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Understanding Poverty Dynamics: Evidence from Nine Villages in Cambodia

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Acronyms and Abbreviations

AIDS	Acquired Immuno Deficiency Syndrome
CDHS	Cambodia Demographic and Health Survey
CDRI	Cambodia Development Resource Institute
CMDG	Cambodia Millennium Development Goal
CPI	Consumer Price Index
CPR	Common Property Resources
CSES	Cambodia Socio-Economic Survey
D&D	Decentralisation and De-Concentration
FDI	Foreign Direct Investment
FGD	Focus Group Discussion
FHH	Female-Headed Household
GDP	Gross Domestic Product
GMS	Greater Mekong Sub-Region
Ha	Hectare
HH	Household
HHH	Household Head
HIV	Human Immunodeficiency Virus
KHR	Cambodian Riel
MDG	Millennium Development Goal
MFI	Microfinance Institution
MHH	Male-Headed Household
MOPS	Moving Out of Poverty Study
NGO	Non Governmental Organisation
NIS	National Institute of Statistics
NPRS	National Poverty Reduction Strategy
NSDP	National Strategic Development Plan
PCA	Principal Component Analysis
PDS	Poverty Dynamics Study
PPA	Participatory Poverty Assessment
RGC	Royal Government of Cambodia
SEDP	Socio-Economic Development Plan
SESC	Socio-Economic Survey of Cambodia
SSI	Semi-Structured Interview
USD	United States Dollar
WDI	World Development Indicators

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EXECUTIVE SUMMARY

Poverty in Cambodia is one of the highest in Asia. Despite the country's very impressive GDP growth in the last decade or so, poverty remains pervasive specifically in the rural areas. The food and economic crises along with the idiosyncratic shocks of the recent years put the plight of the poor and near-poor at even greater risk. The Poverty Dynamics Study (PDS), as a longitudinal monitoring exercise, helps shed light on the extent, determinants, and nuances of the face of Cambodian poverty against the impacts of major macro and micro developments. Employing a mixed methods approach, the quantitative aspect involved statistical analyses of the panel data on 897 households from nine villages representing different geo-climatic regions in the country. This data was generated from CDRI's Moving Out of Poverty Study (MOPS) in 2001, the MOPS in 2004/5 and the PDS survey in 2008, with financial and technical support from the World Bank. The qualitative aspect, on the other hand, drew upon analyses of the results of focus group discussions (FGDs) and semi-structured interviews (SSIs) with households and individuals from the same nine study villages. Based on the results of the PDS presented in this report, policy recommendations have been formulated in the hope of helping tailor the government's poverty reduction policies and advance their implementation.

Addressing Poverty Remain the Top Priority of Development Policies

Poverty is a multidimensional phenomenon. It is an outcome of interlocking problems that operate at different levels and contexts. In Cambodia, the incidence of poverty has been consistently high albeit this has been decreasing in recent years and can be explained by country-level, sectoral and micro-level factors. At the national level, Cambodia's legacy of conflict, repression and isolation stands as a central explanation to why the country has become one of the world's poorest. This legacy lingers in key broad determinants of poverty, particularly the low levels of physical and human capital and poor governance. The impressive growth period between 1998 and 2008 also witnessed the impact on poverty of economic and non-economic shocks. At the sectoral level, the narrow economic base of growth and the under performance of the agricultural sector highlight poverty in Cambodia as a mainly rural phenomenon. At the micro-level, poor asset ownership, limited access to public goods and finance, low levels of education and nutrition, and idiosyncratic shocks jointly resulted in communal, household and individual poverty.

Cambodia achieved a successful economic and social restructuring between 1998 and 2008 that spurred economic growth and poverty reduction. In time, the Royal Government of Cambodia (RGC) declared poverty alleviation as its single most important long term goal, recognising that poverty reduction is integral to social reconciliation and key to maintaining political stability. The fulfilment of this mission rests on what has been formally called the Rectangular Strategy. This strategy's core component is improvement in governance and its four pillars are as follows: enhancement of agriculture; private sector development and employment generation; human resource development; and infrastructure building. This strategy has borne fruit, sustaining the progress in expanding the economy and diminishing poverty. However, poverty reduction has not matched the pace of economic growth, suggesting gaps in the translation of policy into action.

Poverty Dynamics and Socio-economic Trends: Community Perspectives

The rural study villages have different experiences in changing poverty headcount and income. This demonstrates that income growth may have been a necessary but certainly not a

sufficient condition for poverty reduction. The PDS suggests that poverty headcount declined in many rural villages between 2004/5 and 2008, a period that had substantial increases in average real per capita income and consumption. Average real per capita income rose significantly for almost all the study villages but this did not hold for consumption. Ultimately, using the consumption approach, some villages experienced a decline in poverty, but its incidence in some villages increased. Income growth appeared to be strongly, positively related with asset ownership and other welfare improvement. However, the experience of the nine study villages varied greatly in terms of sustainable food and non-food consumption and depended on their starting base in 2001. It is important to note that most study villages experienced consumption deficits in relation to the 2008 village poverty line. Successful agricultural villages have experienced significant reduction in poverty headcount or low poverty incidence. Land sales and transaction was viewed as a key factor in improvements in well-being and poverty reduction in some village.

The study villages were grouped into six strongly and three poorly performing villages based on the ability and capacity of each to exploit social, economic and political developments for the purpose of augmenting income and consumption, especially between 2005 and 2008. Chief of these developments included (1) agricultural growth; (2) enhanced access to common property resources (CPR) for subsistence and commercial purposes; (3) food price escalation in 2007 and then deflation by the middle of 2008; and the (4) real estate boom between 2005 and July 2008. These developments had direct and indirect positive impact on household welfare in the study villages. However, some gains tended to be unsustainable for such reasons as the illegal nature of the CPR access and the landlessness caused by real estate transactions. For example, increased CPR access as a result of the fisheries and forestry reform and its political implications before the national election in July 2008 contributed greatly to the remarkable rise of total average per capita income and helped boost agricultural growth in the CPR villages. These villages however experienced uneven change in poverty headcount. That is because increased income in the natural resource development villages stemmed mostly from the illegal conversion of forest and flooded forest for cultivation between 2004/5 and 2008, but such an increase cannot be sustainable. Wage labour became an important source of income for landless households and some villages, but this income tended to sustain improvements in livelihoods and the mitigation of poverty.

The sample rural households seem to have benefited from infrastructure development and increased availability of microcredit services. However, this improvement was not enough to raise the capacity of rural households to cope with social and economic shocks or to sustain their consumption above the village poverty line to avoid sliding into poverty. Consumption and poverty reduction also proved unstable in those villages where most households depended heavily on the cultivation of wet season rice, wage labour and access to CPR. There were increased efforts to grow more cash crops and raise livestock in addition to rice production but the lack of know-how and inadequate extension services undermined progress. These findings highlight the need to speed up infrastructure development, provision of adequate effective extension services, and agricultural diversification.

Empirical Analysis: Chronic and Transient Poverty in Nine Villages

The empirical analysis uses three separate years of unique panel data on 827 households to measure transient and chronic poverty based on real total expenditure per capita as a welfare indicator. The results show that 44 percent of the sample households experienced transient poverty while chronic poverty affected 15 percent. There are high levels of chronic and

transient poverty in the Tonle Sap and Plateau regions. Using multinomial logit regression to identify the causes of transient and chronic poverty, the econometric evidence shows that transient poverty is associated with household composition, the gender of the household head and marital status. Household composition, number of dependent household members, males aged 15–64, education of the household head and ownership of non-land assets are important factors in chronic poverty but are not significant in transient poverty. The number of females aged 15–64 increases both chronic and transient poverty.

The asset approach to measuring chronic and transient poverty found that the largest numbers of households were transient poor, consistently with the findings of the consumption approach; however, the asset measure offers new important and more telling insights into the key determinants of chronic and transient poverty. Households experiencing transient poverty account for 40 percent of the sample and chronic poverty for 30 percent. The Tonle Sap and plateau regions have lower chronic poverty and higher transient poverty than the coastal region. Male adults aged 15–64 years, household head characteristics such as educational level and occupation, agricultural land, non-land assets and livestock are important factors for chronic poverty but are not significant determinants of transient poverty. Transient poverty is negatively associated with non-land assets. Using either of the consumption or asset approach, the empirical results suggest that different policies will be needed to address chronic and transient poverty and for each agro-climatic region.

Policy implications

A number of pro poor policy directions can be drawn from the key findings of this micro study. These policies are advanced to support both community growth and poverty reduction and respond to transient and chronic poverty through support for both farm and non-farm employment for poverty reduction. These policies need to be integrated into an agricultural and rural development policy framework and upcoming development interventions. Such policies and interventions can be effective if they harness existing synergy of community growth and economic opportunities generated along with structural change in order to build the capacities of the poor. This will not only increase productivity but also pave for stronger capacity to cope with socio and economic shocks/crises. Coordination of pro-poor policies and interventions has to be done through strategic sectoral planning and define the roles of national and sub-national bodies within the D&D reform structure. The private sector and civil society have important parts to play in highlighting major technical, administrative and political challenges to policy design and implementation. However, promoting structural change from an agricultural to a non-agricultural-based growth requires large-scale and long-term investments.

Supporting Community Growth for Poverty Reduction

1. *Pro-poor strategic development framework should be integrated and coordinated in development interventions in order to build the capacities of the poor.* These should focus on rural infrastructure; generating labour demand; technical changes for productivity gains; and, access to stable input, output and financial markets to support such technologies. These factors should enable the poor to benefit from widespread technology adoption in response to labour markets and the need to diversify in the face of risks of falling grain prices. The process encompasses structural change that requires careful targeting of policies, strategic planning and coordination mechanisms to address the different endowments and needs of the poor in rural areas and the differences between the chronically and transient poor.

2. *Pro-poor agricultural development policy for poverty reduction should enhance the capacity and productivity for income generation of small landholding farmers*. Strategic mechanisms should be in place for the small farmers to address their problems and needs so that they can increase productivity and diversification. Intensifying and diversifying agricultural activities to increase income of small farmers has been supported by recent market developments in both strongly and poorly performing villages. This development, however, has been constrained by a lack of know-how, ineffective agricultural extension services and inadequate savings and irrigation systems. At the same time, migration has become an alternative coping strategy for the growing labour force while the agricultural landless and land concentration has risen.
3. *Pro-poor agriculture should address the needs of poor, rural agricultural households, especially existing conflicts over land and water access for small farmers*. Conflicts over CPR access (land and water) for subsistence and commercial agricultural and related activities remain unresolved and have further inhibited agricultural development and employment creation in rural areas. This should be addressed through land distribution and security, agricultural modernisation and diversification and public goods (infrastructure and agricultural extension services) delivery for small farmers. A key priority should speed up land titling processes and social land concession to address inequality in land ownership and target frontier areas that are prone to land and water conflicts or conflict between subsistence and commercial interests.

   Agricultural mechanisms, infrastructure, irrigation, reliable agricultural loans and extension services for small farmers must be set in place to improve land productivity and promote agricultural intensification and diversification to induce investments in modern equipment and systems. With such policy interventions, small farmers gain a better capacity to cope with shocks and exploit opportunities generated by increased market connections.
4. *Bolster crisis response that protection schemes are required for ex-ante and ex-post crisis responses that should establish and build the community capacity of crisis responses as part of poverty reduction strategies.* The government is in the process of establishing a comprehensive social safety net system. Three aspects of this are particularly important: funding sustainability; programme design (targeting and type of schemes, with public work programmes and cash transfers vital); and unified administration. Ex-ante strategies, which seek to enhance income sustainability, are longer in term that can diversify economic base.
5. *Enhance advanced community-based CPR management to secure pro-poor property rights access for fisheries and forestry.* Increasing community ownership of the commons not only formally entitles local villagers to the benefits of CPR access but also formally endows them with the responsibility to ensure resource sustainability. Collective action has been shown to sustain successful CPR management, but is subject to the satisfaction of several conditions. First, it has to be based on a well-defined and context-appropriate property rights regime, with the boundaries under management both clearly laid out and also congruent with the ecosystem and local administrative structures. Second, cost-benefit sharing arrangements must be as equitable as possible, as key factors in the sustainability of participatory resource management are the distribution of dividends and decision-making power. Third, the success of CPR management hinges on the quality of local governance. Reneging on obligations and free-riding and cheating the system can occur, and it is important to devise cost-effective monitoring, enforcement and sanctioning systems. Fourth, capacity building is a prerequisite for the success of participatory schemes, and technical assistance to enhance the capacities of local communities should be provided. Sustainable natural resource use requires a blend of modern and indigenous knowledge of conservation and utilisation. This

should be supported through consultative discussions to avert conflict and through technical assistance to communities.

6. *Continue aggressive implementation of educational strategies and effective pro-poor scholarship schemes***.** Human capital for both transient and chronic poor through higher educational attainment and appropriate life skill levels can be promoted by simultaneously increasing education budgets (a priority sector) and enhancing the quality of spending. Access to primary education, already widespread, can be further improved through targeted spending on education quality. Problematic areas also include low teacher competencies and school retention rates. At the secondary and tertiary levels, low enrolment ratios must be improved, and budgets for secondary education must be increased to make access more affordable. In terms of workforce skills, there is a mismatch between present levels of skills and the requirements of the private sector, which prevents labour movement into more productive sectors. The lack of management skills is an oft-cited reason for the limited number of Cambodians with managerial positions in the garment sector. The private sector has to be encouraged to take up the slack in offering and funding vocational and technical training opportunities.

Pro-Poor Policy Responses to Chronic and Transient Poverty

Two different sets of specific policy responses are needed for the chronic and transient poor, groups which encounter different livelihood problems.

Policies for the chronically poor: The chronically poor have been inactive participants and beneficiaries from the recent growth and developments. They lack financial and productive assets. They have weak human and physical capital, with low education levels and chronic health problems. Most chronically poor are self-employed or daily wage workers within the village, which are opportunities that are mostly insecure and with lower wages. A number of key strategies should be specifically created to improve the capacity of the chronically poor to move out of poverty.

7. *Expand pro-poor scholarships and free health care services to target the chronically poor.* All poor households have benefited from pro-poor health services in recent years through the ID Poor card from the Ministry of Planning. However, only some households have benefited from the universal education policy and the school feeding programme; other households have had to force their children to withdraw from school at an early age to help in earning incomes or foraging for food. This study supports the expansion of the pro-poor scholarship programme and free health care services along with non-farm income generation programmes for parents as paths out of poverty for the chronically poor.
8. *Cash transfer programmes for small business creation and non-farm activities are an effective tool to help the chronically poor.* The strategic design of these kinds of interventions should be linked to the broader market demand and appropriate vocational training and understanding of market chains in order to maximise profits. Special arrangements for cash transfer programmes supported by vocational training and saving schemes or rural credit for small business creation is the best option for this section of the chronically poor, especially for female-headed households without male labour.
9. *Enhance support for development services for both chronically and transient poor.* Single female-headed households often consider alternative income generation activities such as poultry and pig rearing but suffer from lack of knowledge as to how to protect their animals from infectious diseases. This problem is not specific to the chronically and transient poor

but relates to livestock production in both strongly and poorly performing villages. It can be addressed by increasing and strengthening agricultural extension services for the poor.

Policies for the transient poor: Transient poor households have a different set of problems compared with the chronically poor, often relating to their inability to cope with income shocks. They have assets for sale to cope with shocks, but during the recent crises the demand for and price of assets fell and, without formal credit, they became more vulnerable to sliding into poverty. This group of the poor could benefit from formal insurance and social protection schemes. The following strategies are worth considering in helping the transient poor.

10. *Formal protection schemes are needed in response to crises, such as food for work and employment creation programmes to provide work for the unemployed and/or dismissed workers on labour-intensive government projects*.
11. *Build community risk reduction mechanisms such as saving groups.* Saving schemes and rice banks were made available to the poor by NGO-led development initiatives to sustain their consumption in times of need, but these community based efforts have not been strong enough to cope with the magnitude of the impact of income shocks. The transient poor have often had to rely on traditional coping strategies such as loans from moneylenders with high interest rates and sales of farm outputs to merchants/traders who willing to offer them credit in times of need but for lower than normal farm-gate prices. This has further eroded their capacity to recover from income shocks. The traditional buffer of CPR used for coping with food shortages is no longer available; the only alternative has been migration to secure earnings elsewhere. This is possible with households that have a labour surplus but less so for single female-headed transient poor households, which are left with limited options.
12. *Promote linkages between social protection and pro-poor agricultural development.* Agricultural productivity can be supported by well-designed social protection programmes. Productive capacities can be enhanced through the expansion of quality public services for technical transfers to the poor, and such social protection can enhance resilience in the face of threats, limit disinvestment, reduce risk and promote investment by the poor. Crop and livestock insurance schemes through market interventions by the government are important in times of economic crisis, and agriculture should be subject to more social protection, and protection which is sensitive to impacts on production. The experience of the recent economic crises shows that allocations of national insurance funds need to be well-planned and implemented. For the purposes of poverty reduction, however, this study suggests social protection interventions be given priority in the plateau, Tonle Sap and coastal regions, where concentrations of transient poor are highest, particularly since the recent economic crises.

Chapter 1

Introduction

1.1 Background

Cambodia has come a long way since the violence and isolation of its recent past. The 1991 Paris Peace Agreements and the end of civil war and political infighting in 1998 brought about a period of relative stability and peace. A regionally and globally integrated open market economy has replaced the centrally planned economy, and a partial structural transformation has seen the rise of certain key sectors that are driving growth. There has also been considerable progress in restoring the country's physical and human capital, which was decimated by the protracted conflict. As a result of these transformations, Cambodia has experienced a very high rate of growth, with real gross domestic product (GDP) averaging around 8.5 percent per year between 1994 and 2008.

Despite Cambodia's impressive economic performance, strategic location and natural resource endowments, the country is still one of the poorest in Asia. The national poverty rate may have decreased significantly from a level of 45–50 percent in 1993/94, but it remains unacceptably high, at around 30 percent (World Bank 2009b; 2009c). A key explanation for this lies in Cambodia's history and the challenges of the post-conflict economic recovery. A combination of political, economic and social factors has restricted Cambodia from achieving inclusive growth and greater poverty reduction.

The poverty elasticity of growth in Cambodia is far below the average rate for developing countries.[1] This can be explained partly by the nature of the country's output growth, which has precluded a wider distribution of the dividends (Ballard *et al.* 2007; Fitzgerald & So 2007; Jalilian 2008; World Bank 2007a). Different patterns of economic growth have differentiated impacts on poverty. While cross-country studies indicate a lack of bias in the sharing of the benefits of growth on average, individual country studies have shown that experiences can differ greatly. The trickle-down effect of growth can be limited, and poverty can increase even in the midst of economic expansion. Two factors that shape the impact of growth on poverty are the sectoral composition and inter-linkages of growth in a country (Jalilian 2008).

Cambodia has gone through a partial structural shift in the economy, especially after the end of armed conflict in 1999. This transformation has involved the take-off of three industries: garments, tourism and construction. Apart from during the economic crisis in 2009, these sectors have largely driven GDP growth; however, they have had weak links with the rest of the economy. Although they have generated employment, their share in total employment has remained modest. Agriculture, accounting for the bulk of the workforce, could have a much higher impact on poverty, as the majority of the country's poor are concentrated in largely agriculture-based rural areas. Regrettably, the sector has been growing at a very low and unstable rate until recently. Between 2007 and 2009, real agricultural output grew by 5 percent per year on average. It is of interest to study this factor when looking at poverty dynamics, along with the effects of recent food, energy and economic shocks and specific local events such as changing access to common property resources (CPR).

[1] The growth elasticity of poverty for developing country ranges from -1.5 to -5 percent, with an average of -2 percent (Adams 2004; Weiss & Khan 2006)

The food and energy shocks of 2007–8 resulted in unprecedented food and non-food price rises in Cambodia. Notwithstanding production gains from higher commodity prices, these shocks increased the vulnerability of the poor, particularly net food buyers and sellers with little surplus to bring to the market (Jalilian *et al.* 2008; 2010). While developing countries were still battling with the effects of the food crisis, financial turmoil spread across the developed world. By the second half of 2008, the contagion effects of the economic crisis became evident in Cambodia. Agriculture proved resilient but the garment, construction and tourism industries suffered contractions. Food and non-food prices plunged, although most remained above average, benefiting some while hurting others (Jalilian & Reyes 2010; Jalilian *et al.* 2009; 2010). Other important events occurred alongside these developments. The real estate boom proved profitable for a number of Cambodians but, inflated by speculation, the bubble burst in 2008. Between 2007 and 2010, the national poverty headcount may have increased by 1 to 4 percentage points (World Bank 2009b).

The Royal Government of Cambodia (RGC) has placed poverty reduction at the top of its policy agenda. The progress achieved in during the last decade or so suggests some degree of success in poverty reduction, but greater effort is required. Government policy-making and implementation would benefit from studies that help identify which areas to target and the strategies that need to be adapted and pursued more aggressively.

1.2 Design and Objectives of the PDS

The PDS is a follow-up on the MOPS, conducted as part of a World Bank global study in 18 countries between 2004 and 2005. The MOPS in turn built on the findings of a survey conducted by CDRI in 2001 and disseminated in Chan & Acharya (2002). Cambodia, with support from the World Bank Country Office, is the only country that is continuing to improve its panel data for poverty analysis.

The PDS is an important tool for poverty monitoring. As a local and longitudinal study, it can be used to monitor poverty indicators in response to the type of changes in social, economic and political conditions at the community level which cannot be captured by national surveys. These surveys, which capture aggregate poverty trends, include the following: the Socio-Economic Survey of Cambodia (SESC) 1993/4; the Cambodia Socio-Economic Surveys (CSESs) 2004 and 2007; national poverty profiles produced by the National Institute of Statistics (NIS) in 1993, 1997, 2004 and 2007; and the Cambodia Demographic and Health Surveys (CDHSs) 2000 and 2005. The PDS complements the analyses of poverty dynamics and inequality conducted by the World Bank in the 2006 Poverty Assessment, in the 2007 Equity Report and in "Poverty Profile and Trends in Cambodia: Findings from the 2007 CSES" (World Bank 2006; 2007; 2009a). Other studies that it complements include CDRI's Participatory Poverty Assessment (PPA) of the Tonle Sap Region, its Cambodia Land Titling Rural and Urban Baseline Survey Reports and papers such as the perception survey on attitudes towards inequality and governance issues commissioned for the World Bank.

The 2004/5 MOPS tracked movement into and out of poverty, and factors behind this, between 2001 and 2004/5. However, it was not possible to assess whether some households that became better off fell back into poverty, or whether those that became poor remained "stuck" in poverty. It was also not possible to assess whether poverty dynamics observed between 2001 and 2004/5, a period when Cambodia experienced successive years of flooding and drought, were atypical or consistent with longer-term trends. Equally important, the 2004/5 MOPS used only descriptive statistics to analyse community trends and factors that influence changes in household poverty dynamics.

The PDS aims to fill the research gaps in the MOPS. Its key objective is to deepen the qualitative and quantitative analysis and understanding of poverty dynamics in Cambodia between 2001 and 2008 using a longitudinal dataset described further below. By doing so, it seeks to highlight the factors behind pervasive poverty set against the backdrop of high economic growth. Between 2001 and 2008, major developments occurred at both the macro and micro levels. Higher agricultural growth rates in the years up to 2008, food and energy shocks and the global economic downturn were key macro-economic factors; at the micro level, there were improvements as well as shocks and specific local events affecting communal and household levels. This PDS looks at poverty trends with these important developments in mind. In particular, it seeks to address the following research questions:

1. How has the extent of poverty changed? Are there notable variations in the extent of change across the study villages and the four agro-ecological regions?
2. If poverty reduction has occurred, has it been sufficient to lift the study villages and regions out of pervasive poverty?
3. To what extent is poverty chronic and transient, and to what extent are the improvements in welfare sustainable?
4. How do changes in income relate to changes in consumption, asset ownership and therefore poverty? Does income growth necessarily translate into growth in consumption and asset ownership?
5. What are some determinants of chronic and transient poverty? What has underpinned the sustainability or lack of sustainability of welfare improvements?
6. To what extent and in what way has agricultural growth contributed to income growth and/or poverty reduction? To what extent and in what ways have shocks and specific local events contributed to poverty? How have households responded to cope with negative shocks or exploited the positive benefits of shocks and events?

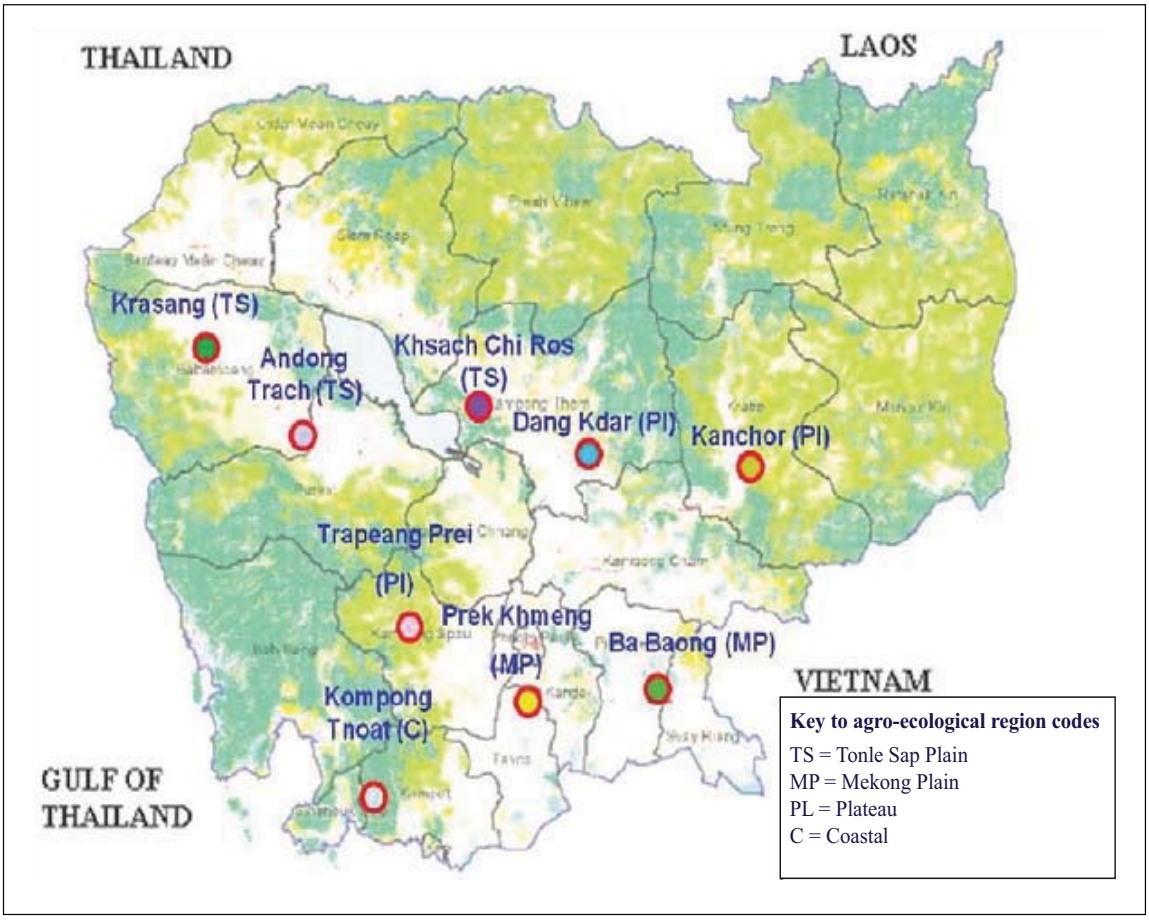
1.3 Survey Sample Design

The sampling frame for the 2008 survey component of the PDS was the 1,005 households residing in nine villages in Cambodia surveyed by CDRI in 2001. These nine villages represent all four of the country's main rural agro-ecological regions: the Mekong plains (Ba Baong and Prek Khmeng villages); the Tonle Sap (Krasang, Andong Trach and Khsach Chi Ros villages); the upland plateaus (Dang Kdar, Kanchor and Trapeang Prei villages); and the coastal region (Kompong Tnoat village) (Figure 1.1). Of the 2001 sample, 827 households were revisited and surveyed. The difference between sample sizes (1,005 in 2001 and 827 in 2008) owed to attrition. Table 1.1 elaborates on the characteristics and sample size of each of the nine study villages.

To capture seasonal variations, the 2008 survey, like the MOPS and the 2001 survey, was conducted in two rounds. The first round was conducted during the agricultural lean season (September) and sought information on consumption, income, demographics and the labour market (e.g. housing conditions and assets, access to and use of credit, land productivity, access to CPR, shocks, migration activities). The second survey round took place during the wet season (March) and sought additional information on household characteristics.

Between 2001 and 2008, there were six survey rounds, generating unique panel data that are highly useful for poverty analysis in Cambodia. It was possible to relocate households from the 2001 sample because of the household identifier data included in the panel dataset. Re-interviewing these households made it possible to determine and measure changes in their living standards and overall well-being between 2001 and 2008. The core household questions used in the MOPS survey were also adopted for the 2008 survey for comparability of data.

Figure 1.1: Location of Study Villages



1.4 Methodology and Definitions

The PDS adopts the mixed research approach, utilising both quantitative and qualitative methods to track relevant trends and characteristics of sample households and study villages between 2001 and 2008. This is a key difference between the PDS and the MOPS, which relied largely on descriptive analysis. The quantitative aspect of the PDS involved the use of more robust statistical methods to analyse poverty dynamics and causes from the core dataset of 827 panel households. Poverty is defined by both money-metric (income and consumption) and alternative (asset ownership) measures, as Chapter 2 describes. Consumption data are used to construct village poverty lines, measure poverty incidences and identify the extent of chronic and transient poverty and strong and poor performers among the study villages. The chronically poor refer to those households that have per capita consumption below the poverty line for all of the three survey years; the transient poor are those whose per capita consumption falls below the poverty line in any one of the three years; and the never poor are those with consumption per capita above the poverty line in all years.

Villages whose poverty rates in 2008 are lower than the overall rural poverty rate (34.7 percent) are categorised as strong performers, whereas those whose poverty rates are higher than the rural poverty rate are poor performers. Asset data were also used to construct poverty lines, calculate poverty rates and detect chronic and transient poverty via principle component analysis (PCA). A key challenge to the construction of poverty lines, using either the consumption or the asset approach, was the absence of price data on food and non-food items in the NIS national Consumer Price Index (CPI) surveys in 2001, 2004/5 and 2008. Therefore, as with the MOPS, the PDS used price surveys, conducted in March and September 2008, to study 106 types of rural consumer goods. Data collected from these surveys were adjusted according to the national inflation rate and used to construct village inflation rates.

The qualitative aspect of the PDS complements the quantitative analysis. Four or five focus group discussions (FGDs) were conducted during the second round of data collection in each village, with commune officials, village leaders (formal leaders and village elders) and members of different poverty mobility groups, both female and male, participating. The FGDs covered social, economic and political dimensions of community development and household welfare. Community timeline discussions sought overviews of specific village events and shocks, such as food price escalations and significant changes in access to economic opportunities, CPR and public services. In addition to the FGDs, three or four individual households were selected from each village for semi-structured interviews (SSIs). The purpose was to form an understanding of experiences relating to income generation and of general well-being. Information from the FGDs and SSIs was used to prepare community synthesis reports for each village, an important component of the PDS.

Table 1.1: Location and Key Characteristics of Study Villages

Village	Commune	District	Province	2001 Land and Food Security Study	2004/5 Moving Out of Poverty Study	2008 Poverty Dynamic Studies
Tonle Sap plains						
Andong Trach	Kompong Preah	Sangke	Battambang	85 out of 196 HHs surveyed (no qualitative research)	• 85 out of 196 HHs surveyed • 1 interview with village leaders • 2 community timeline discussion groups • 5 FGDs (moved in, moved out (x2), young men and women) • 4 SSIs • 46 participants (24 M, 22 F)	• 87 out of 209 HHs surveyed • 5 FGDs (moved up HHs, stagnated poor and destitute HHs, female-headed HHs, commune council, village leaders) • 6 SSIs (out-migration with farm land HHs (x2), out-migration without farm land HH, moved down female-headed HH, moved down male-headed HH, stagnated poor HH) • 36 participants (14 M, 22 F)
Krasang	Tamoeun	Thmor Kul	Battambang	120 out of 228 HHs surveyed (FGDs and interviews)	• 120 out of 234 HHs surveyed • 1 interview with village leaders • 2 community timeline discussion groups • F5 FGDs (moved in, moved out, stable, young men and women) • 4 SSIs • 53 participants (23 M, 30 F)	• 116 out of 244 HHs surveyed • 5 FGDs (moved up HHs, stated poor and destitute HHs, female-headed HHs, commune council, village leaders) • 4 SSIs (out-migration HHs (x2), migrant tailors in Thailand, moved down HH) • 32 participants (16 male, 16 female)
Khsach Chi Ros	Kompong Kor	Kompong Svay	Kompong Thom	120 out of 305 HHs surveyed (no qualitative research)	• 120 out of 339 HHs surveyed • 1 interview with village leaders • 2 community timeline discussion groups • 5 FGDs (moved in, mixed, stable, young men and women) • 4 SSIs • 45 participants (21 M, 24 F)	• 120 out of 466 HHs surveyed • 5 FGDs (moved up HHs, stated poor and destitute HHs, female-headed HHs, commune council, village leaders) • 4 SSIs (livestock HHs (x2), dry rice season HHs (x2)) • 35 participants (22 M, 13 F)
Mekong plains						
Prek Khmeng	Prek Khmeng	Lvea Aem	Kandal	120 out of 339 HHs surveyed (FGDs and interviews)	• 120 out of 343 HHs surveyed • 1 interview with village leaders • 2 community timeline discussion groups • Five FGDs (moved in, moved out, stable young men and women) • 1 SSI • 49 participants	• 120 out of 366 HHs surveyed • 5 FGDs (moved up HHs, stated poor and destitute HHs, female-headed HHs, commune council, village leaders) • 4 SSIs (moved down HH, land sold HH, outstanding loan HH, fishing HH) • 28 participants (7 male, 21 female)
Ba Baong	Ba Baong	Peam Ror	Prey Veng	127 of 536 HHs surveyed (FGDs and interviews)	• 127 out of 543 HHs surveyed • 2 community timeline discussion groups • 5 FGDs (moved in, moved out, stable, young men and women) • 4 SSIs • 65 participants	• 127 out of 546 HHs surveyed • Six FGDs (moved up HHs, moved down HHs, stated poor and destitute HHs, female-headed HHs, commune council, village leaders) • 5 SSIs (livestock HHs, outstanding loan HHs (x2), out-migration HHs (x2)) • 44 participants (15 M, 29 F)

Village	Commune	District	Province	2001 Land and Food Security Study	2004/5 Moving Out of Poverty Study	2008 Poverty Dynamic Studies
Plateau/mountain						
Kanchor	Kanchor	Chlong	Kratie	120 of 278 HHs surveyed (no qualitative research)	• 120 out of 267 HHs surveyed • 1 interview with village leaders • 2 community timeline discussion groups • 4 FGDs (moved in, moved out, young men and women) • 4 SSIs • 53 participants (23 M, 30 F)	• 123 out of 266 HHs surveyed • 5 FGDs (moved up HHs, stated poor and destitute HHs, female-headed HHs, commune council, village leaders) • 4 SSIs (out-migration HH, outstanding loan HH, cleared land HH (x3), fishing HH) • 37 participants (9 M, 28 F)
Dang Kdar	Krayea	Sontuk	Kompong Thom	125 of 306 HHs surveyed (FGDs and interviews)	• 125 out of 420 HHs surveyed • 1 interview with village leaders • 2 community timeline discussion groups • 4 FGDs (moved in, moved out, young men and women) • 4 SSIs • 51 participants (28 M, 23 F)	• 129 out of 497 HHs surveyed • 6 FGDs (moved up HHs, moved down HHs, stated poor and destitute HHs, female-headed HHs, commune council, village leaders) • 5 SSIs (livestock HH, outstanding loan HHs (x2), out-migration HHs (x2)) • 40 participants (15 M, 25 F)
Trapeang Prei	Khsem Khsan	Odongk	Kompong Speu	68 out of 68 HHs (FGDs and interviews)	• 73 out of 75 HHs surveyed • 2 community timeline discussion groups • 5 FGDs (moved in, moved out, stable, young men and women) • 4 SSIs • 74 participants (35 M, 39 F)	• 76 out of 85 HHs surveyed • 5 FGDs (moved up HHs, state poor and destitute HHs, female-headed HHs, commune council, village leaders) • Four SSIs (out-migration HH, in-migration HH, outstanding loan HH, moved up HH) • 33 participants (10 male, 23 female)
Coastal						
Kompong Tnoat	Koun Sat	Kampot	Kampot	120 of 348 HHs (FGDs and interviews)	• 120 out of 363 HHs surveyed • 1 interview with village leaders • 2 community timeline discussion groups • 4 FGDs (moved in, moved out, young men and women) • 1 SSI • 41 participants (23 M, 18 F)	• 123 out of 460 HHs surveyed • 6 FGDs (moved up HHs, moved down HHs, stated poor and destitute HHs, female-headed HHs, commune council, village leaders) • 4 SSIs (fishing HH, outstanding loan HHs (x2), vegetable farming HH) • 42 participants (13 M, 29 F)
Total (all villages)				1,005 out of 2,602 HHs surveyed	• 1,010 out of 2,780 HHs surveyed • 477 participants in qualitative interviews and FGDs	• 1,021 out of 3,139 HHs surveyed • 327 participants (121 male, 206 female) in FGDs and SSIs

1.5 Limitations of the PDS Dataset

Although the PDS panel dataset provides a solid basis for long-term longitudinal analysis of community trends and poverty dynamics in Cambodia, it has certain limitations. The representativeness of the PDS findings may be in question, given the purposive selection of the sample households. Data comparability is also compromised by the problem of attrition. A more serious issue, however, is that some inconsistencies in terms of data gathering and composition have been introduced over time into the dataset in order to address the specific objectives of the different studies. These cannot easily be remedied. When the 2001 and 2004/5 studies were being undertaken, there was no intention of conducting a longitudinal study. As a result, in each round of the study, there were some changes in data collection and survey questionnaires, in particular regarding quantitative analysis of the data. Results generated in this way should be treated with caution.

Mixed-method studies typically throw up questions and contradictions in the data collected using each method, and the PDS is no exception. Information gathered from household surveys inevitably contradicts or conflicts with data collected in FGDs on occasion, while information from consumption and income sections may be inconsistent with that identified through recall-based exercises in the survey. One of the strengths of the mixed-method approach is that different perspectives and data are captured, cross-checked and weighed against each other for validity, generating insights into the complexity of and relations between community trends, household mobility and poverty dynamics.

In conclusion, despite limitations, the longitudinal dataset is an important tool, and the PDS in general is a highly valuable and unique exercise. The results of the research can help Cambodian policy-makers to better understand and target the poor by examining the causes of poverty, given national and local development trends.

The rest of the report is structured as follows. Chapter 2 provides an overview of Cambodia's growth and poverty profiles, poverty determinants and poverty reduction policies. Chapter 3 analyses the dynamics of poverty at the micro level in the nine villages covered in the survey, using qualitative and quantitative techniques such as surveys, FGDs and SSIs. Chapters 4 and 5 cover an important addition to the PDS in relation to the MOPS: detailed quantitative analyses of poverty, both chronic and transient, using panel data and applying appropriate statistical techniques. Chapter 4 concerns the consumption approach to poverty assessment, Chapter 5 the asset approach. To reiterate, given the discussed limitations of the study, the results should be treated with some caution. Finally, Chapter 6 summarises and concludes the report.

Chapter 2

Poverty in Cambodia: Profile, Causes and Policies

2.1 Introduction

Poverty is a complex, multidimensional phenomenon. It is a product of an intricate web of problems that operate at various levels and may be context-based. Its determinants are particularly traceable at the country, sectoral and micro (communal, household and individual) levels (Haughton & Khandker 2009). Although money-metric measures such as income and consumption (Chapters 3 and 4) continue to be necessary indicators of poverty, it is now widely acknowledged that they are not the singular definition of the term. Poverty can be seen as capability deprivation (Sen 1993; 1999; 2000), and concepts such as human development and asset-based welfare (Chapters 3 and 5) suggest that poverty refers to the lack of the material and non-material prerequisites for the realisation of human capabilities. For the purposes of policy-making, however, the concept of poverty has to be determined and its major causes understood and used to prioritise needs. As a low-income country, Cambodia confronts a myriad of pressing problems. Only with needs prioritisation can strategies to reduce poverty hold meaning (World Bank 2009b).

Poverty often persists in countries which have experienced protracted periods of internal conflict. A host of challenges exist in such countries (USAID 2009); these challenges, such as low levels of physical and human capital, a narrow economic base and poor governance, represent the chief causes of high poverty in Cambodia. As Chapter 1 mentioned political stability, economic restructuring and reintegration into global markets allowed for stronger economic growth and a degree of poverty reduction. However, underperformance of agriculture and structural constraints to labour allocation to more productive industries have sustained poverty in rural areas, with poor asset ownership, limited access to public goods and finance and low levels of education and nutrition having strong effects. Shocks and specific local events are also important causes of poverty, with recent crises demonstrating this strong linkage, which later chapters detail.

Inasmuch as poverty has no single set of causes, poverty reduction policies must be multi-pronged. Policy prioritisation must be undertaken to maximise effectiveness of government action within the limits defined by available resources. Policies can be categorised into three: those that foster opportunity; those that facilitate empowerment; and those that address income insecurity (Haughton & Khandker 2009). These policy priorities are reflected in past and present government development blueprints, and government ownership of these plans has strengthened over the years. The success of their implementation is evidenced by fast economic growth, and while this has led to poverty reduction, the relatively fast pace of growth in relation to slower poverty reduction suggests a disconnect between planning and implementation.

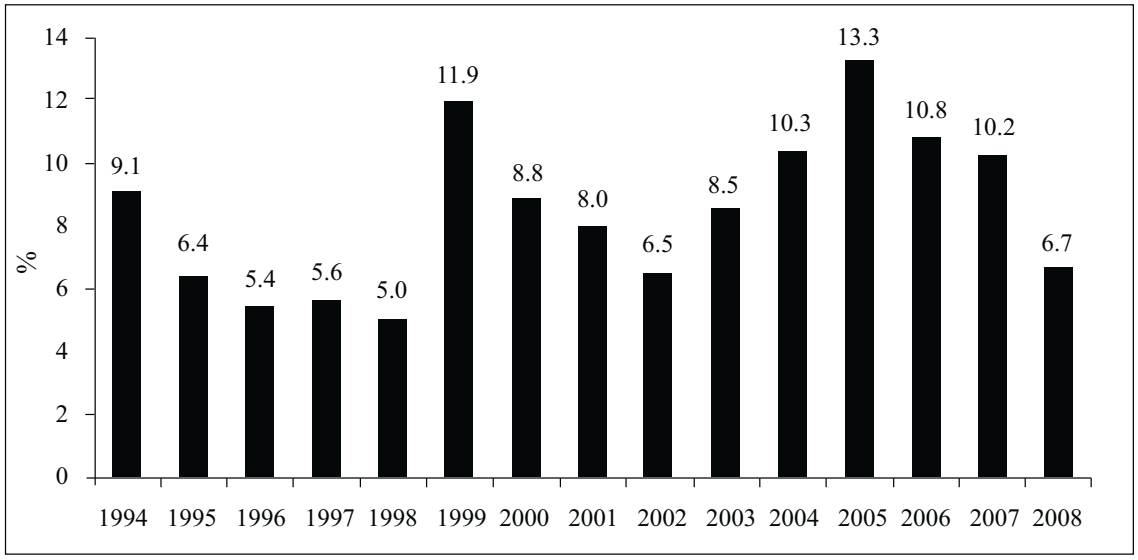
This chapter provides more detailed overviews of the determinants of poverty in Cambodia and government policies in this area, with the objective of providing a backdrop to the household poverty dynamics other chapters describe.

2.2 Growth and Poverty Profile

2.2.1 Growth

Cambodia has seen its economy become one of the fastest-growing in the world. Macro-economic performance between 1994 and 1998 was affected by internal conflict and the Asian financial crisis, and was modest, with real GDP growth averaging around 6.3 percent per year. Far stronger macro-economic progress started in 1999, after the collapse of the Khmer Rouge and the consolidation of peace and social order across the country. Real GDP growth averaged around 9 percent per year from 1999 to 2003 and was above 10 percent for four consecutive years from 2004 to 2007 (Figure 2.1). Growth was driven by an open economy and stable macro-economic environment, increased exports and foreign direct investment (FDI) and a low inflation rate of about 5 percent prior to the steep hike in food prices in 2007–8. However, growth stemmed from a narrow economic base of four sectors: garments, tourism, construction and agriculture. The global financial and economic crisis of 2007–9, which caused record declines in trade and investment, resulted in significant contractions in Cambodia's garment, tourism and construction sectors, slowing real output growth to around 6.7 percent in 2008 and around 0.1 percent in 2009, according to government estimates. Output recovery is expected in 2010, with growth estimated at 5.0 percent (MEF 2010).

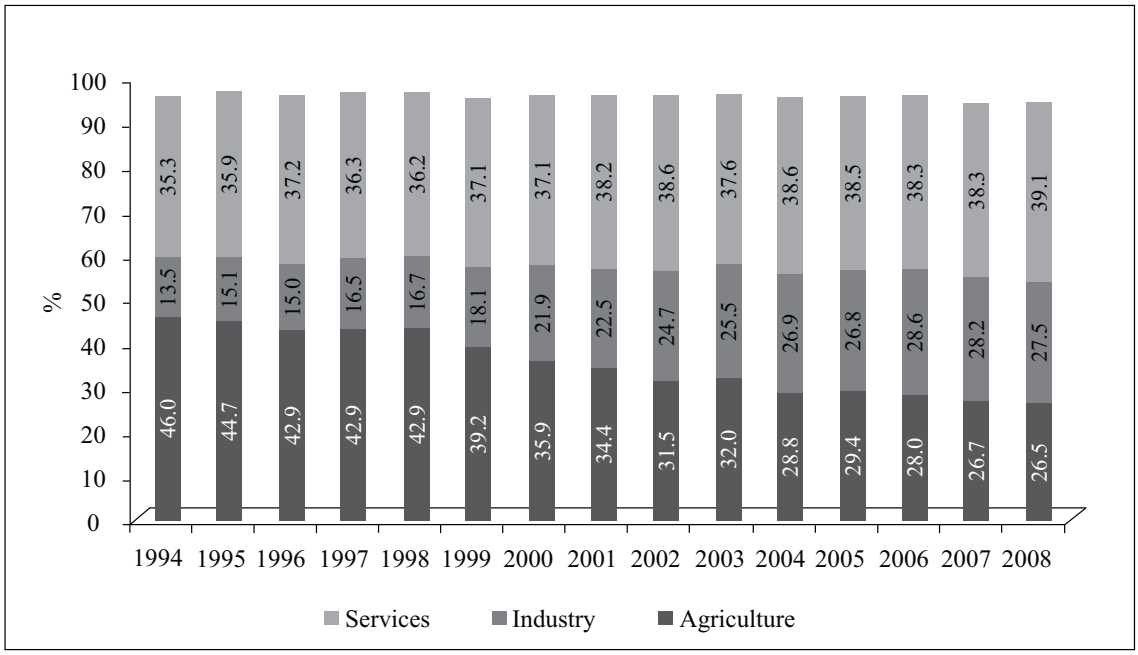
Figure 2.1: Real GDP Growth, 1995–2008 (constant 2000 prices) (%)



Source: NIS (2008), World Bank (2010b)

Cambodia's economy has been transformed rapidly in the last decade, with agricultural output lagging behind that of services and industry (Figure 2.2). Between 1998 and 2008, industry was the fastest-growing sector, averaging 14.4 percent annually and contributing 3.5 percent to GDP growth per year (Figure 2.3). Garments and construction have been the main drivers of industry, except in the crisis year of 2009, when they slumped, causing industrial growth to shrink. Industrial expansion translated into employment growth, creating approximately 100,000 new jobs a year between 1998 and 2007. Unfortunately, labour productivity in this sector has grown only slightly.

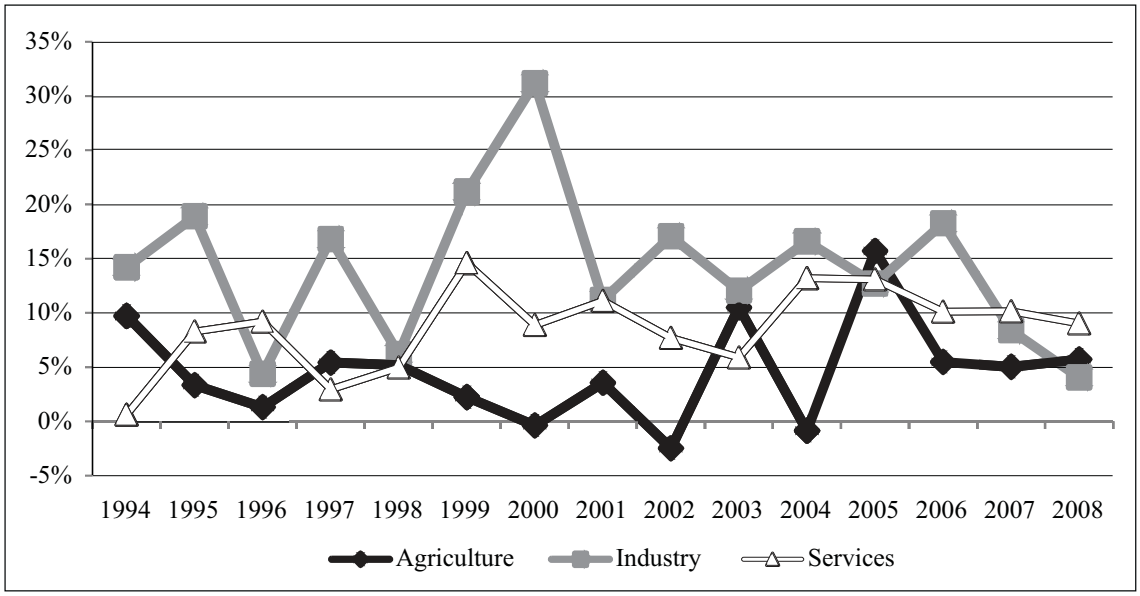
Figure 2.2: Sectoral Shares in Real GDP, 1995–2008 (constant 2000 prices) (%)



Source: NIS (2008)

The services sector made a steadily increasing contribution to Cambodia's economy between 1995 and 2008, accounting for around 40 percent of annual real GDP (see also Figure 2.2). Sectoral growth of 4.4 percent a year from 1998 to 2008 led to the creation of around 100,000 jobs annually, and labour productivity grew by approximately 6 percent per year (Hang 2009; NIS 2008; World Bank 2009b). As in the industry sector, however, services contracted in 2009, mainly because of the decrease in tourism.

Figure 2.3: Sectoral Growth, 1998–2009 (constant 2000 prices) (%)



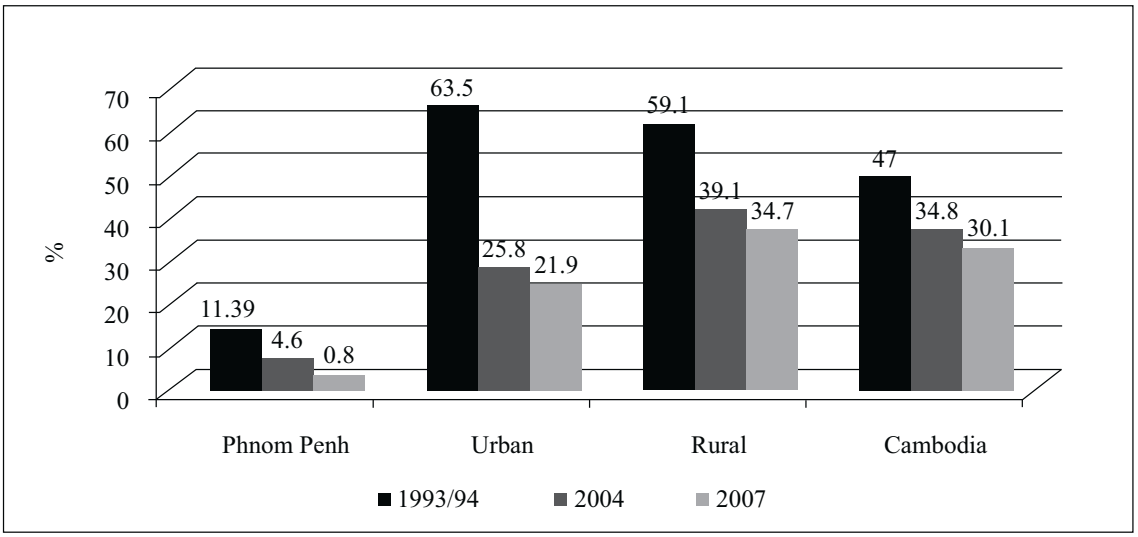
Source: NIS (2008), MAFF (2010)

Although agriculture's share of GDP has been decreasing and its growth has been unstable, the sector remains crucial to Cambodia's economy, accounting for around 27 percent of real GDP in 2008 (see also Figure 2.2). In average terms, it grew by around 4.5 percent (Figure 2.3) and contributed about 2 percent of GDP growth per annum between 1998 and 2008 (Guimbert 2010). The sector employed approximately 60 percent of the total workforce, and labour productivity rose by 2 percent from 1998 to 2007 (World Bank 2009b). Unlike the other growth sectors, it was also able to withstand the effects of the economic crisis. It grew by 5 percent in 2009, helping pick up the slack in the economy. Growth in agriculture has been driven by land, labour and productivity gains. Agricultural crops contributed an average of 1.1 percent to annual real GDP growth from 1998 to 2007, with rice accounting for over 50 percent of crop growth. Rubber and cassava are newly emerging cash crops, and their production has grown markedly, with the expansion of planted areas and better productivity. Market demand, especially from the main export markets of Thailand, Vietnam and China, was hurt by the crisis but proved to be resilient, demonstrating the increasing importance of these crops to Cambodia's economy.

2.2.2 Poverty

Economic growth has transformed the country profoundly, enabling it to make advancements in poverty reduction. The experiences of other developing countries prove that sustained economic growth of around 7 percent per year, with agricultural growth of around 5–6 percent per year, can impact on rural poverty significantly. Although Cambodia's pre-crisis GDP growth was very strong, volatile agricultural growth limited its impact on poverty eradication. Results of the SESC 1993/4 and the CSES 2004 show that the national poverty headcount decreased by 10–15 percent between 1993/94 and 2004, an average of 1 to 1.5 percent per year (Figure 2.4).

Figure 2.4: Poverty Rates, 1993/4–2007 (%)



Source: World Bank (2006; 2009a)

A CDRI study of rural villages found that the poverty headcount declined by only 1 percent over four years between 2001 and 2004 (Fitzgerald & So 2007). This suggests that the rural poor hardly benefited from economic growth up to 2004. The study found that the majority of its sample poor households lived in the Tonle Sap and plateau regions, were far from a main road and were highly dependent on CPR and crop farming. "Chronically poor"

and "falling back to poverty" welfare groups earned low incomes from agriculture and CPR, and marginal incomes from selling labour; the "moved out of poverty" or "remained in the middle" groups increased their income from agriculture, self-employment and wage labour (Fitzgerald & So 2007; World Bank 2006). Women's wages are still significantly lower than those of men in both agriculture and industry, and gender disparities in employment remain extensive, limiting livelihood opportunities for women (MoWA 2009). This suggests women and female-headed households with more dependants are more likely to be trapped in poverty. People living in the capital and urban areas can benefit more easily from economic growth, as they have better access to education and health services and better infrastructure and more employment opportunities.

In contrast, the remarkably high economic growth of around 10 percent between 2005 and 2008, including average agriculture growth of 7.5 percent per year, saw the poverty headcount decline at a rate of 1.6 percent per year, from 35 percent in 2004 to 30.1 percent in 2007. Welfare indicators, such as quality of houses and key household assets, also showed a significant improvement over the period (World Bank 2009a). In terms of health indicators, mortality rates of children under five fell by one third, access to and use of public health services increased, costs of average medical treatment fell by around 25 percent and HIV/AIDS prevalence declined from 1.2 percent in 2003 to 0.7 percent in 2008. Education indicators showed school enrolment increasing by 27 percent for primary school, 16 percent for lower-secondary school and 11 percent for upper-secondary school (NIS 2006; MoEYS 2005; MoH 2008; Rushdy 2009; World Bank 2009b).

The rate of poverty reduction, given the rate of economic growth between 2005 and 2008, was in line with international averages during this period. However, inequality increased rapidly and at a worrying rate compared with international trends (World Bank 2009a). Poverty has remained unacceptably high at 30 percent in 2007, possibly higher in 2010 (World Bank, 2009a & World Bank, 2009c). Although improvements in education and health have been positive, the two sectors could not reach the objectives set in their strategic plans. Maternal mortality has not improved since 2000, remaining unacceptably high at 472 deaths per 100,000 live births. Because of low utilisation of key health care services, the number of deliveries at public health facilities remains low, at 22 percent, with worse figures in remote areas. Quality of services and professionalism of health workers remain unimproved, and amenities such as equipment, medicines and beds are far below the required standards and cannot cope with demand. Enrolment in lower-secondary and upper-secondary schools remains very low, especially in rural areas, with high repetition rates in all grades and very low teaching standards. Economic considerations are clearly a factor in school enrolment, retention and performance, and enrolment in higher levels of education for both genders is limited mainly to high-income groups (MoEYS 2005; MoH 2008; MoWA 2009).

2.3 Poverty Determinants

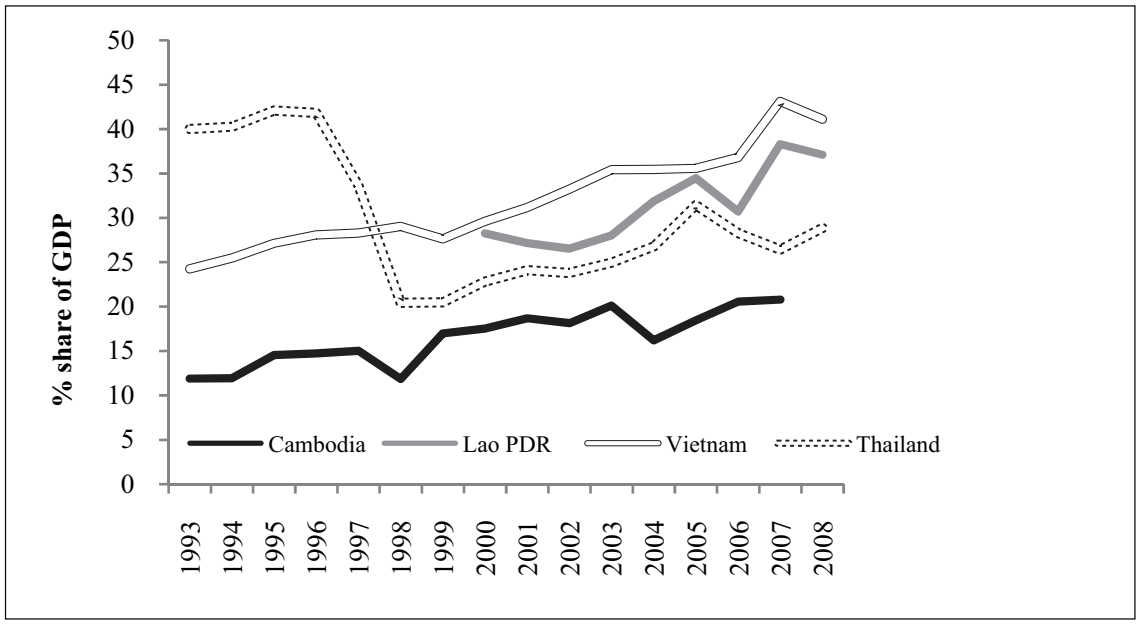
2.3.1 Country-Level Determinants

To fully understand pervasive poverty in the context of Cambodia, it is essential to consider the country's history of conflict. Almost three decades of civil strife from the 1970s through to the end of the 1990s had devastating consequences for Cambodia's infrastructure, human and social capital and state institutions. Priority spending was on defence and security, to the detriment of agricultural and rural development, and there occurred widespread human incapacitation and displacement (World Bank 1999; 2006). Cambodia emerged from this dark

period in its history as one of the world's poorest countries, with real GDP per capita in 1993 of only around USD200 (World Bank WDI online), a Human Development Index score of 0.325 (UNDP 1996) and poverty rates of 45–50 percent.

Two key challenges confronting Cambodia are direct legacies of the country's devastating history. These are the relatively low levels of physical capital, particularly infrastructure, and human capital. Many studies have demonstrated the direct and indirect positive links between infrastructure and poverty reduction (Fan 2004; Klitgaard 2004; Ogun 2010). As a percentage of GDP, gross capital formation in Cambodia is low compared with that of its neighbours in the Greater Mekong Sub-Region (GMS), at about 21 percent in 2008 (Figure 2.5). Capital intensity in the country's leading manufacturing sector, garments, was found to be much lower relative to other garment exporters (World Bank & IFC 2009); agricultural mechanisation and the proportion of paved roads have also remained low compared with other Asian developing countries (World Bank 2009b).

Figure 2.5: Gross Capital Formation, 1993–2008 (% share of GDP)

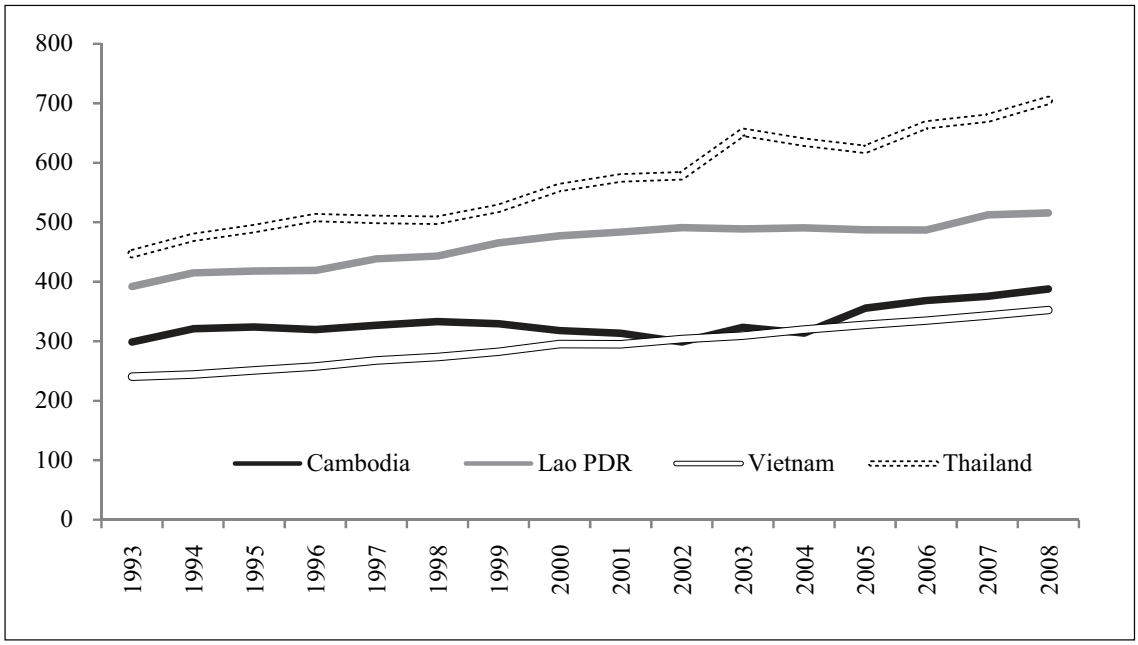


Source: World Bank WDI Online

The human capital theory and empirical findings have shown that investments in human capital, in particular in education, impact on poverty by increasing a worker's cognitive and non-cognitive skills and productivity, enhancing their chances of finding employment in the formal and informal sectors.[2] Cambodia's human capital stocks were virtually decimated during the brutal Khmer Rouge regime, and the effects persist to this day. Advancements in educational attainment show that progress has been achieved, but this has come from a very low base. Moreover, education indicators such as secondary enrolment ratios are considerably lower than in comparable countries (World Bank 2009b). Lower human capital is reflected in lower labour productivity, particularly in agriculture, with value-added per worker of USD389 in Cambodia, USD516 in Lao PDR and USD704 in Thailand. Sector-wide labour productivity is lower than in selected comparable countries (World Bank & IFC 2009).

[2] For the human capital theory, see Becker (1964) and Schultz (1961). For relevant empirical studies, see Filmer (2007), Joliffe (2004), Knight *et al.* (2008) and Patrinos (2004).

Figure 2.6: Agriculture Value Added per Worker, 1993–2008 (constant 2000 USD)



Source: World Bank WDI Online

A large body of evidence from both cross-country analyses and case studies has shown the connections between good governance,[3] economic growth and poverty reduction (Grindle 2005). Good governance encompasses better institutional efficiency; decentralised decision-making; encouraging participation by citizens, focusing on their needs and solutions to problems; curbing corruption which negatively impacts revenue generation and public spending; and enforcing the rule of law which guarantees the security of the rights of everyone. These efforts have direct beneficial effects on poverty reduction. Cambodia scores poorly on measures of governance, with scores on indicators of governance by Kaufmann *et al.* (2009) showing little change or even worsening between 1996 and 2008, apart from in relation to political stability.[4] Transparency International's Corruption Perception Index also shows little change in governance in Cambodia since it was first calculated in 2005.[5] Decentralisation and de-concentration (D&D),[6] national public administrative reform and public financial management reforms have progressed at a modest pace. D&D reforms have resulted in commune elections, but power has yet to be transferred fully to sub-national levels. A weak legal framework and judiciary and complex public service delivery have made Cambodia's trade environment less attractive to private sector investment and have acted as a disincentive to business entrepreneurs, resulting in low job creation which has mostly affected the rural poor (RGC 2008; 2010; World Bank 2009b).

Shocks have further aggravated the state of poverty. The food shocks and associated price hikes of recent years and global financial and economic turmoil have affected Cambodia. With the exception of agriculture, the country's growth pillars have suffered, resulting in the laying-off of thousands of workers and contraction in internal and international remittances.

[3] Different indicators of governance are used. They refer to all or any of the indicators in Kaufmann *et al.* (2009).

[4] See Kauffman *et al.* (2009) for the corresponding margins of error.

[5] www.transparency.org/policy_research/surveys_indices/cpi/2009

[6] The Strategic Framework for Decentralisation & De-Concentration Reforms, adopted in June 2005.

The poverty headcount, as a result, is estimated to have increased (CDRI 2009a; Jalilian & Reyes 2010; Jalilian *et al.* 2009; World Bank 2010a).

2.3.2 Some Sector-Level Determinants

GDP growth does not necessarily lead to poverty reduction: it is the sectoral composition of GDP growth that determines its effect. Cambodia has a very narrow economic base, which is also poorly diversified in terms of products and market destinations. On average, around half of the country's annual real output growth between 1998 and 2007 was accounted for by the four growth drivers: garments, construction, tourism and agriculture. The garment sector, which was growing at double-digit rates before the economic crisis, has been manufacturing mostly cut-make-trim garments and exporting them to the US. Primarily FDI-financed private construction activities have been concentrated in urban areas. Tourism has revolved mainly around cultural tourism related to Angkor Wat. The linkages between these principal industries and the rest of the economy have been weak.

As asserted earlier, agriculture plays a key role in poverty reduction in developing countries. A vast body of evidence exists related to the impact of agricultural growth on poverty, given the concentration of poverty in largely agriculture-based rural areas.[7] Low and volatile growth in agriculture in Cambodia can be attributed to poor land ownership, poor access to credit, lack of irrigation and rural infrastructure, poor marketing information, lack of access to technology and agricultural extension services and poor quality inputs such as fertiliser (MAFF 2010; World Bank 2009b; World Bank Institute 2008). Exploitation of natural resources such as forests and fisheries has been unsustainable, although some progress in this area has been made. A very large amount of potentially productive land, owned by a small group of powerful landowners, lies idle and constrains growth in agriculture. Moreover, only 3 percent of Cambodia's national budget has been allocated to agriculture over the past decade (World Bank 2009b), meaning technical research and technology inputs for much-needed diversification and improvements in production and productivity have been largely inadequate, harming the development of the sector. A regression analysis of agricultural crops in Cambodia shows the potential for improving rice production if investment in fertilisers, seeds and irrigation is increased (Yu & Fan 2009). The findings also suggest the government needs to design an effective investment strategy that loosens the constraints outlined above to speed up agricultural production and productivity and boost farmers' incomes.

2.3.3 Some Micro-Level Determinants

Asset-based welfare has emerged as a popular alternative definition of well-being. The proponents of this alternative measure argue that, while income is what households and individuals need to pay for their basic daily needs, assets are what they need to "move ahead" (Shapiro et al. 2009).[8] Although these studies are limited, they have also demonstrated that financial inclusion helps achieve development outcomes, including poverty alleviation (World Bank 2001; 2006). Microfinance services by the reputable Bangladeshi microfinance institution (MFI), Grameen Bank, were found to have had small but significant impacts on household spending and asset ownership (Pitt & Khandker 1998). Poor households and individuals have few internal resources at their disposal, and their restricted access to affordable financing further prevents them from investing in improving their capabilities. Poverty reduction policies will

[7] See, for instance Cervantes-Godoy & Dewbre (2010), DFID (2004), Pinstrup-Andersen & Pandya-Lorch (1995) and Timmer (2005) for an account of this evidence.

[8] For a pioneering article on asset poverty, see Oliver & Shapiro (1990). See also Paxton (2002).

also fall short of reaching their objective if the institutional systems and procedures by which they are administered are flawed and inefficient.

Unsurprisingly, therefore, there is a direct link not only in the reach but also in the quality of public service delivery on the one hand and poverty reduction at the micro level on the other. Quality of public service delivery is associated with quality of governance, and D&D reforms are important in enhancing the availability of appropriate public services. Education and health improvements are essential in ensuring that poor households are not trapped in vicious cycles of poverty, and the centrality of these services to poverty reduction is evidenced in the many studies demonstrating that they help improve wages, productivity and labour force participation. Health and education are also prominent in the four Millennium Development Goals (MDGs) that relate to achieving universal education, improving child health, improving maternal health and combating HIV/AIDS, respectively. The fact that education and health outcomes complement each suggests that the overall impact of the two is greater than the sum of their individual effects (Morrisson 2002).

Asset ownership, access to finance and quality public services and education and health levels remain low among poor Cambodian households. Improvements across all these areas have been witnessed as Cambodia's economy has grown, but from a very low base. CSES results (World Bank 2009a) show that very few of the poorest and next poorest households own major consumer durables.[9] They also show that access to all-weather roads, health centres and primary schools among poorest and next poorest households worsened between 2004 and 2007. Net lower-secondary enrolment ratios (for ages 12–14) were a mere 13 and 20 percent, respectively, for the poor and next poor in 2007. Only 15 and 21 percent of poor and next poorest households, respectively, had access to electricity and piped water in the same year. Cambodia's financial sector, particularly the banking and microfinance industries, may have flourished in recent years in terms of numbers and their deposit base, but access to finance by low-income groups remains low, despite some improvements. The latest poverty profile shows that around 70 percent of poor and next poorest households were able to secure loans in 2007; however, the loan amounts they were able to obtain were significantly lower than those given to richer households. Agriculture also comprises a small share of the total bank loan portfolio (World Bank 2009b). There has also been the problem of affordability. Unable to meet collateral requirements, and without the trust of the formal financial sector, many poor Cambodians still turn to informal creditors, who charge greater interest.

2.4 Government Poverty Reduction Policies

The government has recognised poverty reduction as integral to social reconciliation and maintaining political stability. In its first mandate, it declared poverty alleviation its single most important long-term goal, and made it the central thrust of the *first five-year Socio-Economic Development Plan* (SEDP I 1996–00). The primary objectives of SEDP I were to: 1) strengthen macro-economic management to attain high economic growth (with an aim of doubling GDP from 1994 levels by 2004, focusing on agriculture, industry and tourism; 2) improve rural livelihoods through sustainable agricultural and rural development; 3) enhance governance; 4) foster investment in human resources, physical infrastructure, health and education; and 5) promote land reform and environmental protection. However, implementation of projects and programmes that prioritised poverty reduction and human resources development was unsatisfactory, owing to constraints in government expenditure. Support from multilateral

[9] Some widely owned major consumer durables among the poorest households are bicycles (82 percent), TVs (43 percent) and radios (29 percent) (World Bank 2009a).

and bilateral development organisations was necessary to implement most poverty alleviation projects.

The *Triangular Strategy*, adopted in 1998, was the policy platform of the government's second mandate. This was based on reforms in governance and anchored on three interrelated pillars: 1) strengthening stability, peace, security and public order; 2) integration of Cambodia into the regional and international community; and 3) socio-economic development and poverty reduction. The *second SEDP* (SEDP II 2001–5), adopted in 2002, set the government's development objectives by integrating the Triangular Strategy and the *Interim Poverty Reduction Strategy* 2000. It identified four broad goals: 1) private sector-led sustainable long-term economic growth of 6–7 percent a year; 2) equitable distribution of income and access to social and cultural development services; 3) sustainable natural resource use and environmental protection; and 4) reform of government administration. The *National Poverty Reduction Strategy* (NPRS) 2003–5 and the *Cambodia Millennium Development Goals* (CMDGs), which outline Cambodia's medium-term strategy to raise per capita income and halve poverty by 2015, were prepared in 2002 and 2003, respectively. The Health Strategic Plan 2003–7 was adopted in 2002, highlighting reductions in infant and maternal mortality rates as a key priority (they had risen in the years before this plan was enacted).

The *Rectangular Strategy for Growth, Employment, Equity and Efficiency* was the policy platform for the government's third mandate. This was built on the implementation of the Triangular Strategy. Key elements were selected from the CMDGs, SEDP II and the NPRS 2003–5 through broad consultation with national and international stakeholders. The following priority goals were selected: 1) institution of a favourable macro-economic and financial environment; 2) preservation of peace, political stability and social order; 3) regional and global integration of Cambodia; 4) building partnerships in development; 5) enhancement of agriculture; 6) private sector development and employment generation; 7) capacity building and human resource development; and 8) further infrastructure development and rehabilitation. When SEDP II ended in December 2005, the *National Strategic Development Plan* (NSDP) 2006–10 was developed. This was done by elaborating on the Rectangular Strategy to create a single, overarching document containing the government's priority goals and strategies to reduce poverty and achieve the CMDGs and other socio-economic development goals for the benefit of all Cambodians (RGC 2005).

The *Education Strategic Plan* 2006–10 was also issued in 2005. This reflects lessons learnt from preceding educational reforms and strategy documents which failed to reach their targets. Strengthening as opposed to abandoning the previous broad policy priorities was deemed prudent. These policies were the guarantee of equitable access to education, enhancement in the quality and efficiency of educational services and institutional development and capacity building for decentralisation. Equally important, the Strategic Framework for Decentralisation and De-Concentration Reforms was completed in 2005, envisioning a unified administration by empowered sub-national authorities. This framework was aimed primarily at providing further details for the reform to be implemented at the sub-national level, beginning with the enactment of relevant laws and sub-national elections and with a greater role in planning, budgeting and public service delivery for sub-national authorities.

The *Health Strategic Plan* 2008–15 was adopted in 2008. As with the Education Strategic Plan, this blueprint acknowledged the strengths and weaknesses of preceding health plans and built on strong political commitment to improving health services in the country by allocating more finances to the health sector over the years. Efforts focused on improvements in the areas

of service delivery, financing, human resources, information systems and governance. The *Rectangular Strategy Phase II* was also launched in 2008, in the government's fourth mandate, continuing the policy platform of the Rectangular Strategy, as it was deemed necessary to: 1) strengthen and expand the achievements of the Rectangular Strategy; 2) address the challenges encountered in its implementation; and 3) achieve the CMDGs. The previous plan was also fine-tuned in the *NSDP Update* 2009–13, to deal with the effects of the global economic crisis. It was also necessary to adopt a refined methodology identifying the "who" (implementing agency), "what" (specific responsibilities) and "how much" (cost of the initiatives) of policy implementation. Another recent policy achievement is the *National Programme for Sub-National Democratic Development* 2011–20. With the law on sub-national administration in place, and elections of sub-national authorities finished, this programme was adopted as a long-term anchor for the government's D&D reforms, with empowering sub-national authorities as the next step following elections. This programme outlines the processes by which national functions will be delegated to sub-national authorities and their management and fiscal roles.

2.5 Policy Reflections

An average growth rate of 7–8 percent per year is an ideal target to support poverty reduction objectives in the medium term; however, it is far from being a sufficient condition to realise poverty-related targets, as witnessed by the lack of correlation between economic growth and poverty reduction over the past decade in Cambodia. Poverty is a multi-dimensional phenomenon and it follows that policies must be multi-pronged, addressing poverty determinants at the macro and micro levels. Some priority actions that may help channel benefits of economic growth towards the poor are outlined below.

- *Employment creation.* Employment generation is a priority because around 250,000 jobs are required each year for new labour market entrants (Hang 2009). To secure jobs, Cambodia needs to: broaden its economic base by diversifying export products; exploit new export markets by integrating further into East Asia and the GMS; invest in light manufacturing (e.g. rice milling and storage) in rural areas to generate non-farm jobs for rural households; plan urbanisation to help in creating productive employment for surplus rural migrant labour; bolster the trade environment by enforcing legal reforms; and simplify public service delivery to increase incentives for private sector investment and create jobs for the poor (Hang 2009; World Bank 2009b).
- *Agricultural intensification and diversification.* Even though it showed healthy and resilient growth under the pressure of recent external shocks, agriculture is still performing far below its potential. High sustainable growth could be enhanced by: addressing the constraints mentioned in Chapter 2.2; planning and expanding production in new areas; expanding irrigated land to reduce the risks of drought; improving post-harvest technologies; orienting production towards export market demands; and improving coordination between the public and private sectors by improving the trade environment (RGC 2009; World Bank 2009b).
- *Infrastructure development.* Roads, irrigation and electricity are critically important for promoting rural economic growth and poverty alleviation. Not only do they help in increasing and diversifying agricultural productivity, but also they promote rural enterprise, creating jobs and incomes for rural populations (Hang 2009; World Bank 2009b). The high cost of electricity and lack of road infrastructure are obvious obstacles to the rapid expansion of a vibrant private investment sector. Although general transportation infrastructure, apart from railways, has markedly improved over the past 15 years, it is still largely inadequate

for facilitating economic growth. The national highway system is almost complete, and the upgrading of secondary roads will be complete by the end of 2011. These plans must be followed through on. Improved efforts need to be made in coordinating existing irrigation systems, and irrigated areas need to be expanded to speed up agricultural growth.

- *Land and natural resource management*. Cambodia has abundant land, but management and security are problematic. Land-grabbing must be halted and land registration processes sped up. Improvements to land titling, enforcement of regulations, respect of property rights of the poor and legalising ownership transactions would promote land productivity and investment. CDRI studies (CDRI 2007; 2009b; Fitzgerald & So 2007) show that, in the case of many crops, small landholders are more productive. Since forestry reform in 2000 and fisheries reform in 2002, poor households have been able to access these resources to improve their livelihoods, benefiting from specific areas for protection and conservation, sustainable exploitation practices and community forestry and fishery management, a point the next chapter discusses further. Therefore, improving land use and natural resource management by providing social land concessions to rural landless households and smallholders would have a significant impact on poverty reduction and rural economic growth. Finally, enforcing the legal framework and strengthening networks of forestry and fisheries communities would both improve protection and management of Cambodia's natural resources and ensure access to and use of these resources by the poor to attain sustainable livelihoods (MAFF 2006; World Bank 2009b).
- *Effective pro-poor programmes***.** If expenditure is allocated to priority sectors such as agriculture, trade or private sector development, the majority of returns help to reduce the vulnerability of the poor. International experience shows that well-designed social development programmes in education, health services and infrastructure, for example, support growth and help prevent people from falling into poverty. These measures are cost-effective, as it is cheaper to stop people from falling into poverty than it is to lift them out of it afterwards (World Bank 2009b).

Chapter 3

Poverty Dynamics and Socio-economic Trends: Community Perspectives

3.1 Introduction

This chapter focuses on community trends in income, consumption and asset ownership as indicators of welfare, using mixed methods to combine analyses of the survey data and results of the FGDs and SSIs. Annex 2 details relevant characteristics of the sample households and villages and of FGD and SSI participants. Analysis began with a look at major community developments. Descriptive statistical methods were then used to study the relationship between such events and poverty indicators between 2001 and 2008, and the FGD and SSI results were assessed for the same purpose.

The analysis examined improved investment in physical and human capital and social infrastructure; micro-credit development; governance; and economic, political and social stability. Analysis focused in particular on changes between 2004/5 and 2008. The findings from the qualitative data analysis were then cross-checked with the panel data and existing poverty studies to explain the relationship between community socio-economic trends, household poverty dynamics and well-being improvement over the reference years. Evidence from the FGDs and individual case study interviews were used to triangulate community development trends to gain insights into who benefits most from these factors of community growth and development.

The findings are presented in six chapters. They demonstrate that income growth may have been a necessary but certainly not a sufficient condition for poverty reduction. While average real per capita income rose significantly for almost all the study villages, consumption did not. Some villages benefited from increased consumption and reduced poverty but poverty in other villages increased. Income growth, however, appeared to be strongly and positively related with asset ownership.

The study villages were grouped into six strongly and three poorly performing villages, based on their ability to exploit social, economic and political developments to boost their income and consumption between 2005 and 2008. Main developments in this area were: 1) agricultural growth for strongly performing villages; 2) enhanced access to CPR for subsistence and commercial purposes in the natural resource development villages; 3) food price escalations in 2007 and deflation by mid-2008 for all villages; and 4) the real estate boom between 2005 and July 2008, which benefited villages connected to urban development. These developments had direct and indirect positive impacts on household welfare in the study villages. However, some gains tended to be unsustainable, for reasons such as illegality of CPR access and landlessness caused by real estate transactions.

The sample rural households also seem to have enjoyed benefits from infrastructure development and increased availability of microcredit. However, this improvement was not enough to raise the capacity of rural households in poorly performing villages to cope with social and economic shocks, or to keep their consumption above the village poverty line. Consumption and poverty reduction also proved unstable in villages where most households depend heavily on the cultivation of wet season rice, wage labour and access to CPR. There were increasing efforts to grow more cash crops and raise livestock in addition to rice production,

but a lack of know-how and inadequate agricultural extension services undermine progress. These findings highlight the need to speed up infrastructure development, diversify agriculture and provide adequate extension services.

3.2 Village Classification: Poverty Reduction, Consumption and Income

Poverty declined in many study villages between 2004/5 and 2008, a period that saw sustainable increases in average real per capita income and consumption

In 2008, around 29 percent of the 827 panel households were still poor (Table 3.1). Although poverty declined by 1.7 percent per year between 2001 and 2008, rapid growth of real daily per capita income averaged 179 percent, or 26 percent per year; consumption grew more slowly, at 23 percent or 3 percent per year, which tends to suggest that the rate of poverty reduction, income and consumption growth is not uniform.

The substantial increases in per capita income, however, come from a very low base, from an average KHR1,233 (about USD0.31) per person per day in 2001 to KHR3,437 (USD0.81) in 2008. Similar trends are observed for increases in per capita consumption, starting from KHR1,886 (USD0.47) per person per day to KHR2,321 (USD0.58) over the 2001 to 2008 period. This study suggests that poverty reduction is to some extent linked to growth of per capita consumption.

The study villages are grouped into strongly and poorly performing village by poverty rates and sustainable changes in poverty rates

Strongly performing villages are classified as having a proportion of poor households below the national poverty rate in rural areas (34.7 percent) but with substantial achievements in poverty reduction between 2001 and 2008. Poorly performing villages have a higher proportion of poor households or experienced increased poverty between 2004/5 and 2008. Six villages—Krasang, Prek Khmeng, Kompong Tnoat, Ba Baong, Trapeang Prei and Dang Kdar—are strongly performing villages, where around 8–27 percent of households were poor but had a higher per capita consumption in 2008. Some villages in this group reduced poverty between 2001 and 2008, with Trapeang Prei showing a 66.7 percent reduction and Dang Kdar a 38.3 percent reduction. Poverty in some strongly performing villages sharply increased in the first period of the survey between 2001 and 2004/5 but declined rapidly in the second period between 2004/5 and 2008.

Experiences of the poorly performing villages differ. The poverty headcount in Khsach Chi Ros (75 percent), Andong Trach (59 percent) and Kanchor (47 percent) are above the national poverty rate in rural areas. Most poorly performing villages had a lower average per capita consumption in 2008 and experienced an increase in poverty between 2004/5 and 2008. Continuing conflict between rice growers and fishing lot owners and gambling addiction were cited as causes of domestic violence, livelihood impoverishment and increase in poverty in those villages (Annex 1).

Table 3.1: Poverty Reduction, Daily per Capita Income and Consumption (Adult Equivalent) by Strongly and Poorly Performing Villages, 2001–8

	Poverty headcount in 2008 (%)	Poverty reduction (%)			Mean per capita consumption in 2008 (KHR)	Change in mean per capita consumption (%)			Mean per capita income in 2008 (KHR)	Change in mean per capita income (%)		
		2001–8	2001–4/5	2004/5–8		2001–8	2001–4/5	2004/5–8		2001–8	2001–4/5	2004/5–8
Stong performance												
Krasang	8	-9.3	-8.1	-1.2	2434	12	-1	13	3207	101	110	-4
Prek Khmeng	8	-5.5	0.0	-5.5	3112	25	-2	28	5891	242	65	107
Kompong Thnoat	11	-0.9	25.7	-26.6	2685	4	-16	24	3164	111	42	49
Ba Baong	16	-9.1	-0.9	-8.2	2215	27	7	18	4726	198	100	49
Trapeang Prei	27	-66.7	-45.1	-21.6	2066	101	61	25	3961	417	156	102
Dang Kdar	**23**	**-38.3**	**6.5**	**-44.9**	**2562**	73	1	71	2764	248	92	81
Poor performance												
Khsach Chi Ros	75	11.5	10.3	1.1	1496	-10	-12	2	1767	105	41	45
Andong Trach	59	-13.1	-19.7	6.6	1608	13	20	-6	2700	151	79	40
Kanchor	47	-3.8	-11.3	7.5	2114	24	12	11	2241	162	127	16
All villages	**29**	**-12.3**	**-1.3**	**-11.0**	**2321**	**23**	**1**	**22**	**3437**	**179**	**84**	**52**

The PDS confirms findings from CDRI and other studies (Fitzgerald & So 2007; World Bank 2007a) which show that, while income growth is important, it is not the only factor needed to improve per capita consumption. Rural villages that experience high income growth, improved consumption and rapid poverty reduction often have connections with urban growth and can increase agricultural productivity and income diversity from recent market developments. Annex 1 summarises the factors that directly or indirectly affect growth and poverty reduction in each study village. However, inclusive growth is needed to address the difficult situation of the chronic and transient poor.

> *The chronically poor are mostly landless, with many young children who cannot help earn money. They experience frequent shocks including sickness or lack of regular occupation or income and cannot see a way out. Some of them have small amounts of farm land. After harvesting, they sell the yield to repay loans taken out to treat illnesses and buy food and therefore their income is offset against their spending and they have nothing left. One family's living standards went down because the husband died leaving the family poor and in debt. The husband could help earn money before, but when he became seriously ill they had to borrow to pay for his treatment. Some poor families sent their children to work outside the village, but the children were often cheated by their employers and the families had to borrow money to bring their children home.* FGD in Andong Trach. Similar issues were reported by FGD participants in other villages

The relationship between change in per capita consumption and income growth is not uniform, and owes largely to specific local conditions and the base of initial growth. For example, Khsach Chi Ros achieved remarkable sustainable per capita income growth, rising from KHR865 to KHR1,767 per person per day (remaining the lowest per capita income among study villages), but experienced a considerable decline in daily per capita consumption of 10 percentage points in 2001–8.

Ability to increase income leads to improvements in well-being

While sustainable poverty reduction occurred in strongly performing villages, poverty in weakly performing villages increased in the second half of the survey period. This study shows that villages with low poverty rates experienced slower poverty reduction when they reached certain levels of poverty than poorly performing villages that started in extreme poverty. However, poverty reduction is only one development and growth achievement, and a positive change in consumption can be used as a proxy for change in income. Growth in income is considered a precondition for livelihood or well-being improvements in poor rural communities and, with only small changes to income, many people remain trapped in poverty (Ballard *et al.* 2007; Fitzgerald & So 2007; World Bank 2007a&b).

The study villages benefited from rapid income growth and improvements in well-being between 2005 and 2008, giving them more durable assets and improved housing conditions and allowing their children to spend more time in school. This was affirmed by well-being ranking groups in all villages.

> *Around 80 percent of the 466 households in this village were able to improve their well-being between 2004/5 and 2008, 18 percent saw their well-being decrease and 2 percent saw no change in their well-being. Those households showing improvements have more income from various sources including higher yields from dry season rice farming, cash crop growing, animal rearing or running small businesses. This group of households have more grown-up children. Those experiencing a decline in well-being*

have experienced frequent sickness or have many small children to take care of and their incomes have not risen. However, more and more people in this village use their savings to buy TV/cassette players and batteries for lighting. Many households here are now able to renovate their houses, buy generators and better equip their boats, hand tractors or threshing machines. Wealth-ranking exercise by village leaders in Khsach Chi Ros

It is important to note that Khsach Chi Ros is among the three natural resource development villages (along with Dang Kdar and Kanchor) predicted to be worse-off in terms of poverty and well-being, since employment other than forestry access was limited in 2004/5. This situation changed dramatically between 2004/5 and 2008.

3.3 Trends in per Capita Consumption Based on Adult Equivalent Consumption

Rates of change in average per capita consumption were affected strongly by increase in prices of 106 food and non-food items in the study villages. In 2001, there was no baseline price survey of food and non-food items consumed by rural households. Because the national CIP collected only prices of commodities consumed by residents of Phnom Penh and not rural households, a price survey was conducted in the nine study villages in 2004/5 and again in 2008 as part of a follow-up survey in the PDS study areas. This information was used to construct deflators in formulating a village poverty line and to calculate real per capita consumption and income based on adult equivalents from 827 panel households. Between 2001 and 2004/5, per capita consumption rose uniformly by about 15 percent and continued to rise sharply, by 93 percent, to 2008. Rates of change of village prices varied considerably across the nine study villages between 2004/5 and 2008; the lowest rate (73 percent) was in Kompong Tnoat and the highest (116 percent) was in Kanchor (Sections 3.4 and 3.5 provide more detail).

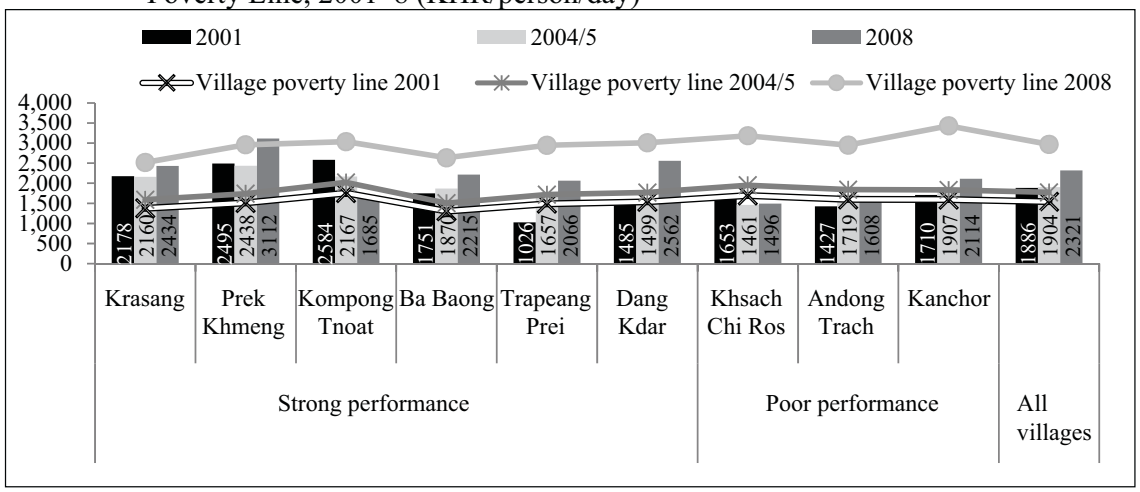
Average per capita adult equivalent consumption rose in most study villages but was unsustainable in some villages between 2001 and 2008

At aggregate level, real daily per capita consumption rose by 23 percent between 2001 and 2008. The rise in consumption showed a similar pattern to income growth between 2004/5 and 2008, indicating an improvement in living standards in most study villages. However, this rise in consumption started from a very low base of KHR1,886 in 2001, rising to KHR2,321 per person per day in 2008 (Figure 3.1). Between 2004/5 and 2008, consumption rose 23 percent compared with virtually stagnant consumption at 1 percent between 2001 and 2004/5. This did not occur in Andong Trach, where average per capita consumption dropped by 6 percent between 2004/5 and 2008, reflecting the variations in income growth and shifts in poverty at the village level. Poorly performing villages experienced a remarkable increase in income of around 40–5 percent but a levelling-off of or slower growth in consumption, while poverty in those villages increased during the same period.

Consumption is more likely to increase more quickly in strongly performing villages than in poorly performing ones (see also Table 3.1), ranging from 13 percent in Krasang (from KHR2,160 to KHR2,434) to 71 percent in Dang Kdar (from KHR1,499 to KHR2,562). However, the positive trend in average real per capita consumption is unsustainable for many villages. Only four (Ba Baong, Trapeang Prei, Dang Kdar and Kanchor) were able to sustain average per capita consumption growth in both the first and second halves of the survey. The rest experienced unsustainable consumption trends. Moreover, despite the strong rise in daily per capita consumption in most villages between 2004/5 and 2008, only Prek Khmeng sustained a consumption surplus (average per capita consumption above the village poverty line). Mixed

but locally specific reasons given during FGDs for the change in consumption, particularly over the past four years, included the success of dry season cultivation in Ba Baong, using money from land sales in Trapeang Prei and selling labour or increasing forestry access for selling labour and harvesting timber in Dang Kdar and Khsach Chi Ros. These improvements were used for food and non-food consumption in the study villages.

Figure 3.1: Real Daily per Capita Consumption Based on Adult Equivalent and Village Poverty Line, 2001–8 (KHR/person/day)



The level of consumption in most villages remained below the village poverty line, as Figure 3.1 also shows. This is because, to keep consistency of panel data, items consumed by rural households which were not captured in the 2004/5 survey were not used in the analysis. This affected the result of average per capita consumption and was highlighted during discussion of this report.

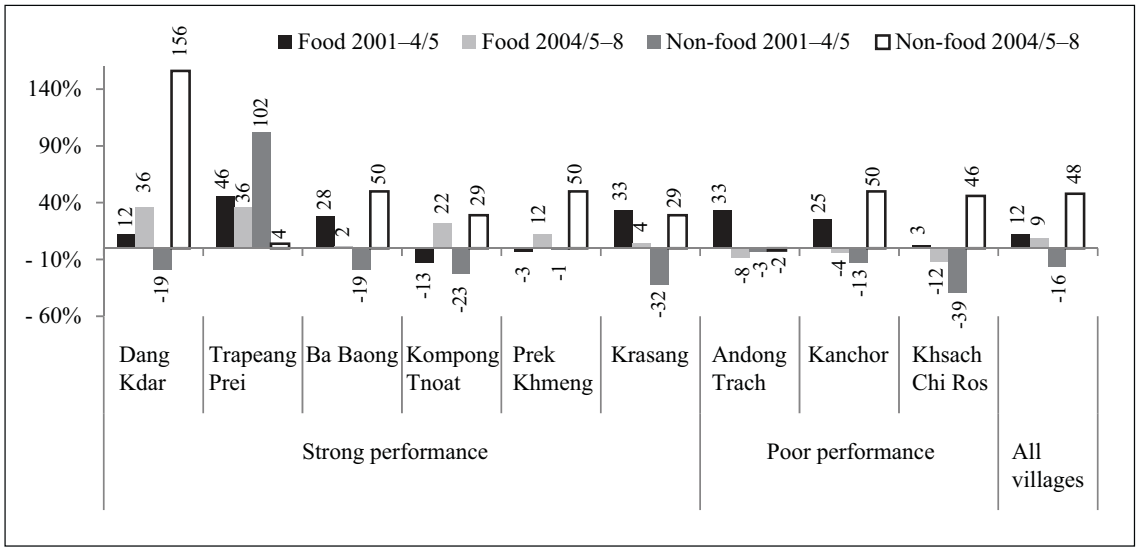
Experiences of the nine study villages vary greatly in terms of sustaining food and non-food consumption and depend on their starting base in 2001

Figure 3.2 shows a mixed pattern of change in the percentage of average real per capita food and non-food consumption during the first and second parts of the survey. Consumption was highly vulnerable to a wide range of household, community and national shocks, which often pushed households to reduce consumption, towards food insecurity or even into poverty, within a short period of time (CDRI 2010; Chan 2008; Fitzgerald & So 2007; World Bank 2006). Between 2001 and 2004/5, most study villages were hit by a number of shocks, including floods and drought and stringent government control over access to CPR. Shocks resulted in reduced non-food consumption in most villages, from 1 percent in Prek Khmeng to 39 percent in Khsach Chi Ros between 2001 and 2004/5. Descriptive analysis of 827 panel households also reveals that some villages reduced food consumption between 2001 and 2004/5, such as by 3 percent in Prek Khmeng and 13 percent in Kompong Tnoat. The shocks also impacted on food security and poverty, as summarised below:

> *Around 74 percent of panel households in 2001, 56 percent in 2004/5 and 38 percent in 2008 experienced some form of shock. Average monetary loss per affected household totalled around KHR587,200 (just over 58 percent of household income) in 2001, KHR511,000 (24 percent of household income) in 2004/5 and KHR810,000 (16 percent of household income) in 2008. Villages heavily reliant on wet season rice cultivation and access to*

CPR for livelihoods suffered the most hardship. Shocks depleted the assets of the better-off and immediately resulted in reduced consumption and increased migration and child labour among medium and poor households. Impacts of the crises are not confined to the immediate costs of health treatment or loss of income from a single harvest. A single year of crop failure can result in two or three years of hardship. Better-off households have greater capacity to recover from shocks, but the limited savings and assets of the poor means they take longer to recover owing to extended periods of unemployment and reduced consumption, often resulting in ill-health and child labour. With declining access to natural resources as a safety net, shocks often cause hardship, food insecurity and impoverishment, and prevent movement out of poverty.

Figure 3.2: Change in Real Daily per Capita Food and Non-food Consumption, Adult Equivalent, 2001–8 (% Change in KHR/person/day)



Qualitative data from the FGDs reveal that differential factors and specific local events such as more rain or changes in government control over CPR helped increase income and improve food and non-food consumption between 2004/5 and 2008. Better rainfall was mentioned by FGD participants in 2008 in Trapeang Prei, Andong Trach, Krasang, Ba Baong and Kompong Tnoat. Some of these villages, such as Krasang, Ba Baong and Khsach Chi Ros, have irrigation systems for rice cultivation, either from manmade channels or from existing water streams. In villages such as Trapeang Prei, Andong Trach, Kompong Tnoat, Dang Kdar and Kanchor, farmers rely heavily on rainfall for wet season rice growing, and from the mid-1990s have often faced irregular rainfall, which has affected their crops. In the years before the 2008 survey, farmers in those villages reported good rainfall and increased yields of wet season rice, which improved food security. Natural resource-dependent villages such as Prek Khmeng, Dang Kdar, Kanchor, Kompong Tnoat and Khsach Chi Ros gained from both better rainfall and increased access to forestry or fisheries resources owing to changes relating to the control of illegal use of forestry or fisheries in the years before the national election in July 2008.

However, people in the study villages are aware that changes of this nature are not predictable or sustainable, and more and more adults and youth decided to join the migration movement, utilising the household labour surplus and diversifying employment to improve food security and livelihoods. FGD participants also mentioned concerns about high food prices and exposure to lightning strikes and other shocks such as ill-health. Strongly performing villages

tended to have more robust capacity to cope with shocks and could sustain food and non-food consumption between 2004/5 and 2008.

Average real per capita food consumption declined considerably in poorly performing villages, by 12 percent in Khsach Chi Ros (from KHR1,104 to KHR973), by 8 percent in Andong Trach (from 1,237 to 1,138 Riel) and by 4 percent in Kanchor (from 1,380 to 1,323 Riel). This resulted from high agricultural commodity prices and increasing food prices. Consequently, many net food buyers in both strongly and poorly performing villages, especially households with no farmland or land of 0.5 ha or less, could not afford to sustain their food expenditure with their income or savings in 2008. FGD participants in study villages confirmed this.

> *The price of rice rose along with the oil price increase, starting in mid-2006 until now. It is now double the rice price in 2005. Only a few large landholding farmers produce surplus rice and have benefited from this. Many villagers here are small landholders with just 1 ha or less. They produce insufficient rice and also suffer from high food prices. Around 40 percent of households here who are non-rice producers suffer even more from high food and non-food prices. We don't know the severity of their situation with regard to food shortages. We have observed that many households often decide to reduce food consumption and their household members become frail and often fall sick. Middlemen and rice speculators have benefited greatly from the high rice price in our village.* FGD with village leaders in Khsach Chi Ros

Average daily per capita non-food consumption increased substantially in most study villages, except Andong Trach, where it declined 2 percent, suggesting overall livelihood improvements. The increase ranged from 29 percent in Kompong Tnoat (from KHR700 to KHR902), to 156 percent in Dang Kdar (from KHR436 to KHR1,116), between 2004/5 and 2008. Different reasons were cited for this rapid increase in non-food consumption. Road construction, observed in all villages, provided better access to markets and increased the flow of consumer goods, in particular helping to connect the remote, forest-dependent villages of Dang Kdar and Kanchor. Road construction also linked the fishing villages of Prek Khmeng and Khsach Chi Ros to urban markets and facilitated the flow of consumer goods to the villages in the years before the survey was completed in October 2008 (Annex 1).

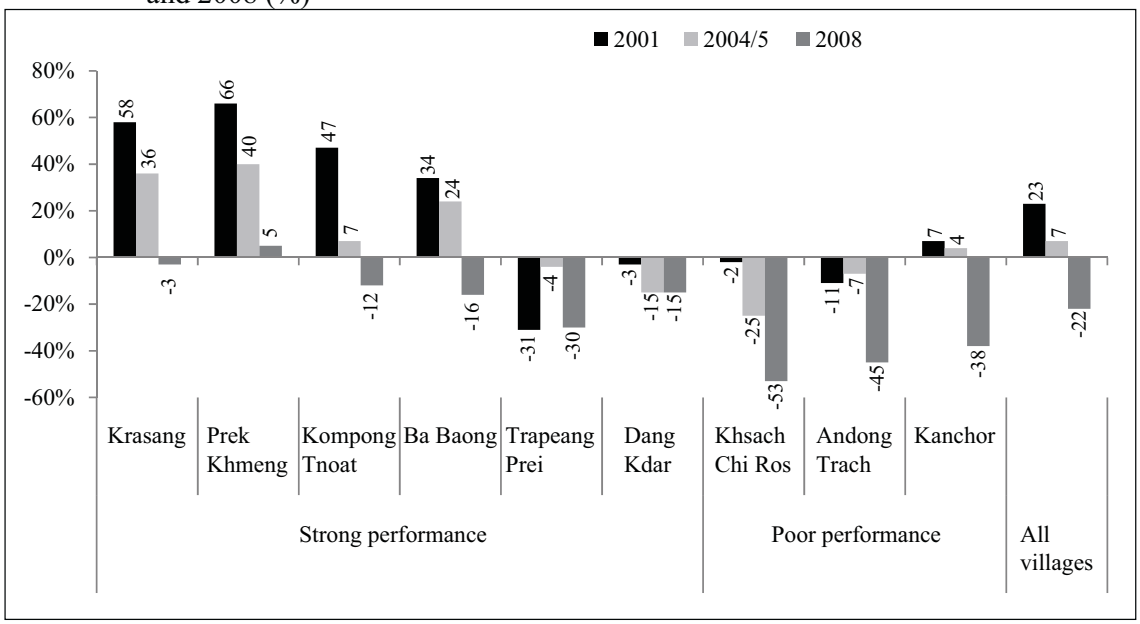
Most study villages experienced consumption deficits compared with the 2008 village poverty line

Although average per capita consumption rose significantly, it was not enough to meet the poverty line in most villages. This suggests a lack of improvement in the quality of food and non-food consumption between 2001 and 2008, which has not kept pace with the increase in price of commodities consumed by rural people. These results point to a larger decline in real per capita consumption below the village poverty line for most study villages. Only Prek Khmeng had a consumption surplus of around 5 percent in 2008, but this represented a sharp drop from 66 percent in 2001 and 40 percent in 2004/5 in relation to the village poverty line in the respective year.

Figure 3.3 shows the difference in percentage between average real per capita consumption and village poverty lines in 2001, 2004/5 and 2008. In 2001 and 2004/5, the majority of strongly performing villages, such as Krasang, Prek Khmeng, Kompong Tnoat and Ba Baong, had surplus consumption. However, this was affected by high food prices in 2008. The consumption deficit (the shortfall in average per capita consumption from the village poverty line) became larger for most study villages that year, with villages experiencing a strong

increase in per capita income when food prices were high (see CDRI 2009b). As mentioned above, Prek Khmeng had a surplus of 5 percent, but this had fallen substantially. Consumption deficits tended to increase sharply in many poorly performing villages, such as Khsach Chi Ros and Andong Trach.

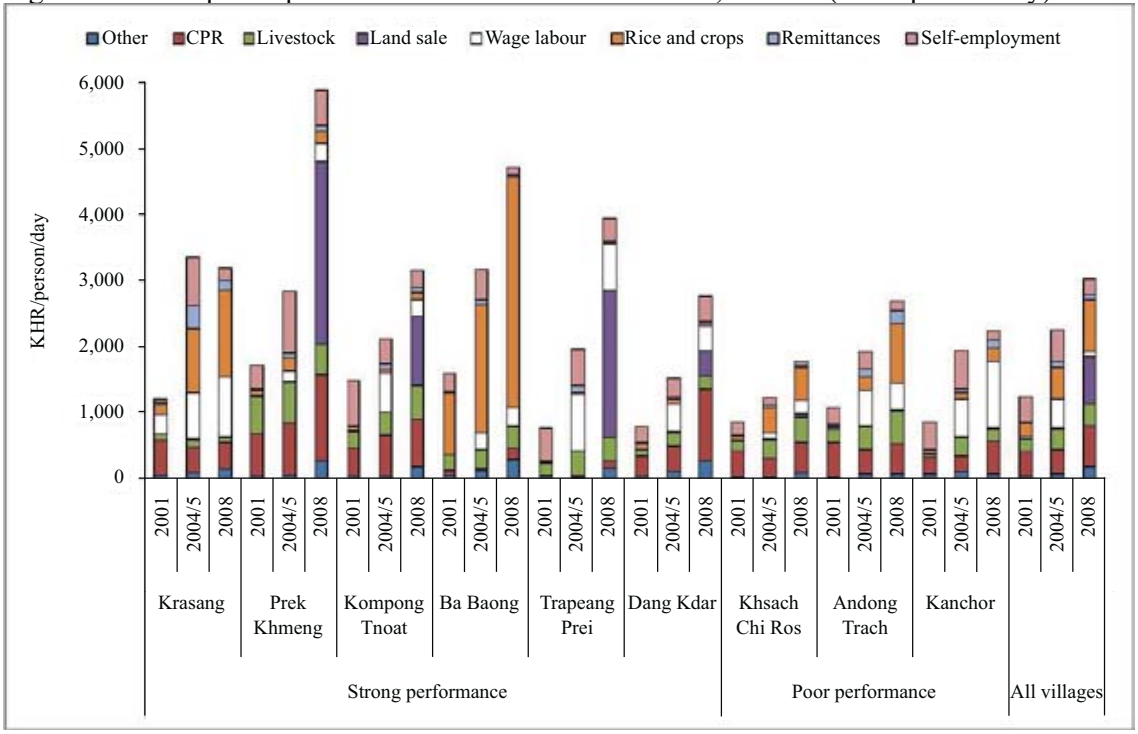
Figure 3.3: Gaps between Average per Capita Consumption and Village Poverty Line, 2001 and 2008 (%)



3.4 Source of Income and Poverty Reduction

Figure 3.4 presents the real per capita income from panel households' different income sources in each study village between 2001 and 2008. It suggests that strongly performing villages with relatively low poverty incidence or significant poverty reduction experienced increasing per capita income from agriculture (43 percent of total income in Krasang, rising from 32 percent in 2005 and only 15 percent in 2001; 81 percent of total income in Ba Baong in 2008, from around 70 percent in both 2004/5 and 2001); land transactions (47 percent of total income in Prek Khmeng, 56 percent in Trapeang Prei and 33 percent in Kompong Tnoat in 2008); and increased fisheries and forestry CPR access, mainly in the years preceding the national election in July 2008 (40 percent in Dang Kdar in 2008) (Annex 2). Income in villages heavily dependent on wet season rice, CPR access and wage labour tended to be more unstable. Moreover, income was more likely to fall in poorly performing villages with relatively high poverty incidence in 2008, or the number of poor households increased in these villages between 2004/5 and 2008.

Figure 3.4: Real per Capita Income from Different Sources, 2001–8 (KHR/person/day)



Successful agriculture villages have experienced big reductions in poverty or low poverty incidence

Agricultural growth is critical to poverty reduction. Krasang and Ba Baong villages experienced a sharp and sustained increase in agricultural income between 2001 and 2008. Farmers in these two villages were able to double or triple their yields of wet and dry season rice in 2004/5 and 2008 compared with 2001. Combined with increases in income from wage labour in Krasang and increased returns from fishing in Ba Baong, only 8 percent of panel households in Krasang and 16 percent in Ba Baong were classed as poor in 2008. Adoption of modern farming techniques, particularly of high-yielding rice variety IR66 and chemical fertilisers, was behind the large increases in rice yields. Many farmers increased their incomes owing to better rice prices and could produce a surplus for sale.

Other factors behind the success included the development of irrigation systems providing reliable water for farming, increasing availability of micro-credit (Annex 3) and construction of rural roads that assisted transportation of agricultural inputs and improved market connections. FGD participants noted that prices of rice and other agricultural produce almost doubled in 2008 compared with 2004/5, encouraging farmers to change from subsistence to modern methods of farming. Intensification and diversification of agricultural production by growing cash crops such as peanuts, green beans and corn and by raising livestock was observed in Ba Baong, Krasang, Khsach Chi Ros and Kompong Tnoat, helping improve incomes. Box 1 describes other stories and successes in agricultural development which have improved well-being and reduced poverty.

Box 1: Impact of Agricultural Development and Diversification on Livelihoods and Poverty Reduction

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 their average yield of traditional floating rice since 2004/5. Mr Sang Math, a Khsach Chi Ros farmer, said that growing dry season rice helped his household move out of poverty.

> *I am now 51 years old, with only one year of schooling, and my wife (Ms Ty Chea) is 43 and has no education. We have seven surviving children after three of our children died. We have 6 ha of dry season rice field, not all cultivated. In the past 10 years, we have cultivated only 0.5 has of floating rice for our own consumption. We were poor when we grew floating rice, and relied on fishing and collecting honey. Our living got better when our children were grown up and could help us with farming. We expanded our farm land from year to year. Last season, my family cultivated 3 ha of dry season rice, which produced 20 tonnes of paddy rice. We sold 18 tonnes for KHR16,200,000 in May 2008. This was a good profit for us, since we spent only KHR1,377,000 in total on gasoline, fertiliser, harvesting, pesticides, seeds, hiring labour and threshing. This year, after buying one hand tractor and pumping machine, we used our savings to cultivate up to 5 ha of dry season rice. We expected to harvest 5–6 tonnes of paddy rice per hectare. Unlike before, we have no problem selling our paddy because more and more traders come to buy from us at better prices. At last year's harvest, the paddy price was KHR900,000–1,100,000 (USD225–USD275) per tonne, an increase from KHR600,000–700,000 (USD150–USD175) per tonne in 2005. We learned how to grow dry season rice from our neighbour who is from Takeo province, not from any non-governmental organisation (NGO) or government training programme.*

Similar cases were mentioned in the forest-dependent villages of Dang Kdar and Khanchor. Massive conversion of flooded land has occurred since 2005, in particular before the national election in 2008. At the same time, conflicts over water between local farmers, fishing lot owners and newcomers who have built a large irrigation dam have not been settled. Most converted land has been used to grow high-yielding rice variety IR66. As a result, Khsach Chi Ros has become a dynamic dry season rice-growing and surplus-producing area. This was cited as the main source of improvements in livelihoods and well-being for many villagers. A similar scenario is also taking place in Dang Kdar, according to village leaders:

> *With good weather over the past two years, farmers here harvested more than 2 tonnes of rice per hectare compared with around 1 tonne per hectare in 2004/5. A new idea is also emerging in this commune. Some people are starting to grow cassava and other subsidiary crops in addition to depending on forest access and rice production. However, this idea is not yet commonly practised. Farmers still use traditional farming techniques to cultivate rice for their own consumption and are not producing more cash crops for business purposes.*

Not all rice-growing villages could benefit from high food prices as Khsach Chi Ros could. In other villages, rice productivity tended to be more stable, owing to good weather in the previous three years. Increased attempts to grow cash crops and sell livestock have been undermined by a lack of know-how and reliable agricultural extension services. Many villages are unable to increase rice production or productivity owing to a lack of irrigation facilities.

The potential of agricultural development for income diversification was also reported in the forest-dependent villages of Dang Kdar and Kanchor. This potential was created through the illegal conversion of forest land by outsiders from Kompong Cham, Prey Veng and Takeo provinces to grow cassava, soybeans and maize as cash crops. The outsiders arrived in the years before the national election in July 2008 and indigenous villagers have yet to fully realise the opportunity to benefit from agricultural diversification, depending heavily

on income from forestry access or from selling their labour to clear forest land. These two villages could follow Krasang and Ba Baong in boosting agricultural growth, employment and income and reducing poverty if the constraints on agriculture are removed. These cases show that, while the type of challenges to agricultural growth described in Annex 1 and Box 1 still exist in these villages, there remain high levels of poverty. Poverty rates of 75 percent among panel households in Khsach Chi Ros and 47 percent in Kanchor remain well above the national average of 34.7 percent for rural areas. Agricultural development in these villages has begun only over the past few years. Its potential for employment, livelihood improvement and poverty reduction could be maximised if access to arable land were secured through social land concessions and if conflict over access to land and water (in the case of Khsach Chi Ros) and lack of effective extension services were to be addressed for the benefit of small landholding farmers.

Large farmers with 1 ha of land or more who are often in the "better-off" group were able to increase their yields. Small farmers with less than 1 ha of land and limited savings and who are unable to afford higher costs of farm inputs had declining or similar wet and dry season rice yields. Increasing attempts to grow more cash crops and to raise livestock were also reported in each village. Some farmers had already picked up new ideas on diversification from traders and neighbours in the few years before the 2008 survey but have been less successful owing to a lack of know-how and unreliable extension services. Unsustainable rice farming techniques such as shifting from transplanting to sowing to save farm labour costs, and increasing use of chemical fertilisers and pesticides without proper knowledge, were reported in agricultural development villages.

Demand for arable land for both subsistence and commercial agricultural production is increasing in the forestry- and fisheries-dependent villages. This often leads to resource conflicts between indigenous villagers and outsiders, with many indigenous people unable to cope with increasing competition for fisheries, forestry and rice production. They still rely heavily on unreliable incomes from CPR and wage labour and remain trapped in poverty by a lack of savings and farm equipment.

Land sales were viewed as a key factor in improvements in well-being and poverty reduction in some villages

Land sales in the strongly performing villages of Trapeang Prei and Prek Khmeng contributed greatly to poverty reduction, and increased benefits from fisheries in the years before the national election in July 2008 contributed significantly to rises in income, improvements in well-being and poverty reduction in Prek Khmeng. However, the relationship between income growth and poverty reduction in these two villages tended to be unsustainable.

Trapeang Prei and Dang Kdar, the villages with the lowest average per capita income in 2001, and Prek Khmeng experienced the highest rise in per capita income, of over 100 percent in real terms between 2004/5 and 2008. A total of 51 percent of panel households in Trapeang Prei and 47 percent in Prek Khmeng decided to take advantage of rocketing land prices (Table 3.2) and the active land market in the area to sell plots of residential and agricultural land between late 2005 and the national election in July 2008, and all households with land in Trapeang Prei and Prek Khmeng were said to have engaged in land transactions.[10] More and more households therefore depended on wage labour or sought employment in garment

[10] In addition to the quantitative data from the panel households, a FGD with seven different groups of villagers was conducted in each village to capture certain social and economic events affecting villagers' employment and livelihoods.

factories and on construction sites in Phnom Penh and urban peripheries. Like other villages, providing children with a good education to at least the secondary level is viewed as essential to getting well-paid work in Phnom Penh.

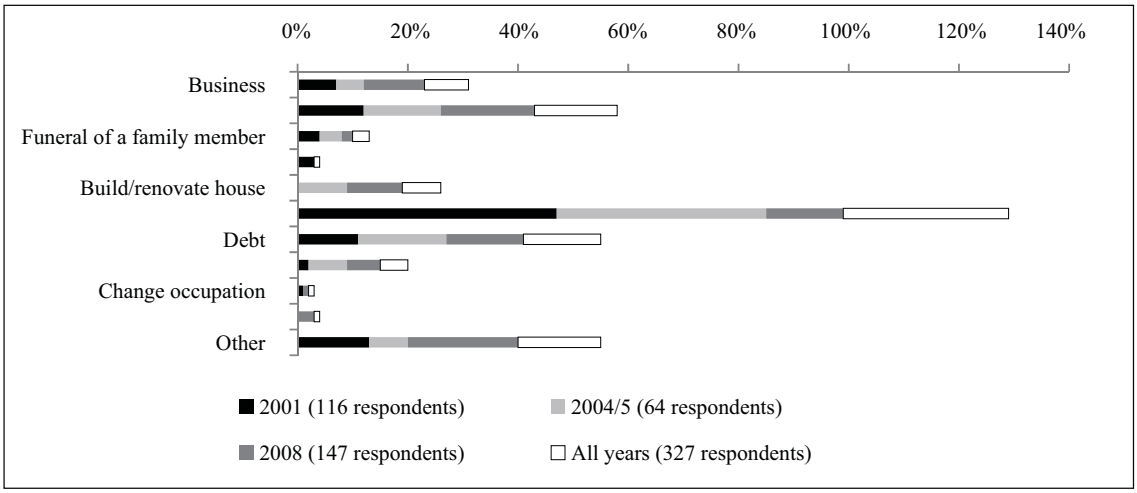
Table 3.2: Change in Average Real Price of Land per Hectare by Village, 2001–8

	KHR10,000/ha			% change	
	2001	**2004/5**	**2008**	**2001–4/5**	**2004/5–8**
Krasang	227	360	1058	58	194
Andong Trach	203	96	403	-56	320
Trapeang Prei	**84**	**234**	**4.588**	**178**	**1862**
Khsach Chi Ros	41	58	142	43	143
Dang Kdar	70	63	156	-11	149
Kompong Tnoat	328	688	3.855	110	460
Prek Khmeng	**136**	**244**	**5060**	**79**	**1976**
Kanchor	191	272	205	42	-25
Ba Baong	194	240	375	24	57
All villages	167	263	1479	24	462

In Dang Kdar village, where access to land conversion was uncontrolled, 21 percent of panel households engaged in land transactions. In terms of other PDS villages, land sales ranged from 4 percent in Kanchor to 11 percent in Ba Baong. Villagers reportedly sold land to people from urban areas, especially to those living in Phnom Penh, who had information about land speculation and infrastructure and agricultural development projects.

Figure 3.5 shows the reasons for panel households' decisions to sell agricultural land. These reasons have shifted considerably, from health care and food consumption in 2001 to alternative businesses, building or renovating houses and buying durable assets in 2008. This shift indicates some livelihood improvement among villagers in the study villages.

Figure 3.5: Reasons for Selling Land, 2001–8



Small farmers still make hardly any profit, however. Rising prices of farm inputs meant that land productivity of small landholders with less than 1 ha declined, even for dry and wet season rice farmers who had small increases in yields owing to good weather in 2008. In the absence of effective agricultural extension services, some small farmers viewed their plots as unprofitable and decided to sell them, with land speculation and high land prices the most important reasons behind this. The number of landless households, which rose strongly between 2005 and 2008, has squeezed villagers out from farming or producer groups. This rapid increase in landless households suggests ineffective implementation of the national strategic development plan to support small farmers.

FGD participants claimed that prices of farm inputs were double those of two or three years earlier. This constraint, combined with ineffective agricultural extension services, has limited small farmers' ability to intensify and diversify their agricultural production, and has led to farmers selling their small plots of land to join migration groups in the PDS villages. There is a close relationship between inability to afford farm inputs and selling land. 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 virtually no benefits from their farming and have few savings for the next season, often having to take out loans, which add to the cost of production. Lacking market information, they have limited choices of what to produce, and poor bargaining power when selling their produce. These factors are behind the selling of land, and point to the need for stronger efforts to support small farmers to overcome their challenges and reap the benefits from continuing to produce.

Increasing CPR access contributed greatly to the remarkable rise of total average per capita income and helped boost agricultural development in CPR dependent villages—however, these villages experienced uneven poverty reduction

Increased access to CPR in the years before the national election in July 2008 helped boost agricultural production and income from fisheries and forestry, leading to increased household incomes and improvements in well-being in the forest-dependent villages of Dang Kdar and Kanchor and the fishing villages of Prek Khmeng, Khsach Chi Ros and Kompong Tnoat. This enabled poverty reduction of around 6 percent in Prek Khmeng, 27 percent in Kompong Tnoat and 45 percent in Dang Kdar. At the same time, however, poverty increased by around 1 percent in Khsach Chi Ros and 7 percent in Andong Trach and Kanchor between 2004/5 and 2008. Improvements in livelihoods and poverty reduction may not be sustainable if savings are not used for productive investments such as agriculture and diversification of income sources. Khsach Chi Ros may be an exceptional case, owing to the high rate of gambling addiction (Annex 1).

Access to fishery and forestry resources was regulated strictly by the government between 2001 and 2005 for the purposes of sustainable natural resource management (Fitzgerald & So 2007). Control over illegal forestry and fishery activities was relaxed in the years before the national election in July 2008 (Annex 1), giving people greater freedom to cut wood and collect timber by-products from the forests and to exploit fishery resources. The informal increased access to CPR meant that illegal extraction of forestry and fishery resources became more common among CPR-dependent villages, including Dang Kdar, Kanchor, Khsach Chi Ros and Kompong Tnoat, and was cited as the main cause of livelihood improvements between 2004/5 and 2008. This account is from Kanchor village leaders:

We now have more access to the forest and can sell our labour to cut wood. An adult male can earn a minimum net income of around KHR300,000 within seven working days. The price of timber now is KHR60,000 per cubic metre, which is a good price for us, but we had to spend USD370 to buy one mechanised saw. This is better than spending USD300 to purchase 1 ha of land to earn USD1,000 from growing cassava for six to seven months. The price of a cubic metre of kakos is about USD500 and that of sralaov is USD270—also good prices for us. Many households here can also grow cassava for six months starting from May, June or July and can harvest at least KHR600,000–700,000 (USD150–USD175) per hectare. After harvesting the cassava, they can continue to grow rice or maize for another KHR500,000–700,000 (USD125–USD175) per hectare.

Loosened control of illegal forestry and fisheries helped both indigenous and newcomer households to increase their income from selling their labour, and boosted cash crop production in the forest-dependent villages. At the same time, it led to a massive legal and illegal conversion of forest and flooded forest land for cultivation by people from within and outside the four villages.

In Kanchor and Dang Kdar, production of cash crops such as cassava, soybeans and maize increased a great deal between 2006 and 2008 without reaching its full potential. Cultivation of cash crops in the area was initiated by outsiders arriving mainly from Kompong Cham and Prey Veng from 2006. These people had good information about demand for and prices of crops and they often either encroached on or purchased around 2–5 ha per household of forest from local authorities for cultivation, reaping profits of USD800–1,000 a year from growing cassava and an additional USD200–300 per ha from cultivating soybeans. Many indigenous farmers have therefore abandoned shifting cultivation for permanent cultivation of cash crops. A similar trend is occurring in Khsach Chi Ros, which has seen massive conversions of flooded forest land into farmland for dry season rice growing.

While this trend is expected to result in substantially improved wealth for both newcomers and indigenous people, large companies and rural 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 higher wages, from around KHR5,000 per day in 2005 to KHR15,000 in 2008, also benefiting poor people with no means to pay for land conversion.

Increased income in the natural resource development villages is mostly from the illegal conversion of forest and flooded forest for cultivation between 2004/5 and 2008, but this increase may not be sustainable

Legal and illegal large-scale conversion of forest lands by both local people and private companies became common in the CPR-dependent villages when there was poor CPR management, resulting in positive and negative impacts on agricultural development and livelihood improvement. On the positive side, it helped boost agricultural production, and higher prices increased demand for wage labour. On the negative side, it led to the overuse of existing natural resources and conflicts between local people, outsiders and the authorities responsible for sustainable natural resource management.

Conflicts over access to land for subsistence and commercial production have often not been resolved, limiting the growth of cash crop production in the area. A severe conflict has occurred in Dang Kdar, between households in Kraya commune and a Vietnamese company that had received an economic concession from the government. Local authorities (commune council and village leaders) have been trying to resolve the problem through negotiation and

plans for a social land concession for landless indigenous people, but this has been progressing slowly, and all the while the company has been putting up fences. This limits access to land for subsistence cultivation and to traditional areas for grazing animals and foraging. Uncertainty over access to land and the relaxation of control over illegal forest activities before the national election in July 2008 meant people decided to collect as many forest products as possible before stronger enforcement resumed.

Some villagers in Kanchor decided to use their savings from CPR access to invest in cash crop and livestock production, but faced high risks of losing the business and falling into poverty

In November 2008, cassava growers wondered whether they would be able to gain as much from their farming, as the price of cassava dropped to only KHR200–250 per kilogram, from KHR800 the previous year; meanwhile, the price of labour remained high. Growers also often took loans for farming, and low prices and high wage labour meant they did not harvest as they would not make any profit, according to village leaders. Cassava grown here is mainly exported to Vietnam, and falling demand and price may have been a result of the global financial crisis in November 2008.[11] Cash crop growers in Kanchor and Dang Kdar faced problems, as many households had already used savings from the last harvest to invest in rice farming and cash crops such as cassava, soybeans and corn, and were uncertain as to whether they could make the type of income from farming as they had one year ago. Livestock producers, however, still expected higher incomes from raising livestock.

> *There are more cattle in this village than in 2005. The price of a cow is lower (USD700–800) than in 2005 (USD500), but the price of a bull is higher (USD1,500–1,800; locally bred USD1,200–1,300 per head) because people need them to carry or transport timber. Around 80 percent of the households have cattle; some have 50 to 60 cattle.* Mixed group in Kanchor village

Wage labour became an important source of income for some villages, but this income tended to be unstable in improving livelihoods and reducing poverty

Selling labour at village level, within Cambodia or overseas continues to be an important source of rural income and livelihoods, coping strategies and employment for adults and youths in both fast- and slow-growing communities (CDRI 2007; Chan 2009; UNDP 2009). In 2008, the contribution of income from selling labour varied from 5 percent in Ba Baong and Prek Khmeng villages to 45 percent in Kanchor village (Annex 2). It is also increasingly important as alternative employment for the growing labour force in the nine study villages. The impacts of remittances on village income are evident in a few study villages (Krasang, Trapeang Prei, Dang Kdar and Kanchor). FGD participants noted that households receiving high remittances are able to upgrade their homes or set up grocery shops, giving them better livelihoods or allowing them to release themselves from vicious cycles of loan debt. The following is a quote about migration from the village and commune chiefs in Kanchor:

> *Out-migration started in 2005, but the number of migrants is now getting higher and higher, mainly to Phnom Penh. Some youths work as security guards and gain a high school certificate. Only about 4 out of 10 of those students who attend senior high school can afford to complete school and receive their certificate. About 20 percent of those can afford to study at senior high school and about 80 percent of them quit schooling to join*

[11] Although it was not possible for the PDS to collect further information in this area, it is important to conduct a study on the impacts of the global financial crisis.

the wage labour group to earn KHR7,500 per day, but this year they can receive higher wages of about KHR12,000 per day.

The returns from selling labour became the primary income source in Kanchor, where there was a sharp increase in demand and wages in 2008 to clear forest or cut timber for traders or illegal logging companies. Selling labour has become the second- or third-most-important source of household income for many other study villages (Annex 1), but with great variation between villages depending on each village's connection to urban growth and on innovative agricultural development, which provides opportunities for local people. Another reason lies in increasing demand for agricultural exports made possible through Cambodia's regional and global economic integration. The short-lived high food prices also encouraged many farmers to change their farming techniques or agricultural activities for better profits. All these trends were supported by the rapid development of micro-credit institutions throughout Cambodia in the past few years (Annex 3). Annex 1 highlights specific events in each village, including the demand for unskilled labour from Thailand and other neighbouring countries.

Infrastructure development is often identified as the backbone of agricultural and rural development for poverty reduction and is reflected in two government strategic policy papers. As a result, rural roads that facilitate flows of goods and services to rural areas and connect villages to markets have been built in most study villages, attracting more development projects and therefore serving as an initial condition for growth in the study villages. However, there are both positive and negative impacts on growth and poverty reduction, which differed across the study villages. On the positive side, they improve access to trade and inflows of consumer goods and services such as health care and education, and they improve communication and costs and time taken for travel or to migrate in search of work. On the negative side, greater freedom of movement can bring social risks and insecurity and accelerated depletion of natural resources. Generally, however, the roads have helped people diversify income and boost their agricultural production, and there has been noticeable investment in the construction of rural roads through commune investment planning since 2005.

The study villages achieved considerable livelihood and well-being improvements between 2001 and 2008. Rural households are happy with the increasing availability of both public and private health care services, with children's school enrolment levels and attendance and with increasing market connections and flows of goods as a result of ongoing road construction. These factors may be important for changes in consumption, income and poverty reduction.

3.5 Trends in Asset Ownership: Other Well-being and Poverty-related Indicators

Changes in ownership of key selected assets, including land, houses, car batteries for lighting, radios, TVs, bicycles and motorcycles, constitute another set of well-being indicators. Ownership of these assets was ascertained from the 827 panel households in 2001, 2004/5 and 2008 (Table 3.3). These selected assets are systematically associated with income but not with poverty reduction.

The proportion of households owning these assets and the average monetary value of selected assets per household are discussed to assess improvements in well-being and standards of living. Analysis of asset indicators, along with income growth, improvement of housing conditions and increasing ownership of durable assets and lands over 2001 and 2008, showed that all study villages had experienced improvements in well-being, especially between 2004/5 and 2008.

Table 3.3: Panel Households without Agricultural Land, House, Battery for Lighting, 2001–8 (%)

	% of landless HH			Thatch house			Wooden house with tin roof			Wooden house with tile and fibro roof			Concrete or brick house			Batteries*	
	2001	2004/5	2008	2001	2004/5	2008	2001	2004/5	2008	2001	2004/5	2008	2001	2004/5	2008	2004/5	2008
Strong performance																	
Krasang	27	30	26	57	14	2	43	85	98		1					84	86
Prek Khmeng	29	28	57	71	60	**40**	12	17	19	16	23	41	1			89	93
Kompong Tnoat	8	6	8	39	18	11	43	66	41	16	14	45	3	2	3	61	43
Ba Baong	6	6	6	36	28	15	44	53	56	19	17	29	1	2		85	86
Trapeang Prei	8	8	16	67	49	14	14	25	24	20	25	63				76	82
Dang Kdar	5	3	6	6	61	**46**		4	7	33	35	16		1	2	66	58
Poor performance																	
Khsach Chi Ros	7	3	3	77	62	44	13	24	39	10	14	17				78	72
Andong Trach	**34**	**34**	**41**	49	34	10	51	66	90							92	72
Kanchor	29	20	26	43	41	21	27	25	28	29	34	51				79	77
All villages	**17**	**15**	**20**	**55**	**41**	**24**	**27**	**40**	**42**	**17**	**19**	**33**	**1**	**1**	**1**	**78**	**74**

Note: * There was no record of ownership of batteries among panel households in 2001

From descriptive analysis of panel data, landlessness seems to have no relationship to income and poverty reduction in the study villages

Table 3.3 also shows the rise in landless households in some strongly and poorly performing villages. It suggests uniform relationships and trends in income, landlessness and poverty reduction in the study villages. For example, among strongly performing villages, the number of landless households in Prek Khmeng almost doubled, from 28 percent in 2004/5 to 54 percent in 2008, and it increased in Trapeang Prei from 8 percent in 2004/5 to 16 percent in 2008 because of land sales to outsiders. Poverty went down by about 6 percent in Prek Khmeng and by 22 percent in Trapeang Prei, while real per capita income more than doubled in both villages between 2004/5 and 2008. A similar trend in landless households is evident in Andong Trach, a poorly performing village with a poverty increase of around 7 percent and a decline in income of around 6 percent over the same period. Furthermore, Khsach Chi Ros, with the lowest proportion (percent) of landless households in 2004/5, experienced almost no change in real per capita income, but poverty increased by 10 percent between 2004/5 and 2008. However, the number of landless households remained unchanged in the successful agricultural villages, at about 26 percent in Krasang and 6 percent in Ba Baong.

Evidence from the FGDs, shown in Table 3.4, confirms results of other CDRI contemporary poverty related studies (MOPS 2007; PPA 2007). Landless households, especially single female-headed ones, have limited capacity to cope with income shocks and rely heavily on unreliable wage income, making them more susceptible to slipping into poverty. The following quote from a wealth-ranking FGD in Andong Trach offers insights into the characteristics of the poor or non-poor households that fell into poverty between 2004/5 and 2008:

> *Some households fall into chronic poverty. These are mostly landless with many little children who cannot help to earn money, have sickness in the family, have no regular occupation or income and are unable to join long-distance migration for better wage incomes. Some of them have small amounts of farm land; after harvesting, they sell*

the yield to repay debts from paying for treatment for their sick family members and to buy food. Therefore, their income is offset by their spending; they have nothing left after that. Some families' living standards have gone down and they remain trapped in poverty. In many cases, households sell all their land to buy medicine and food. Most of the landless households rely heavily on their children's earnings, and some poor families have children working outside the village who were cheated by employers. Therefore, the family had to borrow money to bring their children home and then became trapped in poverty.

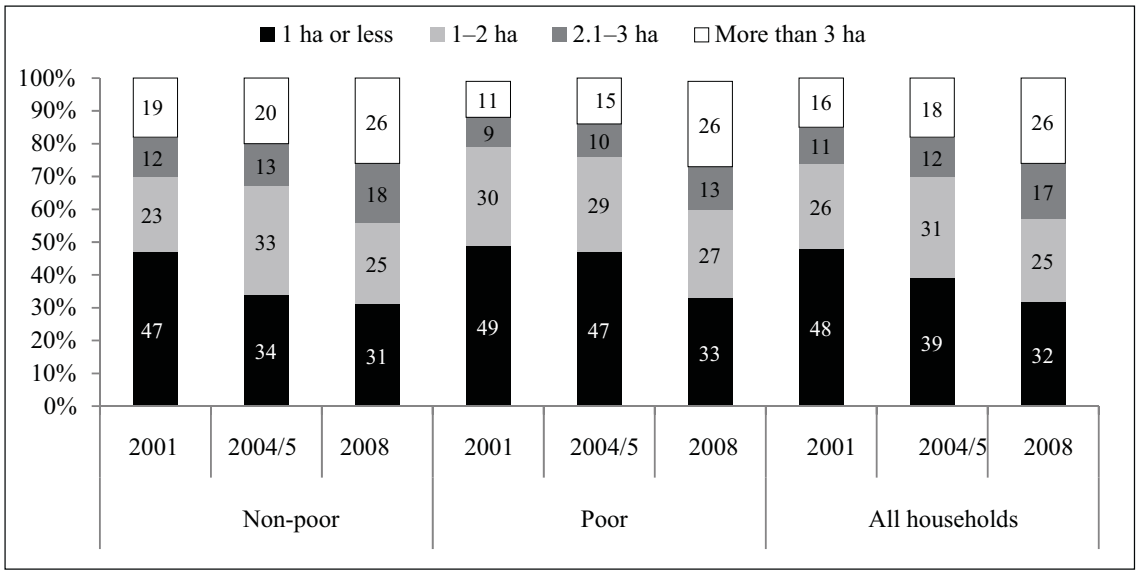
Table 3.4: Poor and Non-Poor Households by Gender of Household Head, 2001–8 (%)

	2001	**2004/5**	**2008**
Non-poor MHH	16	14	19
Poor MHH	16	12	20
MHH	**16**	**14**	**19**
Non-poor FHH	16	20	19
Poor FHH	22	22	36
FHH	**19**	**21**	**25**

Note: MHH = male-headed household; FHH = female-headed household

There is little difference in size of agricultural landholdings among poor and non-poor households. Around 33 percent of poor households own 1 ha or less of agricultural land compared with 31 percent of non-poor households in 2008 (Figure 3.6). However, the proportion of households with 1 ha or less has gradually declined, while the proportion of those with larger-sized agricultural landholdings slowly increased for both poor and non-poor between 2001 and 2008. This might be an effect of the land transactions and illegal conversion of forest land that happened in the years before the 2008 national elections, especially in some CPR-dependent villages such as Khsach Chi Ros, Dang Kdar and Kanchor.

Figure 3.6: Agricultural Landholding Size by Poor and Non-poor Households, 2001–8 (%)



Quality of housing has improved in all study villages

Of the study villages, Prek Khmeng, Dang Kdar and Khsach Chi Ros had the highest proportion of thatch-made houses in 2008, between 40 and 46 percent, compared with much lower rates of 2 percent in Krasang and 21 percent in Kanchor. The poor mostly possess thatch houses, whereas the better-off have wooden houses roofed with tin sheets, tiles or fibro and the rich own concrete houses. Higher per capita income has allowed many panel households in all villages to renovate or build new houses. Between 2001 and 2008, quality of housing in each study village improved, along with the ability to increase household income. Some panel households used MFI loans and savings to renovate or build houses. This was mentioned in FGDs with village leaders in some study villages.

> *As of 2007, the village comprised 427 households. Housing conditions have improved in the village. Many houses have been upgraded from thatch to zinc and, from zinc to fibro. Today, only 5 percent have a thatched roof. This is largely thanks to the availability of credit from MFIs, including ACLEDA, Amret, Thanakeaphum and PRASAK. People have borrowed money to construct their houses or to avoid problems which occur annually.* FGD with village leaders in Kompong Tnoat. Similar stories were recounted in Ba Baong, Trapeang Prei, Dang Kdar and Kanchor

Trends among panel households of increased ownership of TVs, bicycles and motorbikes reflect improved well-being owing to increases in average per capita income

Other indicators include higher proportions of households owning a (car) battery for lighting (see also Table 3.3) and other durable assets (Table 3.5), and a rapid rise in real value of assets (Annex 4). FGD participants also saw ownership of these items as part of livelihood improvements. More rural and national roads have increased connections to markets and trading services for rural households, and bicycle or motorbike usage has made travelling easier. A village leader interviewee noted that owning a bicycle and/or a motorbike has not only encouraged children to go to school and reduced costs of transporting fertiliser, rice seed and other farm inputs, but also has encouraged women to engage in and earn money from petty trade. Almost every household in each study village obtains information about jobs and farming innovations from their radio and TV. However, the negative effects of ownership of these items include the impact of violent stories on youth behaviour and gang violence. Female FGD participants wanted to see more educational programmes and news about market information and farm innovations to help them improve their farming practices.

> *We have concerns related to security because one of us experienced the theft of a motorbike a few years ago; we do not know who took it. Nowadays, there are young men in our village who are thieves, probably the Bang Thom group who often do not go to school but just steal chickens. The situation is the same as in 2005. Violence among young men happens very often, often at ceremonies and dancing, probably because of their parents or the influence of television. Those responsible are often arrested by the police and taken to the prison at Prey Veng town to teach them how to respect the community and some of them are afraid of the police now.* FGD with moved up or better-off households in Ba Baong

Table 3.5: Panel Households with Durable Assets by Village, 2001–8 (%)

	Radio			TV			Bicycle			Motorcycle		
	2001	**2004/5**	**2008**	**2001**	**2004/5**	**2008**	**2001**	**2004/5**	**2008**	**2001**	**2004/5**	**2008**
Strong performance												
Krasang	13	33	33	28	48	65	80	88	84	10	23	34
Prek Khmeng	13	31	25	48	73	78	26	30	51	8	16	41
Kompong Tnoat	24	52	50	6	11	23	41	70	72	18	26	28
Ba Baong	16	25	27	45	71	75	50	66	86	10	18	31
Trapeang Prei	10	16	16	35	49	80	31	65	78	24	35	82
Dang Kdar	26	31	28	9	25	40	54	79	88	13	18	40
Poor performance												
Khsach Chi Ros	20	17	13	10	28	47	31	38	74	2	5	23
Andong Trach	11	16	28	16	39	57	56	84	82	10	13	33
Kanchor	37	41	46	22	56	59	38	69	73	8	22	39
All villages	20	31	31	25	45	57	45	64	76	11	19	37

3.6 Summary

Overall, poverty in the nine study villages went down by around 12 percent from 2001 to 2008, declining by around 11 percent between 2004/5 and 2008 compared with only about 1 percent between 2001 and 2004/5. Experiences of poverty reduction in the study villages differed, but daily per capita incomes in most villages increased substantially. Poverty increased in three villages where wet season rice farming, CPR access and wage labour are the mainstays of village livelihoods, and dropped or levelled off in other villages where economic activities became more dynamic and diverse between 2005 and 2008.

Impressive growth was noticeable in per capita incomes and improvements in other well-being indicators such as housing conditions and ownership of durable assets in all study villages between 2004/5 and 2008. Key events have promoted livelihood improvement, income growth and poverty reduction at village level. These include the construction of rural roads and irrigation systems, high food prices in 2008, the hike in land prices and increased land transactions between 2005 and July 2008 and increased availability of micro-credit since 2005.

Study villages are grouped into strongly and poorly performing villages according to their experiences of poverty reduction, allowing for analysis of poverty dynamics. Strongly performing villages saw relatively lower poverty rates than the national rural rate in 2007 or have seen substantially reduced poverty since 2004/5. In poorly performing villages, either poverty was either well above the national rate or there were increases in the number of poor households between 2004/5 and 2008 despite increases in average per capita income.

The multi-dimensional nature of poverty means the link between poverty dynamics and increased income and consumption is not clear. Increasing income is not strongly associated with poverty reduction or improvement of daily per capita consumption. However, poverty

reduction in the strongly performing villages reflects the ability of households to sustain income growth through agricultural development and diversification, land sales and increasing CPR access. Unfortunately, income from selling land and CPR access is unreliable and may not be good for long-term poverty reduction, especially if the income has not been used for productive purposes.

The success of agricultural development and diversification has owed to irrigation and road infrastructure development and short-lived high food prices, but success is quite uneven. Farmers in all study villages have tried to diversify from only rice production to earn a better income, but constraints include lack of know-how, agricultural extension services and marketing information for production and diversification. Villages depending on wet season rice and wage labour are more vulnerable to household, community and national economic shocks and are therefore more likely to become poorly performing villages. Like other strongly performing villages, their well-being improved with better housing conditions, increased ownership and value of assets and increased migration through connections to urban development.

Chapter 4

Transient and Chronic Poverty in Nine Villages of Cambodia: Panel Data Evidence—Consumption Approach

4.1 Introduction

Poverty analysis in Cambodia is based primarily on cross-sectional household survey data that provide estimates of the aggregate and static poverty rates.[12] Poverty reduction strategies and policies drawn from these studies are likely to address poverty in the long rather than the short term. Estimates of poverty over time provide a richer picture of poverty. As discussed widely in the literature (e.g. Haddad & Ahmed 2003; Jalan & Ravallion 2000; Kedir & McKay 2003), poverty over the long term is called "chronic poverty" and poverty resulting from income shocks that is likely to be temporary is called "transient poverty". This type of poverty reflects the vulnerability of the non-poor to suddenly falling into poverty.

Between 2007 and 2010, it is possible that the poverty rate in Cambodia increased by 1–4 percent (World Bank 2009c; 2010a). Tong *et al.* (2009) found poverty increased between 2008 and 2009, partly because of a World Bank-predicted economic contraction of 2 percent in 2009 (World Bank 2010b). The global economic crisis posed a great challenge to achieving the 2015 MDGs, particularly the goal of eradicating extreme poverty and hunger. In 2007, the poverty rate was 30.1 percent and, taking into account rates of poverty decline of 1 percent per year and the increase in poverty owing to the economic crisis, the achievement of this MDG is in doubt. Moreover, current poverty reduction policies are failing to protect vulnerable households from falling into poverty.

Recent studies of poverty dynamics in other developing countries (Baulch & Hoddinott 2000; Haddad & Ahmed 2003; Jalan & Ravallion 2000; Kedir & McKay 2003) find that the key determinants of chronic and transient poverty differ slightly. Health and education services, asset redistribution and infrastructure development are likely to reduce chronic poverty, and unemployment and health insurance, income stabilisation programmes, micro-credit and temporary social safety nets are important for reductions in transient poverty.

In the past decade, increasing numbers of poverty studies have been conducted in Cambodia. The Cambodia Poverty Profile, which uses nationally representative cross-sectional CSES data from 1993–4, 1997, 1999, 2003–4 and 2007, shows the poverty headcount fell from 45–50 percent to 30 percent between 1993/4 and 2007. It fails to show the dynamics of poverty—why some households move out of, fall back into or remain in poverty— as a rigorous quantitative data-based analysis of poverty dynamics in Cambodia has never been done, mainly because of a lack of panel data.

The main objective of this study is to explore key determinants of chronic and transient poverty by geographical area to assist policy-makers with evidenced-based and effective poverty reduction strategies in appropriate areas.

[12] It is worth noting that CSES 2007 or CSES 2008 sampled villages are a subset of CSES 2004's sample. Therefore, the survey is a panel of villages.

4.2 Data and Sample Characteristics

The empirical work in this chapter is based on the results of surveys conducted in nine villages in 2001, 2004/5 and 2008 by CDRI. Information collected includes household demographics, housing conditions, land ownership and transactions, credit markets, food and non-food consumption, non-land assets, livestock ownership, household income, agricultural production, production expenditure and wages and self-employment.

Income data are based on participants' recall of six months before the survey. Most non-food consumption was also based on six months' recall, with a few items based on one week's recall. Food consumption data are based on recall of the amount consumed (both purchased and domestically produced and distributed, including an imputed value) for one week. Consumption per capita was calculated by total expenditure on or the value of each consumption item, divided by household adult equivalent members. Similarly, income per capita was calculated by dividing the sum of income from all sources by household adult equivalents. All nominal values were converted to constant 2001 prices using village price indexes constructed by Albert (2009c).[13]

The most common measurements of household economic welfare are based on the monetary value of consumption and income indicators. However, income always tends to be understated (Haughton & Khandker 2009), rising and falling over a lifetime and subject to seasonal fluctuations, whereas consumption remains relatively stable, indicating the greater utility of consumption as an indicator of lifetime welfare. This chapter uses consumption as the main indicator, with poverty lines constructed using methods from Albert (2009c).

Poor households in rural Cambodia are characterised by large sizes, by numbers of children and by male household heads who are engaged in agriculture and are illiterate or who have only a few years of schooling (MoP 1999). The purpose of this study is to examine whether these factors are equally important in explaining chronic and transient poverty. To answer this, we include household-specific human and physical assets and community effects as explanatory variables; the latter is defined by a set of dummies. The household variables included in the regression analysis are dependent household members (under 15 or over 64 years), a range of household head characteristics and household composition. In addition to human capital, access to land and physical capital are likely to be important factors in escaping poverty. We include land ownership, livestock and non-land assets.

4.3 Descriptive Statistics: Changes in Welfare, 2001, 2004/5 and 2008

This section looks at trends in average welfare of the 827 households in the panel between 2001 and 2008, measured by real total consumption per capita per day. We prefer to use consumption for reasons mentioned above and because we found income was reported to be nearly half the size of consumption in 2001, possibly because questions on in-kind income were not incorporated at the time of the survey.

During the period 2001–8, consumption per capita fluctuated greatly in Kompong Tnoat. Per capita consumption in Khsach Chi Ros declined, even though the national economy registered double-digit growth and the poverty rate declined by 1 percentage point per year. On average, however, the results suggest that household welfare improved in rural areas between 2001 and 2008 (Table 4.1).

[13] Albert (2009c) adopts the Laspeyres approach to construct village price index.

Table 4.1: Mean Real Total Expenditure per Adult per Day, 2001–8 (KHR at 2001 prices)

	2001	2004/5	2008
Tonle Sap	1787	1785	1870
Krasang	2178	2160	2434
Andong Trach	1427	1719	1608
Khsach Chi Ros	1653	1461	1496
Mekong plains	2123	2154	2664
Prek Khmeng	2495	2438	3112
Ba Baong	1751	1870	2215
Plateau	1487	1693	2287
Kanchor	1710	1907	2114
Dang Kdar	1485	1499	2562
Trapeang Prei	1026	1657	2066
Coastal	2584	2167	2685
Kompong Tnoat	2584	2167	2685
Total	1886	1904	2321

Given information on real total consumption per capita and the village poverty line, we estimate incidence of poverty by village, region and year (Table 4.2). As can be anticipated from Table 4.1, the rural poverty rate declined over this period, particularly between 2004 and 2008 and in the coastal, Mekong plain and plateau regions. Over the period 2001–8, the poverty rate in the plateau region dropped by 30 percent, while the total sample declined by 12 percent. This is largely because of the decrease of poverty in Trapeang Prei and Dang Kdar. In addition, poverty in Kompong Tnoat and Andong Trach fluctuated greatly, suggesting that further investigation of the four villages is needed.

Table 4.2: Poverty Incidence by Village and Region, 2001–8 (%)

	2001	2004/5	2008
Tonle Sap	48.7	44.4	46.2
Krasang	17.4	9.3	8.1
Andong Trach	72.1	52.5	59.0
Khsach Chi Ros	63.2	73.6	74.7
Mekong plains	19.5	19.1	12.3
Prek Khmeng	13.6	13.6	8.2
Ba Baong	25.5	24.5	16.4
Plateau	63.6	53.0	33.7
Kanchor	50.9	39.6	47.2
Dang Kdar	61.7	68.2	23.4
Trapeang Prei	94.1	49.0	27.5
Coastal	11.9	37.6	11.0
Kompong Tnoat	11.9	37.6	11.0
Total	40.9	39.5	28.5

Table 4.3 shows the proportion of chronically and transient poor and never poor households by village and region. The chronically poor are defined as households that have consumption per capita below the poverty line for all three separate years, the transient poor as households whose consumption per capita falls below the poverty line in one of the years and the never poor as households with consumption per capita above the poverty line in all years. The largest numbers of households (around 75 percent) were transient poor, followed by never poor and chronically poor. This suggests that tackling rural poverty requires a clear understanding of the nature of transient poverty. Both poverty rates are very high in the Tonle Sap and plateau regions.

Table 4.3: Households Poverty Status by Village and Region (%)

	Chronically poor	**Transient poor**	**Never poor**
Tonle Sap	23.9	42.7	33.3
Krasang	1.2	23.3	75.6
Andong Trach	27.9	62.3	9.8
Khsach Chi Ros	43.7	48.3	8.1
Mekong plains	3.2	30.0	66.8
Prek Khmeng	1.8	23.6	74.6
Ba Baong	4.6	36.4	59.1
Plateau	21.2	59.1	19.7
Kanchor	24.5	45.3	30.2
Dang Kdar	19.6	63.6	16.8
Trapeang Prei	17.7	78.4	3.9
Coastal	3.7	42.2	54.1
Kompong Tnoat	3.7	42.2	54.1
Total	14.9	44.5	40.6

Table 4.4 shows that chronically poor households often have larger sizes, higher dependency rates, fewer males aged 15–64 and more females aged 15–64 than transient poor households. Never poor households are likely to be smaller, with fewer adults aged over 64, more males aged 15–64 and fewer females aged 15–64, but with more children than the transient poor. In addition, chronically poor households are likely to have the least agricultural land, non-land assets and livestock, while never poor households have more of these assets than the transient poor. Larger household size, a higher dependency rate, less land and other assets and fewer male workers appear to be key factors of chronic poverty.

Variations in household head characteristics also play a critical role in determining poverty, with more chronically poor households headed by females. Age of household head is not strongly associated with poverty status. The strongest association between poverty status and household characteristics is education, with heads of chronically poor households more likely to have no schooling or not to have completed secondary school than heads of never poor households. Employment status of household heads is important. Although more than half of the household heads in each poverty group are self-employed, chronically poor households have a high proportion of daily wage labourers while never poor households are more likely

to have migrant workers as household heads than the chronically poor, but the proportion is highest among the transient poor.

Table 4.4: Household Demographics and Poverty Status

	Chronically poor	Transient poor	Never poor	Total
Household members	6.2	5.9	5.7	5.9
Children 0–6	1.3	1.0	1.0	1.0
Children 7–14	1.5	1.4	1.5	1.4
Adults over 64	0.3	0.2	0.2	0.2
Male adults 15–64	1.4	1.5	1.5	1.5
Female adults 15–64	1.8	1.7	1.5	1.7
HHH is male	0.7	0.8	0.9	0.8
HHH age	43.9	44.2	42.4	43.4
HHH education (years)	2.3	2.9	4.0	3.3
HHH married	0.8	0.8	0.9	0.8
Agricultural landholding per capita (KHR‘0,000s)	0.2	0..2	0.3	0.2
Non-land assets per capita (KHR‘0,000s)	3.7	7.3	22.1	12.8
Livestock per capita (KHR‘0,000s)	16.3	17.8	16.9	17.2
Employment status of HHH (%)				
Wage worker within village	11.4	5.7	4.2	5.9
Self-employed	56.9	54.1	54.2	54.5
Wage worker outside village	12.2	16.6	14.0	14.9
Other	19.5	23.6	27.7	24.7
Total	100.0	100.0	100.0	100.0

Note: HHH = household head.

4.4 Econometric Results: Determinants of Chronic and Transient Poverty

To look at the characteristics of transient poor households, we use multivariate analysis to investigate the factors affecting the likelihood of a household being in either of the poverty groups. Following Kedir & McKay (2003), we use a multinomial logit model. The explanatory variables include human capital, land and physical assets and geography. The human capital variables include dependency, age (including number of male and female adults aged 15–64 years), education, gender, main economic activity and marital status of household head. As noted by Jalan & Ravallion (1998), access to agricultural land and physical assets are likely to be important in escaping poverty, and we include agricultural land, household durable assets and livestock. The geographical dummies are also included to account for the four broad agro-climatic regions.

The dependent variable takes values of 1, 2 or 3 for chronically poor, transient poor and never poor households, respectively. The marginal effects and their statistical significance for the three poverty measures are reported in Table 4.5.

Regression results suggest that more dependent household members increases the probability of households being chronically poor and decreases the probability of households never being poor. An increased number of males aged 15–64 is negatively associated with the

likelihood that households are chronically poor. An increased number of females of the same age has a positive impact on the probability of households being poor and a negative impact on the probability of never being poor.

The characteristics of household heads are also important determinants of poverty status. A higher educational level of the household head reduces the likelihood that households are chronically poor and raises the likelihood that households are never poor. Male household heads are more likely to be in transient poor households. Married household heads are less likely to be in transient poor households and more likely to be never poor. Non-land assets decrease the probability of being chronically poor and increase the probability of never being poor. Households in the Tonle Sap and plateau regions have a higher probability of being chronically poor and a lower probability of never being poor than in the coastal and Mekong plain regions. Households in the plateau region have a higher probability of being transient poor than chronically or never poor.

Table 4.5: Multinomial Logit Estimation on Determinants of Chronic and Transitory Poverty

	Marginal effect		
	Chronically poor	**Transient poor**	**Never poor**
Dependency	0.027***	-0.005	-0.022**
Male adults 15–64	-0.036'**	0.017	0.019
Female adults 15–64	0.033**	0.036*	-0.070***
HHH age	-0.002	-0.009	0.010
HHH age squared	0.000	0.000	0.000
HHH education	-0.011**	-0.010	0.021***
HHH male	-0.035	0.127*	-0.093
HHH married	0.004	-0.156**	0.1521***
HHH wage worker within village	0.060	-0.030	-0.029
HHH self-employed worker	-0.001	-0.007	0.008
HHH wage worker outside village	-0.026	0.001	0.025
Agricultural land (log)	0.001	-0.003	0.003
Non-land assets (log)	-0.011***	-0.009	0.020***
Livestock (log)	0.005	0.001	-0.006
Tonle Sap	0.258***	-0.043	-0.2166***
Mekong plains	0.050	-0.065	0.014
Plateau	0.244***	0.129*	-0.373***
Number of observations	827		
LR chi2	261.62		
Prob>chi2	0.0000		
Log-likelihood	-704.193		
Pseudo R-squared	0.1567		

Note: * statistically significant at 10% ** significant at 5% *** significant at 1%

It was expected from descriptive statistics results that household head employment as a village wage worker would be strongly associated with chronic poverty, but the econometric results show this is not the case. Daily wage activities within the village are mostly insecure and bring lower returns, so there is a need to investigate further. In addition, agricultural land and livestock are unlikely to be key determinants of chronic and transient poverty. However, Cambodia has an agrarian economy and a large majority of rural households depend on agriculture. Furthermore, the descriptive analysis shows that households with less agricultural land are more likely to be chronically poor. This is another issue to be investigated.

4.5 Summary

Our empirical results suggest determinants of chronic poverty differ from those of transient poverty. For example, number of dependent household members, males aged 15–64, education of the household head and ownership of non-land assets are important factors in chronic poverty but are not significant in transient poverty. The number of females aged 15–64 increases both chronic and transient poverty. A male household head is associated with higher transient poverty but appears to be irrelevant to chronic poverty, whereas a married household head reduces the likelihood of transient poverty but is not important for chronic poverty. It is likely that the Tonle Sap and plateau regions have higher chronic poverty than the Coast and Mekong plains, while the plateau region has the highest transient poverty, showing the need for different policies to address the two types of poverty and for each agro-climatic region.

It is widely noted that a household will suffer from shocks, unexpected and short-lived, if credit or other forms of formal or informal insurance fail to function. It is also possible that shocks can cause a previously non-poor household to become poor indefinitely or a moderately poor household to fall into long-term poverty. Policies such as unemployment insurance and benefits, consumption credit, social safety nets (transfers, work for food programmes), health services and income stabilisation schemes are therefore important and would provide long-term benefits.

Our results not only reflect the decreasing poverty headcount over time but also highlight that, with a poverty rate of 30.1 percent in 2007, considerable numbers of people are unable to escape from poverty. We find that increasing human and physical assets are important to deal with chronic poverty, a finding consistent with Jalan & Ravallion (1998). Nonetheless, further in-depth analysis is needed to better understand the factors associated with chronic poverty. Qualitative methods such as “the stages of progress” (Krishna 2009) would complement and enrich this understanding, which cannot be obtained from quantitative analysis alone.

Chapter 5

Transient and Chronic Poverty in Nine Villages of Cambodia: Panel Data Evidence—Asset Approach

5.1 Introduction

We have seen that poverty has increasingly been defined by both monetary and non-monetary measures. Development economists often use income and consumption (monetary indicators) to measure well-being, but monetary data have accuracy limitations, and non-monetary indicators such as durable assets, access to utilities and housing characteristics have been used to complement monetary measures of welfare. These non-monetary data are a better source of information about long-term living standards than income and consumption because they have been accumulated over time and often have less likelihood of measurement errors. However, it is important to note that non-monetary data may fail to describe short-term shocks to households. In more recent years, a number of studies (Booysen *et al.* 2008; Filmer & Pritchett 1998; Kolenikov & Angeles 2004; McKenzie 2004; Sahn & Stifel 2003) have attempted to develop a new methodology to aggregate various household assets into a single variable and use that as an index to predict poverty.

Chapter 4 used three separate years of longitudinal panel data on 827 households to measure transient and chronic poverty based on consumption as a welfare indicator, identifying the key determinants of chronic and transient poverty. Owing to problems with the household data from surveys on food and non-food consumption, Albert (2009b) suggests adopting the asset-based approach proposed by Filmer & Pritchett (1998). The main objective of this chapter is to re-examine the empirical findings presented in Chapter 4 using this approach.

5.2 Data and Methods

Empirical work in this chapter is also based on the results of surveys conducted in nine villages in 2001, 2004/5 and 2008 by CDRI. The information collected includes household demographics, housing conditions, land ownership and transactions, credit markets, food and non-food consumption, non-land assets, livestock ownership, household income, agricultural production, production expenditure and wages and self-employment.

Although survey data are available for three different years, determining the change has proven problematic. Inconsistencies have been introduced over time, and these are hard to remedy at this stage. The meaning of some questions has changed, whereas others have been combined or split to meet the purpose of the study for each round. Interviewer training and allocation could also impact on the measurement of household income and expenditure. In addition, the comparison of monetary indicators is only as valid as the deflator used. In this regard, CDRI has also collected the price of 106 food and non-food items to construct a village CPI since 2004/5. However, lack of data on commodity prices in 2001 requires assumptions regarding village inflation rates between 2001 and 2004/5. The MOPS (Fitzgerald & So 2007) simply assumes the inflation rate across all villages between 2001 and 2004/5 was around 18 percent—which is unlikely to be true, given that the nine selected villages are located in different regions. Chapter 4 also assumed that the inflation rate was approximately 17 percent. Importantly, the quality of commodity price data is also poor. Therefore, real income and consumption data derived from the estimated village CPI have serious drawbacks.

When using lists to ask people about their assets (such as bicycles, TVs and sources of drinking water), they often provide more accurate information than for income and expenditure. Despite this, the use of a single proxy can lead to unreliable or unstable measures of socio-economic welfare. Constructing an asset/wealth index can incorporate a number of such proxies into a single variable. The most popular method is to assign weights to observed variables and sum them. Pearson (1901) and Hotelling (1933) developed PCA in the early 20th century for the similar purpose of aggregating information (in Kolenikov & Angeles 2004). In economics, this method has been applied to studies of co-integration and spatial convergence, forecasting, simultaneous equations, education and poverty.

One of the most influential poverty analysis studies using PCA to construct a wealth index was Filmer & Pritchett (1998), which suggests aggregating several binary asset ownership variables into a single dimension. As noted by Kolenikov & Angeles (2004), PCA is suitable only for continuous data because it was developed for samples from multivariate normal distribution, and most of the theoretical results were derived under the normality assumption. However, an alternative approach to the analysis of discrete data, polychoric PCA, was well developed by Pearson & Pearson (1922) and Olsson (1979). Polychoric PCA uses maximum likelihood, similar to an ordered probit regression, to estimate the correlation between the unobserved normally distributed continuous variables from their discrete version, and has a number of advantages over PCA. Polychoric PCA coefficients are more accurately estimated than with PCA. Importantly, its assumptions take the ordering of the categories into account. For example, the quality of construction of a home or the different educational levels of household heads might be recorded on a 1–4 or 1–5 scale. Binary data, such as a variable that can take one of two values, such as gender, ownership of a car or a decision to participate in a programme, can be viewed as a special case of ordinal data. Kolenikov & Angeles (2004) demonstrate that Filmer & Prichett's simple procedure of splitting ordinal data into binary variables introduces a large amount of distortion into the correlation matrix, because the variables are automatically perfectly negatively correlated with each other. In addition, the ordinal information is lost because PCA treats every variable as the same. Polychoric PCA solves these problems by assigning each value of a discrete variable and ensuring the coefficients of an ordinal variable follow the order of its values.

Given this, Albert (2009a) still recommends applying PCA to construct a wealth index. He describes the calculation of a wealth index using PCA for the PDS data as a two-stage process. Firstly, PCA is run on the asset data of a national survey (but only for rural households, since PDS areas are rural). Second, the resulting factor scores of the first principal component are used to generate the weight for the component wealth index on the PDS data. Because the purpose of the study is to look into the dynamics of living standards, it is crucial to have an absolute poverty line to generate a wealth index from PDS data. Albert suggests using the poverty rate estimated by consumption data with the national survey (CSES 2003/4) as the benchmark for the poverty line. As Table 5.1 shows, in 2004 poverty in rural areas relative to the total poverty line was 39 percent, and that relative to the food poverty line 22 percent. In line with poverty rate estimated by the consumption approach, two cut-off lines can be used: 1) the 39th percentile of the asset index; and 2) the 22nd percentile of the asset index. As a result, we can define households as:

1. Poor if the value of wealth index is less than the 39th percentile of the asset index distribution of persons residing in rural areas;

2. Very poor if the value of wealth index is less than the 22nd percentile of the asset index distribution of persons residing in rural areas.

Table 5.1: Poverty Headcount Index by Region, 2004 and 2007 (%)

	2004	2004*	2007
Food poverty line			
Phnom Penh	2.55	2.55	0.11
Other urban	14.15	14.78	12.73
Rural	22.23	22.12	20.78
Cambodia	19.68	19.71	17.98
Total poverty line			
Phnom Penh	4.60	4.60	0.83
Other urban	24.73	25.78	21.85
Rural	39.18	39.05	34.70
Cambodia	34.68	34.78	30.14

Note: * limited to villages in the 2007 CSES sampling frame
Source: World Bank (2009a)

Albert (2009a) creates a composite asset index from a selection of variables that are commonly available across the three PDS surveys and CSES 2004. These indicators can be divided into characteristics of housing structure (type of house), household access to utilities and ownership of durable assets.

The proportion of households holding asset indicators in the PDS 2004/5 was slightly different from CSES 2004 (Table 5.2). For example, more households owned boats, water pumps and wooden houses and had access to drinking water from a pond/river in PDS 2004/5 than in CSES 2004, while the number of households with threshing machines or toilets in PDS 2004/5 was far less than in CSES 2004. The differences may owe partially to sampling design and/or size, so a simple comparison could be misleading. If we take all factors into account, to some extent the quality of asset indicators in PDS 2004/5 could be similar to CSES 2004, which is made up of nationally representative household data. Even though PDS empirical results are not nationally representative, they provide an interesting case study on poverty dynamics and the robustness of the analysis is high.

The first column of Table 5.3 provides the scoring factors of the first principal component. The scoring factors are positive for all durable assets except for owning a boat, while poor quality housing materials such as bamboo or thatch receive negative coefficients, as does poor access to drinking water. In other words, the weights for each index component that reflect higher standards of living contribute positively to the asset index, and components that reflect lower standards of living contribute negatively.

The last three columns of Table 5.3 present means for each indicator in three wealth quintiles. As in Filmer & Prichett (2001) and McKenzie (2004), asset ownership differs remarkably. For example, only 24 percent of the poorest quintile of households own a radio compared with 47 percent of the richest quintile; 4 percent of the poorest households have a wooden house compared with 82 percent of the richest households. These results show that, to some extent, the asset index is a good proxy for well-being in CSES 2004.

Table 5.2: Descriptive Statistics in CSES 2004 and PDS 2001–8

	CSES 2004		PDS 2001		PDS 2004/5		PDS 2008	
Variable	**Mean**	**Std. dev.**	**Mean**	**Std. dev.**	**Mean**	**Std. dev.**	**Mean**	**Std. dev.**
Radio	0.354	0.478	0.200	0.400	0.310	0.463	0.310	0.463
TV	0.407	0.491	0.245	0.431	0.447	0.498	0.571	0.495
Bicycle	0.665	0.472	0.451	0.498	0.643	0.479	0.758	0.428
Motorbike	0.225	0.418	0.111	0.315	0.191	0.393	0.368	0.482
Animal cart	0.296	0.456	0.264	0.441	0.260	0.439	0.245	0.431
Sewing machine	0.040	0.197	0.054	0.227	0.077	0.267	0.075	0.264
Generator	0.021	0.144	0.012	0.109	0.027	0.161	0.050	0.217
Boat	0.101	0.302	0.415	0.493	0.485	0.500	0.438	0.496
Plough/harrow	0.464	0.499	0.426	0.495	0.395	0.489	0.302	0.460
Water pump	0.017	0.128	0.127	0.333	0.152	0.360	0.227	0.419
Thresher	0.874	0.332	0.005	0.069	0.010	0.098	0.021	0.142
Rice mill	0.023	0.151	0.025	0.157	0.036	0.187	0.056	0.229
Drinking water from hand pump	0.292	0.455	0.209	0.407	0.172	0.377	0.167	0.373
Drinking water from dug well	0.328	0.470	0.204	0.403	0.166	0.372	0.169	0.375
Drinking water from pond/ river	0.255	0.436	0.578	0.494	0.628	0.484	0.595	0.491
Toilet	0.643	0.479	0.105	0.307	0.100	0.301	0.163	0.370
Wooden house	0.388	0.487	0.440	0.497	0.586	0.493	0.757	0.429
Bamboo/thatch house	0.397	0.489	0.399	0.490	0.334	0.472	0.254	0.436
Ag. land >0 and <1,000 m^2	0.397	0.489	0.399	0.490	0.334	0.472	0.254	0.436
Ag. land >1,000 and <3,000 m^2	0.258	0.438	0.239	0.427	0.316	0.465	0.270	0.444
Ag. land >3,000 and <5,000 m^2	0.034	0.182	0.045	0.207	0.048	0.215	0.097	0.296
Ag. land >5,000 m^2	0.023	0.150	0.031	0.175	0.027	0.161	0.051	0.220

Note: CSES 2004 only rural observations are included
Source: CSES 2004 and CDRI survey data 2001–8

Asset index and poverty rates across PDS villages can be estimated from the scoring factor of the first principal component and the cut-off (wealth index poverty line) derived from CSES 2004. The result is that the poverty rate across all villages and regions dropped significantly during the period 2001–8 (Table 5.4). The 2008 poverty rate was 33.7 percent—29.4 percent lower than in 2001, indicating that the poverty rate reduced by 3.7 percent per year over the study period. Among the four different regions, Tonle Sap registered the highest poverty headcount in 2001. Eight years later, poverty in that region had declined to the second-lowest figure, below the average. This result completely contradicts that of the

consumption approach, which finds the Tonle Sap region still suffering from a high poverty rate. The poverty rate based on assets is highest in the coastal region, which is the lowest of the four regions if a consumption approach is used. Despite this, both asset and consumption approaches reveal that the poverty rate in the selected villages declined remarkably between 2001 and 2008.

Table 5.3: Principal Components and Summary Statistics for Asset Indicators, CSES 2004

Variable	Scoring factor	CSES 2004	Lowest	Middle
Radio	0.1511	0.354	0.239	0.370
TV	0.3518	0.407	0.121	0.410
Bicycle	0.2641	0.665	0.446	0.713
Motorbike	0.3036	0.225	0.050	0.180
Animal cart	0.3036	0.296	0.076	0.286
Sewing machine	0.1616	0.040	0.004	0.023
Generator	0.0833	0.021	0.006	0.016
Boat	-0.0195	0.101	0.107	0.098
Plough/harrow	0.2895	0.464	0.215	0.496
Water pump	0.0115	0.017	0.015	0.017
Thresher	0.092	0.874	0.819	0.883
Rice mill	0.1663	0.023	0.000	0.009
Drinking water from hand pump	0.0147	0.292	0.278	0.309
Drinking water from dug well	0.0078	0.328	0.333	0.315
Drinking water from pond/ river	-0.0538	0.255	0.294	0.243
Toilet	0.1232	0.643	0.542	0.670
Wooden house	0.4394	0.388	0.038	0.359
Bamboo/thatch house	-0.3969	0.397	0.745	0.335
Ag. land >0 and <1,000 m^2	-0.1512	0.397	0.509	0.396
Ag. land >1,000 and <3,000 m^2	0.1819	0.258	0.119	0.278
Ag. land >3,000 and <5,000 m^2	0.1071	0.034	0.006	0.031
Ag. land >5,000 m^2	0.0972	0.023	0.006	0.015
Asset index		-0.1711	-1.769	-0.150

Note: Only rural observations are included
Source: CSES 2004

Table 5.4: Poverty Incidence in Asset and Consumption Approach, 2001–8 (%)

	Asset approach			Consumption approach		
	2001	**2004**	**2008**	**2001**	**2004**	**2008**
Tonle Sap	66.1	39.4	29.8	48.7	44.4	46.2
Krasang	57.6	17.9	19.6	17.4	9.3	8.1
Andong Trach	62.1	36.3	20.6	72.1	52.5	59.0
Khsach Chi Ros	76.9	63.2	45.5	63.2	73.6	74.7
Mekong plains	62.5	52.1	38.7	19.5	19.1	12.3
Prek Khmeng	81.3	70.9	53.8	13.6	13.6	8.2
Ba Baong	41.0	29.7	20.1	25.5	24.5	16.4
Plateau	60.3	44.8	28.2	63.6	53.0	33.7
Kanchor	58.6	38.6	24.1	50.9	39.6	47.2
Dang Kdar	65.0	54.0	40.1	61.7	68.2	23.4
Trapeang Prei	54.9	40.5	12.8	94.1	49.0	27.5
Coastal	63.2	46.1	44.9	11.9	37.6	11.0
Kompong Tnoat	63.2	46.1	44.9	11.9	37.6	11.0
Total	63.0	45.2	33.7	40.9	39.5	28.5

Source: CDRI survey data 2001–8

Table 5.5: Household Poverty Status by Village and Region (%)

	Asset approach			Consumption approach		
	Chronically poor	**Transient poor**	**Never poor**	**Chronically poor**	**Transient poor**	**Never poor**
Tonle Sap	25.6	45.3	29.1	23.9	42.7	33.3
Krasang	11.6	50.0	38.4	1.2	23.3	75.6
Andong Trach	18.0	50.8	31.2	27.9	62.3	9.8
Khsach Chi Ros	44.8	36.8	18.4	43.7	48.3	8.1
Mekong plains	32.3	35.0	32.7	3.2	30.0	66.8
Prek Khmeng	49.1	33.6	17.3	1.8	23.6	74.6
Ba Baong	15.5	36.4	48.2	4.6	36.4	59.1
Plateau	27.3	43.2	29.6	21.2	59.1	19.7
Kanchor	23.6	39.6	36.8	24.5	45.3	30.2
Dang Kdar	36.5	42.1	21.5	19.6	63.6	16.8
Trapeang Prei	15.7	52.9	31.4	17.7	78.4	3.9
Coastal	42.2	33.9	23.9	3.7	42.2	54.1
Kompong Tnoat	42.2	33.9	23.9	3.7	42.2	54.1
Total	30.1	40.4	29.5	14.9	44.5	40.6

Source: CDRI survey data 2001–8

The chronically poor are households that have an asset index below the poverty line for all three years, the transient poor are households whose asset index falls below the poverty line in one of the years and the never poor are households with an asset index above the poverty line in all years. Based on assets, the largest numbers of households were transient poor. Of the total poor in the sample, approximately 57 percent were transient poor. To some extent, this confirms our previous suggestion that tackling rural poverty requires a clear understanding of the nature of transient poverty. The number of transient poor households is highest in the Tonle Sap and plateau regions, and the number in chronic poverty is highest in the coastal region. It is also worth noting that the proportion of chronically poor households based on the asset

approach is 50 percent higher than it is based on the consumption approach; the number of never poor households is 27 percent lower.

Table 5.6 provides descriptive statistics of household and geographic characteristics in the initial period. Chronically poor households are often smaller, with lower dependency rates and fewer male and female adults aged 15–64 than transient poor and never poor households. The household head of chronically poor households is more likely to be younger, less educated, female and single than in transient and never poor households. Never poor households have fewer children aged 0–7 than chronic and transient poor households. In addition, chronically poor households have the least agricultural land, non-land assets and livestock, while never poor households have more of these assets. Less agricultural land, non-land assets and livestock, fewer male and female workers and young, single, female household heads appear to be key factors of chronic poverty.

Table 5.6: Household Demographics and Poverty Status

	Chronically poor	Transient poor	Never poor	Total
Household members	5.4	5.9	6.3	5.9
Children 0–6	1.1	1.1	0.9	1.0
Children 7–14	1.4	1.5	1.5	1.4
Adults over 64	0.2	0.2	0.3	0.2
Male adults 15–64	1.2	1.5	1.8	1.5
Female adults 15–64	1.6	1.6	1.8	1.7
HHH is male	0.7	0.8	0.9	0.8
HHH age	42.4	42.5	45.9	43.4
HHH education (years)	2.5	3.5	3.8	3.3
HHH married	0.8	0.9	0.9	0.8
Agricultural landholding per capita (KHR‘0,000s)	0.1	0.2	0.4	0.2
Non-land assets per capita (KHR‘0,000s)	3.8	11.4	23.8	12.8
Livestock per capita (KHR‘0,000s)	10.5	16.9	24.6	17.2
Employment status of HHH (%)				
Wage worker within village	19.3	22.8	32.8	24.7
Self-employed	9.2	6.0	2.5	5.9
Wage worker outside village	57.0	57.5	48.0	54.5
Other	14.5	13.8	16.8	14.9
Total	100.0	100.0	100.0	100.0

Source: CDRI survey data 2001–8

5.3 Econometric Results: Determinants of Chronic and Transient Poverty

We use a multinomial logit model to examine the factors affecting the likelihood of a household being in either of the poverty groups. The explanatory variables include human capital, land and physical assets and geography. The human capital variables consist of dependency, the number of male and female adults aged 15–64 and the age, education, gender, main economic activity and marital status of the household head. We also include agricultural land, household durable assets and livestock, as well as dummies representing the four broad agro-climatic regions.

The dependent variable takes the value of 1, 2 or 3 for chronically poor, transient poor and never poor households, respectively. Table 5.7 reports the marginal effects and their statistical significance for the three poverty measures.

Table 5.7: Multinomial Logit Estimation on Determinants of Chronic and Transient Poverty

	Marginal effect		
	Chronically poor	**Transient poor**	**Never poor**
Dependency	-0.008	-0.009	0.0173**
Male adults 15–64	-0.044**	-0.002	0.046***
Female adults 15–64	-0.025	-0.005	0.031**
HHH age	-0.001	-0.004	0.006
HHH age squared	0.00001	0.00002	-0.00004
HHH education	-0.019***	0.017***	0.002
HHH male	-0.002	0.098	-0.096*
HHH married	-0.057	-0.069	0.127**
HHH wage worker within village	0.243***	0.031	-0.275***
HHH self-employed worker	0.080*	-0.014	-0.066*
HHH wage worker outside village	0.0242	-0.052	0.027
Agricultural land (log)	-0.020***	0.0019	0.018***
Non-land assets (log)	-0.048***	-0.071***	0.119***
Livestock (log)	-0.007**	0.005	0.001
Tonle Sap	-0.178***	0.097*	0.081*
Mekong plains	-0.001	0.044	-0.042
Plateau	-0.175***	0.095*	0.079*
Number of observations	8.27		
LR chi2	389.63		
Prob>chi2	0.0000		
Log-likelihood	-704.732		
Pseudo R-squared	0.2166		

Note: * statistically significant at 10% ** significant at 5% *** significant at 1%
Source: CDRI survey data 2001–8

The results show that households with a large number of males aged 15–64 are significantly negatively associated chronic poverty and positively associated with the probability of being never poor. A higher educational level of the household head reduces the likelihood that households are chronically poor. Household heads who are self-employed or daily wage workers within the village are more likely to be chronically poor and less likely to be never poor, confirming that economic activities in the villages are mostly insecure with lower returns. More agricultural land, non-land assets and livestock decrease the probability of being chronically poor; livestock is less relevant for transient poor and never poor households. Non-land assets are the most important factor in reducing the likelihood of being transient poor. Male-headed households are less likely to be never poor, and households with a married household head are more likely to be never poor. In addition, we found that a high dependency rate increases the probability of being never poor and a high educational level of household head increases the probability of households being transient poor—which is unlikely to be the case.

However, the coefficient of female adults aged 15–64 showed unexpected results and is no longer significant for chronic and transient poverty, while the consumption approach indicates that the amount of female adults aged 15–64 in a household has a significant positive impact on the probability of households being poor, and a negative impact on the probability of never being poor. Furthermore, agricultural land and livestock have become statistically significant

for the chronically poor, non-land assets for the transient poor and agricultural land for the never poor; these variables are not statistically significant under the consumption approach.

Table 5.8: Key Determinants of Chronic and Transient Poverty

	Asset approach			Consumption approach		
	Chronically poor	**Transient poor**	**Never poor**	**Chronically poor**	**Transient poor**	**Never poor**
Dependency			+	+		-
Male adults 15–64	-		+	-		
Female adults 15–64			+	+	+	-
HHH age						
HHH age squared						
HHH education	-	+		-		+
HHH male			-		+	
HHH married			+		-	+
HHH wage worker within village	+		-			
HHH self-employed worker	+		-			
HHH wage worker outside village						
Agricultural land (log)	-		+			
Non-land assets (log)	-	-	+	-		+
Livestock (log)	-					
Tonle Sap	-	+	+	+		-
Mekong plains						
Plateau	-	+	+	+	+	-

Note: (+) = positive effect (-) '= negative effect

Broadly speaking, the empirical study based on assets provides more telling results than the consumption approach. A few unexplained variables such as dependency rate and educational level of household head may be solved if a superior method, such as polychoric PCA, is adopted.

5.4 Summary

This chapter re-measures chronic and transient poverty and re-examines their determinants using the household survey panel data covering the period 2001–8. The largest numbers of households were found to be transient poor, in accordance with results in Chapter 4, but this chapter generates new important and more telling insights into the key determinants of chronic and transient poverty. We find that numbers of males aged 15–64 and characteristics of household heads relating to educational level and occupation, agricultural land and livestock are important factors for assessing chronic poverty but are not significant determinants of transient poverty. Only non-land assets are associated with lower chronic and transient poverty. The Tonle Sap and plateau regions have lower chronic poverty and higher transient poverty than the coastal region. In general, our empirical results reconfirm that different policies will be needed to address the two types of poverty and for each agro-climatic region.

In addition, we have noted that non-land assets play a critical role in reducing transient poverty, which in turn highlights the incomplete market for credit and the lack of formal insurance and social protection programmes, meaning rural households have to rely on informal risk-coping mechanisms such as physical assets accumulation. However, during a widespread and severe income shock such as the recent global financial and economic crisis, the prices of the assets they hold may fall quickly because of mass selling of similar assets at the same time after the shocks are felt (Fafchamps & Gavian 1997). As a result, villagers may be reluctant and/or unable to sell their assets and therefore fall into poverty. This emphasises that insurance, social protection programmes and other mechanisms for protecting these vulnerable groups are the most important policies for preventing poverty. Furthermore, we have verified that increasing human and physical assets are more appropriate policies to deal with chronic poverty.

Chapter 6

Conclusion and Policy Implications

6.1 Conclusions

Poverty is the single most important problem facing Cambodia. The country's poverty rate may have declined significantly in the past decade, but it remains one of the highest in developing East Asia. Poverty rates in 2007 stood at 30 percent, but the global economic crisis could have increased rates by an estimated 1–4 percentage points in 2010 (World Bank 2009c). Growth which averaged 8 percent in real terms between 1994 and 2007 was correctly heralded as impressive, but poverty reduction did not keep pace, declining by an average of only 1 to 1.5 percent over the same period. This suggests that: 1) Cambodia's high-growth economy was not necessarily pro-poor; 2) economic growth may not be a sufficient condition for poverty alleviation; 3) poverty is locally specific and its reduction has not been linked to macro-economic development and recent engines of growth; and 4) internal market integration and development remain key concerns for pro-poor development and growth, as this study suggests.

That poverty reduction cannot singularly rely on economic growth is hardly surprising, given poverty's multi-dimensional nature. Poverty is capability deprivation and its determinants are related to interlocking problems at the national, sectoral and micro levels. History is central to explanations of poverty in Cambodia, and decades-long civil war, regime brutality and isolation underpin many current impediments to poverty alleviation, such as low levels of physical and human capital and weak governance. At the sectoral level, the underperformance of agriculture and the narrow sectoral base of economic growth can explain the phenomenon of rural poverty. At the micro level, land insecurity, poor asset ownership, limited access to finance and public goods and overall human development have hampered communal and household welfare improvements. Shocks such as the economic and food security crises can also be seen as prominent causes of poverty.

Key development blueprints and supporting documents identify poverty reduction as the core policy goal and overriding concern of the Cambodian government. These plans also acknowledge that success in poverty reduction efforts relies on more than economic growth, evidenced by the placement of good governance at the heart of the RGC's Rectangular Strategy, the NSDP 2006–10 and the NSDP 2009–13. Among the main pillars of this strategy are: enhancement of agriculture; infrastructure building and rehabilitation; human resource development; and private sector development. These policy thrusts aim to foster opportunity, facilitate empowerment and address income insecurity, vital elements in any poverty reduction policy platform. Government ownership of development plans has strengthened significantly over the years, and we can say that poverty reduction policies, though not perfect, are in a good state. Implementation, however, is another issue. Falling poverty rates indicate a notable degree of success. However, compared with rates of growth, it is clear that poverty should have decreased faster than it has, and this points towards a gap between planning and implementation.

The PDS, which builds on a CDRI study in 2001 and the MOPS 2004/5, is a longitudinal poverty monitoring tool that aims to uncover salient poverty trends and determinants. It employs a mixed research method that is both quantitative and qualitative. Quantitative methods involved mainly statistical analyses of a household panel dataset comprising information from the MOPS

and surveys in 2004/5 and 2008. The total of 827 study households were drawn from the 2001 sample set and represented nine rural villages and four major rural agro-ecological regions of the country: the Mekong plains, Tonle Sap, the upland plateau and coastal areas. Qualitative aspect of the study primarily involved the amalgamation and analysis of FGD and SSI results. Participants in these activities were rural households, community officials and leaders and other individuals, male and female, from the nine villages surveyed.

The multi-dimensional nature of poverty means this study defines poverty in both monetary and non-monetary terms. Income and consumption served as the monetary indicators. Asset ownership served as the main non-monetary measure, although the qualitative analyses in particular discussed other indicators. The study also distinguished between chronically poor, transient poor and never poor, defined as households whose per capita consumption or asset indices were under the relevant poverty lines in all, any one or none of the three survey years, respectively. It also distinguished between strongly and poorly performing villages, the former having lower poverty rates than the rural poverty rate, the latter with higher rates.

Using the longitudinal dataset, the PDS aims to deepen the quantitative and qualitative analyses and understanding of the extent, determinants and nuances of Cambodian rural poverty, addressing the following key research questions:

1. How has the extent of poverty changed? Are there notable variations in the extent of change across the study villages and the four agro-ecological regions?
2. If poverty reduction has occurred, has it been sufficient to lift the study villages and regions out of pervasive poverty?
3. To what extent is poverty chronic and transient, and to what extent are the improvements in welfare sustainable?
4. How do changes in income relate to changes in consumption, asset ownership and therefore poverty? Does income growth necessarily translate into growth in consumption and asset ownership?
5. What are some determinants of chronic and transient poverty? What has underpinned the sustainability or lack of sustainability of welfare improvements?
6. To what extent and in what way has agricultural growth contributed to income growth and/or poverty reduction? To what extent and in what ways have shocks and specific local events contributed to poverty? How have households responded to cope with negative shocks or exploited the positive benefits of shocks and events

The key limitations of the PDS need to be borne in mind when considering its findings. First, the purposive selection of the sample households compromises the representativeness of the results. Second, data comparability is undermined by the problem of attrition. Third, inconsistencies were introduced because the previous studies were tailored to specific purposes. Notwithstanding these limitations, the PDS is a highly valuable and unique exercise.

The major findings in response to the research questions are as follows.

a. At the aggregate level, poverty incidence dropped; however, this aggregate picture covers up notable variations

This finding is true whether consumption or asset ownership was the poverty measure used. Using the consumption approach, measured against village poverty lines, overall poverty was found to have gone down by 12 percentage points to 29 percent in 2008 compared with 2001. However, some villages experienced double-digit reductions in poverty but others had only single-digit reductions, and one saw its rate increase. Using the asset approach, overall poverty was found to have declined by about 18 percentage points to 34 percent in 2008 compared with 2001. All villages experienced poverty rate reductions, some by 30–42 percentage points and the rest by 18–28 percentage points.

b. Income growth was considerable but did not all translate into consumption growth

The average daily per capita income in all villages rose by 179 percent between 2001 and 2008, with every village experiencing an increase of over 100 percent. However, average daily per capita consumption in all villages went up by only 23 percent, with consumption growth very high for two villages, modest for six and negative for one. Notwithstanding the methodological limitations, these results can be considered as being aligned with theories that income and consumption do not necessarily correlate,[14] and support the notion that poverty as represented by consumption does not necessarily decline with income improvements.

c. Consumption- and asset-based poverty measurements produced mixed results regarding regional poverty reductions

Using the consumption approach, Andong Trach and Khsach Chi Ros villages in the Tonle Sap region continued to have the highest poverty in 2008, with very modest reductions relative to 2001. Kompong Tnoat, the one study village in the coastal region, had the lowest poverty rate. Using the asset approach, however, poverty in the Tonle Sap region changed from being the highest to the second-lowest of all the four regions, with the largest decline of all regions between 2001 and 2008—36.3 percent. Villages in the coastal region changed from having the lowest rates to having the highest. These divergences in results affirm the importance of understanding how poverty is understood and assessed. Asset indexes for measuring poverty may not be the most appropriate measure, although they do provide reliable indicators of well-being improvement. Despite problems of attrition with the consumption data, this approach to measuring poverty is still valid for the PDS.

d. Even with the decline, poverty remained pervasive in some areas

Poverty levels remained well above the rural poverty rate in poorly performing villages, reaching as high as 75 percent in Khsach Chi Ros. This village was an exceptional case in terms of agricultural development and poverty reduction, transitioning to adopting modern rice farming practices and diversification. However, increased competition to convert the flooded forest and over water and fisheries arose, and the area of dry season rice cultivation expanded, activating conflicts over water and land use for both fisheries and rice growing between those with subsistence and commercial interests. Combined with the many people addicted to gambling, these were the main causes of poverty. Strongly performing villages included villages such as Trapeang Prei, whose poverty rates showed a two thirds decline relative to 2001 and which were well below the rural poverty rate. Trapeang Prei benefited from recent developments in the land market and was strongly connected with urban development and growth in wage

[14] The most prominent theory is the Keynesian theory on consumption and the permanent income hypothesis.

labour employment, which explained its high success rate. Despite a considerable drop, the consumption-based poverty rate in the upland plateau remained high at 34 percent.

e. Factors such as initial growth of villages, endowment and linkages with urban growth underlie varying poverty dynamics and rates of reduction

This observation is mainly drawn from qualitative data analysis of poverty reduction stemming from unique and varied social and economic development events occurring between 2005 and 2008, and needs to be backed up with analysis from quantitative regression methods.

Strongly performing villages had low poverty rates and sustained poverty reduction. This pattern was attributed to the success of agricultural growth and diversification alongside developments in irrigation and road infrastructure in villages such as Krasang in the Tonle Sap region and Ba Baong in the Mekong plains. In these and other villages, farmers also benefited from improved market linkages for selling agricultural products, and from increased internal and cross-border migration facilitated through better links to areas of development. Poorly performing villages had limited capacity to increase agricultural production through improved market connections, as they lacked irrigation systems to adopt modern farming techniques.

Some of the strongly performing villages (Kompong Tnoat in the coastal region, Prek Khmeng in Mekong plains and Dang Kdar in the plateau region) managed to double or triple income from forestry or fisheries through increased CPR access in the years before the national election in 2008. Poorly performing villages such as Khsach Chi Ros and Kanchor also had this opportunity. Although many benefited from a massive conversion of forest and flooded forest land for dry season rice or cash crop growing in the area, indigenous households in some villages without labour or financial capital and know-how could not grasp these opportunities. Trapeang Prei village, with poor soil and low rice yields, benefited from its increased links to urban growth and development in Phnom Penh and from land market-related transactions; the latter factor contributed to poverty reduction in Prek Khmeng village also. Successful labour migration resulted in poverty reduction in other strongly performing villages too. Those villages were in a better position to cope with income shocks and could sustain consumption.

Poorly performing villages had high poverty rates or did not sustain poverty reductions between 2001 and 2008. These villages experienced either limited wet season rice productivity, such as Andong Trach and Kanchor, or were just beginning to adopt techniques for dry season rice cultivation in the case of Khsach Chi Ros. A lack of human and financial capital and agricultural know-how prevented many indigenous households from taking advantage of local agricultural transformations, such as in Khsach Chi Ros and Kanchor, leaving them reliant on irregular wage labour from increased demand for agricultural labour or illegal or legal conversion of forest and flooded forest land for dry season rice or cash crop growing. However, these economic activities were either unsustainable, owing to their illegal nature, or vulnerable to economic shocks. A key constraint to poverty reduction in poorly performing villages was conflicts over water and common land access for subsistence and commercial activities following large-scale land use transformation. Poorly performing villages saw impressive increases in per capita income, albeit from a low base. However, continued high poverty rates confirmed that many households could not cope with unexpected shocks and crises.

f. Transient poverty was considerably higher than chronic poverty

The consumption approach showed 45 percent of sample households to be transient poor and 15 percent to be chronically poor, while the asset approach showed 40 percent to be transient poor and 30 percent chronically poor. Transient poverty was pervasive in all four agro-ecological regions. In the upland plateaus, around 59 percent (consumption-based measures) and 43 percent (asset-based measures) of the sample households were transient poor. These results do not imply that chronic poverty is less of a problem than transient poverty, rather that households can fall into and out of poverty, and this entails a different focus to poverty reduction policies. One positive note was the significant proportion of never poor households in the survey, around 41 percent based on consumption methods and 30 percent based on asset methods.

g. Shocks and specific local events were central causes of transient poverty or lack of sustainability in both food and non-food consumption levels, and can be central causes of chronic poverty

These shocks and events refer to the food crisis and resulting price spikes, the global economic downturn and resulting price deflation and abnormal local weather conditions. Net food buyers were hurt by higher food prices. Net food sellers did not necessarily gain, given higher input prices and the fact that most of them had little surplus to sell. Those who made investments to boost agricultural yields were hurt by price declines following the economic crisis. Droughts and flooding also hurt crop production, and the impact of tightened CPR access after the 2008 elections hurt income from forestry and fisheries. All these shocks meant consumption decline was used widely as a coping strategy; through effects on food security, for example, these shocks can heighten chronic poverty.

h. The three key drivers of income growth were agricultural growth (likely to be sustainable) and the real estate boom and increased CPR access (both less likely to be sustainable)

- Farming incomes were boosted greatly by a combination of factors, such as greater agricultural mechanisation, higher-yielding seeds, rural infrastructure development that increased market access, crop diversification and access to finance that enabled agricultural investments. The food price escalation also both improved profit margins and incentivised commercial crop production and diversification, but overall it made a limited contribution to income growth. These factors underpinned agricultural income growth, making it sustainable, but problems continued related to increased input prices and a lack of agricultural extension services.

- The real estate boom resulted in a flurry of land transactions, and in some villages, such as Trapeang Prei and Prek Khmeng, average per capita incomes soared and land prices likewise escalated. Around half of the sample households in these villages sold residential and/or agricultural plots between 2005 and 2008. The downside of this development was increased landlessness and illegal land conversions. Equally important was the fact that proceeds from land sales were used more for consumption than for productive purposes. Unlike in previous years, in 2008 fewer households used the proceeds from land sales to cover health care expenses, but a significant number used them to pay for basic consumption items and house construction and repair, and to pay off debts, implying that income sourced from the real estate boom was unlikely to be sustainable.

- Access to CPR was informally relaxed in the years before the 2008 elections, benefiting most regions, and specifically villages dependent on fishing and forestry. However, the informal nature of the access means it could not be expected to be sustainable, and income contractions were unsurprisingly experienced once CPR access was tightened again after the elections. There were also conflicts between local people and outsiders; resource overuse; and illegal land conversions.

i. Non-land asset ownership[15] increased while land ownership declined

A greater proportion of households in all study villages but one owned more durable assets in 2008 compared with 2001, and the quality of housing increased in all villages. Income growth and access to microfinance enabled asset improvements, and infrastructure development also eased purchases, mainly of transport assets. By contrast, there was a disconcerting decline in land ownership, caused in part by land sales from the real estate boom, and landlessness almost doubled from 2001 figures in the two villages that saw a marked increased in land transactions.

j. Three household characteristics happened to be significant determinants of chronic poverty, whether consumption- or asset-based

Using either the consumption or asset approach, it was found that the likelihood of chronic poverty is reduced by: higher numbers of working-age male household members; higher educational attainment of household heads; and higher non-land asset ownership. All three are factors that, in the Cambodian context particularly, can enhance household labour force participation and the source and scope of income generation. The consumption approach showed household size and dependency to be significant also, while the asset approach stressed the importance of agricultural land and livestock possession.

k. Most micro-level attributes that significantly determine chronic poverty do not significantly determine transient poverty

Using the consumption approach, household size and dependency rates were not associated significantly with transient poverty. The asset approach showed transient poverty was not affected strongly by number of working-age males or agricultural land and livestock possession. Number of female adults in the household was found to be associated significantly and positively with chronic and transient poverty using the consumption approach but not the asset approach, while having a male household head was linked positively with consumption- but not asset-based transient poverty. These findings stress the role of shocks in inducing transient poverty and the importance of tailored poverty reduction policies. Findings on a otential gender bias of poverty are mixed and inconclusive.

6.2 Policy implications

A number of policy recommendations can be formulated based on the findings,[16] but two types of policy are of strong importance with regard to all study villages and regions: community growth and addressing chronic and transient poverty. The following should be at the top of the policy agenda.

[15] Ownership here may not be tantamount to legal ownership.
[16] See also individual chapters for some of these.

6.2.1 Pro-poor Policy Responses to Support Community Growth and Poverty Reduction

a. Both farm and non-farm employment is vital for poverty reduction, with different but complementary contributions to pro-poor growth

Results from both strongly and poorly performing villages showed that employment should be integrated into an agricultural and rural development policy framework and any upcoming donor and NGO-led rural development programmes. To support the growth of both sectors, it should be remembered that the non-farm sector will build on gains made by smallholder agriculture and will increasingly influence real wages, food security and poverty reduction.

b. Pro-poor strategies should be integrated and coordinated in development interventions in order to build the capacities of the poor

Pro-poor community growth and poverty reduction policies should focus on rural infrastructure; generating labour demand; technical changes for productivity gains; and access to stable input, output and financial markets to support such technologies. These factors should highlight to the poor the benefits from widespread technology adoption in response to labour markets and the need to diversify in the face of risks of falling grain prices. The process encompasses structural change and requires careful targeting of policies, strategic planning and coordination mechanisms to address the different endowments and needs of the poor in rural areas and the differences between the chronically and transient poor.

Coordination through strategic sectoral planning and of the roles of national and sub-national bodies within the D&D reform structure is needed. The private sector and civil society have important parts to play in highlighting major technical, administrative and political challenges to policy design and implementation. However, promoting structural change from an agricultural base to non-farm-based growth requires large-scale and long-term investments. Many study villages are still in areas far from markets, are in the process of land use transformation and have declining resource bases, suggesting the emphasis should be more on resource rehabilitation, supporting out-migration and meeting local food needs. Therefore, supporting pro-poor agricultural growth remains a key policy agenda for poverty reduction and should be seen as an alternative to out-migration borne out of desperation for better incomes and indefinite large-scale welfare support.

c. Pro-poor agricultural development is important for poverty reduction but should provide mechanisms to address the problems and needs of small landholding farmers

There is a tendency to intensify and diversify agricultural activities to move out of poverty, evidence which is supported by recent market developments in both groups of study villages. However, this has been constrained by a lack of know-how, ineffective agricultural extension services and inadequate savings and irrigation systems. Moreover, the number of agricultural landless households has increased as land concentration has risen, and migration has become an alternative coping strategy for the growing labour force in these villages. In addition, conflicts over CPR access (land and water) for subsistence and commercial agricultural and related activities remained unresolved and further inhibit agricultural development.

d. Pro-poor agriculture should address the needs of poor, rural agricultural households, especially regarding existing conflicts over land and water access for small farmers

Priorities for pro-poor agricultural development are land distribution and security, agricultural modernisation and diversification and public goods (infrastructure and agricultural extension services) delivery for small farmers. Evidence from many developing countries suggests countries with more equitable land ownership can sustain and accelerate growth. Therefore, a key priority should be ensuring that land titling progresses more speedily and that inequality in land ownership is addressed. The granting of social land concessions should be sped up and targeted at frontier areas that are prone to land and water conflicts or conflict between subsistence and commercial interests. Agricultural mechanisms and infrastructure for small farmers are important for improved land productivity, and agricultural loans must be made more readily available so farmers can invest more in modern equipment and systems. Irrigation structures and irrigation systems management must also be strengthened and, with agricultural intensification and diversification, small farmers could cope better with shocks and respond to positive developments in increased market connections, for example. The expansion of agricultural extension services is also a must to improve the capability of farming households to exploit opportunities.

e. Bolster crisis response

Crisis coping strategies are categorised into *ex-post* and *ex-ante* mechanisms. *Ex-ante* mechanisms refer mainly to employment and production strategies that seek to contain the effects of income variability, whereas *ex-post* strategies are those employed after the income losses have already been sustained (Morduch & Sharma 2002). Social protection schemes are crucial for *ex-post* crisis responses and have unfortunately remained weak in Cambodia, with spending on safety nets less than the developing-country average. Social interventions have been fragmented, limited in scope, episode- and donor-driven and unsustainable. As a policy response to the global economic crisis, the government is in the process of establishing a comprehensive social safety net system. Three aspects of this are particularly important: funding sustainability; programme design (targeting and type of schemes, with public work programmes and cash transfers vital); and unified administration. *Ex-ante* strategies, which seek to enhance income sustainability, are longer in term. In this respect, Cambodia's narrow economic base is important. The global economic crisis put the spotlight on this issue, and the government has responded accordingly, as evidenced by the passage of the NSDP Update 2009–13. Better planning has to translate into action, however.

f. Advance community-based CPR management

Increasing community ownership of the commons not only formally entitles local villagers to the benefits of CPR access but also formally endows them with the responsibility to ensure resource sustainability. This addresses the dilemma of how to exploit the contribution of CPR in reducing chronic poverty and preventing transient poverty without risking irreversible resource degradation and depletion. Collective action has been shown to sustain successful CPR management, but is subject to the satisfaction of several conditions. First, it has to be based on a well-defined and context-appropriate property rights regime, with the boundaries under management both clearly laid out and also congruent with the ecosystem and local administrative structures. Second, cost-benefit sharing arrangements must be as equitable as possible, as key factors in the sustainability of participatory resource management are the distribution of dividends and decision-making power. Third, the success of CPR management hinges on the quality of local governance. Reneging on obligations and free-riding and cheating the system

can occur, and it is important to devise cost-effective monitoring, enforcement and sanctioning systems. Fourth, capacity building is a prerequisite for the success of participatory schemes, and technical assistance to enhance the capacities of local communities should be provided. Sustainable natural resource use requires a blend of modern and indigenous knowledge of conservation and utilisation. This should be supported through consultative discussions to avert conflict and through technical assistance to communities.

g. Community ex-ante mechanisms should be constructed as part of poverty reduction strategies

Without formal social safety nets and protection schemes, rural people are vulnerable to income shocks, and often rely on informal coping strategies such as sale of assets, migration or support from relatives or friends. The recent economic crisis eroded these informal coping mechanisms and pushed many households into poverty. Pro-poor policies should build the social and physical capacity of the community and individual households to cope with social and economic shocks through provision of know-how and support to local initiatives and collective action. These initiatives should be well-designed to build social and physical capital and self-help mechanisms to minimise risks. They should also be incorporated into agricultural development and CPR management. For example, saving groups and community ponds, small irrigation schemes and/or farmer cooperatives already exist in some study villages, but these remain weak, with negligible effects on livelihood improvement and *ex-ante* crisis management. They should be advanced and supported in any pro-poor intervention.

h. Continue aggressive implementation of educational strategies

The importance of enhancing human capital through higher educational attainment and skills levels has been established and can be promoted through both increasing education budgets (a priority sector) and enhancing the quality of spending. Access to primary education, already widespread, can be further improved through spending targeted on education quality. Problematic areas also include low teacher competencies and school retention rates. At the secondary and tertiary level, low enrolment ratios must be improved, and budgets for secondary education must be increased to make access more affordable. In terms of workforce skills, there is a mismatch between present levels of skills and the requirements of the private sector, which prevents labour movement into more productive sectors. The lack of management skills, for instance, is an oft-cited reason for the limited number of Cambodians with managerial positions in the garment sector. The private sector has to be encouraged to take up the slack in offering and funding vocational and technical training opportunities.

6.2.2 Pro-poor Policy Responses to Chronic and Transient Poverty

Different policies should be in place for the chronic and transient poor, groups which encounter different livelihood problems.

a. Policies for the chronically poor

The chronically poor are constrained with regard to actively participating in and benefiting from recent growth and development. They are trapped in poverty because they lack financial and productive assets and they have weak human and physical capital, with low education levels and chronic health problems. Most chronically poor are self-employed or daily wage workers within the village, which are opportunities that are mostly insecure and with lower

wages. A number of key strategies should be put in place to help the chronically poor move out of poverty.

- *Expanding pro-poor scholarships and free health care services to target the chronically poor.* All poor households have benefited from pro-poor health services in recent years through the ID Poor card from the Ministry of Planning. However, only some households have benefited from the universal education policy and the school feeding programme; other households have had to force their children to withdraw from school at an early age to help in earning incomes or foraging for food. This study support the expansion of the pro-poor scholarship programme and free health care services along with non-farm income generation programmes for parents as paths out of poverty for the chronically poor.

- *Cash transfer programmes for small business creation and non-farm activities are an effective tool to help the chronically poor.* The strategic design of these kinds of interventions should be linked to broader market demand and appropriate vocational training and understanding of market chains in order to maximise profits.

  Female-headed households without male labour and with many dependants are more likely to fall into chronic poverty. With support from NGO-led rural development projects, single female heads of households have been seen to benefit from saving schemes or rural credit. However, given the limited amount they can borrow, they are not able to take advantage of current economic opportunities to start or sustain small business operations besides selling their unskilled labour. Therefore, special arrangements for cash transfer programmes supported by vocational training for small business creation is the best option for this section of the chronically poor.

- *Enhancing support for development services for both chronically and transient poor.* Single female-headed households often consider alternative income generation activities such as poultry and pig rearing but suffer from lack of knowledge as to how to protect their animals from infectious diseases. This problem is not specific to the chronically and transient poor but relates to livestock production in both strongly and poorly performing villages. It can be addressed by increasing and strengthening agricultural extension service for the poor.

b. Policies for the transient poor

Transient poor households have a different set of problems compared with the chronically poor, often relating to their inability to cope with income shocks. While they have assets for sale in times of difficulty, in the case of recent crises the demand for and price of assets fell and, without formal credit, they became more vulnerable to or fell into poverty. This group of the poor could benefit from formal insurance and social protection schemes. The following strategies are suggested.

- *Formal protection schemes in response to crises, such as food security programmes and employment creation programmes to provide work for the unemployed and/or dismissed workers on labour-intensive government projects*.

- *Building community risk reduction mechanisms such as saving groups.* The poor have benefited from saving schemes and rice banks made available by NGO-led development initiatives to sustain their consumption in times of need, but these locally led initiatives have not been strong enough to cope with the magnitude of the impact

of income shocks. Therefore, the transient poor have often had to rely on traditional informal coping strategies such as loans from moneylenders with high interest rates and sales of farm outputs to merchants/traders willing to offer them credit in times of need but for lower than normal farm-gate prices. This has further eroded their capacity to recover from income shocks. Since the traditional buffer of CPR used for coping with food shortages is being depleted, the only alternative has been migration to secure earnings elsewhere. This is possible with households that have a labour surplus but less so for single female-headed transient poor households, which are left with limited options.

- *Promote linkages between social protection and pro-poor agricultural development.* Evidence from other developing countries suggests agricultural productivity can be supported by well-designed social protection programmes. Productive capacities can be enhanced through the expansion of quality public services for technical transfers to the poor, and such social protection can enhance resilience in the face of threats, limit disinvestment, reduce risk and promote investment by the poor. Crop and livestock insurance schemes through market interventions by the government are important in times of economic crisis, and agriculture should be subject to more social protection, and protection which is more sensitive to impacts on production. The experience of recent economic crises shows that allocations of national insurance funds need to be well-planned and implemented. For the purposes of poverty reduction, however, this study suggests social protection interventions be given priority in the plateau, Tonle Sap and coastal regions, where concentrations of transient poor are highest, particularly since the recent economic crises.

In line with the government's Rectangular Strategy, which puts good governance at its core, the policies recommended above rest on governance reforms at national and sub-national levels. All indicators of governance show the need for improvement but, in the Cambodian context, two deserve priority attention for their beneficial effects in other areas. These are voice and accountability. Meaningful progress on these two indicators of governance can be achieved with improved flows of information, wider avenues for public consultation and citizen participation and judicial reform.

Without question, institutionalising the PDS within CDRI is a mission that holds a great deal of promise. This unique longitudinal study will benefit from further rounds of data collection driven by a longer-term purpose. This will help address its existing limitations and thereby enhance the overall quality of findings. As is often said, poverty, especially poverty that is as pervasive as that in Cambodia, cannot be reduced overnight. The ever-present danger posed by economic and non-economic shocks makes it more difficult to realise long-promised poverty relief. However, studies such as the PDS can help in following through on this promise.

ANNEXES

Annex 1: Study Areas and Participants

Purposive sampling was used to select participants for the FGDs. Annex A1B shows the number of households interviewed and selected for wealth ranking and FGDs in each village. A total of 1,022 households were interviewed in March and September 2008. The sampling frame was predetermined by the 2001 Baseline Study and the 2004/5 MOPS. People's livelihoods were the main criteria for village selection. The survey aimed to revisit as many of the households sampled in the two previous studies as possible to gauge the direction and magnitude of changes in living standards. Systematic random sampling was originally used to select households in 2001. Demographic changes that have occurred in each village since 2001 make the original sample unrepresentative. Given the sampling frame, the research team had limited opportunities to include new households in the survey in 2004/5 and 2008. To fill such gaps, households were selected for wealth ranking using systematic random sampling methods. For all villages, 1,350 (48 percent) out of 2,811 households were selected for inclusion in wealth ranking.

Half of the households included in wealth ranking were selected randomly from those interviewed in 2001, 2004/5 and 2008; the other half were selected randomly from the village list or from those not included in the household survey. In every village, wealth ranking was done with village leaders to classify households into social and well-being groups. This also identified household mobility at three different times: 2001, 2004/5 and 2008. The impact of rising prices on well-being, agricultural production and earnings of each group were the main areas of focus of the PDS. Characteristics of each well-being group were defined by both formal and informal village leaders according to level of economic growth and development in the locality. Therefore, impacts of high prices on well-being, poverty reduction and agricultural development are drawn mainly from the FGDs.

Table A1A: Sample Size and Panel HHs

	Number of HHs in 2001	Sample size in 2001	Panel HHs in 2008	Dropped out HHs	Attrition (%)
Tonle Sap					
Andong Trach	196	85	61	24	28.2
Krasang	228	120	86	34	28.3
Khsach Chi Ros	305	120	87	35	29.2
Mekong plains					
Prek Khmeng	339	120	110	10	8.3
Ba Baong	536	127	110	17	13.4
Plateau					
Kanchor	278	120	106	14	11.7
Dang Kdar	306	125	107	18	14.4
Trapeang Prei	68	68	51	17	25.0
Coastal					
Kompong Tnoat	348	120	109	11	9.2
All villages	2,604	1,005	827	180	17.9

Table A1B: Characteristics of FGD Participants and Study Villages

Villages	Total HHs	Number of HHs interviewed in 2008	Wealth ranking of HHs	Number of FGDs in each village and participants' characteristics	Village location and criteria for selection**
Andong Trach	209	87	130	4: moved up, unchanged poor, FHH and village leaders	Battambang province, Sangke district; substantial wet season rice in flooded Tonle Sap, high emigration
Krasang	247	120	170	4: moved up, unchanged poor, FHHs and village leaders	Battambang province, Thmor Kul district; substantial wet season rice in flooded Tonle Sap, high resettlement of returnees from border camps
Dang Kdar	460	130	160	4: moved up, unchanged poor, FHHs and village leaders	Kompong Thom province, Sontuk district; low-yield, wet season rice and substantial forest dependence in plateau
Khsach Chi Ros	360	121	179	4: moved up, unchanged poor, FHHs and village leaders	Kompong Thom province, Kompong Svay district; floating rice plus substantial fishing in flooded Tonle Sap
Kanchor	264	124	174	4: moved up, unchanged poor, FHHs and village leaders	Kratie province, Chlong district; dry season rice and substantial forest dependence in plateau
Prek Khmeng	366	120	121	4: moved up, stagnated poor, FHHs and village leaders	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, FHHs and village leaders	Prey Veng province, Peam Ror district; substantial dry season rice in Mekong plain
Trapeang Prei	69	69	65	4: moved up, unchanged poor, female-headed households and village leaders	Kompong Speu province, Odongk district; low-yield wet season rice and dependence on hiring out labour in plateau
Kompong Tnoat	247	123	163	5: moved up, unchanged poor, FHHs, moved in and village leaders	Kampot province, Kampot district; low-yield wet season rice, coastal fishing and salt mining
All villages	2,811	1,022	1,350	37 FGDs	

Note: * there were 5–10 participants in each FGD. The FGD team also interviewed the commune council to capture special development events and livelihood improvements. ** Source: Chan and Acharya (2002)

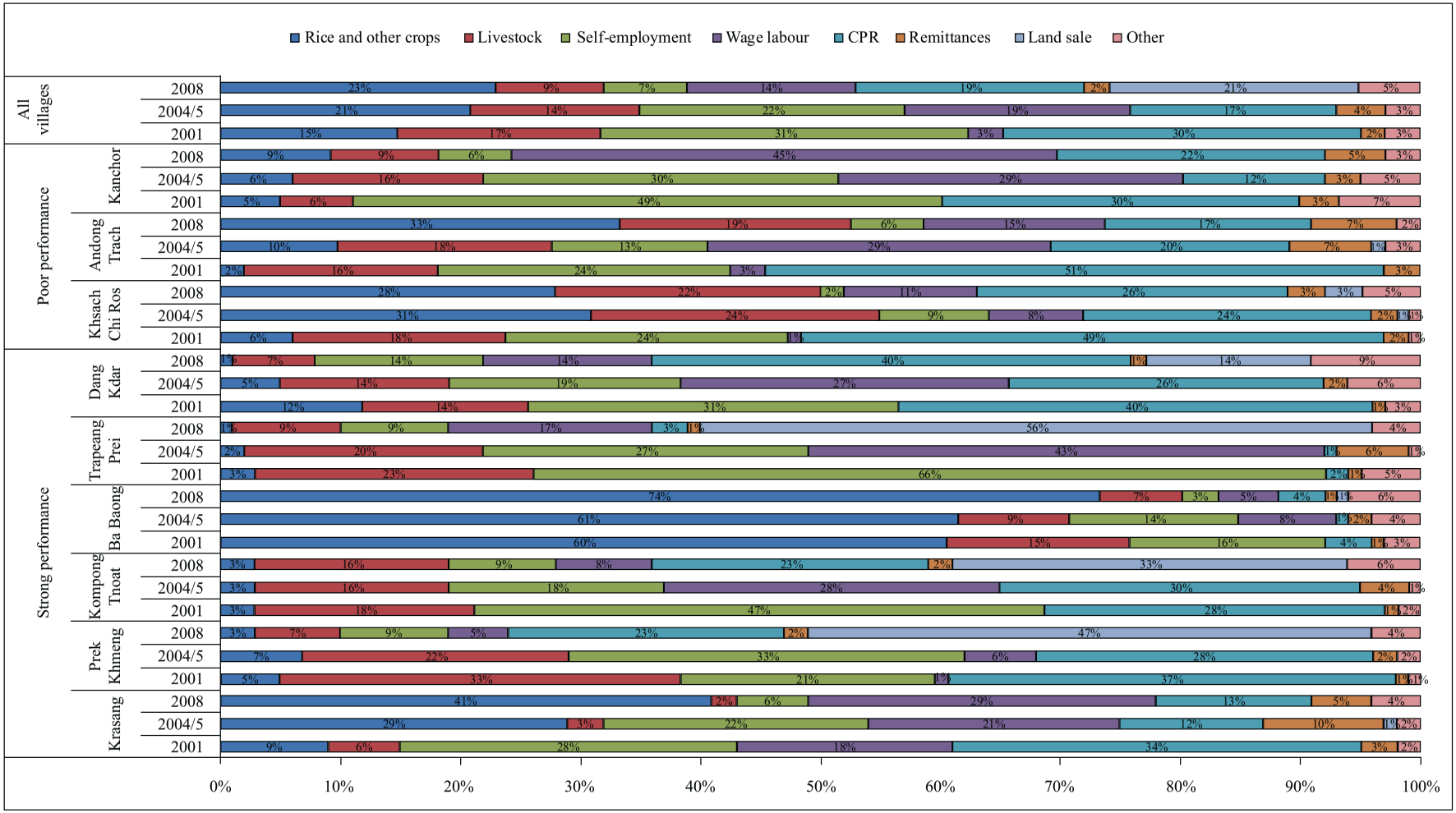
Table A1C: Special Events Affecting Village Income and Livelihoods, 2005 and 2008

	Common events occurring in all villages	
	Positive	**Negative**
All villages	• Increased availability of public and private health care services • Increased children's access to education • Increased market connections and goods flows from new roads in village or neighbouring villages (Prek Khmeng and Khsach Chi Ros) • Wages of labourers increased from KHR5,000 in 2005 to KHR10,000 –15,000 in 2008 • Good demand for paddy rice and livestock with better prices in past two years • Increased micro-credit services from Vision Fund, AMK, CARE and ACLEDA at 3 percent interest per month • Agricultural training from NGOs and or agricultural extension services available to innovative farmers (these are still inefficient owing to lack of follow-up support). Farmers also reported agricultural innovation from incoming households and merchants	• Health care costs remain a major cause of poverty • Wet season rice farmers not profiting from high food prices • Poor and landless households suffered from high food prices • Destructive behaviour of male youths a serious concern • Lack of know-how to protect livestock from deadly infectious diseases a grave concern for farmers
Specific events occurring in strongly and poorly performing villages		
Strongly performing villages		
	Positive	**Negative**
Krasang	• Good access to irrigation for both wet and dry season rice cultivation • Farm mechanisation and application of chemical fertilisers • High demand for aquatic animals and edible insects, including rats and crickets, with good prices from Thailand and crocodile raisers • Increased attempts to diversify household farming practices for extra income by raising poultry and pigs alongside rice cultivation • Increased cross-border migration to Thailand and other neighbouring countries	• Tension with upstream farmers at Bavel Dam who often released too much water, causing damage to rice crops • Concerns about gambling affected some households
Prek Khmeng	• Better returns from fisheries, including ability to catch more fish and use of fish-cage culture. Increasing price of land within the past two or three years: almost all households with land have engaged in land transactions • Many farmers stopped growing dry season rice in crop season 2007/8 for better and quicker returns from intensified fish catches • Many male and female youths started looking for employment in garment and construction sectors in Phnom Penh in 2008, especially after the national election in July • Most land in the village was purchased by speculators from Phnom Penh, but local people were allowed to use land for growing rice or reeds for subsistence purposes	• Like other villages, there was a rapid increase in landless households • Unstable fish culture practices owing to their illegality under the fisheries law
Kompong Tnoat	• Intensified use of fishing tools for marine fishing before the national election in July 2008 • Increased demand for marine fish products and increasing price of land since 2005 • Some youths started migrating to Koh Kong, Kompong Som and Phnom Penh from 2007	• Lack of irrigation • Many people unable to repay outstanding loans • Increasing insecurity for marine fishers (theft of fishing tools and fear of being robbed by fishermen)
Ba Baong	• Good access to irrigation facilities led to good incomes from dry season rice cultivation • Many farmers changed from transplanting to sowing seeds during dry season rice cultivation to save labour expenditure • Increased farm mechanisation and application of chemical fertilisers and pesticides	• Continued lack of know-how on how to control pest damage to rice and cash crops • Increased abnormal health problems owing to improper use of chemical pesticides and fertilisers

Trapeang Prei	• Almost all households with land engaged in land transactions • Increased number of female youths with secondary education working in garment factories in Phnom Penh • High demand for agricultural produce • Increased attempts to raise poultry and pigs	• Lack of water for irrigation • Lack of extension services to support livestock production • Decline in number of people engaged in cash crop growing owing to land transactions
Dang Kdar	• Increased access to forest in the two years before July 2008—illegal and legal conversion of forest land by concession companies and people from outside the village for rubber plantations, a practice then followed by some indigenous households • Increased number of cassava and soybean growing by people from other provinces and a few indigenous households • Almost all indigenous households with male labourers and draft animals or hand tractors had good returns from cutting timber or collecting forest by-products • Increased demand for unskilled labour and migration of 45 male and female youths to Siem Reap and Phnom Penh to seek better employment • Economic land concession for rubber plantation companies was implemented in 2006	• Conflicts between households in Dang Kdar commune and a Vietnamese company, and between some rural elites and Dang Kdar villagers, unresolved as of October 2008 • Social concession of 400 ha of forest land for landless households in 2006 yet to be implemented in October 2008
Poorly performing villages		
	Positive	**Negative**
Khsach Chi Ros	• Shift from growing floating rice to growing dry season rice; increased number of cash crop growers and increased adoption of farm mechanisation • Clearing of flooded forest for dry season rice cultivation by 60 households from outside the village • Increased demand for labour of local people, although adults from 60 households migrated to sell labour in Thailand • Better access to fishing grounds through community fishery, established in mid-2005 • Social concession of 400 ha to landless and land-poor households (1 ha per household) • Increased market connections and high demand for agricultural produce owing to road construction in neighbouring villages • Increased farm mechanisation and application of chemical fertilisers	• Conflicts between rice growers and fishing lot owners • 250 households have members who are addicted to gambling, which is seen to cause domestic violence and declining livelihood standards
Andong Trach	• Good rainfall since 2006 • Increased farm mechanisation and application of chemical fertilisers • Increased cross-border migration to Thailand • Increased demand and higher prices for aquatic plants, animals and crickets • Completion of systematic land titling, although the land market is still inactive	• No challenges reported for this village from FGD reports
Kanchor	• Increased access to forest in the two years before the national elections, increasing incomes from cutting timber and selling labour for land clearances • Increased number of farmers growing cassava and maize for sale • Increased demand for labour to cut timber and clear land for companies or traders • Influx of people from other provinces to clear forest for growing cassava who have asked for permanent resettlement in the area	• Soil erosion caused by deforestation affected some villagers' farm land

Note: This qualitative information is drawn from FGDs with village leaders and the triangulation of four to five FGDs in each village with selected villagers from the moved up, unchanged poor, FHHs, moved in and commune council groups as part of the PDS survey in 2008

Annex 2: Average per Capita Income from Different Sources by Strongly and Poorly Performing Villages, 2001 and 2008



Annex 3: Increasing MFI Availability and Agricultural Development

Since the mid-2000s, a fundamental constraint to increasing agricultural productivity and other economic activities that could create employment has been the lack of affordable credit. This situation has changed in all study villages. Since 2005, services from MFIs have been increasingly available in every study village. MFIs including ACLEDA, Amret, PRASAC, AMK and other NGOs offer cheaper loan interest rates of 3 percent per month, compared with 10–40 percent charged by private moneylenders. The number of licensed MFI providers increased rapidly in Cambodia between 2005 and 2008, and loan portfolios have risen sharply from a total of USD149,000 serving only 494,000 borrowers in 2005 to USD438,000 serving 1,020,000 in 2008 (Thun *et al.* 2010). Increasing attention is being paid to the impact of improved MFI access on agricultural development and diversification, employment and poverty reduction. MFI is viewed as an effective tool in helping the poor access financial services and mobilise financial resources for small and medium enterprise development and job creation in the rural economy. However, a critical concern is that outreach to the poor could be limited if MFIs minimise their risky loan portfolios and shift more towards commercial operations to ensure profitability in response to the effects of recent economic crisis, high food prices and the global economic recession. In this case, access to financial services for the poor could be neglected.

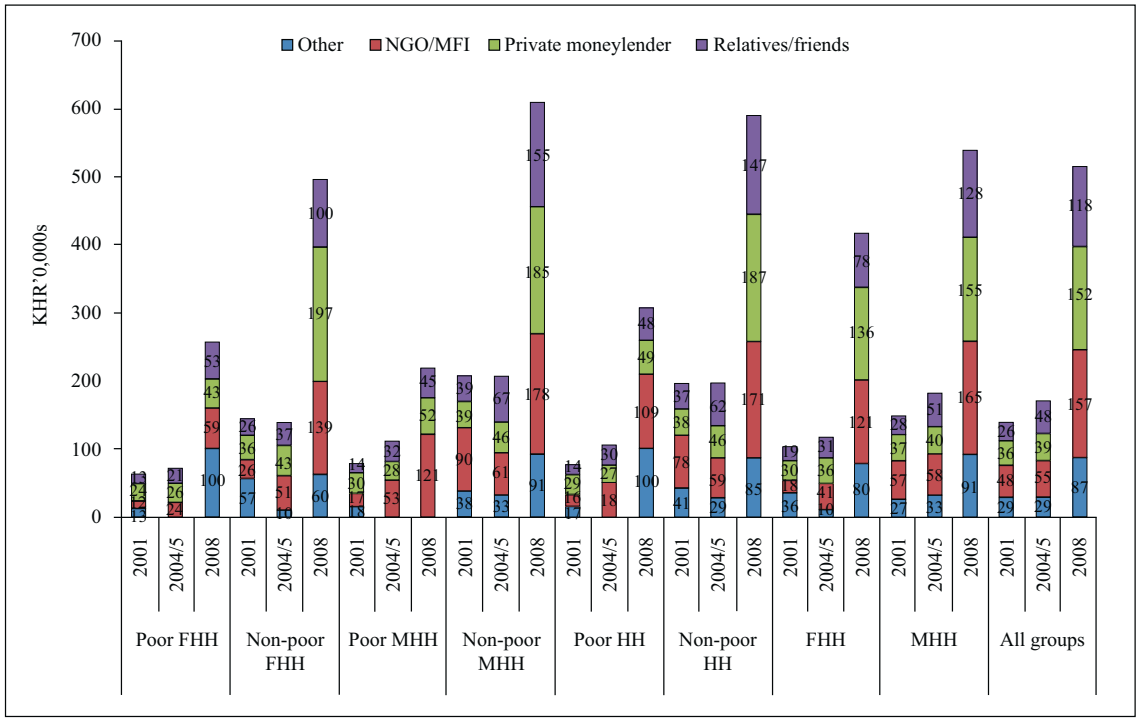
Table A3A: Proportion and Average Outstanding Loans of Panel Households, 2001–8

	Panel HHs with outstanding loans (%)			**Average loan size per household (KHR'0,000s)**		
	2001	**2004/5**	**2008**	**2001**	**2004/5**	**2008**
Strong performance						
Krasang	46	48	42	25	35	99
Prek Khmeng	68	66	61	71	68	162
Kompong Tnoat	54	55	48	22	59	93
Ba Baong	47	43	43	57	68	248
Trapeang Prei	52	65	36	14	30	139
Dang Kdar	49	29	38	17	48	168
Poor performance						
Khsach Chi Ros	65	43	47	15	31	170
Andong Trach	35	48	44	28	29	54
Kanchor	48	36	26	25	25	111
All villages	**52**	**47**	**43**	**34**	**48**	**145**

Finding answers to these above developments is the main focus of this section and can be explained by quantitative and qualitative PDS data. Quantitative data used in this survey were collected from responses to questions about credit access, including the outstanding loans of each panel household interviewed in 2001, 2004/5 and 2008. Questions were asked about the sources and sizes of loan and what the loans were used for (purpose of the loan was added to the survey in 2004/5 and 2008). Descriptive analysis of the responses suggests an uneven picture of changes in credit access and its impact on agricultural development, employment and well-being improvement. The number of panel households with access to loans has been disproportionate, while the average loan size per household sharply increased between 2004/5 and 2008 in all villages.

The overall proportion of panel households with outstanding loans gradually declined to 43 percent in 2008 from 47 percent in 2004/5 and 52 percent in 2001. In contrast, the average loan size in 2008 is three times bigger than that in 2004/5 and four times that of 2001 (Table A3A and Figure A3A). This tends to suggest more panel households do not need loans because they have better savings owing to increased income from selling agricultural produce and wages from off-farm employment. Non-poor rural households with secure assets to use as collateral are able to take bigger loans from MFIs and moneylenders in their area than poor households. In addition, changes in the size of loan tend to be strongly related to changes in village income sources and average household income.

Figure A3A: Average Loan Size by Poor and Non-poor Households, 2001–8



Among the study villages, only Khsach Chi Ros and Dang Kdar experienced an increase in the proportion of panel households that required a loan, while other villages experienced reverse trends or no change between 2004/5 and 2008. In Trapeang Prei, where many households sold land before the national elections in July 2008, the proportion of households that needed credit fell sharply from 65 percent in 2004/5 to 36 percent in 2008. In contrast, Khsach Chi Ros, an emerging, agriculturally successful village, experienced a reverse trend, and in Prek Khmeng more than 60 percent of villagers still needed credit to upgrade fishing gear and invest in fish farming over the same period.

Two types of lending—group and individual loans—have been made available to rural households by MFIs. Some MFIs offer group lending to poor landless households that have no forms of collateral, such as a land certificate or a house, to use as security against a loan. Instead, these households form a group of three to four members as a social guarantee of repayment. This type of lending and borrowing has become less popular among both borrowers and creditors. Individual loans have become more popular for those with collateral because borrowers with collateral are allowed to take bigger loans and the risks of being unable to repay

are lower. FGDs reported that rural households are able to borrow KHR300,000–5 million depending on the value of their collateral.

Fitzgerald & So (2007) indicate that, since the mid-2000s, access to MFI services for loans to buy farm inputs and invest in other forms of self-employment has been difficult owing to inflexible lending terms and strict repayment schedules. The majority of farmers at that time continued to borrow money from moneylenders or continued to buy farm inputs on credit with promises to sell their agricultural produce such as rice, pigs, fish and palm sugar to their creditors, who were local traders or merchants. This was a fundamental constraint to accessing credit for the poor between 2005 and 2008 and was cited in most FGDs in all villages:

> *More and more villagers now take loans from ACLEDA, PRASAC, AMK and other NGOs. Borrowers have to submit documents to certify ownership of their property, land and houses that can be used as collateral when they seek loans from those organisations. If we need to borrow KHR3 million, we need property worth KHR5 million. Few people choose to borrow money through group loans, although it is possible. Some villagers, most of whom are poor, seek loans from private moneylenders in the village despite the high interest rates of up to 30 percent per month, as they are in acute need. Some buy petrol, gasoline and chemical fertiliser on credit from traders or merchants. When it is close to the harvest season, traders and merchants do not charge interest. However, because they are obliged to sell their produce to their creditors, borrowers cannot get the best prices by selling to other traders.* Village leaders in Ba Baong; similar issues were raised by village leaders and poor FGD participants in other study villages

Figure A3B shows the change in credit sources accessed by poor and non-poor households between 2001 and 2008. Overall, the proportion of panel households able to access MFI credit shows an increasing trend, up to 57 percent of households in 2008 from 35 percent in 2004/5 and only 19 percent in 2001. However, the poor often lack the required collateral to obtain credit from formal financial institutions. This limits their capacity to benefit from emerging economic opportunities generated by growth. Poor households with limited capital for collateral find it difficult to access MFI loans; therefore, their reliance on loans from relatives, friends and moneylenders remained higher than for the non-poor in 2008.

Increasing access to MFI loans is perceived as part of livelihood improvement, boosting the rural economy and creating employment and raising incomes to help people move out of poverty. This owes to the rising trend in the use of credit between 2004/5 and 2008: from 18 percent to 24 percent for agriculture (rice, cash crops and livestock) and from 29 percent to 36 percent for small businesses and other forms of self-employment (Figure A3C).

Access to larger loans is contributing to agricultural development and growth in Krasang, Ba Baong and Khsach Chi Ros, where 49 to 58 percent of loans are being increasingly used for agricultural production and migration for both poor and non-poor households. The majority of households in CPR-dependent villages reported using MFI loans to upgrade their fishing gear or invest in fish farming in Prek Khmeng, or to buy sophisticated tools for cutting timber or collecting forest by-products in the forest-dependent villages of Dang Kdar and Kanchor. This contributed to increasing household incomes in those villages between 2004/5 and 2008. FGD groups also reported that CPRs are being exploited beyond their regeneration capacity. This could lead to more rapid depletion of CPR resources, diminishing food security and the erosion of buffers that could help mitigate future household shocks.

Figure A3B: Credit Sources Accessed by Poor and Non-poor Households, 2001–8 (%)

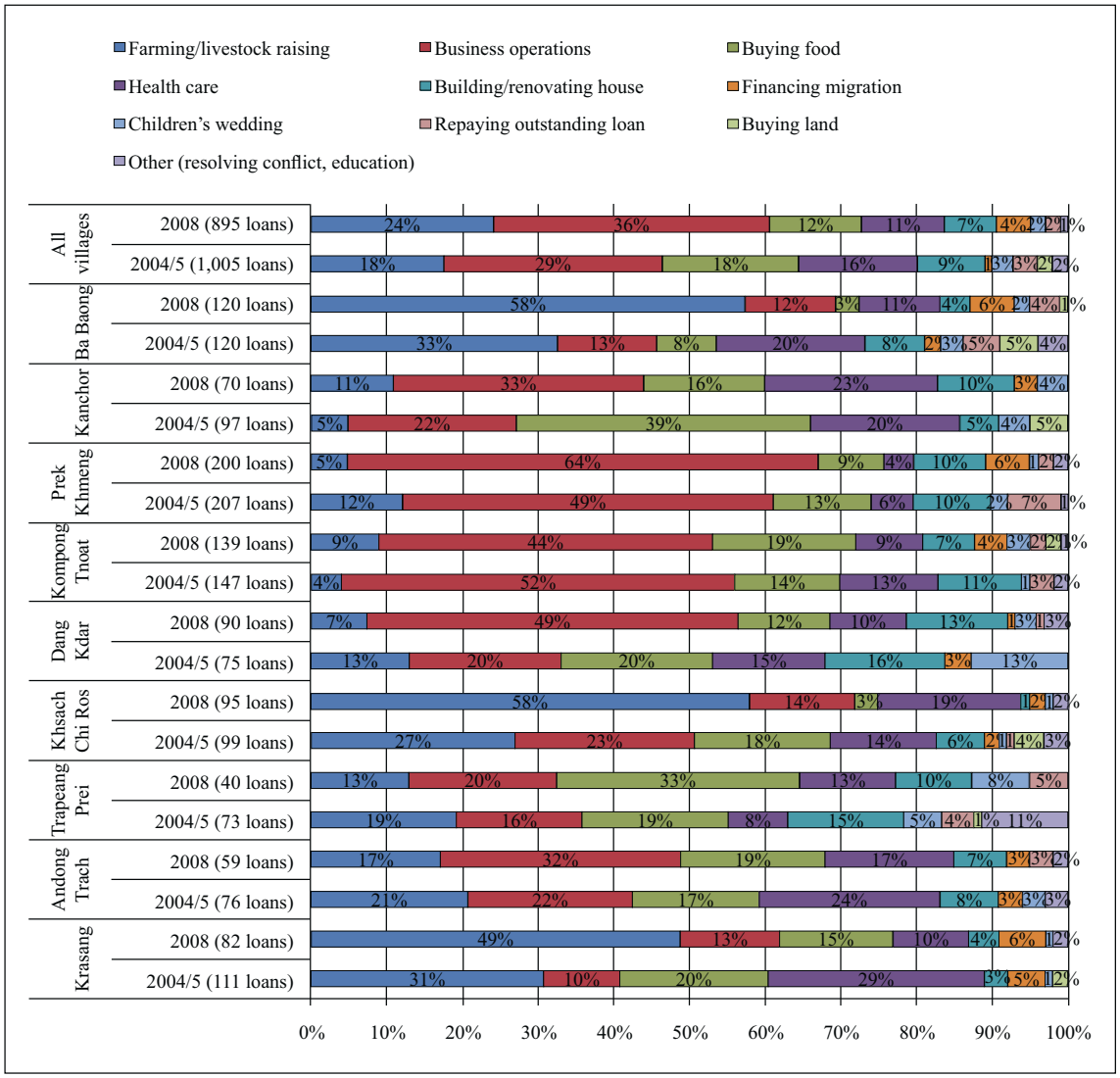
Like in other contemporary studies (CDRI & WorldFish Center, forthcoming), the poor, especially female-headed households, are found to have hardly benefited from increasing CPR access, as they still find it difficult to access MFI loans. Because they have to rely on loans from moneylenders, they are unable to free themselves from interlocked credit arrangements and are forced to sell their produce to informal creditors (traders and merchants) at prices that are 10–25 percent below the farm-gate price—even during agricultural commodity and CPR product price hikes.

People take loans for various reasons, evidenced by both qualitative and quantitative data. Productive purposes include buying farm inputs, setting up or running a business, financing migration to seek work and buying farmland. Non-productive purposes include health care, buying food, solving household conflicts and wedding expenses. Figure A3D shows that, between 2004/5 and 2008, the use of loans for productive purposes by poor and non-poor panel households increased, while borrowing to cover the costs of living declined.

Many households, especially the poor, are in food deficit and took loans for consumption purposes. If their incomes did not improve they then had to borrow more money from another MFI to repay their outstanding loans. This group of people have not yet been able to free themselves from the vicious cycle of outstanding debt and remain trapped in poverty. With limited ability to grasp economic opportunities created by recent economic development, the poor do not use credit for productive purposes or for building human capital, and credit is not the only factor generating economic growth and poverty reduction (as evidenced from FGDs with poor participants). The relationship between growth and poverty reduction is determined by geographical endowment in the area where the poor live. Geographical location and connections to urban growth tend to be more important than access to credit for driving growth and poverty reduction. Improved education and access to communication are perceived to be critical for the poor. Credit can be used to facilitate employment capacities and agricultural productivity, and can increase labour mobility towards more productive activities and towards areas with higher growth potential, such as where land can be converted for agricultural crops

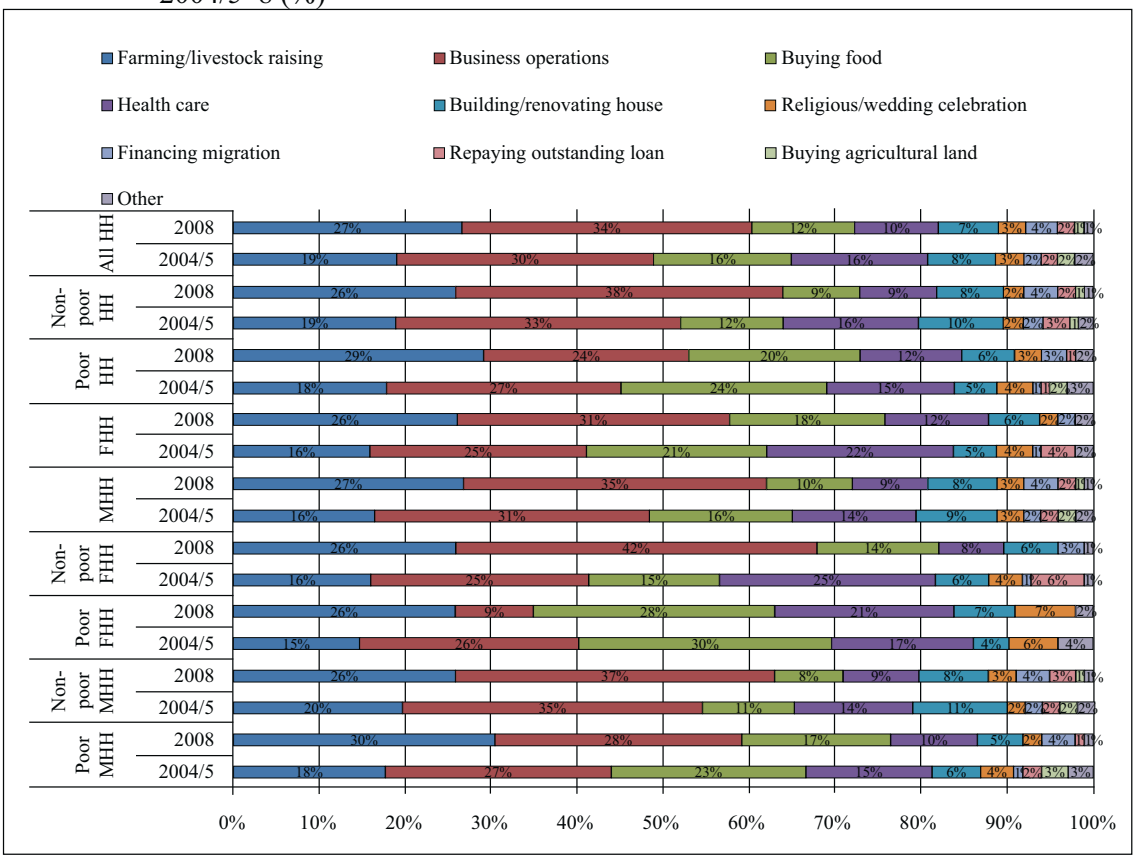
(as occurred in Dang Kdar, Kanchor and Khsach Chi Ros) or in those areas where there are good connections to urban growth (Trapeang Prei and Prek Khmeng).

Figure A3C: Loan Use by Village, 2004/5–8 (%)



Although none of the sample households is yet able to use MFI services to deposit savings, the growth of financial services will eventually provide savings facilities that should mobilise individuals' savings, thereby increasing funds available for further lending (with low transaction costs) for investment in individuals and firms. People would be able to deposit their money in a secure place (such as an eligible bank or financial intermediary) and withdraw their money whenever they want. Importantly, this study shows that borrowing from MFIs is cheaper than from private moneylenders and creates competition in the loan market, adjusting the interest rates charged in rural areas. This has helped attract investment projects that benefit savers. Financial intermediaries help with risk diversification which increases returns and encourages more savings from small businesses, generating jobs and increasing incomes of local people.

Figure A3D: Credit Use by Poor and Non-Poor Male- and Female-Headed Households, 2004/5–8 (%)



Annex 4: Change in Average Real Value of Assets, 2001–8 (KHR'000s per Household)

	House			% change 2004/5–8	Residential land			% change 2004/5–8	Agricultural land			% change 2004/5–8
	2001	**2004/5**	**2008**		**2001**	**2004/5**	**2008**		**2001**	**2004/5**	**2008**	
Krasang	1300	1397	3858	176	2822	1682	7953	373	3116	5425	14183	161
Andong Trach	1850	878	2051	134	1528	1025	6747	558	4513	1901	8648	355
Trapeang Prei	**812**	**2067**	**8009**	**287**	**435**	**1449**	**33600**	**2219**	**698**	**2283**	**46889**	**1954**
Khsach Chi Ros	894	1595	2189	37	682	606	1057	75	760	1304	3824	193
Dang Kdar	1212	1848	3239	75	344	745	4811	546	421	809	4241	424
Kompong Tnoat	3267	2464	2945	20	3633	7187	22676	216	1968	2617	72522	2671
Prek Khmeng	**3131**	**6006**	**9902**	**65**	**1320**	**2364**	**17077**	**622**	**867**	**2906**	**46328**	**1494**
Kanchor	878	2988	3414	14	1413	1526	2026	33	923	1498	3362	124
Ba Baong	3155	2663	2969	11	2466	2458	5554	126	3006	4691	10931	133
All villages	1991	2559	4286	67	1757	2308	10184	341	1727	2575	21793	746

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