on pain of a huge penalty. However, infrastructure was established by the company, especially roads, a school and a hospital.

Because the forest was one of the most important sources of their income, people in Tum Ring did not want the company to clear it. People recognised forests, especially evergreen forests, as valuable resources that should be conserved. People said that rubber could not compare with forest for income or environment. They said that rubber plantations should be developed in areas without valuable forest, not in Tum Ring.

Livelihoods were worse than prior to the rubber plantation because forest resources were damaged by the plantation. Moreover, people stated that rubber could generate a higher income only for the plantation owner and some people who had the ability

to plant it. Most people in the area, who mainly depend on forest products, would be worse off after forest was cleared. Meanwhile, people recognised that rubber really has more benefits than other crops. They stated that if they had stable livelihoods, they would want to convert their crop land to rubber in expectation of improvement once the trees reached the age for tapping. People knew that rubber trees need five or six years to reach maturity, but farmers can inter-crop in the plantation in the first three years. Therefore, farmers need to wait only two or three years to collect from their planting. People said that rubber could help them improve rapidly once tapping started.

Rubber could generate more economic benefits than forests. This does not take environmental services and biodiversity into consideration. Sustainable forests could generate more benefits, last longer than rubber and produce additional income from recreation and eco-tourism. Some evergreen and other types of forest must remain when introducing rubber. This could make possible a balance of economic development and socio-cultural and biodiversity conservation.

7.4.2. Economic Analysis of Crop Conservation Schemes

This study relies on the result of previous studies in assessing the costs and benefits of forest conservation, crop production and large-scale and smallholder rubber plantations.

Bann's (1997) economic assessment of the costs and benefits (including environmental values and distributional concerns) of alternative forest land use can provide information for the design of forest management plans. This study compared two key land uses—the value of using forest land for traditional purposes (such as harvesting NTFP) against its use for commercial timber extraction. A survey of 42 households was undertaken in four villages. The study sought to assess the value of the forest for traditional purposes and to value NTFP such as fuel wood, rattan and bamboo, malva nuts, house construction materials and wildlife. The results show that forest products have a value that may be as high as USD3922 per hectare. If this forest were to be harvested for timber, it would have a lesser value, no more than USD1697 per hectare. The study showed also that the benefits from traditional sustainable use of forest resources exceed the benefits of commercial timber extraction by at least USD200/ha (NPV over a 90-year period).

Hansen and Top (2006) valued natural forest and examined the financial and economic aspects of natural forest conversion to alternative uses. The study focused on three selected forest types and nine alternative land uses (crops and forest farm), which add up to 27 different natural forest conversion scenarios. First, this study assessed the total livelihood value obtained from natural forest, based on 502 household interviews in four provinces (Kompong Thom, Kratie, Mondolkiri, and Pursat) on consumption and sale of NTFP over the previous year. Second, this study examined the forest value. Main direct and indirect values of natural forest were assessed per hectare based on the household survey, forest inventory and environmental valuation studies conducted in other countries. Third, this study analysed financial and economic aspects of natural

forest conversion to alternative land uses. Data on expected financial and economic benefits from different alternative land uses were collected from interview and secondary sources and entered into the value flow model. In the value flow model, the net present value of different scenarios was assessed based on estimated yields and environmental services incorporated in the cost-benefit analysis.

7.4.2.1. Forest Conservation

Benefits of Forest Conservation

The revenue under forest conservation is split into two categories:

- Direct revenue from NTFP: this study did not assess this benefit. Thus the value of NTFP of USD375 per ha per year was taken from Hansen and Top (2006).
- Environmental benefits: this study did not assess this benefit. These values were taken from previous studies: (i) Hansen and Top (2006)—value of water conservation of USD70 per ha per year; value of soil conservation of USD60 per ha per year; value of carbon sequestration of USD759 per ha per year with an increment of 2 percent per year; and (ii) Bann (1997)—value of biodiversity conservation of USD300 per ha per year.

Table 7.1: Estimation of Benefits Accruing in Forest Conservation (USD/ha)

Year	PV	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	…	Yr 24	Yr 25
Value of NTFP	3404	375	375	375	375	375	…	375	375
Value of timber products	0	0	0	0	0	0	…	0	0
Value of water conservation	635	70	70	70	70	70	…	70	70
Value of soil conservation	545	60	60	60	60	60	…	60	60
Value of biodiversity *	2723	300	300	300	300	300	…	300	300
Carbon sequestration value	8379	759	781	803	825	847	…	1265	1287
Total Benefits	15,686	1564	1586	1608	1630	1652	…	2070	2092

*PV: Present value. Sources: Hansen and Top 2006, except *: Bann 1997*

Costs of Forest Conservations

The costs accruing in the forest conservation scenario can be divided into the following items:

- Cost of protection and silviculture: this study did not assess this cost; the value was taken from Hansen and Top (2006).
- Capital investment for NTFP collection: this study did not assess these costs; it is extrapolated from CBNRM-LI (2008). These costs involve materials used for timber and non-timber collection, especially an ox, oxcart, knives, axes, lines, shoes, cloth and mosquito nets. These costs are incurred only once, in the first year. It is supposed that ox and oxcart last for the whole project period; knife, axe,

line, shoes, cloth and mosquito net will be replaced every two years. The costs of timber and non-timber product collection are composed of costs for food and medical expenses.

Table 7.2: Estimation of Costs Accruing in Forest Conservation (USD/ha)

Year	PV	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	…	Yr 23	Yr 24	Yr 25
Protection and silviculture (1)	227	25	25	25	25	25	…	25	25	25
Cost of NTFP collection (2)	702	460	30	40	30	40	…	40	30	40
Total Costs	929	485	55	65	55	65	…	65	55	65

PV: Present value. Sources: (1) Hansen & Top 2006, (2) CBNRM-LI 2008

7.4.2.2. Large Rubber Plantation

The 2007 field survey did not provide reliable data for estimating the costs and benefits in the large rubber plantation scenario. Thus, this study makes use of existing data available for estimating the costs and benefits (Hansen & Top 2006). It is assumed that the current forest cover area will be cleared and transformed into a large rubber plantation. The benefit accrues only from the sixth year after planting rubber trees. The present value of net economic benefits in the rubber plantation is calculated on a period of 25 years at a 10 percent discount rate. There is no attempt to estimate the economic value of the change in people's livelihoods, timber products when cut, wildlife trade, environmental damage, any indirect benefits that could accrue, especially social infrastructure, or credit from the clean development mechanism.

Benefits of Large Rubber Plantation

The benefits of the large rubber plantation are generated by selling dried rubber, its by-products and old rubber trees at the 25th year and from the indirect value of carbon sequestration. There is also a possibility of revenue from renting land for intercropping during the first three years; this study does not take this benefit into account, because it is problematic. Some large rubber plantations encourage their workers to grow crops on the land without charge.

The price of dried rubber products on the international market varies monthly; it was USD3290 a tonne in June 2008. This study uses the average price in 2007 of USD2331 a tonne. From the field survey conducted in 2007, this study assumes that the price of dried rubber products at the farm gate is equal to 85 percent of the international market price—that is, USD1981 a tonne. Dried rubber production begins from 0.72 tonne per ha in the sixth year, rises to a peak of 1.80 tonne per ha in the 16th year and drops to 0.79 tonne per ha in the 25th year. The value of rubber by-products is 0.2 percent of the total for dried rubber. The revenue from selling old rubber trees is estimated at USD3300 per ha.

Table 7.3: Estimation of Benefits of Large Rubber Plantations (USD/ha)

Year	PV	Yr1	…	Yr6	Yr7	Yr8	…	Yr23	Yr24	Yr25
Value of dried rubber	11,686	0	…	0	396	991	…	3964	3964	3964
Value of rubber by-product	23	0	…	0	1	2	…	8	8	8
Value of rubber trees	923	0	…	0	0	0	…	0	0	3300
Carbon sequestration value	7153	0	…	659	766	872	…	2472	2579	2685
Total Benefits	19,785	0	…	659	1163	1865	…	6443	6550	9957

PV: Present value. Source: Hansen & Top 2006

Costs of Large Rubber Plantation

Costs in the large rubber plantation scenario are divided into six components: (i) maintenance of rubber trees, (ii) tapping and harvesting, (iii) material and equipment, (iv) manufacturing and coagulating, (v) taxes and (vi) overhead expenses. The average annual total cost of the rubber plantation is USD628 per ha, with a minimum cost of USD226 per ha in the second year and a maximum of USD809 per ha in the 11th year.

Table 7.4: Costs in Large Rubber Plantation (USD/ha)

Year	Yr 1	…	Yr 6	Yr 7	Yr 8	…	Yr 23	Yr 24	Yr 25
Maintenance of rubber trees	347	…	285	53	76	…	65	67	66
Tapping and harvesting	0	…	0	226	231	…	254	254	249
Material/Equipments	0	⋯	0	21	20	⋯	19	20	22
Manufacturing/Coagulating	21	⋯	34	95	114	⋯	143	143	143
Taxes	0	⋯	0	35	47	⋯	157	158	158
Overhead expenses	36	⋯	30	22	160	⋯	149	151	148
Total Costs	404	…	349	452	648	…	787	793	786

Source: Hansen & Top, 2006.

7.4.2.3. Smallholder Rubber Plantation

The field survey did not provide reliable data for estimating the costs and benefits of a smallholder rubber plantation. Thus this study makes use of existing data (ACI 2005). The benefits accrue only from the sixth year after planting rubber trees. The present value of net economic benefits is calculated on a period of 25 years at a 10 percent discount rate. There is no attempt to estimate the economic value of the change in people's livelihoods, environmental damage, carbon sequestration or a clean development mechanism component.

Benefits of Smallholder Rubber Plantation

The benefits in the smallholder rubber plantation are generated from: (i) selling coagulum latex at a price of USD0.63 per kg; coagulum latex production varies from 1400 kg per ha in the sixth year to a peak of 3600 kg per ha in the 25th year; (ii) selling old rubber trees, estimated at USD3300 per ha; and (iii) intercropping of soybeans and mung beans (twice a year), worth USD250 per ha per year. This last benefit accrues only in the first three years after planting.

Table 7.5: Estimation of Benefits of Smallholder Rubber Plantation (USD/ha)

Year	PV	Yr 1	…	Yr 6	Yr 7	Yr 8	…	Yr 23	Yr 24	Yr 25
Value of coagulum latex	9462	0	…	875	1250	1625	…	2250	2250	2250
Value of intercropping	622	250	…	0	0	0	…	0	0	0
Value of rubber trees	305	0	…	0	0	0	…	0	0	3300
Total benefit	10,388	250	…	875	1250	1625	…	2250	2250	5550

PV: Present value. Source: ACI, 2005

Costs of Smallholder Rubber Plantation

For a smallholder rubber plantation, the investment to transform coagulum latex into dried rubber is high. Thus, the farmer prefers to sell to an intermediary at the farm gate. Table 7.6 shows detailed costs in a smallholder rubber plantation. They are divided into labour and input components. Labour for planting includes land preparation and digging holes. Labour for maintenance includes weeding, fertiliser application, plant replacement and treatment of plant disease. The input component includes rubber trees, fertiliser, chemical products and harvesting materials.

Table 7.6: Costs of Smallholder Rubber Plantation (USD/ha)

	PV	Yr 1	Yr 2	Yr 3	…	Yr 6	Yr 7	Yr 8	…	Yr 23	Yr 24	Yr 25
Labour for planting	217	226	14	0	…	0	0	0	…	0	0	0
Labour for maintenance	580	113	181	130	…	32	32	32	…	0	0	0
Labour for harvesting	1269	0	0	0	…	240	240	240	…	240	240	240
Rubber trees	307	293	49	0	…	0	0	0	…	0	0	0
Fertiliser	244	40	40	60	…	0	0	0	…	0	0	0
Chemicals	73	23	23	18	…	5	5	5	…	0	0	0
Harvesting materials	37	0	0	0	…	66	0	0	…	0	0	0
Total Costs	2727	695	307	208	…	343	277	277	…	240	240	240

PV: Present value. Source: ACI, 2005.

The costs and benefits for other crops, including cassava, soybeans, maize and cashews, are discussed in more details in the main report. A summary of NPV of net benefit per hectare and BCR at different discount rates is provided in table 7.7.

Table 7.7: NPV of Net Benefit per Hectare and BCR at Different Discount Rates

Land use types	5 percent		10 percent		15 percent	
	NPV	BCR	NPV	BCR	NPV	BCR
Forest conservation	23747	20.02	14757	16.88	10191	14.49
Large-scale rubber plantation	32224	5.04	15690	4.40	8207	3.76
Smallholder rubber plantation	15987	4.99	7661	3.81	3944	2.93
Cassava production	2199	2.59	1416	2.59	1009	2.59
Soybean production	1219	1.28	785	1.28	559	1.28
Maize production	907	1.20	584	1.20	416	1.20
Cashew production	4877	2.14	2270	1.80	1016	1.48

BCR = benefit-cost ratio. All values are in USD. The NPV is calculated over 25 years.

7.4.3. Cost and Benefit Analysis

The cost-benefit analysis of conversion from forest or other crops to rubber plantation is a decision-support tool on how conversions can be carried out with the highest economic return. This study considers forest conservation as the base case scenario 1. Cassava, soybeans, maize and cashew production are considered as scenarios 2, 3, 4 and 5 respectively. Large and smallholder rubber plantations are alternative options. This study compares (i) the incremental net benefit of large rubber plantation with forest conservation; and (ii) the incremental net benefit of smallholder rubber plantation with production of four crops.

The conversion schemes are:

- Option 1: Conversion from forest to large rubber plantation.
- Option 2: Conversion from cassava production to smallholder rubber plantation.
- Option 3: Conversion from soybean production to smallholder rubber plantation.
- Option 4: Conversion from maize production to smallholder rubber plantation.
- Option 5: Conversion from cashew production to smallholder rubber plantation.

Due to the limits of the analysis, environmental costs and benefits were not estimated, except for forest conservation and rubber plantations. For conversion of forest to rubber plantation, this study did not estimate the environmental costs such as loss of forest services or degradation of watershed. Only the carbon sequestration values of rubber plantation were considered. It was assumed that environmental cost and benefits of the base case and the option were the same.

7.4.3.1. Incremental Net Benefit

In this cost-benefit analysis, net benefits are the difference between total economic benefits and total direct costs in each scheme. If net benefits are positive with higher values, this means the rubber plantation will provide more direct benefits to the farmers involved and their community than other schemes.

Table 7.8: Net Present Value of Incremental Net Benefits (USD/ha)

	NPV of Net Benefit	NPV of Incremental Net Benefit	BCR	IRR (%)
Base Case 1 - Forest conservation	14,757	0	0	0
Base Case 2 - Cassava production	1416	0	0	0
Base Case 3 - Soybean production	785	0	0	0
Base Case 4 - Maize production	584	0	0	0
Base Case 5 – Cashew production	2270	0	0	0
Option 1 - Forest to rubber (large scale)	15690	934	1.3	11
Option 2 - Cassava to rubber (smallholder)	7661	6244	4.4	32
Option 3 - Soybeans to rubber (smallholder)	7661	6875	72.0	36
Option 4 – Maize to rubber (smallholder)	7661	7076	47.9	38
Option 5 - Cashews to rubber (smallholder)	7661	5390	43.7	N/A

BCR = benefit-cost ratio. IRR = internal rate of return. N/A = not applicable

The incremental net benefits are the difference between the net benefits of rubber plantation and the net benefits in the forest land or the four crop production schemes. The present values of net benefits and incremental net costs are estimated over a 25-year period with a discount rate of 10 percent. The higher the incremental net benefits, the more economically viable is the rubber plantation (large scale or smallholder).

Table 7.8 shows that all crop conversion options yield a positive value of incremental net benefits, ranging from USD934 to USD7076 per ha over 25 years at a 10 percent discount rate. Their benefit-cost ratio ranges from 1.3 to 1 in conversion from forest to large rubber plantation to 72 to 1 in conversion from soybean production to smallholder rubber.

Conversion from maize to smallholder rubber is the most preferred on economic efficiency grounds, followed by conversion from soybeans to smallholder rubber, conversion from cassava to smallholder rubber and conversion from cashews to smallholder rubber. Option 1, conversion from forest to large rubber plantation, is the least preferred on economic efficiency grounds.

The cost-benefit analysis shows clearly that conversion from crops to smallholder rubber provides large benefits to the farmers involved. However, rubber planting requires large technical assistance and extensive follow-up. This analysis corroborates the outcome of the Agence Française de Développement project on smallholder rubber in six districts of Kompong Cham.

7.4.3.2. Sensitivity Analysis

A sensitivity analysis was also conducted to investigate the effects of varying key assumptions (costs, revenues, project lifetime and discount rate) on the present values

of incremental net benefits. This analysis provides a measure of the degree to which these variables can deviate from their estimated values before the preferred options cease to be economically viable. Four scenarios were tested.

Scenario 1: Change the Discount Rate from 10 to 15 Percent

For all crop and forest conversion options, the discount rate is increased from 10 percent in the initial scenario to 15 percent in Scenario 1. The project duration is set at 25 years. Table 7.9 shows that there is no change in the ranking of crop and forest conversion options. Conversion from maize to smallholder rubber is still the most economically viable. For all other crop conversion options, the NPV of incremental net benefits is still positive. Thus, options 3, 2 and 5 are still economically viable with an increase of the discount rate from 10 to 15 percent. Options 2, 3 and 4 cease to be economically viable at discount rates of 32, 37 and 39 percent, respectively. Option 5 is not sensitive to an increase in the discount rate; even if this rate is set at 100 percent, the NPV of incremental net benefits of Option 5 is still positive.

The conversion of forest land to large-scale rubber plantation ceases to be economically viable as the NPV of incremental net benefits is negative.

Table 7.9: Scenario 1 – Present Value of Incremental Net Benefits (USD/ha)

	NPV of Net Benefit	NPV of Incremental Net Benefit	BCR	IRR (%)
Base Case 1 - Forest conservation	10,191	0	0	0
Base Case 2 - Cassava production	1009	0	0	0
Base Case 3 - Soybean production	559	0	0	0
Base Case 4 - Maize production	416	0	0	0
Base Case 5 - Cashew production	1016	0	0	0
Option 1 - Forest to rubber (large scale)	8207	-1984	0.1	11
Option 2 - Cassava to rubber (smallholder)	3944	2935	3.1	32
Option 3 - Soybeans to rubber (smallholder)	3944	3384	96.4	36
Option 4 - Maize to rubber (smallholder)	3944	3528	5821	38
Option 5 - Cashews to rubber (smallholder)	3944	2928	51.1	N/A

Scenario 2: Reduce Project Lifetime to 15 Years

The project duration is reduced from 25 years to 15 years in scenario 2. The discount rate remains 10 percent. Table 7.10 shows that there is no change in the ranking of crop and forest conversion options. For all crop conversion options, the NPV of incremental net benefits is still positive. Option 4 has low sensitivity to a change in project duration.

Option 1, the conversion of forest land to large rubber plantation, ceases to be economically viable since the NPV of incremental net benefits is negative.

Table 7.10: Scenario 2 – Present Value of Incremental Net Benefits (USD/ha)

	NPV of Net Benefit	NPV of Incremental Net Benefit	BCR	IRR (%)
Base Case 1 - Forest conservation	11,938	0	0	0
Base Case 2 - Cassava production	1187	0	0	0
Base Case 3 - Soybean production	658	0	0	0
Base Case 4 - Maize production	489	0	0	0
Base Case 5 - Cashew production	1506	0	0	0
Option 1 - Forest to rubber (large scale)	9953	-1985	0.3	6
Option 2 - Cassava to rubber (smallholder)	5189	4003	3.5	31
Option 3 - Soybeans to rubber (smallholder)	5189	4531	451.3	36
Option 4 - Maize to rubber (smallholder)	5189	4700	144.0	38
Option 5 - Cashews to rubber (smallholder)	5189	3683	63.2	N/A

Scenario 3: Increase Production Costs by 20 percent

Table 7.11: Scenario 3 – Present Value of Incremental Net Benefits (USD/ha)

	NPV of Net Benefit	NPV of Incremental Net Benefit	BCR	IRR (%)
Base Case 1 – Forest conservation	14,571	0	0	0
Base Case 2 - Cassava production	1239	0	0	0
Base Case 3 - Soybean production	221	0	0	0
Base Case 4 – Maize production	10	0	0	0
Base Case 5 - Cashew production	1701	0	0	0
Option 1 - Forest to rubber (large scale)	14,767	196	1.0	10
Option 2 - Cassava to rubber (smallholder)	7115	5877	3.7	29
Option 3 - Soybeans to rubber (smallholder)	7115	6894	60.0	36
Option 4 - Maize to rubber (smallholder)	7115	7105	39.9	37
Option 5 - Cashews to rubber (smallholder)	7115	5414	36.4	N/A

For all conversion options, production costs are increased by 20 percent relative to the initial scenario. The project duration is set at 25 years and the discount rate at 10 percent. Table 7.11 shows that there is no change in the ranking of crop and forest conversion options. For all options, the NPV of incremental net benefits is positive. Thus, the five options are still economically viable if production costs increase by 20 percent.

Scenario 4: Increase the Value of Crops by 20 percent

For all conversion options, the value of crops is increased by 20 percent relative to the initial scenario. There is no increase in environmental benefits. The project duration is set at 25 years and the discount rate at 10 percent. Table 7.12 shows that there is no change in the ranking of options. For all conversion options, the NPV of incremental net benefits is positive. Thus, the five options are still economically viable with the value of crops increased by 20 percent.

Table 7.12: Scenario 4 – Present Value of Incremental Net Benefits (USD/ha)

	NPV of Net Benefit	NPV of Incremental Net Benefit	BCR	IRR (%)
Base Case 1 – Forest conservation	15,438	0	0	0
Base Case 2 - Cassava production	1877	0	0	0
Base Case 3 - Soybean production	1507	0	0	0
Base Case 4 – Maize production	1275	0	0	0
Base Case 5 - Cashew production	3294	0	0	0
Option 1 - Forest to rubber (large scale)	18,321	2884	1.8	13
Option 2 - Cassava to rubber (smallholder)	9738	7861	5.3	35
Option 3 - Soybeans to rubber (smallholder)	9738	8231	86.5	37
Option 4 - Maize to rubber (smallholder)	9738	8463	57.4	39
Option 5 - Cashews to rubber (smallholder)	9738	6444	52.4	N/A

The four sensitivity analysis options illustrate that with all variations of basic assumptions—discount rate, project duration, production costs and value of crops—the ranking of crop and forest conversion schemes remains unchanged. It clearly reveals that smallholder rubber plantation is more economically viable than other crop production. Consequently, smallholder rubber plantation should be encouraged to reduce the poverty rate in red soil provinces. Although smallholder rubber requires a large investment of both financial and technical resources, especially for the first six years, some mechanisms could help farmers to overcome those difficulties. The AFD project in Kompong Cham is a successful pilot that should be extended to other red soil provinces.

Furthermore, the cost-benefit analysis and sensitivity analysis show that the NPV of incremental net benefits of conversion from forest to large rubber plantation is only USD934 per ha for a project duration of 25 years and a 10 percent discount rate. This is less economically viable than the conversion of crop production to smallholder rubber, which has a minimum NPV of incremental net benefit of USD5390 per ha. If we change the discount rate from 10 percent to just 12 percent, conversion from forest to large plantation will not be economically viable. Indeed, this conversion scheme is very sensitive to a change of any basic assumption.

With a lower and sometimes negative benefit, conversion from forest to large rubber plantation is a sensitive issue. Most of the benefits in the forest conservation scheme are biodiversity and environmental values. Some previous reports, especially those financed by environmental organisations, put forest value and preservation of people's livelihoods at a high level. Concerned with profits and increasing revenue from non-use forest resources, private companies and the government often argue that the conversion of forest to large rubber plantations would be an ideal means to achieve poverty alleviation.

This study also shows that there are many potential net benefits generated by large rubber plantation (USD15,690 per ha over 25 years at a 10 percent discount rate) compared to the net benefit from other crop production (USD2270 per ha for cashew and USD1416 for cassava). In the past few years, the government has awarded large areas of forest land to private companies as economic land concessions. Some of the companies intend to undertake large-scale cassava production. Extrapolating the result of this analysis, the conversion from forest to large-scale cassava production would not be economically viable in the long term.

7.5. CONCLUSION

7.5.1. Policy Recommendations

With no estimate of the costs of environmental damage from their establishment, large-scale rubber plantations could generate slightly more economic benefits than forest conservation. This study recommends that part of the benefit generated from large-scale rubber plantation should be offered to communes to develop social infrastructure and to pay education expenses of the local population.

The environmental damage due to forest conversion to rubber plantation is huge. Therefore, in order to marginalise the damage, an environmental service payment should be established for forest conversion schemes.

However, forest conversion and development should not deprive local people of their sources of income. Thus, the study recommends that a social component of forest conversion schemes should receive top priority, especially for economic land concessions, so that the benefit can reach local populations. Civil society and NGOs should be involved in the compensation procedure. Follow-up programmes and technical assistance should be provided.

Smallholder rubber plantations should be encouraged to provide sustainable livelihoods to local people. This study proposes that the government and project developers help farmers to overcome difficulties. The AFD project in Kompong Cham should be extended to other red soil provinces.

7.5.2. Summary

There is ongoing debate in Cambodia over conversion of forest to agro-industry under economic land concessions. This study confirms previous studies' findings that

the social component has been ignored and local people become worse off after forest conversion.

Across the 164 households interviewed, 66 percent of respondents were not satisfied with the Tum Ring rubber plantation, citing its failure to improve their livelihoods and small contribution to poverty alleviation. Forest conversion to rubber plantation was considered a bad idea by a majority of respondents. However, the conversion of crop production into smallholder rubber was considered a good idea.

The objective of this study was to analyse trade-offs between rubber plantation and crop production and forest conservation. The cost and benefit analysis considered seven land use schemes. The present value of net economic benefits was calculated over 25 years at a 10 percent discount rate.

- **Forest conservation:** the study considered forest conservation as the base case. It assumed that no changes were made to the current forest cover. Logging was banned. Local people were free to collect NTFP. The present value of net economic benefits in the forest conservation scheme was USD14,575
- **Cassava production:** the present value of net economic benefits in cassava production was USD1416.
- **Soybean production:** the present value of net economic benefits in soybean production was USD785.
- **Maize production:** the present value of net economic benefits in the maize production was USD584.
- **Cashew production:** the present value of net economic benefits in cashew production was USD2270.
- **Large rubber plantation:** this alternative assumed that forest would be cleared and transformed into a large rubber plantation. The present value of net economic benefits in large rubber plantation was USD15,690.
- **Smallholder rubber plantation:** the present value of net economic benefits in smallholder rubber plantation was USD7661.

The cost-benefit analysis considered five conversion options: from maize, soybeans, cassava and cashews to smallholder rubber and from forest to large rubber plantation. All crop conversion options yielded positive incremental net benefits. Conversion from maize was the most preferred option for economic efficiency, followed by conversion from soybeans, cassava and cashews to smallholder rubber and from forest to large plantation. This ranking was unchanged in all sensitivity analyses tested. With lower and sometimes negative benefits, conversion from forest to large rubber plantation is a sensitive issue and needs to address a number of concerns, especially the benefits to local people.

The study shows that cost-benefit analysis could be used as a decision support tool by the Department of Environmental Impact Assessment of the Ministry of Environment to evaluate the economic return of investment projects that involve forest land conversion.

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Hours Worked and Children's Health in Rural Agriculture: Empirical Evidence and Policy Implications

By: Han Phoumin

CHAPTER 8

Chapter 8 - Hours Worked and Children's Health in Rural Agriculture: Empirical Evidence and Policy Implications[1]

8.1. INTRODUCTION

8.1.1. Background

Rural Cambodian children remain largely engaged in agriculture and domestic household chores. Their daily life is simple, helping their parents with activities ranging from raising seedlings to harvesting. Children also spend time tending animals after school, collecting firewood and catching fish and other animals. Children have a significant role in the household economy since their labour has a direct impact on household welfare. Child agricultural labourers are viewed by their community as good children who understand the difficulties faced by their parents. In Cambodia, where subsistence farming is prevalent, it is usual for children to interact with their agricultural environment. The effect of such activities on children's health is an important factor to be integrated into poverty reduction and achievement of the millennium development goals.

In recent decades, there have been a number of studies on the impact of child labour on human capital formation. However, only a few studies connect child labour with health issues. Agriculture, even though it is widely agreed to be one of the most dangerous areas for children, employs a much larger number of children than other sectors (United States General Accounting Office 1998). The impact of child labour in developing countries, especially rural child agricultural labour, seems to have been ignored in recent Cambodia's labour laws. Its effect on the long-term health of children is underestimated due to neglect and the view that by working in agriculture, children will inherit know-how from their parents and thus prepare themselves for adulthood (Satz 2003). In fact, most studies investigating the impact of child labour on health assume that such impacts are only negative (Guarcello *et al.* 2004). The ILO (1998) reported that children worldwide are exposed to hazards in their work environment including toxic pesticides, lifting heavy loads, operating machinery without appropriate training, exposure to strong sunlight and a lack of water and sanitation.

Child agricultural labour often involves long hours worked from a young age. In India, bonded child labourers as young as 11 often work 16 or 17 hours a day (Human Rights Watch 2002). Guarcello et al. (2004) found that hours worked have a significant effect on the probability of negative health outcomes. Although child agricultural labour remains widespread in the developing world, and even though some children are exposed to hazards at work, there seems to be a consensus that such work can have positive effects through developing discipline, responsibility, self-confidence and independence, and by teaching children the agricultural skills of their parents. On the other hand, such child labour can also have a negative impact on health and development (Parker 1997; ILO 1998). While health and well-being of all age groups are important,

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childhood development and adolescence provide the foundation of adulthood. Rapid growth and development, such as changes in body proportions, height and weight, are indicators to monitor growth patterns (Department of Health and Human Services 2006). O'Donnell *et al.* (2003) found little evidence of contemporaneous impact on health in the case of Vietnam's child agricultural labourers, but work during childhood raises the risk of illness up to five years later, and the risk increases with the duration of work. However, Fentiman *et al.* (2002) found no growth differences in rural Ghana between children enrolled and not enrolled in school, assuming that the non-enrolled children were working.

Several studies have documented the positive impact of parental education on child height (Cochran *et al.* 1982). Many other studies have argued that education has no direct effect on height, but is a proxy for unobserved background variables such as underlying maternal health (Wolfe & Behrman 1987). More explicitly, Thomas *et al.* (1991) found that almost all the impact of maternal education can be explained by indicators of access to information—reading papers, watching television and listening to radio. In Ghana, Blunch (2004) found that parental literacy and numeracy have positive effect on intermediate (pre- and postnatal care and vaccinations) and final child health outcomes (illness and mortality). Since mothers often spend more time with their children than do fathers, the mother's education will have a greater effect on child health. Maitra (2004) found that a woman's education has a stronger effect than her husband's on health care usage, and a woman's control over household resources (ability to keep money aside) has a significant effect on health care usage. Glewwe (1999) found that mother's health knowledge alone appears to be crucial in raising a healthy child in Morocco.

This study is the first to investigate the health effects of child agricultural labour from the standpoint of hours worked, a subject hitherto virtually untouched in the literature on child labour. This study is also special in the sense that a field survey was conducted in October 2006 to fill some gaps of earlier studies. For instance, although Guarcello *et al.* (2004) recognised the importance of general health self-assessment and measures of height and weight standardised for age and sex (BMI-age), they did not have such data, and so used self-reported illness and injuries as a proxy. Despite the common understanding of the trade-off between child health and hours worked by children, this study has established the threshold level of hours, which can facilitate policy makers in drawing up new laws or regulations for child agricultural labour. This study feeds into the growing literature of child agricultural labour, and its findings are consistent with earlier studies. Furthermore, this study found that child agricultural labour does have an effect on health, if working hours exceed the threshold of 2.5 hours per day. Other salient determinant factors suggest that child health is strongly affected by access to media such as radio, television and newspapers. The study also suggests several other determinants of child health, including water and sanitation. Finally, it has policy implications for protecting child agricultural labourers in Cambodia.

8.1.2. Objectives of the Study

This study aims to provide evidence on child agricultural labour in rural Cambodia and its consequences for health. It has been observed that children's agricultural labour has a negative impact on health if they are exposed to hazardous conditions (ILO 1998). However, child agricultural labour in Cambodia remains traditional, and children's involvement in household economy and daily labour is viewed by villagers as light work, necessary and labour-saving for adults. This study will investigate the following regarding child agricultural labour in Cambodia:

1. Determinants of child health, and any differences in health between children working in agriculture and non-working children.
2. If child labour in agriculture has negative effects on health, the threshold hours for child agricultural labour below which their growth and health is not interrupted.
3. Policy implications.

8.1.3. Organisation of the Paper

Section 2 presents the empirical framework. Section 3 explains the data and variables used in the study. Section 4 discusses the results. Sections 5 and 6 present the conclusions and policy implications, respectively. Finally, an appendix contains the tables of correlation among covariates used in our specification function.

8.2. EMPIRICAL FRAMEWORK

In this section we briefly discuss the objectives of the econometric analysis and notation and the parameters of interest, along with our identification and estimation strategy. We wish to estimate the relation between health care characteristics and child health outcomes. There are of course many measures of health, such as general health status, self-reported morbidity/illness/injuries, nutritional intake and anthropometrics. However, each measurement has its own drawbacks (Strauss & Thomas 1998). General health status is probably the most widely used indicator in empirical literature in the United States. Although Guarcello *et al.* (2004) recognised the importance of general health self-assessment and measurement of height and weight standardised for age and sex (BMI-age), data constraints limited their analysis to indicators built on self-reported illness and injuries.

Our model of child agricultural labour and health effects employed two main health indicators: general health status and BMI for age percentile. For the general health status indicator, respondents provide an assessment of their own health. The anthropometric indicator used in this study is body mass index for age and sex (BMI-age). Although the BMI number is calculated in the same way for children and adults, the criteria used to interpret the meaning of the number for children and teens are different from those used for adults. For instance, BMI age- and sex-specific percentiles are used for children and teens to deal with body fat changes with age and body fat differences between girls and boys (Department of Health and Human Services 2006).

This empirical framework seeks to estimate children's health based on their nutritional intakes and personal and family characteristics. Among our explanatory variables, we suspect that "total income" and "hours worked" are endogenous with child health. Therefore, we need to seek for appropriate instrumental variables in the data set that have a high correlation with these endogenous variables, but are not correlated with the disturbance term of the structural equation. With these ideas in mind, we can establish our regression model as follow:

$$Health_i = \beta_0 + \beta_1 H_i + \beta_2 H_i^2 + \beta_3 Ch_i + \beta_4 Income_i + \beta_5 X_i + \beta_6 Z_i + U_{i1} \quad \text{Eq. (1)}$$

$$H_i^* = \delta_0 + \delta_1 AgriAssets_i + \delta_2 HouseP_i + \delta_3 ConsGoods_i + \delta_4 X_i + \delta_5 Z_i + U_{i2} \quad \text{Eq. (2)}$$

$$Income_i^* = \delta_0 + \delta_1 AgriAssets_i + \delta_2 HouseP_i + \delta_3 ConsGoods_i + \delta_4 X_i + \delta_5 Z_i + U_{i3} \quad \text{Eq. (3)}$$

Where the short notation in equations 1, 2 and 3 are H_i (hours worked of children during agricultural season), $Income_i$ (total income in the household), Ch_i (child's characteristics), X_i (household's characteristics), Z_i (community characteristics), $AgriAssets_i$ (agricultural assets), $HouseP_i$ (imputed house price) and $ConsGoods_i$ (consumption goods). Finally, the estimation of the structural equation (1) is simply the reduced form in equation (4) below:

$$Health_i = \beta_0 + \beta_1 H_i^* + \beta_2 H_i^2 + \beta_3 Ch_i + \beta_4 Income_i^* + \beta_5 X_i + \beta_6 Z_i + U_{i1} \quad \text{Eq. (4)}$$

If the coefficient of hours worked and its square are statistically significant with the U-shape function, then a first order condition on (4), with respect to hours worked is to check the turning point of the hours worked against health outcome.

We also perform the Hausman test of endogeneity and over-identification restriction test to check whether the suspected endogenous variables and their instrumented variables are valid. If our model cannot pass these tests, we simply estimate our structural equation (1) by standard probit model for the equation of general health assessment and by OLS for the equation of BMI for age percentile. The standard probit model of general health assessment is expressed through the latent variable as follows:

$$\begin{aligned} &Health_i^* = x_i\beta + \varepsilon_i \\ &x_i\beta = \beta_0 + \beta_1 H_i^* + \beta_2 H_i^2 + \beta_3 Ch_i + \beta_4 Income_i^* + \beta_5 X_i + \beta_6 Z_i + U_{i1} \\ &\varepsilon_i | x_i \sim N(0,1) \end{aligned} \quad \text{Eq. (5)}$$

where $x_i\beta$ is the aggregated form of the explanatory variables. Therefore, the dependent variable can be observed as follows:

$$\begin{aligned} &Health_i \equiv 1(Health_i^* > 0) \\ &\Pr(Health_i = 1 | x_i) = G(\beta_0 + \beta_1 H_i^* + \beta_2 H_i^2 + \beta_3 Ch_i + \beta_4 Income_i^* + \beta_5 X_i + \beta_6 Z_i) \\ &\qquad = G(x_i\beta) = \Phi(z) \end{aligned} \quad \text{Eq. (6)}$$

Then the standard normal cumulative distribution function and the standard normal density are:

$$\Phi(z) = \int_{-\infty}^{(z)} \phi(v)dv \quad ; \quad \phi(z) = \frac{1}{\sqrt{2\pi}} \exp[-\frac{(z)^2}{2}]$$

And the likelihood function is:

$$\ln L = \sum_{i}^{s} \ln \Phi\{1-(x_i\beta)\} + \sum_{s+1}^{n} \ln \Phi(x_i\beta) \quad ;$$

$$N = 1..., s, (s+1).....n$$

8.3. DATA AND VARIABLES

The primary field survey was conducted by a team of graduate students including the author of this article, led by Professor Seiichi Fukui, in October 2006 in four villages, Prey Changva, Kan Damra and Trapeang Kraloung, located in Kompong Speu province, and Kol Kom, located in Takeo. The characteristics of this survey are socioeconomic household data comprising several modules: farming system, household consumption, migration, child agricultural labour, child health and social capital. We interviewed 168 households in total, and 214 children aged 5–14 years, 107 female and 107 male. The majority of children in our study neither applied pesticide nor operated machinery (see Table 8.2). Of the children in our sample, 99 were non-working and 115 working. We adopted a definition of working child consistent with the definition in the ILO's convention No. 138, and consistent with the Cambodia Child Labour Survey in 2001–2002 (NIS 2002). In this context, any children involved in agricultural activities, even one hour in the past seven days, is regarded as a working child.

Table 8.3 shows the number of children in the sample broken down by age and sex. We found that female working children outnumbered males. Table 8.4 shows that around 47 percent of the children were underweight, 2 percent at risk of being overweight and around 1 percent overweight. Of the four villages in the study, Prey Changva and Trapeang Kraloung had the highest proportions of underweight children, 35 and 31 percent. Surprisingly, around 74 percent of the children were malnourished (see Table 8.6). This basically implies that Cambodian children suffer from their past history of food shortage. Both working and non-working children were found to have suffered malnutrition.

We employed two main indicators for child health. First, we asked children to rate their own health; on this basis, 151 children were in good health and 63 not in good health. Second, we used the anthropometric indicator of BMI for age. In Tables 8.4 and 8.5, details of BMI-age are given. We found that almost 47 percent of children were underweight and around 50 percent a healthy weight. The remaining 3 percent were at risk of being overweight. Tables 8.6 and 8.7 present statistics on child malnutrition measured by "stature for age". We found around 74 percent were malnourished and only 26 percent in the category of normal child growth. "Stature for age" measures the impact of child history of malnutrition. The variables used for the empirical analysis are given in Table 8.1. The variables "income" and "hours worked"

are suspected to have error terms correlated with "child health outcomes"; therefore these variables are instrumented based on sets of exogenous variables such as "house price", "consumption goods", "livestock value", "off-farm employment", "farmland size" and "human capital function".

Table 8.1: Descriptive Statistics (Children in Age Group 5–14 Years)

Variable	Definition	Mean	Std. Dev.
Total income	Total income of household	2665966	1811022
Child's age	Age of the child	10.32243	2.677284
Female child	1 if female child, 0 otherwise	.5	.5011723
Agri. hours worked	Agricultural hours worked per day	2.509346	3.312362
Child labour	1 if working child, 0 otherwise	.5373832	.4997696
Child's education	Education of the child (years)	3.065421	2.386468
Father's education	Education of father (years)	4.948598	2.934684
Mother's education	Education of mother (years)	4.252336	2.53832
Face food shortage	1 if household faced food shortage in the past year	.4497354	.4987884
Meals past 7 days	1 if have enough food in the past 7 days	.8738318	.3328174
Nb. Family	Number of family members	5.593458	1.883497
Nb. labour	Number of labour force in the family	2.5	1.157746
Nb. living apart	Number of children living apart	.8317757	1.182708
Breastfeeding	1 if a child is breastfed from birth up to 1 year old, 0 otherwise	.2663551	.4430886
Female household head	1 if female is a household head, 0 otherwise	0.163551	1.705109
Use toilet & boiled water	1 if household either uses toilet or uses boiled water	.2056075	.4050924
Immunisation	1 if child is immunised, 0 otherwise	.864486	.3430743
Training attended	Number of trainings household attended	3.799065	3.622024
Media	1 if household has access to radio, TV or other media	.8551402	.3527847
Nb. of injuries	Number of times child injured	3.014019	5.285714
Machine operation	1 if child operates machinery, 0 otherwise	.0186916	.135751
Apply pesticide	1 if child applies pesticide, 0 otherwise	.1121495	.3162902
Experience	Number of years child in labour force	1.17757	1.895451
PreyChangVa	Prey Changva village	.2943925	.4568378
KanDamra	Kan Damra village	.1682243	.3749424
KolKom	Kol Kom village	.2757009	.4479145

Note: Total observations 214

Source: Author's calculation from survey data 2006

Table 8.2: Frequency, Row and Column Percentage of Children Aged 5–14 Operating Machinery and Applying Pesticide

	Not Operate Machinery	Operate Machinery	Total
Not apply pesticide	190	0	190
	100.00	0.00	100.00
	90.48	0.00	88.79
Apply pesticide	20	4	24
	83.33	16.67	100.00
	9.52	100.00	11.21
Total	210	4	214
	98.13	1.87	100.00
	100.00	100.00	100.00

Source: Author's calculation from survey data 2006

Table 8.3: Frequency, Row and Column Percentage of Children Aged 5-14, by Labour and Sex

	Male	Female	Total
Not working child	56	43	99
	56.57	43.43	100.00
	52.34	40.19	46.26
Working child	51	64	115
	44.35	55.65	100.00
	47.66	59.81	53.74
Total	107	107	214
	50.00	50.00	100.00
	100.00	100.00	100.00

Source: Author's calculation from survey data 2006

Table 8.4: Frequency, Row and Column Percentage of Children Aged 5–14, by Sex and BMI-age Percentile Category

	Underweight	Healthy Weight	Risk of Overweight	Overweight	Total
Male	56	47	4	0	107
	52.34	43.93	3.74	0.00	100.00
	56.00	43.52	100.00	0.00	50.00
Female	44	61	0	2	107
	41.12	57.01	0.00	1.87	100.00
	44.00	56.48	0.00	100.00	50.00
Total	100	108	4	2	214
	46.73	50.47	1.87	0.93	100.00
	100.00	100.00	100.00	100.00	100.00

Source: Author's calculation from survey data 2006

Table 8.5: Frequency, Row and Column Percentage of Children Aged 5–14, by Village and BMI-Age Percentile Category

	Underweight	Healthy Weight	Risk of Overweight	Overweight	Total
Prey	35	27	0	1	63
Changva	55.56	42.86	0.00	1.59	100.00
	35.00	25.00	0.00	50.00	29.44
Kan Damra	14	22	0	0	36
	38.89	61.11	0.00	0.00	100.00
	14.00	20.37	0.00	0.00	16.82
Kol Kom	20	36	2	1	59
	33.90	61.02	3.39	1.69	100.00
	20.00	33.33	50.00	50.00	27.57
Trapeang	31	23	2	0	56
Kraloung	55.36	41.07	3.57	0.00	100.00
	31.00	21.30	50.00	0.00	26.17
Total	100	108	4	2	214
	46.73	50.47	1.87	0.93	100.00
	100.00	100.00	100.00	100.00	100.00

Source: Author's calculation from survey data 2006

Table 8.6: Frequency, Row and Column Percentage of Children Aged 5–14, by Malnutrition and Sex

	Male	Female	Total
Malnutrition due to	79	80	159
long-term food deficiency	49.69	50.31	100.00
	73.83	74.77	74.30
Normal growth	28	27	55
	50.91	49.09	100.00
	26.17	25.23	25.70
Total	107	107	214
	50.00	50.00	100.00
	100.00	100.00	100.00

Source: Author's calculation from survey data 2006

Table 8.7: Frequency, Row and Column Percentage of Children Aged 5–14, by Malnutrition and Labour

	Not Working Child	Working Child	Total
Malnutrition due to long-term food deficiency	72	87	159
	45.28	54.72	100.00
	72.73	75.65	74.30
Normal growth	27	28	55
	49.09	50.91	100.00
	27.27	24.35	25.70
Total	99	115	214
	46.26	53.74	100.00
	100.00	100.00	100.00

Source: Author's calculation from survey data 2006

8.4. RESULTS AND DISCUSSION

Table 8.8 presents coefficient estimates of "general health assessment". In Table 8.8, column (a) presents the Probit coefficients produced from a standard Probit model, and column (b) presents the IV-Probit coefficients produced from simultaneous equation systems under the assumption that total household income and hours worked by children are endogenous to the model of child health outcomes. Using the Hausman test, we confirmed that we do not have enough evidence to reject our null hypothesis of exogeneity, and thus we tend to interpret the result from standard Probit coefficient estimates. Similarly, Table 8.9 shows coefficient estimates of BMI for age percentile. In Table 8.9, column (a) presents coefficients estimated by Ordinary Least Square (OLS), while column (b) presents coefficients of Two-Stage Least Square (2SLS). The BMI for age percentile equation passes the test of endogeneity and the over-identification restriction test. We therefore tend to interpret the results from the 2SLS.

Hours worked: In Table 8.8, the variable "hours worked" and its square are statistically significant, though with opposite sign. This finding suggests that children's agricultural labour does have a negative impact on child health if their involvement in agricultural activities exceeds the threshold level of 2.5 hours per day.

Breastfeeding: In Table 8.8, the variable "breastfeeding" is statistically significant. It shows that child breastfeeding is associated with an 18 percentage point increase in the probability that a child is healthy. However, breastfeeding here is defined as a mother breastfeeding from the day of birth up to 12 month. These findings are consistent with our observation during field interviews that most mothers of the children said that because of insufficient milk and nutrition, the child was/is given longer periods of breastfeeding, and in extreme cases the child was breastfed up to five years. Shah *et al.* (2002) indicated that breast milk alone does not provide all nutrients needed by an infant older than six months. Behavioural research suggests that by six months, infants are ready to take semi-solids, and physiological evidence that the gastrointestinal tract

is mature enough to handle food. Therefore, longer breastfeeding implies a household unable to provide nutrients needed by a child.

Immunisation: In Table 8.8, the variable "immunisation" is statistically significant. The marginal effect shows that child immunisation against seven preventable diseases is associated with a 15 percent increase in the probability that a child is healthy. This finding supports the evidence claimed by PATH (2004) that immunisation has been a relatively successful public health programme in Cambodia, in which in recent years polio has been eradicated and the incidence of measles sharply reduced. Based on the field interviews, all four villages have a commune health centre equipped with trained staff and nurses to serve people in the commune. The Cambodia Socio-Economic Survey 1999 (NIS, 1999) clearly show that child immunisation coverage is significantly higher in villages having public health clinics than in those not having such clinics. There is other evidence from village health volunteers that availability of health infrastructure has gradually improved over the past 10 years, and thus immunisation has been a national priority.

Income of household: In table 8.9, the variable "income" is statistically significant. This is very interesting for our hypothesis that nutritional intake plays a significant role in children's health. The positive relationship between household income and child health is basically that wealthier households tend to spend enough for their children's food consumption and better nutrients. This finding supports a growing literature on child growth and nutrition (Strauss & Thomas 1998).

Access to media, participation in health programmes: A household's accessing of media (radio and television) is found to have a positive relationship with improvement of child health (Table 8.8). This finding supports the study by Thomas *et al.* (1991), who found that almost all the impact of maternal education can be explained by access to information—reading papers, watching television and listening to radio. We also found that household participation in health programmes has a positive relationship with child health. According to the field interviews, health training programmes were conducted from 1999 with support from the Rural Development Project of the Ministry of Rural Development. Most villagers agreed on an improvement of health since the establishment of the project. Furthermore, more facilities had been equipped by the Ministry of Health such as the mobile clinics set up for monthly health checks.

Water and sanitation: The empirical findings are consistent with our observations because the improvements of general health perception and body mass of children are well associated with health facilities and general health knowledge; for example, the use of latrines and boiled water consumption lead to improved general health and body mass of children (Tables 8.8 and 8.9). Access to safe drinking water and sanitation are crucial because of the prevalence of water-borne diseases in Cambodia. According to NIS (1999), only 23 per cent of villages obtain water from public or private taps rely on wells for drinking water in the dry season.

Father's education and age of household head: The coefficients of father's education and age of household head are statistically significant. However, what is surprising is that a father's education has a negative impact on child health, while the age of the household head has a positive impact. Perhaps one of the reasons is that a father's education gives opportunities for alternative jobs outside the home, especially seasonal migration to work in Phnom Penh, so the mother is the only caregiver. As mentioned above, theory generally does not offer any unambiguous conclusions about the impact of education on the demand for health inputs, thus pointing to the need for empirical analysis. Furthermore, health consultation is a home-based decision in Cambodia, where elders provide substantial advice to the primary caregivers (NIS, 2001). This basically means that we may not expect much effect on child health from parents' education, but the importance of age is clearly revealed in the study.

Family members and household members living apart: The coefficients of family members and family members living apart are statistically significant. The direction of coefficient suggests that household size has a negative relationship with child health, while more household members living apart is associated with a 20 percent increase in the probability that a child is in good health. This basically reflects a situation in which many households finance their consumption and debt repayments with remittances from family members living apart.

Food shortage and injury: The coefficients of variables "face food shortage" and "Nb injuries" are statistically significant. This means that child health has a negative relationship with households experiencing food shortage in the past year and negative also with working children experiencing injuries in their agricultural activities.

Other variables and community characteristics: In general we found that children tend to have better health as they grow up. This could be explained by health programmes just start in the early 2000s in these four villages. It has been found that child health is negative with the frequency of sickness or injuries (Table 8.8). Female children were found to have better health than male children. More has to be explored about the basic infrastructure, facilities, location and history of each village, because we found that child health, in general, was better in Kan Damra and Kol Kom villages.

Table 8.8: Probit Coefficient Estimates of Health Self-Assessment

	Health Self-Assessment **(OLS)** (a)			Health Self-Assessment **(2SLS)** (b)	
	Coefficient	**dy/dx**	**P-value**	**Coefficient**	**P-value**
Total Income	-3.26e-08	-9.27e-09	0.742	-4.15e-07	0.179
Child's age	.0140647	.0040046	0.823	-.0047958	0.940
Female child	-.0049643	-.0014135	0.984	.0938605	0.679
Hours worked	.1088047	.0309795	0.029	-.022738	0.008
Hours worked^2	-.0225418	-.0064182	0.054	-.0124203	0.031
Child labour	-.7960444	-.2206053	0.008	-.4788279	0.036
Child's education	-.0318112	-.0090575	0.702	.0309931	0.727
Father's education	.0029472	.0008391	0.957	.0907974	0.212
Mother's education	.0759301	.0216193	0.247	.0430427	0.534
Face food shortage	-.7110087	-.2066514	0.017	-.7734351	0.006
Meals past 7 days	.3062163	.0949548	0.464	.1227431	0.763
Nb. family	-.0625511	-.0178099	0.520	-.0645737	0.474
Nb. labour	-.0516927	-.0147183	0.736	-.1210634	0.403
Nb. living apart	.7346803	.2091825	0.001	.8404281	0.000
Breastfeeding	.7703521	.1858559	0.013	.8136385	0.003
Female household head	.2408845	.0685861	0.088	.2517182	0.047
Use toilet & boiled water	.5103631	.126637	0.083	.0413209	0.033
Immunisation	.4661684	.1495475	0.076	.5304587	0.077
Training attended	.0183566	.0052266	0.678	.0148834	0.724
Media	2.004428	.6815312	0.001	1.93231	0.001
Nb. of injuries	-.2912035	-.0829132	0.000	-.2617162	0.000
Machine operation	-.4435784	-.1462601	0.692	-.7828656	0.407
Apply pesticide	.1628883	.0439619	0.751	.223665	0.639
Experience	.2819893	.0802897	0.013	.3089255	0.004
PreyChangVa	-.5582975	-.1719271	0.174	-1.001827	0.021
KanDamra	.7030546	.1588632	0.057	.4835683	0.095
KolKom	.4858315	.1258285	0.062	.2413911	0.058
Constance	-.9555263		0.092	.1751816	0.012
Rho				.5387358	0.180

Wald test of exogeneity (/athrho = 0): chi2(1) = 1.80 Prob > chi2 = 0.1801
Hansen J statistic (over-identification test of all instruments): 8.171
Chi-sq(6) P-val = 0.22585

Instrumented: Hours worked, Income
Instruments: Off-farm income, Remittances, House price, Agricultural assets, Consumption goods, PreyChangVa, KanDamra and all sets of exogenous variables in the structural equation (1).

Source: Author's calculation

(a) Report of goodness of fit of Probit
Number of obs = 189 Wald chi2(27) = 83.07 Prob > chi2 = 0.0000
Pseudo R2 = 0.4583 Log pseudolikelihood = -62.219141

(b) Report of goodness of fit of IV (2SLS)
Number of obs = 189 Wald chi2(27) = 136.89 Prob > chi2 = 0.0000
Log pseudolikelihood = -2968.7039

Table 8.9: Regression Coefficient Estimates of BMI-Age Percentile

Variable	BMI for Age Percentile (OLS) (a)		BMI for Age Percentile (2SLS) (b)	
	Coefficient	**P-value**	**Coefficient**	**P-value**
Total Income	2.64e-06	0.076	5.57e-06	0.040
Child's age	-2.184037	0.011	-2.001437	0.021
Female child	.4270067	0.889	-.334157	0.912
Hours worked	.7920255	0.184	1.532479	0.122
Hours worked^2	-.074258	0.240	-.1074288	0.152
Child labour	-1.042103	0.063	-2.452773	0.058
Child's education	-.1840423	0.848	-.6640225	0.535
Father's education	-1.262676	0.205	-1.982099	0.058
Mother's education	-1.032729	0.277	-.6378881	0.456
Face food shortage	.450395	0.891	2.144853	0.512
Meals past 7 days	1.867078	0.745	2.5585	0.640
Nb. family	-1.141419	0.269	-1.263886	0.007
Nb. labour	-.3621834	0.814	.0738493	0.961
Nb. living apart	-.7028938	0.672	-1.991519	0.276
Breastfeeding	1.221593	0.784	.1493176	0.973
Female household head	3.432114	0.092	3.686988	0.061
Use toilet & boiled water	4.303987	0.070	.5866893	0.008
Immunisation	4.25002	0.349	3.449917	0.447
Training attended	-.529026	0.159	-.5146655	0.158
Media	.224281	0.977	-.4041392	0.956
Nb. of injuries	-.2112923	0.071	-.2264973	0.040
Machine operation	-2.021768	0.808	1.09495	0.893
Apply pesticide	.9756794	0.857	.5331963	0.920
Experience	.0254451	0.982	-.5977287	0.618
PreyChangVa	4.252197	0.446	8.330059	0.182
KanDamra	-4.860079	0.615	-3.912272	0.178
KolKom	14.03383	0.016	15.34601	0.008
Constance	26.65964	0.100	17.25504	0.030
	Hansen J statistic (over-identification test of all instruments):			3.362
			Chi-sq(6) P-val =	0.76222

Instrumented: Hours worked, Income

Instruments: Off-farm income, Remittances, House price, Agricultural assets, Consumption goods, PreyChangVa, KanDamra, and all sets of exogenous variables in the structural equation (1).

Tests of endogeneity of: Hours worked, Hours worked^2, Income

Ho: Regressors are exogenous

Wu-Hausman F test: 6.65298 F(1,160) P-value = 0.00649

Durbin-Wu-Hausman chi-sq test: 7.58480 Chi-sq(1) P-value = 0.00007

Source: Author's calculation

(a) Report of goodness of fit of OLS

Number of obs = 189 F(27, 161) = 1.71 Prob > F = 0.0228

R-squared = 0.2528 Adj-R squared = 0.2393 Root MSE = 20.633

(b) Report of goodness of fit of IV (2SLS)

Number of obs =189 F(27, 161) =1.66 Prob > F = 0.0301

Adj R-Square =0.2237 Root MSE = 19

8.5. CONCLUSION

This study departs from identifying gaps in the past studies of agricultural child labour and their health effects. In the literature, it is very rare to find books or papers on the impact of child agricultural labour on health. Second, this study conducted a field survey to fill some gaps in earlier studies.

The findings of this study feed into the growing literatures on child labour in general and its health effects specifically. The findings are consistent with the earlier study of O'Donnell *et al.* (2003), who found little evidence of a contemporaneous impact of child work on health in Vietnam's agriculture, but evidence that work during childhood raises the risk of illness up to five years later, a risk that increases with the duration of work In addition, Han (2008) found that child labour contributes to human capital since children's education is a significant determinant of their wage rates, which implicitly explains the logic behind the household's decision to allow a child to both work and to study, and thus explains why parents keep investing in their children's education. Furthermore, poor households cannot afford to send children to school without combining work and study. Any policy to withdraw child agricultural labour has to be done carefully to protect the interests of the child, including schooling and health.

The present study confirms that child agricultural labour has a negative impact on child health if hours worked in agriculture exceed the threshold level of 2.5 hours per day. Since the average work of child agricultural labour is around 2.5 hours per day, this finding will inform policy makers that policy formulation to protect agricultural child labourers is needed. This study also suggests that Cambodia shall follow recommendation of ILO (1998) that children's involvement in agriculture creates health threats, depending on their working environment. The findings also suggest that children should be allowed to work within the threshold level of 2.5 hours per day in the agricultural season because their labour contributes to saving adult labour and helps the family economically.

This study also found that breastfeeding, household participation in health training programmes, access to media, household income, immunisation and age of the household head are all crucial factors to improve child health. Therefore, this study will shed light on policy implications of child health in rural Cambodia.

8.6. POLICY IMPLICATIONS

This study has policy implications for Cambodia as follows:

- Increased hours of child agricultural labour have a negative impact on children's health. Policy formulation to protect agricultural child labourers whose work exceeds the threshold level of 2.5 hours per day is needed. Because most rural children in Cambodia directly support the household economy or help their family during the agricultural season, any effort to remove children from work or limit their involvement must be done with extreme care because this interferes

with their means of survival. Interfering with a family or community's survival strategy may not always be in the best interests of the child. This may therefore violate Article 3 of the Convention on the Rights of the Child, which states that all interventions must be in the "best interests of the child".

- Any policy could also allow children to work within the threshold level hours of 2.5 hours per day during the agricultural season. Limiting child's involvement during the agricultural activities will affect their household economy as children have been used for adult labour saving since long time ago.

- A positive impact of media on child health: Increased access of households to media is likely to affect substantially the probability that a child is healthy. There are many private and social benefits from increasing household access to media. First, households can learn good health practices from TV health programmes, newspapers and radio. Second, media provide up-to-date information on epidemics of bird flu, HIV/AIDS and other diseases that need popular attention. Third, media ensure close contact with current social developments, especially the development model from area to area.

- Positive impact of access to clean water and sanitation: These have substantial impacts on the improvement of children's health. Therefore, the policy should be to increase public understanding of these health practices and increase access to water and sanitation in rural areas.

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Appendix

Appendix 1*:* Covariate Correlations

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) Total income	1.0000									
(2) Child's age	0.0779	1.0000								
(3) Female child	0.0455	0.0631	1.0000							
(4) Hours worked	-0.063	0.5065	0.0922	1.0000						
(5) Hours worked^2	-0.059	0.4179	0.0908	0.9536	1.0000					
(6) Child labour	0.0375	0.5008	0.1116	0.7198	0.5720	1.0000				
(7) Child's education	0.2577	0.7245	0.0375	0.4504	0.3796	0.4647	1.0000			
(8) Father's education	0.3487	-0.103	-0.044	-0.062	-0.046	-0.037	0.0972	1.0000		
(9) Mother's education	0.0705	-0.048	0.0009	0.0424	0.0474	0.0205	0.0544	0.5810	1.0000	
(10) Face food shortage	-0.178	0.0483	-0.027	-0.076	-0.115	0.0006	0.0113	-0.206	-0.268	1.0000
(11) Meals past 7 days	0.1294	0.0374	-0.160	0.1861	0.1895	0.1177	0.2018	0.2906	0.3360	-0.102
(12) Nb. family	0.0667	0.1251	-0.049	-0.065	-0.042	-0.036	-0.039	-0.160	-0.148	-0.117
(13) Nb. labour	-0.055	0.0117	-0.089	-0.066	-0.029	-0.104	-0.067	-0.204	-0.132	-0.022
(14) Nb. living apart	0.2098	0.1075	-0.027	-0.038	-0.031	-0.027	0.0877	-0.157	-0.100	-0.004
(15) Breastfeeding	0.1714	-0.037	-0.116	-0.041	-0.043	0.0131	-0.057	0.0125	-0.085	-0.156
(16) Female household	0.0228	0.0497	-0.000	0.0268	0.059	-0.087	0.1205	0.0409	0.1307	-0.100
(17) Use toilet & boiled water	-0.266	-0.074	-0.050	-0.046	-0.044	-0.082	-0.094	0.1461	0.1632	-0.028
(18) Immunisation	-0.018	-0.112	0.1208	-0.045	-0.053	0.0233	-0.051	0.1584	0.1905	0.0832
(19) Training attended	0.0274	-0.065	-0.127	-0.026	-0.080	0.1180	-0.031	0.0475	0.0264	-0.093
(20) Media	0.0810	0.0077	-0.001	0.0500	0.0676	0.0649	0.0532	-0.012	0.0259	-0.126
(21) Nb. of injuries	0.0397	-0.094	-0.043	-0.145	-0.113	-0.205	-0.142	-0.127	-0.062	-0.062
(22) Machine operation	-0.107	0.1302	-0.072	0.2408	0.2356	0.1387	0.1759	0.0933	0.0958	-0.059
(23) Apply pesticide	-0.091	0.2758	0.0019	0.3222	0.2781	0.3424	0.1609	-0.049	0.0456	-0.062
(24) Experience	0.0315	0.5495	0.0218	0.6197	0.5364	0.6064	0.4165	-0.084	-0.017	0.0711
(25) PreyChangVa	-0.354	-0.033	0.0842	0.0124	-0.028	0.1580	-0.249	-0.351	-0.253	0.1012
(26) KanDamra	-0.008	0.0617	-0.027	0.1333	0.1517	0.0652	0.1288	0.1281	0.2472	-0.167
(27) KolKom	0.1558	0.0543	0.0622	-0.002	0.0069	-0.024	0.2736	0.2425	0.0612	0.0512

	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
(11) Meals past 7 days	1.0000									
(12) Nb. family	-0.094	1.0000								
(13) Nb. labour	-0.066	0.4600	1.0000							
(14) Nb. living apart	0.0157	0.3337	0.5316	1.0000						
(15) Breastfeeding	0.1567	0.2744	-0.006	-0.000	1.0000					
(16) Female household	0.0094	-0.201	-0.131	-0.044	-0.127	1.0000				
(17) Use toilet& boiled water	0.0724	-0.043	0.0517	0.0113	-0.061	-0.039	1.0000			
(18) Immunisation	-0.106	-0.177	-0.034	-0.205	-0.248	0.1363	0.1237	1.0000		
(19) Training attended	0.0784	-0.022	-0.045	-0.050	0.2510	-0.140	-0.157	0.0024	1.0000	
(20) Media	0.0777	0.1044	0.0859	0.0377	0.0069	-0.046	-0.222	0.0686	0.0869	1.0000
(21) Time of injuries	-0.023	-0.007	0.1562	0.1499	0.0672	-0.142	-0.130	-0.275	-0.020	0.0856
(22) Machine operation	0.0561	-0.023	-0.011	-0.102	-0.088	0.0870	0.1097	0.0587	-0.076	0.0309
(23) Apply pesticide	0.0393	0.1118	-0.072	-0.116	0.0441	-0.009	0.0237	0.0013	0.0544	0.0763
(24) Experience	0.0981	0.0750	-0.105	-0.060	0.0170	-0.038	0.0136	0.1057	-0.020	0.0439
(25) PreyChangVa	-0.338	0.0671	0.1130	0.0005	-0.028	-0.375	-0.013	-0.005	0.2506	0.1382
(26) KanDamra	0.1143	-0.106	-0.072	-0.093	-0.182	0.7313	0.0138	0.1233	-0.038	0.0877
(27) KolKom	0.1673	-0.210	-0.189	-0.132	-0.107	-0.041	-0.048	0.0100	-0.189	-0.161

	(21)	(22)	(23)	(24)	(25)	(26)	(27)
(21) Nb. of injuries	1.0000						
(22) Machine operation	-0.076	1.0000					
(23) Apply pesticide	-0.052	0.4051	1.0000				
(24) Experience	-0.127	0.1182	0.3585	1.0000			
(25) PreyChangVa	0.0398	-0.096	0.1929	0.1445	1.0000		
(26) KanDamra	-0.087	0.1456	0.0808	0.0335	-0.274	1.0000	
(27) KolKom	-0.124	0.0719	-0.116	-0.012	-0.410	-0.260	1.0000

Note: The coefficients of the matrix correlations indicate that the model is secure from multi-colinearity. Technically, if the coefficient is greater than four and smaller than eight, one can draw a conclusion that there is weak correlation, but it does not suffer to the model. However, if the coefficient is greater than eight, one should omit that variable or combine both variables into one.

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