



CAMBODIA DEVELOPMENT REVIEW

A Publication of CDRI—
Cambodia's leading independent
development policy research institute

VOLUME 16, ISSUE 3

OCTOBER 2012

\$4.00

CHALLENGES OF RURAL LIVELIHOODS IN THE CONTEXT OF CLIMATE CHANGE¹

Introduction

Within the frameworks of good governance and inclusive growth where legitimate rights over natural resources and benefits derived from them must be equitably and sustainably allocated and flowed to every sector in society, natural resources management has shifted focus from productivity to sustainability. This has brought a complex array of environmental, social and economic concerns with the parameter of sustainable development that recognises healthy ecosystems as fundamental to economic and social wellbeing and poverty reduction (Saad-Filho 2010). The global vision behind this new perspective is for “...a world that is environmentally, socially and economically sustainable, and where economic growth is accomplished within the constraints of realising social objectives of poverty eradication and social equity and within the constraints of life support nature’s carrying capacity, and a world where the challenges such as climate change, loss of biodiversity and social inequity have been successfully addressed “ (UNEP 2012: 2).

In line with these frameworks, Cambodia is strongly committed to ensuring the efficient use and good management of its natural resources such as forests, water, land, fisheries and biodiversity. It provides strategic direction for integrating natural resource management into mainstream economic development planning for sustainable productivity and potential long term benefits of the country’s natural resource base. Policies and strategies to ensure development and sustainable economic



Irrigation systems build resilience to increasingly irregular rainfall due to climate change, Rolous Scheme, Kampong Thom province, June 2012.

growth, poverty reduction and environmental sustainability are set out in the Cambodian Millennium Development Goals. However, climate change impacts such as droughts, flooding and higher temperatures, along with human-induced change due to development activities such as conversion of forestland, unlawful logging and illegal fishing, are putting the long term viability of remaining natural resources at risk (MoE & UNDP 2011). Rural people whose livelihoods depend on natural resources and agricultural farming will be hard pressed to cope

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¹ Prepared by Nang Phirun, Research Associate, Natural Resources and Environment Programme.

with the adverse effects of climate variability and change. Certain groups of people, for example, women, women-headed households, the elderly and those with disability are particularly vulnerable to climate change impacts and will likely face even greater hardship.

This desk review report examines the potential challenges posed by climate change on the main resources that support rural people's livelihoods. The aim is to identify better ways to mitigate vulnerability and enhance adaptation capacity while ensuring livelihood stability in the face of an increasingly variable and changing climate.

The Complexities of Climate Change on Livelihoods ***Defining Climate Change and Livelihoods***

For the purposes of this study, "climate change" is defined as "any change in climate over time because of both variation and change in nature or human activity" (IPCC 2001: 984), and "livelihoods" as "the means by which households obtain and maintain access to the resources necessary to ensure their immediate and long-term survival. These essential resources can be physical, natural, human, financial, social, and political. Households use these assets to increase their ability to withstand shocks and to manage risks that threaten their well-being" (USAID 2005: 2).

Key Resources Supporting Rural Livelihoods

This article examines the key challenges of climate change and human-induced change that threaten the sustainability of key livelihood-supporting resources through a brief overview of the current situation in (1) the agriculture sector, and (2) the natural resources sector (water, land cover/forests, and fisheries).

Agriculture

Negative effects of climate change not only affect developing countries and poor populations disproportionately, they also affect the economic and social dimensions of sustainable development. In Asia, future climate change and increasing weather variability is likely to affect agriculture and heighten the risk of freshwater scarcity and food shortages (IPCC 2007a). This is especially true for Cambodia where agriculture is the primary source of income for the majority, particularly the rural poor. The country has suffered frequent floods, windstorms

and droughts during the last decade. Floods impact severely on agricultural crops, livestock, fisheries, infrastructure, human settlements and welfare. For example, in 2009, the typhoon Ketsana affected 10 provinces, destroying an agricultural area of 40,136 hectares and damaging 67,355 hectares of rice. The total loss and damage to agriculture/livestock and fisheries, vital for local food security, amounted to USD56 million (RGC 2010). The recent 2011 flooding caused 250 deaths, affected 354,217 households and damaged 1,297 houses. Crops in the provinces around Tonle Sap Great Lake suffered severe damage. Losses include damage to about 431,476 hectares of rice with 267,184 hectares of paddy destroyed, and around 21,929 hectares of other crops with yield on 17,264 hectares wiped out (RGC 2012).

The Mekong River Commission (MRC), based on modelling the effects of various basin development scenarios, projects that the level (minimum and maximum) and duration of seasonal flooding in the Tonle Sap system will change (MRC 2010). It also calculated that between 1960 and 2005 the average temperature increased by 0.8°C, at decadal rates of about 0.20 to 0.23°C in the dry season and 0.13 to 0.16°C in the wet season, and that by 2100 the mean annual temperature will be between 1.4 and 4.3°C higher (MRC 2009). This would lead to higher mean annual rainfall in the wet season, increased severity and duration of flooding and droughts, and widespread pests and diseases. Such changes would affect crop production where yields could increase in some areas and decline in others (*ibid*). Impacts of climate change are already affecting the lives and livelihoods of individuals and communities. Higher temperatures in the last few years have reportedly affected crops in many provinces of Cambodia. The droughts in 1997/8 caused farmers great hardship and pushed them into poverty—many even died. It is not uncommon for the short dry spell that usually occurs in the middle of the wet season to extend into drought, frequently damaging farmers' rice crops. The major drought in 2002—the worst ever experienced in Cambodia—affected two million people and caused USD38 million of damage (UNESCAP 2008).

Changes in seasonal weather patterns (particularly temperature and rainfall) have degraded the environment to some extent, potentially creating desertification, and already affected the cropping

calendar which could in turn undermine farmers' confidence in planting and managing production. Such challenges especially affect women as they play a vital role in providing/producing food, child nutrition and generating family income. A study by CARE (2002) in the annually flooded province of Prey Veng points out that flooding not only damages women's farming and assets, but also increases their workload. Because they have to spend more time collecting food (far from village) for their family and caring for children, they have less time for farming and earning daily income. As a last resort, they are often pushed into debt (loan) in order to cope (CARE 2002). A case study by the Women's Environmental Network (2010) also reveals that widows and orphans have real difficulty coping with climate change; already weakened by under-nutrition, they are particularly susceptible to disease.

Natural Resources

(i) Water

A climate change screening (i.e. assessment/identification of climate change risks and adaptation options) conducted by Danish International Development Agency (DANIDA) and the Cambodia Climate Change Office (CCCO) of the Ministry of Environment (MoE) in 2008 reports that in Cambodia, vulnerability to climate change is high and current capacity to adapt and address impacts of climate variation is limited (DANIDA 2008). Water shortage, food insecurity and greater risks to human health and life as a result of climate change will particularly affect the poor and vulnerable. Chem and Someth (2011), for example, reveal that farmers face water shortage in the dry season, though there is much more water in the wet season. Water use conflicts between upstream and downstream irrigation/farming communities and different water user groups often flare up in the dry season. Existing irrigation systems simply do not have the capacity to ensure equitable allocation of water or enforce effective water resource management policies (Chem & Someth 2011).

Irrigation structures and hydropower dams in upstream locations divert water flow and effectively disconnect hydrological processes by changing the quality and quantity of water, resulting in too much or too little water and impeding fish migration and sediment movement. Changes in the hydrological cycle will create complexities for water quality, availability and

allocation among water users in the river basins (MoE & UNDP 2011). Furthermore, because irrigation water planning and management is particularly fragmented, water shortage in the dry season is a major problem every year (Chem & Someth 2011).

Human activities (conversion of forest for agriculture, agro-industry, hydropower development) and climate change impacts (flood, drought) lead to the erosion of fertile topsoil from uplands to lowlands. This erosion further results in high sedimentation, exposes rock and sand which increases water run-off, decreases water quality and reduces agricultural productivity in key watersheds. Resultant of significant efforts to manage and protect the stability of natural resources and biodiversity in a sustainable manner, some important measures are already in place. These include draft sub-decrees on River Basin Management and Farmer Water User Communities, the draft National Action Plan (NAP 2011-20) to combat land degradation, Law on Protected Areas, Law on Fisheries and Law on Forestry. In addition, reservoirs in Tonle Sap Basin Protection and Conservation Zones I, II and III have been demolished and economic land concessions and private fishing lots cancelled (MAFF 2012; MoWRAM 2011; Nang & Yem 2010).

(ii) Land Cover/Forests

Forests are crucial for regulating the environment, carbon cycle and climate systems as well as for sustaining local livelihoods such as employment on plantations and in forest-based industries (timber and non-timber forest product processing), collecting food, medicinal plants and utility items, and generating income from local NTFP and carbon markets (MAFF 2009). Climate change is expected to disrupt forest productivity, increase biodiversity loss and hasten forest degradation including the loss of wet and dry forest ecosystems (MoE 2002; MRC 2009). The Intergovernmental Panel on Climate Change reports that forest expansion and forest migration will be curtailed and biodiversity threatened by land use change/reduced tree cover and population pressure (IPCC 2007a). Clearing forest areas for other land use, such as for urban purposes, agriculture and other developments, results in fewer trees to absorb carbon dioxide and release oxygen. The consequent increase in greenhouse gases and carbon dioxide emissions warm the atmosphere thus fuelling greater intensity and uncertainty in weather

variation and climate change impacts.

The depletion of forest resources due to lack of forestry management and land use planning could have disastrous consequences for the environment and local livelihoods, for forest-dependent communities in general and indigenous people in particular. The conversion of forestland is typically associated with immediate reduction in forest carbon stock (IPCC 2007b). Cambodia's forest area has declined considerably (Vong & Michael 2009): as of 2010, forest cover had decreased by 16 percent since 1965, with annual deforestation rate of 0.52 percent in 2002-10 (MAFF 2012). The expected increase in agro-industrial crop production, specifically rubber, cassava, sweet potatoes and soybeans, over the next few years will inevitably lead to expansion of cultivated areas (Ros *et al.* 2011). It is clear that the livelihood systems of communities close to large land conversion areas will be immediately affected by adverse impacts of human-induced change (e.g., restricted access to and control over land, water and forest resources) than climate change. Nonetheless, in the long term their standard of living (i.e., employment opportunities, infrastructure, public services such as schools and health centres, markets) is likely to improve.

(iii) Inland and Marine Fisheries

Marine and freshwater fisheries are important to Cambodian livelihoods. A preliminary analysis of the impacts of a one metre sea level rise on Cambodia's coastal zone undertaken by the Ministry of Environment identifies Koh Kong as the most vulnerable of the five provinces likely to suffer. Because the land along Koh Kong's coastline is mostly low-lying, about 0.4 percent of the total province area would be permanently under water, and mangrove and other forest, aquaculture, grassland and human settlements would be seriously damaged (MoE 2002).

The Tonle Sap Basin has the largest freshwater fishery in the country and in Southeast Asia. Hydrological change in the Tonle Sap Lake system would significantly change natural systems. In particular, contraction of the overall flooded area would affect the unique flood pulse (recession and flooding) of the Lake which supports a rich variety of plant species and aquatic life, disrupt the cycle of natural nutrient exchange, reduce overall ecosystem productivity, and lower fish production/catch (MRC 2010). The combined effects of over-fishing, climate

change (precipitation), hydrological change (water flow, quality and quantity) and degradation of nutrients in the Mekong River and Tonle Sap Lake are expected to decimate fish habitats, fish stocks and lead to the extinction of fish species (Ros *et al.* 2011).

Discussion and Conclusion

Climate variability and its negative effects already challenge rural livelihoods, though the specific nature of climate change impacts continues to be uncertain. Despite Cambodia's robust economic growth in the last decade, climate extremes hinder efforts to reduce inequality between and within urban and rural areas and to narrow the gap between the rich and the poor (MoP 2010).

More attention must be paid to improving the agricultural sector as it is the main rural livelihood-supporting resource. Proper land and water management can positively contribute to water security (access to adequate quantity and quality), crop production and farming system resilience (e.g. crop and income diversification particularly in rain-fed farming systems). In 2009 Cambodia's community forests, projected to expand by up to 11 percent, totalled 401 and covered 380,587 ha or about 2 percent of the total land area. If the target is achieved then community forests would cover an area of more than two million hectares, contributing not only to local people's livelihoods but also to moderating climate change (Vong & Dutschke 2009).

Exploitation of coastal and marine fisheries is already beyond their regenerative capacity and if it continues unregulated will likely deplete marine species and fish stocks and worsen the livelihood hardship faced by coastal fishing communities (Ros *et al.* 2011). Freshwater fisheries resources and livelihoods dependent on them face similar challenge. Lack of financial resources and low capacity hinder fishers in the Tonle Sap area from improving their livelihoods despite the government's bold fishery reform that released 538,000 hectares (56 percent) of former private fishing lots for public access (So *et al.* 2011). Multi-sectoral support (technical, financial) from all stakeholders along with strong law enforcement measures is essential to protect fisheries resources and to strengthen rural livelihoods. Likewise, livelihood diversification (ecotourism, vegetable cropping, micro-business) must be considered so as to reduce the pressure on rapidly depleting fishing grounds (*ibid*).

Livelihood improvement, poverty reduction and climate change adaptation initiatives should consider the economic, social and productivity implications of protecting and improving the natural resource base, and ensure equitable access to and control over key resources by local communities. To some extent, policies aimed at environmental protection and ecological health are already integrated into international agriculture, industry and economic development decision-making and planning. Environmentally sustainable development is imperative to addressing challenges related to inclusive economic growth, social progress and poverty reduction, while adaptation to climate change as well as climate change mitigation is key to sustaining and improving rural livelihoods.

Disaster risk reduction programmes, climate-related disaster-preparedness and response strategies, and important resources (human, logistics, communication/information) must be in place to identify and prioritise exactly where, how and when to act as well as the institutions, communities and individuals that should implement these adaptive and response strategies. This is to mitigate the uncertainty of climate change and anticipated effects on water and food supplies, livelihoods and economies. The involvement of the state, private sector and civil society and, critically, the integration of local/indigenous knowledge, in planning and implementing income, land use and farming diversification strategies using appropriate eco-friendly technology would help sustain livelihoods and mitigate climate change and development impacts. Increasing adaptive capacity to cope with the challenges of both short and long-term climate changes is an urgent priority, particularly in agriculture and natural resources management sectors. Effective institutions at all levels, especially at local and community level, are needed to plan and implement adaptation actions so as to strengthen resilience to climate change, particularly to support poor, natural resource-dependent households, women and other vulnerable groups with limited capacity, assets and resources to cope with climate change challenges.

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Credit for Rice Farmers: A Study in Takeo Province¹

Introduction

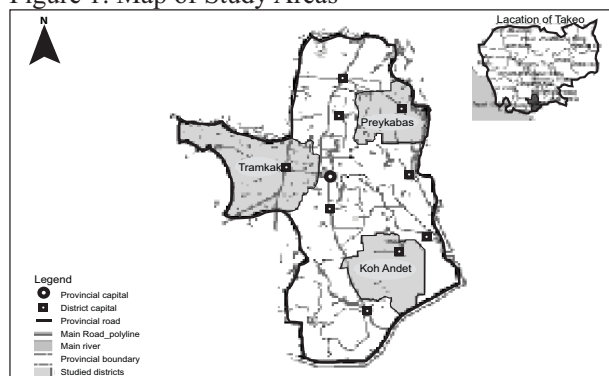
Lack of access to both working and investment capital by farmers is the major factor hindering transition from low-input agricultural systems to more productive ones (ACI 2005). Microfinance has boomed in Cambodia (CAM 2011), yet the outreach to smallholder farmers remains limited mainly due to risks posed by insecure land tenure and uncertain returns to on-farm investment. Meanwhile, rice productivity in Cambodia is significantly constrained by low application of agricultural inputs, i.e. fertiliser, mechanisation and irrigation (ACI 2005; World Bank 2007). Easing access to rural credit would be a significant step forward for agricultural development. Understanding the pattern of credit access and the way it affects rice farmers' loan decision could usefully inform policy options to improve the viability of rural credit delivery.

The hypothesis is that ready access to credit raises rice farmers' productivity and farm income, thus improving the well-being and reducing the vulnerability of rural households. This study seeks to (1) understand the patterns and characteristics of credit access of different farmers, (2) investigate the impact of credit on farmers' livelihood and production systems, (3) identify challenges and opportunities for successful credit utilisation, and (4) provide key options for improving credit access and promoting successful farm credit utilisation.

Rice Farming Systems in Takeo Province

There are two main rice-farming systems in Takeo province: lowland non-irrigated and lowland irrigated (UNCDF 2011). Four districts, namely Kirivong, Koh Andet, Borei Chulsar and Angkor Borei, lead in dry season rice production due to their favourable natural endowments, i.e. secure water supply and proximity to the border with Vietnam where farmers can readily access agricultural inputs and markets. The total cultivated area of 248,228 ha is made up of about 9139 ha irrigated land, 97,505 ha flooded

Figure 1: Map of Study Areas



Source: Constructed by author using national census map (NIS 2008)

rice and the remainder is non-irrigated land used for other crops. Average yield in 2011 was 2.53 tonnes per ha for wet season rice and 3.3 tonnes per ha for dry season rice. Total rice production in the same year was 1,105,031 tonnes with reported surplus of around 800,000 tonnes, equal to 17.61 percent of the country's total rice surplus (UNCDF 2011).

Rice farming in Takeo is transforming from traditional subsistence farming to commercialised farming (Oveson *et al.* 2012). This is evidenced by gradual replacement of traditional inputs with fertiliser, pesticides and mechanisation in the wet season, irrigated farming in the dry season, and the cultivation of fast growing high-yielding varieties (UNCDF 2011). Market demand for rice export to Vietnam is one of the main drivers of commercial rice farming in Takeo. Other contributing factors include availability of water and irrigation facilities, access to farm production technology and inputs (seeds, fertilisers, pesticides, credit), and increased agricultural mechanisation.

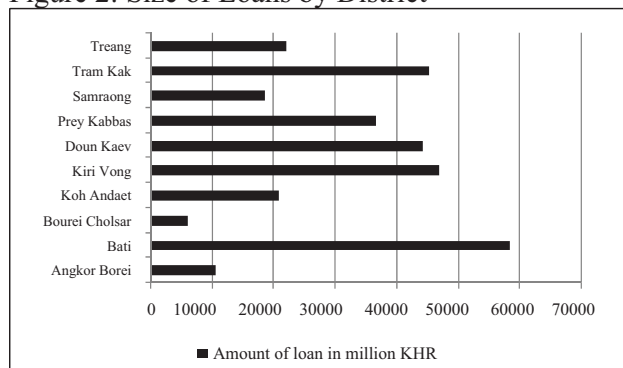
Key Findings

Credit Outreach

Both formal and informal credit is available in Takeo. Ten microfinance institutions (MFIs) currently operate in the province, covering all 10 districts. The number of MFI borrowers totalled 116,695 in 2011, but as Figures 2 and 3 illustrate, the distribution between districts varies widely, reflecting population density, economic diversification and agricultural production (CMA 2011). Most farming in the province is subsistence-based. Majority of people do not use credit to invest

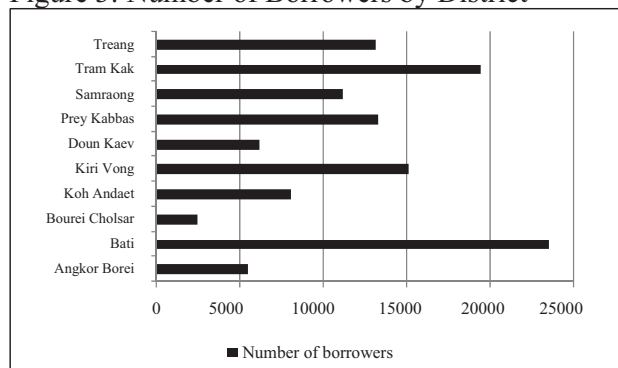
¹ Prepared by Kem Sothorn, Research Associate, Poverty Agriculture and Rural Development Programme. This article draws on Case Study 4 of the ACIAR Project (ASEM/2009/023) "Developing Agriculture Policies for Rice-based Farming Systems in Laos and Cambodia" due to be completed in May 2014.

Figure 2: Size of Loans by District



Source: CMA database 2011

Figure 3: Number of Borrowers by District



Source: CMA database 2011

in agriculture; instead, they take out loans for other purposes such as business expansion, migration and buying household assets. Around 70 percent of borrowers prefer small loans of USD250 to USD1500. Bati and Tramkak districts have the highest number of borrowers; however, the greatest demand for agriculture loans is from commercial rice producers in Angkor Borei, Bourei Cholsar, Kiri Vong and Kaoh Andet districts, which reportedly have the highest number of farmers accessing credit for irrigated rice production.

Several studies (see for example, Kim 2001 and Phlong 2009) highlight the important role of social networks in enabling farmers to access financial services. Most smallholders prefer to obtain credit from local (informal) moneylenders (Figure 4) because the system is flexible and no collateral is required. The average interest rate charged is 10 percent per month, three times higher than that charged by MFIs. Despite lower interest rates, several factors inhibit smallholder farmers from using MFI loans. First, lack of collateral is the biggest constraint as 57 percent of farmers in Takeo have less than one ha of land. Second, the poor’s extreme vulnerability to both idiosyncratic and covariant² shocks impedes them from forming groups to access loans. Third, high risk of crop failure means MFIs are reluctant to extend loans to subsistence farmers. And lastly, farmers lack the necessary technical knowledge and entrepreneurial skills to secure and use loans effectively.

Semi-commercial rice farmers cultivate both wet and dry season rice for household consumption and for sale. They rely on local input suppliers (in-kind loans) or local moneylenders and MFIs for capital.

² Idiosyncratic shocks affect some individuals or households but not others; covariant shocks affect many people at the same time.

On average, farmers apply 100 kg of fertiliser per hectare, equivalent to 21 percent of total input cost. They use MFI loans to hire agricultural machinery for dry season rice production, equal to 38 percent of total input cost. Loan sizes are usually modest—around USD250 to USD500—because most landholdings are too small to offer sufficient collateral to secure larger loans. This suggests that the credit farmers are able to access is less than actual demand. The cost of fertiliser and pesticide inputs for dry season rice farming is seven times higher than for wet season rice farming, claiming 32 percent of total output. Lack of capital forces farmers to buy inputs on credit from local suppliers at a monthly interest rate of 5 percent (Table 1). High input costs, volatile rice prices, exorbitant interest rates and inability to access medium size loans squeeze semi-commercial rice farmers’ profit margin. Gross profit is USD277 per hectare for wet season rice and USD540 per hectare for dry season rice. Low agriculture income also suggests farm households’ modest living conditions and limited ability to cope with shocks.

Commercial farmers cultivate dry season rice exclusively for sale (Table 2). They use MFI loans to cover all production expenditure. Most farmers

Figure 4: Pattern of Credit Access by Rice Farmers

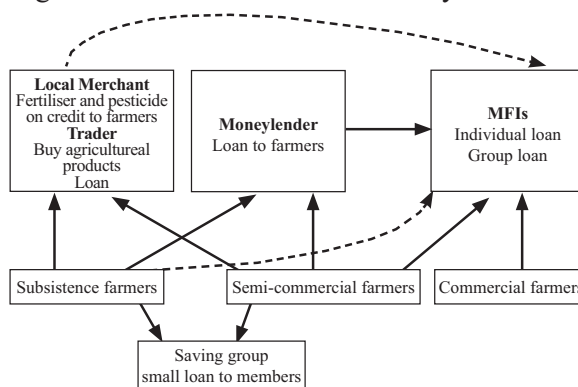


Table 1: Production Costs of Semi-commercialised Rice Farming ('0000 riels per hectare)

Type of cost	Wet season rice			Dry season rice		
	Amount ('0000 riels)	% of input	% of output	Amount ('0000 riels)	% of input	% of output
1. Inputs						
Land preparation	16	13	7	36	11	6
Seed	7.5	6	3	36	11	6
Hired labour	35.2	30	15	0	0	0
Chemical fertiliser	24.5	21	11	129	37	23
Pesticide	0	0	0	50	15	9
Irrigation water	30	25	13	64	19	11
Threshing	6	5	3	28	7	6
Total input costs	119.2	100	52	343	100	61
2. Gross margin	110.8		48	215	0	39
3. Output: paddy production	230		100	558		100

Source: Data from field interviews (May 2012)

hold 3-4 ha of land that allows them to obtain MFI loans of USD1000 to USD1500, though some use their own capital. The cost of production is USD772 per ha, equivalent to 65 percent of total outputs. Farmers grow IR rice varieties which yield an average of 6 tonnes per ha. After harvest, farmers can make on average USD427 per ha. But the rush to repay MFI loans to avoid interest charges together with expenditure on machinery hire and irrigation force farmers to sell their rice immediately after harvest, preventing them from taking advantage of higher rice prices in the wet season. Credit seems to be much more viable when invested in commercial rice farming. Access to credit connects farmers to markets, agricultural inputs and physical infrastructure supports, and enables them to optimise benefits from natural endowments. This combination of enabling factors enhances rice productivity in the province and significantly contributes to farmer livelihood improvement.

Impact of Credit on Rice Farmers' Livelihood

The chance of loans successful use in subsistence rice production is slim due to binding constraints

Table 2: Production Costs of Commercialised Dry Season Rice Farming ('0000 riels per hectare)

Type of cost	Dry season rice		
	Amount ('0000 riels)	% of input	% of output
1. Input			
Land preparation	28	9	6
Seed	21	7	4
Hired labour	0	0	0
Chemical fertiliser	46	15	10
Pesticide	130	42	27
Irrigation water	56	18	12
Threshing	28	9	6
Total input costs	309	100	65
2. Gross margin	171		35
3. Output: paddy production	480		

Source: Data from field interviews (May 2012)

in the agriculture sector, i.e. lack of infrastructure supports, high input costs and insufficient collateral, risk exposure and vulnerability of farm households, limited opportunity for income diversification and rice price volatility. However, credit could have a more positive impact if smallholders use it for more productive non-farm purposes. In focus group discussion (FGD), some farmers who had used loans to diversify their income source by investing in non-farm activities reported having increased their household assets and food security. Ultimately, broader access to rural credit should contribute to gradual improvement in smallholders' livelihoods and build their resilience to shocks.

The impact of loan use on semi-commercial rice farmers' livelihood is uncertain, mainly because low agricultural diversification heightens the risk of production failure. Whether loan use has positive or negative outcomes depends on farm profit, which in turn depends on uncertainties such as rice price fluctuations and the weather. In 2012, for example, the rice price dropped from 1200 riels to 700 riels per kg, reducing farm net profit to just USD328 per ha. In such a situation, access to microfinance could actually worsen farmers' livelihoods and push them into deeper indebtedness. Nonetheless, access to capital can help accelerate the shift from subsistence production to commercial farming.

Greater presence of MFIs has led to the expansion of commercial agricultural production in Takeo province. Credit, together with irrigation and access to markets and agricultural technology, enhances the yield in commercial rice farming. Further, farmers reported increased household assets, better housing conditions, more mechanisation, better education for children, and improved food security as result of higher farm profit. However, rising production costs

and rice price volatility might negatively affect farm income. In addition, there have been reports of more frequent pest infestation and pollution from intensive pesticide use. This in turn could have environmental consequences that threaten the quality of farming systems. It is also likely that heavy use of pesticides not only increases production costs but also affects farmers' health, which will lead to higher health expenditure.

Challenges and Opportunities for More Viable Credit Use

The study findings highlight several challenges and opportunities for more viable credit use; these are summarised below:

Challenges

- **High interest rates:** MFIs charge around 30 percent interest per year in order to cover operational costs and maintain financial sustainability; many still depend on outside investors, while low domestic savings remain a barrier to lowering the interest rate in the near and medium term.
- **High farm production costs:** high input costs, particularly low quality fertilisers and rising cost of mechanisation due to the soaring fuel price, continue to hinder overall long-term agricultural growth, not just rice production.
- **Trade-off between better credit outreach and MFIs' financial sustainability:** the need to ensure maximum returns to loans by carefully assessing potential clients means that MFIs' effectively screen out smallholder farmers with no collateral and the poor who tend to be highly vulnerable. Some MFIs such as CREDIT and Vision Fund have developed a special loan package (with capital support from donors) for this particular group of people.
- **Lack of land titling and entrepreneurial skills:** without a formal land title, farmers have no collateral and therefore cannot access formal credit. To date, 273,253 plots of land have proper titles (MLMUPC 2011); however, there is no available data on the proportion of titled land to total landholdings. In the FGDs, some farmers implied that they could not access microfinance because their land lacks formal title, while others who could access finance lacked the entrepreneurial skills to use loans efficiently and effectively.

Opportunities

- **Lower interest rates:** MFIs are likely to cut interest rates on loans in the future due to two major factors: competition among MFIs, and increasing local savings/deposits. MFIs aim to reduce the interest rate to 1 percent per month, though this will depend on the amount of savings deposited.
- **Rice export:** increasing global food demand plus government policy to promote rice export is driving rice sector growth. Government efforts to improve agriculture sector infrastructure, such as irrigation facilities and the road network, and increased private sector investment in rice milling and storage will boost production, facilitate trade, ensure local markets and stabilise rice prices.

Policy Options

Drawing on the study findings, we recommend that policy decision making and planning consider the following options:

- **Accelerate land titling:** the Land Management and Administration Project (LMAP) is processing more land titles, but the needs of small farmers and the poor need to be further prioritised.
- **Invest in agricultural infrastructure:** long prioritised by the government to improve productivity and reduce production risks, further investment in infrastructure to support subsistence farming is needed; greater private sector involvement in the rice sector through contract farming could be encouraged; small and medium-scale rice milling will secure market demand for rice and smooth rice price fluctuations.
- **Provide more extension services:** demonstrating improved cultivation methods to farmers could help increase productivity and farm income; with the benefit of business skill training, farmers would stand a better chance of using MFI loans more efficiently and successfully. NGOs' and development partners' could integrate these measures into their development programmes.
- **Expand Social Protection Programme:** especially vulnerable to shocks, the poor commonly resort to loans when their income is stressed despite the high risk of falling even deeper into indebtedness; increased investment in the Social Protection Programme would help reduce risk and vulnerability among the poor and protect them from falling into debt.

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Rural Household Knowledge, Attitude and Practice (KAP) on Safe Water, Sanitation and Hygiene: A Study in Five Provinces¹

Introduction

Progress in expanding the reach of essential water supply and sewage disposal infrastructure and sanitation facilities in Cambodia has been slow mainly because from the late 1970s to the mid-1990s rural water supply and sanitation activities out of necessity focused on the provision of emergency relief. Earliest available data indicates exceptionally low rural sanitation coverage of just 2 percent in 1995 and only 8 percent in 2002 (Rosenboom 2011). Coverage has since increased, rising sharply to 14 percent in 2004 and almost 22 percent in 2005 (World Bank 2008). However, as the Ministry for Rural Development's (MRD) National Sanitation and Hygiene, Knowledge, Attitudes and Practices (KAP) Survey in 12 provinces in 2010 reports, only 29.6 percent of households have access to a latrine.

Low access to safe drinking water and poor sanitation and hygiene (S&H) practices are a drain on the Cambodian economy. Poor sanitation is responsible for estimated annual economic losses of USD448 million, equivalent to about USD32 per capita or 7.2 percent of Cambodia's GDP in 2005 (World Bank 2008). That one in six (17 percent) Cambodian children die before their fifth birthday largely from preventable conditions related to diarrhoea caused by contaminated water, poor hygiene and lack of sanitation is a stark reminder of the human cost (Mom 2011). Although poverty decreased from 30.1 percent in 2007 to 27.2 percent in 2010, household investment in sanitation facilities remains low. With over 80 percent of the population living in rural areas, improved rural S&H coverage is imperative for social well-being and poverty reduction. Prime Minister Hun Sen underscored its importance when he said "In Cambodia, poor sanitation and hygiene is one of the factors contributing to the poverty of Cambodian people and blocking the efforts of the Royal Government

of Cambodia in national economic development" (World Bank 2008: 5).

The government is now better positioned to focus efforts more on long-term initiatives to develop rural water supply and sewage disposal infrastructure and raise public awareness to boost the uptake of S&H practices. Access to clean water and latrines and the promotion of S&H practices have been prioritised and integrated into the national strategic development framework (CDC 2011). Cambodian Millennium Development Goal 7 (Ensure Environmental Sustainability) aims to provide access to safe drinking water to 50 percent and improved sanitation to 30 percent of the rural population by 2015. To support these priorities, the National Policy on Water and Sanitation was drafted in 2003. This policy highlights the government's clear vision that "every person in rural communities has sustained access to safe water supply and sanitation services and lives in a hygienic environment by 2025" (World Bank 2008: 9).

Background to the Study

With the overall goal of strengthening the promotion of S&H practices in rural communities, the MRD has established the Cambodia Rural Sanitation and Hygiene Improvement Programme (CR-SHIP) in partnership with Plan International Cambodia with funding support from the Global Sanitation Fund (GSF) of the Water Supply and Sanitation Collaborative Council (WSSCC). The CR-SHIP aims to increase access to improved sanitation and advance proper hygiene practices by: (1) encouraging the consistent use of latrines, handwashing with soap and safe drinking water in rural communities; and (2) developing and strengthening the capacity of government, local authorities and local NGOs to promote better sanitation and hygiene practices.

To establish benchmark information for the CR-SHIP on rural household knowledge, attitude and practice (KAP) on safe drinking water and storage, construction and utilisation of household latrines and hygiene practices, CDRI conducted a baseline household survey in Kompong Cham, Kandal,

¹ Prepared by Vong Sreytouch, research associate, Social Development Programme, CDRI. The author would like to acknowledge Plan International Cambodia for its generous support of the project.

Takeo, Svay Rieng and Kompong Speu provinces. This article reports the key study findings from which some recommendations to improve the effectiveness of public health S&H messages and boost the adoption of better S&H practices are drawn.

Methodology

The study team employed both quantitative and qualitative approaches consisting of a survey of 841 randomly selected households, semi-structured interviews and observations. Qualitative information was gathered via 20 key informant interviews (KIIs) and 40 focus group discussions (FGDs). KIIs with village chiefs, commune councillors, parents and teachers as well as local health facility and Provincial Department for Rural Development (PDRD) staff provided broad insights into the overall effectiveness of S&H practices in the study areas. FGDs with women-only groups, mixed groups of women and men, primary school teachers and primary school children provided detailed information on problems relating to household adoption of S&H practices. Supported by PDRD staff, field data was collected over 10 days from 27 November to 6 December 2011. Data was then entered into SPSS and transferred to STATA for analysis.

Findings

Utilisation and Construction of Household Latrines

More than half of the sample households (60.17 percent) do not own a latrine, indicating that nearly 40 percent own some type of latrine. Majority (97.31 percent) of latrine owners have an improved latrine type—flush or pour-flush draining to a septic tank or pit (Table 1)—about 96.42 percent of whom reported their latrine to be in working order (Table 1); only 5 percent said that it is not the first one they have owned, suggesting that many of the households are new latrine owners.

The main reasons given for households not owning a latrine are money/high cost of building one (97.80 percent), no locally available construction materials (26 percent), and no external support such as government and NGO subsidies (10.50 percent). FGD results confirmed that a household's financial status is one of the main reasons for not having a latrine. One participant in a women-only FGD stated "It's not easy to sell labour for building a latrine, since what I earn is gone [spent] everyday",

² 4100 riels equal USD1

Table 1: Household Latrine Ownership, by Type (n=335)

Type of latrine	Percent
<i>Improved</i>	
Flush or pour-flush to sewer	0.6
Flush or pour-flush to septic tank or pit	97.31
Total	97.91
<i>Unimproved</i>	
Flush or pour-flush to elsewhere	0.9
Open pit latrine without slab	0.3
Latrine overhanging water	0.6
Other	0.3
Total	2.1

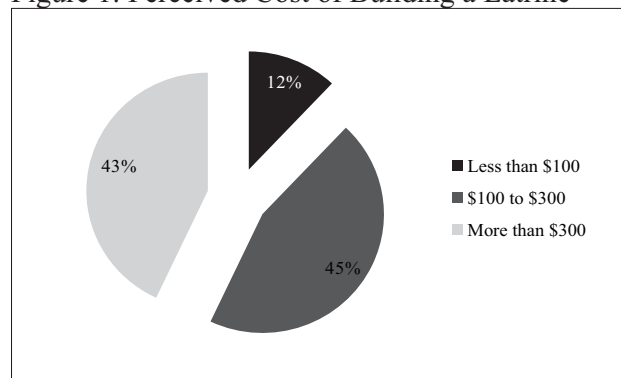
a point echoed by a commune councillor - "I have never heard anyone talk about difficulties in using a latrine, they only talk about money. If they have money, they can build a latrine".

Interestingly, regardless of financial status households' preferred choice of latrine is the more expensive water-flush type. Households without a latrine (86 percent) opted for the water-flush type and would build one if they had enough money, as affirmed in the women-only FGD in Kompong Cham - "I don't want to build an open pit latrine without a slab (dry latrine) because it is too dirty and I'm waiting until I have enough money to build a flush latrine".

Household Perception of Latrine Construction Cost

Sanitation marketing programmes, supported by NGOs in partnership with private construction material outlets and local authorities, are operating in the study provinces. For example, Lien Aid runs educational programmes and cooperates with local authorities (village chief, commune councillors) and local builders merchants/outlet stores to transfer skills on treating water and building sanitation infrastructure to local communities. The cost of a flush or pour-flush latrine, consisting of three soak pits and one pour-flush pan, is KHR164,000 (USD40)², including free delivery. A commune councillor from Choeng Prey district, Kompong Cham, remarked "buying [a latrine construction set] from Lien Aid is cheaper than [buying one] from a private source which costs KHR200,000 (USD48.78) or more; the cost of one soak pit varies by about KHR10,000 (USD2.43)".

Figure 1: Perceived Cost of Building a Latrine



Household perception is that the cost of building a latrine is prohibitive. For example, only 12 percent of the households believed the cost to be less than USD100, whereas more than three-quarters thought it would cost USD100-300 or more to build an acceptable latrine for their family (Figure 1). It is likely that insufficient personal savings is the main barrier preventing households that have not yet installed a latrine from doing so. At the same time, the general perception that the cost of an adequate latrine is much more than it actually is further discourages households from building one.

Key informants' (villagers, commune chiefs, village chiefs) knowledge on loans offered by microfinance institutions (MFIs) to build sanitation facilities was patchy. Most had no idea that latrine-related credit even exists, but some were aware that such loans are available from MFIs. Indeed, many MFIs have started to extend services to the villages, but sanitation-related loans are not always considered by either the MFIs or villagers. Although villagers often use MFI loans to invest in rice and crop farming, they are unlikely to borrow money from an MFI to build a latrine. Asked about their views on using MFI services to build a latrine, 92 percent of households showed no interest in doing so. The common reason given for this reluctance is (the fear of) being unable to make the regular repayments required as a condition of an MFI loan (83 percent). Observations from FGDs and KIIs support these views:

None of the villagers here have used an MFI loan to build a toilet because MFIs do not allow it; also, people dare not borrow, as they are afraid of not having the money to pay back the loan... (Chief of Santech Lech

village, Dong Kda commune, Kompong Cham province)

NGOs (MFIs) do not provide loans for building toilets...if we want to borrow, they will give us a loan, but we do not want to do this because we are afraid we cannot pay them back... (Chief of Angkor Chey Leu village, Moha Khnong commune, Koh Sotin district, Kompong Cham province)

[I] don't dare to borrow or use a loan for building a latrine, [I have] no means to pay back the loan because a latrine cannot make income... (Woman from Santech Lech village, Dong Kda commune, Kompong Cham province)

[I] never think about borrowing money to build a toilet or buy a water filter because [I am] afraid of losing [our] rice farm... (Father of four children in Trapeang Sla village, Sompong Chey commune, Cheung Prey district, Kompong Cham province)

Household Knowledge of Safe Drinking Water, Sanitation and Hygiene

Mass media (television and radio) is households' main source of public health information or messages, followed by community meetings (including community training) which also provide an effective channel for conveying hygiene and safe drinking water messages to rural communities. Households had heard or received messages about drinking safe water (57.90 percent), building latrines (36 percent), and handwashing with soap (32.70 percent) in the past year.

Households generally associated S&H with clean/safe water (80 percent), hand hygiene and cleanliness (64 percent) and food hygiene (44 percent), and were aware of how to maintain good standards of cleanliness and hygiene. Respondents' knowledge of how diarrhoea spreads and its prevention was also notable; they were aware that diarrhoea can be transmitted through unclean food (67 percent), unclean water (67 percent), flies (60 percent) and dirty hands (48 percent), though only 17 percent knew that diarrhoea can spread through open defecation (OD).

Knowledge on S&H is significantly correlated with the household head's educational attainment. Using Spearman's correlation, household head's education positively correlates³ with knowledge on

³ Significant at 1 percent level, with a correlation coefficient of 0.165

how diarrhoea is contracted, and is also positively correlated with household knowledge on how diarrhoea is spread at 5 percent level and a correlation coefficient of 0.085. This suggests that the higher a household head's education, the more likely it is that household members understand the concept of S&H practices, maintain good standards of S&H, and know how to prevent diarrhoea. Additionally, household heads viewed good health, i.e. avoiding sickness and preventing infectious disease (94 percent), as the main reason for maintaining good S&H standards. They were also aware of the value of handwashing, but their perception of the critical times for doing so differed according to their occupation: female household heads were more aware of the need to wash hands before preparing food and cooking, while others responded that before and after eating and after defecating were the most important times.

Household knowledge of water storage and treatment is also high. The main reasons cited for storing water are to prevent contamination (75 percent), to keep it clean (23 percent) and safe (19 percent). They also affirmed that they treat drinking water to combat contamination by germs, bacteria, dirt or faeces (62.30 percent), for good health (50 percent) and to prevent sickness (19 percent).

Household Adoption of Safe Drinking Water, Sanitation and Hygiene Practices

Ideally, hand-washing should be habitual rather than an occasional occurrence. Participants reported they tend to only wash their hands before eating, especially after working in the rice field, after using the latrine (defecation) and when their hands are dirty. However, it is likely that children wash their hands more often than adults. For example, one parent declared "My children are better at washing their hands than me and my husband; they always ask – have you washed your hands yet?" This is possibly because school teachers constantly remind children about S&H, especially the importance of hand-washing. School children explained "teachers advise us to wash our hands regularly, before and after eating, and to wash our hands with soap after cleaning up garbage or dirt..." A school principal added that "school children wash their hands because it is a school requirement".

FGD and KII findings support the survey observations that people wash their hands with

only water or soap and water, and that a few use ash. Households that use only water claimed that the cost of soap is a barrier to adopting the practice of hand-washing with soap. This was confirmed by discussion in one of the women-only groups – "if [we] wash [our] hands with soap, [we] need to spend money on soap, so [better to] save money to buy monosodium glutamate for cooking for two days". Another participant added that "washing powder used to be sold in small packages for just 100 riels each, but now it can only be bought in larger quantities that cost 500 riels or more per package". Health centre staff expressed their concern about community attitudes, saying "soap is available in every household but they don't wash... they (villagers) often say that they never wash their hands and never have problem".

More than four in five households (82 percent) treat their drinking water, mainly by boiling (90.50 percent) or using a water filter (10 percent). They believe that treating drinking water is good for maintaining health. Those who do not treat drinking water explained they have "no time" to do so. A small percentage of households follow the traditional practice of not boiling or treating drinking water as they are not accustomed to it. The traditional belief that untreated water is better for health is another factor discouraging households from treating drinking water. For example, a primary school teacher mentioned that "villagers don't believe [in boiling water], they say we have been drinking water from cows' footprints (*dan chheung kor*) since our grandparents' generation".

Household Attitude towards Adopting Safe Drinking Water, Sanitation and Hygiene

The study findings confirm that the majority of the households have favourable attitudes towards safe drinking water, hand-washing and especially the use of an improved latrine, though some still follow the traditional practice of drinking untreated water and have not adopted habitual hand-washing. More than four in five households (82 percent) treat their drinking water, mainly by boiling or filtration. Almost all household heads confirmed that habitual hand-washing, either with just water or water and soap, is common. Households with a latrine use their own or a public facility, whereas majority of those without a latrine always practice open defecation (OD) (65 percent) or bury their waste (23 percent).

Conclusion

Rural household knowledge on sanitation and hygiene, safe drinking water and water storage is high. Attitudes towards adopting S&H practices, drinking safe water, and especially using an improved latrine are positive, though some households traditionally favour drinking untreated water and do not practice hand-washing as a routine S&H measure.

Households that own a latrine tend to keep it in working order and household members always use it. Those that do not have a latrine always practice OD or bury their waste, and use the same defecation sites in wet and dry seasons. Pour-flush latrine is the preferred type, irrespective of household wealth status. But the perception that the building cost is prohibitive discourages households from even considering the idea of installing one. That majority of households tend to use a public latrine when in a public place such as a pagoda or school suggests there is no particular resistance to having a latrine and underlines the finding that cost, or perception of cost, is the main constraint. Households are reluctant to take out an MFI loan to build a latrine not only because they are afraid of being unable to meet the repayment conditions but because investing in a toilet does not generate income, indicating that earning an adequate daily living is a higher priority than access to improved sanitation. Several respondents affirmed they would save for a latrine if they could earn enough to cover their daily needs and build some savings.

Households are aware of the value of hand hygiene, though depending on their occupation they have different views on the critical times for hand-washing. Almost all the households confirmed that routine hand-washing with either water or soap and water is common, usually before and after eating, after defecating and when hands are dirty. Children tend to wash their hands more often because S&H is part of the school curriculum and teachers constantly remind pupils about the importance of washing their hands.

Most households treat water for drinking by boiling or filtering it so as to maintain good health, and know how to store water safely to prevent contamination.

Recommendations

Although not a solution to the problem of low water and sanitation coverage in rural areas or a substitute for access to safe water and latrines, improving the

promotion of S&H messages and encouraging the adoption of routine S&H practices can go some way to helping rural people look after their health to the best of their ability and resources. Drawing on our survey findings, we suggest the following actions be considered in policy and planning:

- Design a Behaviour Change Communication programme to target the small percentage of households who have not adopted S&H practices and to boost public acceptance and use of safe water and storage.
- Prioritise media broadcasting of public S&H education programmes; radio and television are important channels for informing and motivating people regardless of their educational attainment.
- Promote well-designed community training as a secondary source of conveying hygiene promotion and safe drinking water messages to keep reminding people about the benefits of S&H practices.
- Build on past interventions which provided latrine construction loans in the form of savings groups and devise similar schemes for communities and households that cannot afford MFI loans.

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Economy Watch—External Environment¹

This section describes economic indicators of major world economies and economies in East Asia.

The world economy is gradually recovering from the worse financial and economic crisis since the Great Depression despite signs of slowdown in some east Asian economies in the second quarter of 2012.

Real GDP growth in Indonesia dropped slightly in the second quarter, to 6.4 percent from 6.5 percent a year earlier, whereas the Malaysian and Singapore economies continued to perform relatively well, having GDP growth increased to 5.4 percent and 1.9 percent, respectively. There were signs of economic slowdown in China and some east Asian Tigers. China's year on year GDP growth declined to 7.6 percent from 9.5 percent a year earlier. Growth in Hong Kong declined to 3.6 percent while that in South Korea contracted to 2.4 percent, the lowest since 2010. Taiwan experienced negative growth of minus 0.2 percent, down from 4.9 percent a year earlier. Natural disasters have been frequent in Asia for the last two years. Powerful Typhoon Bolaven hit the northern part of South Korea, killing people and damaging houses and communication and electricity networks, leaving hundreds of thousands without power. China is also expected to be affected by the typhoon. Also, tension over a number of disputed islands can potentially sour political and economic ties between China, South Korea and Japan, further affecting economic activities, especially trade.

The euro zone continued to struggle as threat of another recession loomed. GDP growth of the euro-12 contracted to 0.4 percent in the second quarter from 1.6 percent in the same period last year. The U.S. performed comparatively well, achieving growth of 2.2 percent compared to 1.5 percent in the same period last year. Japan's growth increased to 3.5 percent from a negative 1.0 percent in the second quarter last year.

World Inflation and Exchange Rates

Inflation was largely controlled in the second quarter compared with a year earlier. Cambodia's annual inflation decreased to 2.9 percent from 6.5 percent a year earlier. Vietnam achieved a one-digit

inflation rate of 8.6 percent. Inflation rates in other economies were also controlled. China's inflation dropped to 2.9 percent in the second quarter, from 5.7 percent in the same period last year. Overall prices in Japan increased 0.2 percent, compared to 0.3 percent a year earlier.

The riel depreciated by 0.2 percent against the dollar in the second quarter (0.23 percent year on year), to KHR4054.3. In the same period, the Thai baht depreciated by 0.9 percent (3.3 percent year on year) against the dollar. The Chinese yuan depreciated by 0.3 percent, but appreciated 2.6 percent year on year.

Commodity Prices in World Markets

The price of maize (US No. 2) dropped by 2.5 percent in the second quarter (13.2 percent year on year) to USD270.4/tonne and of rubber (SMR 5) by 9.2 percent (32.4 percent year on year) to USD3361/tonne. In the same period, the price of rice (Thai 100% B) increased by 9.3 percent (16.7 percent year on year) to USD600.3/tonne, of palm oil by 2.4 percent (but 1.2 percent decrease year on year) to USD1133/tonne and of soybeans (US No. 1) by 11.4 percent (3.9 percent year on year) to USD546.5/tonne. Gasoline (US Gulf Coast) went down by 6.3 percent from the previous quarter (6.0 percent from the same period last year) to USD0.74/litre. The price of diesel fuel (low sulphur No. 2) dropped by 7.1 percent from a quarter earlier to USD0.78/litre, but increased 2.7 percent year on year. There are fears that global food prices might increase because of frequent natural disasters in the last six months.

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¹ Prepared by Roth Vathana, research associate at CDRI.

Economy Watch—External Environment

Table 1. Real GDP Growth of Selected Trading Partners, 2006–2012 (percentage increase over previous year)

	2006	2007	2008	2009	2010		2011				2012	
					Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Selected ASEAN countries												
Cambodia	10.6	10.2	6.8	0.1	-	-	-	-	-	-	-	-
Indonesia	5.4	6.3	6.1	4.2	5.8	6.9	6.5	6.5	6.5	6.5	6.3	6.4
Malaysia	5.9	6.3	4.6	-2.4	5.3	4.8	4.6	4.0	5.8	5.2	4.7	5.4
Singapore	7.7	7.7	1.1	-4.5	10.5	12.0	8.3	0.9	5.9	3.6	1.6	1.9
Thailand	4.8	4.9	2.6	3.3	6.7	3.8	3.0	2.6	3.5	-9.0	0.0	4.2
Vietnam	8.1	8.5	6.2	4.7	7.2	7.3	5.4	5.7	7.2	6.1	-	-
Selected other Asian countries												
China	10.5	11.9	9.0	8.2	9.7	9.8	9.7	9.5	9.1	8.9	8.1	7.6
Hong Kong	6.6	6.4	2.4	-3.2	6.8	6.2	7.2	5.1	4.3	3.0	4.2	3.6
South Korea	5.0	4.9	2.2	-1.0	4.5	4.8	4.2	3.4	3.4	3.4	3.0	2.4
Taiwan	4.6	5.2	0.1	-3.6	9.8	6.9	6.5	4.9	3.4	1.9	0.4	-0.2
Selected industrial countries												
Euro-12	2.7	2.9	0.9	-3.8	1.9	2.0	2.5	1.6	1.4	0.7	0.0	-0.4
Japan	2.1	2.0	-0.7	-5.4	5.0	2.2	-1.0	-1.0	0.0	-1.0	2.8	3.5
United States	3.3	2.2	1.1	-2.5	2.3	2.8	2.3	1.5	1.6	1.6	2.1	2.2

Sources: International Monetary Fund, *Economist* and countries' statistic offices
Table 2. Inflation Rates of Selected Trading Partners, 2006–2012 (percentage price increase over previous year—period averages)

	2006	2007	2008	2009	2010		2011				2012	
					Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Selected ASEAN countries												
Cambodia	4.7	10.5	19.7		1.8	3.3	3.6	6.2	6.7	4.9	5.5	2.9
Indonesia	13.4	6.4	10.1	4.7	6.2	6.3	6.8	5.9	4.7	4.1	3.8	4.5
Malaysia	3.7	2.0	5.3	0.4	1.9	2.1	2.8	3.3	3.4	3.2	2.3	1.7
Singapore	1.0	2.1	6.5	0.5	3.4	4.0	5.2	4.7	5.5	5.5	4.9	5.2
Thailand	4.7	2.2	5.5	-0.9	3.3	2.0	3.0	4.1	4.1	4.0	3.4	2.6
Vietnam	7.7	8.3	23.3	7.3	8.4	10.9	12.8	19.4	22.5	19.8	16.0	8.6
Selected other Asian countries												
China	1.5	4.8	5.9	-0.8	3.3	4.7	5.1	5.7	6.3	4.6	3.8	2.9
Hong Kong	2.2	2.0	4.3	-0.3	2.3	2.9	4.0	5.1	6.5	5.7	5.2	4.2
South Korea	2.4	2.5	4.6	2.8	2.9	3.6	4.4	4.2	4.8	4.1	2.9	2.4
Taiwan	0.6	1.8	3.2	-1.1	0.4	1.1	1.3	1.6	1.3	1.4	1.3	1.6
Selected industrial countries												
Euro-12	2.1	2.1	3.3	0.4	1.7	2.0	2.5	2.7	2.7	2.9	2.7	2.5
Japan	0.5	0.1	1.4	-1.3	-0.9	0.1	0.0	0.3	0.2	-0.3	0.3	0.2
United States	3.2	2.9	3.8	-0.4	1.2	1.3	2.1	3.5	3.8	3.3	2.8	1.9

Sources: International Monetary Fund, *Economist* and National Institute of Statistics
Table 3. Exchange Rates against US Dollar of Selected Trading Partners, 2006–2012 (period averages)

	2006	2007	2008	2009	2010		2011				2012	
					Q4	Q1	Q2	Q3	Q4	Q1	Q2	
Selected ASEAN countries												
Cambodia (riel)	4103.20	4062.70	4054.20	4140.48	4122.58	4041.90	4044.89	4095.66	4071.89	4045.98	4054.26	
Indonesia (rupiah)	9134.00	9419.00	9699.00	10413.83	8965.70	8902.02	8593.94	8625.83	8985.65	9078.63	9281.28	
Malaysia (ringgit)	3.70	3.30	3.30	3.52	3.11	3.05	3.02	3.02	3.15	3.06	3.11	
Singapore (S\$)	1.59	1.51	1.42	1.45	1.30	1.28	1.24	1.23	1.29	1.26	1.26	
Thailand (baht)	37.90	32.22	33.36	34.34	29.99	30.56	30.28	30.15	30.98	31.00	31.28	
Vietnam (dong)	15,994.00	16,030.00	16,382.00	17,725.24	19,499.48	20,273.83	20,693.58	20,699.60	20,997.70	20,971.18	-	
Selected other Asian countries												
China (yuan)	7.97	8.03	6.94	6.83	6.66	6.58	6.50	6.42	6.36	6.31	6.33	
Hong Kong (HK\$)	7.77	7.80	7.78	7.75	7.76	7.79	7.78	7.79	7.78	7.76	7.76	
South Korea (won)	955.00	929.04	1137.23	1277.76	1132.85	1120.19	1084.27	1084.90	1144.87	1131.17	1152.59	
Taiwan (NT\$)	32.50	32.85	31.54	33.04	30.36	29.30	28.86	29.19	30.26	29.68	29.62	
Selected industrial countries												
Euro-12 (euro)	0.80	0.70	0.84	0.72	0.74	0.73	0.70	0.71	0.74	0.76	0.77	
Japan (yen)	116.40	117.80	102.46	93.60	82.53	82.33	81.66	77.86	77.78	79.30	80.07	

Sources: International Monetary Fund, *Economist* and National Bank of Cambodia
Table 4. Selected Commodity Prices on World Market, 2006–2012 (period averages)

	2006	2007	2008	2009	2010		2011				2012	
					Q4	Q1	Q2	Q3	Q4	Q1	Q2	
Maize (USNo.2)—USA (USD/tonne)	111.04	149.08	218.15	167.31	238.81	280.32	311.63	302.79	270.77	277.50	270.46	
Palm oil—north-west Europe (USD/tonne)	433.85	707.68	912.23	686.84	1108.00	1251.00	1147.00	1079.00	1024.67	1106.67	1133.0	
Rubber SMR 5 (USD/tonne)	1996.30	2202.30	2586.30	1884.84	4257.27	5278.03	4968.77	4617.57	3658.00	3701.17	3361.0	
Rice (Thai 100% B)—Bangkok (USD/tonne)	282.00	305.36	615.32	524.47	531.00	528.25	514.33	581.3	610.33	549.00	600.3	
Soybeans (US No.1)—USA (USD/tonne)	213.88	294.59	460.41	414.03	480.24	537.24	525.66	513.98	454.83	490.79	546.5	
Crude oil—OPEC spot (USD/barrel)	61.58	69.25	95.44	60.50	84.17	100.70	113.31	108.91	-	-	-	
Gasoline—US Gulf Coast (cents/litre)	47.70	53.58	62.22	42.91	57.23	67.92	78.73	74.63	68.50	78.97	74.0	
Diesel (low sulphur No.2)—US Gulf Coast (cents/litre)	51.35	55.51	76.20	43.05	61.68	72.47	75.72	77.27	77.31	83.75	77.8	

Sources: Food and Agriculture Organisation and US Energy Information Administration

Economy Watch—Domestic Performance¹

Main Economic Activities

Signs of slowdown in some economic activities emerged in the second quarter of 2012, perhaps due to continued uncertainty in the global economy—particularly that of the European Union—and the slowdown in some east Asian economies such as China, South Korea, Hong Kong and Taiwan. This year's growth in Cambodia has been revised down to 6.7 percent from an initial prediction of 7.0 percent.

Total fixed asset investment approvals dropped by 34.1 percent from a quarter earlier (89.7 percent year on year) to USD273 m; investment in agriculture decreased 47.5 percent (48.1 percent year on year), in industry by 16.7 percent (32.4 percent year on year) and in services by 64.6 percent (99.2 percent year on year). Investment in garments—a major industrial commodity—went down 30.1 percent (10.1 percent year on year), while there was no investment approval in hotels and tourism. The total value of construction approvals rose 3.3 percent from a quarter earlier (331.0 percent year on year) to USD333.6 m; the value of villa and house approvals increased 2.8 percent (1028.8 percent year on year) to USD66.6 m and flats by 260.7 percent (861.8 percent year on year) to USD219.3 m. Foreign visitor arrivals to the kingdom decreased by 194.4 percent from the previous quarter, but increased 6.3 percent year on year.

Total exports contracted by 2.9 percent from the preceding quarter (a 9.8 percent rise year on year) to USD1243.2 m; garment exports declined by 3.8 percent (a 6.9 percent increase year on year) to USD1030.4 m. Exports to the US dropped by 10.4 percent (5.3 percent year on year) to USD441.8 m and to Japan by 29.5 percent but year on year increased by 26.1 percent. To the struggling economy of the euro zone, garment exports were still vibrant, growing by 6.8 percent from the preceding quarter (16.4 percent year on year) to USD350.8 m. Exports to ASEAN grew by 20.2 percent (83.9 percent year on year). Exports of agricultural commodities dropped by 11.3 percent from a quarter earlier (26.4 percent year on year), to USD15.6 m. Exports of rice went down 0.4 percent (10.9 percent year on year), of rubber 14.9 percent (29.5 percent year on year) and of fish 20.0 percent. In the same period, total imports increased by 17.2 percent (11.5 percent year on year)

to USD1885.4 m. Imports of gasoline increased by 8.5 percent from a quarter earlier, while diesel fuel dropped by 9.2 percent. Imports of construction materials rose by 4.4 percent (11.0 percent year on year) to USD14.1 m. The trade deficit increased by 95.1 percent from the previous quarter (15.1 percent year on year), to USD642.2 m.

Public Finance

Enhancing revenue collection and reducing excessive government spending are important to rebuild fiscal strength and to avoid crowding out private investment through government borrowing. In the first quarter of 2012, total government revenue dropped by 2.7 percent from a quarter earlier to KHR1728.9 bn, but year on year increased 10.5 percent. Current revenue went down 3.5 percent, of which that from domestic taxes decreased 1.1 percent and that from taxes on international trade by 11.1 percent. However, non-tax revenue went up 15.8 percent (69.3 percent year on year) to KHR330.9 bn. In the same period, total expenditure dropped by 45.8 percent (16.6 percent) to KHR1688.3 bn; capital expenditure went down by 51.6 percent (2.9 percent year on year) and current expenditure by 40.8 percent (24.2 percent year on year). Expenditure on wages of civil servants decreased by 16.3 percent from a quarter earlier (4.3 percent year on year) to KHR508.9 bn and subsidies and social assistance by 61.1 percent (57.9 percent year on year) to KHR189.6 bn.

Inflation and Foreign Exchange Rates

Inflation in Phnom Penh (all items) contracted in the second quarter of 2012 to 2.9 percent from 6.3 percent in the same period last year. The decrease was partly attributable to relatively low domestic oil prices and the continued normalisation of overall prices in neighbouring countries such as Vietnam. Prices increases of food and non-alcoholic beverages dropped to 3.4 percent, from 7.6 percent, and transportation to 5.3 percent, from 7.3 percent a year earlier. In the second quarter, the riel depreciated 0.21 percent (0.23 percent year on year) against the dollar while appreciating 0.9 percent (3.6 percent year on year) against the Thai baht. The riel depreciated 0.5 percent against the Vietnamese dong, but year on year appreciated 1.0 percent. The gold price dropped 4.7 percent to USD194.4/chi, but year on year increased

¹ Prepared by Roth Vathana, research associate, Sry Bopharath and Pon Dorina, research assistants, at CDRI.

by 7.1 percent. The price of diesel fuel dropped by 14.2 percent from a quarter earlier (6.8 percent year on year) to KHR4458/litre.

Monetary Developments

In the first quarter, net foreign assets increased by 4.2 percent (9.2 percent year on year) to KHR18652.3 bn and net domestic assets by 7.8 percent (94.1 percent year on year) to KHR6211.2 bn. Total liquidity rose by 5.1 percent (22.6 percent year on year) to KHR24,863.5 bn. Credit to the private sector went up 7.0 percent (35.1 percent year on year) to KHR18,789 bn. Money in circulation rose by 0.7 percent from a quarter earlier (13.9 percent year on year).

Poverty Situation

Compared to a year earlier, the average real daily earnings of 10 groups of vulnerable workers increased by 4.6 percent in February, 17.5 percent in May and 18.8 percent in August.

In August, the real daily earnings of cyclo drivers rose by 15.4 percent compared to the same month last year, from KHR9343 to KHR10,783. Eighty percent of cyclo drivers had one year of education, while 7.5 percent had two years and 2.5 percent three years; 10 percent had never been to school. On average, they had four members in the family, and all of the respondents were the family's main income earner. In August, 15 percent of cyclo drivers thought that their income had increased from the previous month, 63 percent that it had declined and 23 percent that it had stayed the same. They earned KHR20,000 per day (38 percent) in the previous week, while only 5 percent earned KHR25,000/day. Fifty percent worked 30 days per month. Forty-five percent worked 10 hours/day and 22.5 percent 12 hours/day.

Earnings of porters rose by 26 percent from the same month in 2011 to KHR12,588/day, while their average expenditure on food was KHR8600/day and on housing KHR975/day. The average spending on health was KHR4525 per month. Ninety-five percent said that food price rises had a direct impact on their livelihoods, while 2.5 percent mentioned that house rents and transportation costs had a direct impact on them.

Small vegetable sellers expanded their daily incomes by 30 percent compared with the same month last year. Forty percent of them thought that they earned more than they did four years ago, 17.5 percent thought that they earned less than in 2008,

15 percent thought that they had stayed the same, 27 percent didn't know. Only 2.5 percent of them said that their income could support their family. Ninety-seven percent of small vegetable sellers were the main family income earner.

In August, the earnings of scavengers grew by 27.7 percent compared with the same month last year. Their daily income was KHR9219 and they spent around KHR4700 a day for food. On average they worked around 25 days/month and 11.4 hours/day. Fifty percent of them thought that the sources of rubbish had increased, 40 percent thought that it declined and 10 percent thought that it was stable. Eighty-five percent of scavengers rented housing, 10 percent stayed in a relative's house, and 5 percent owned their house.

Rice-field workers' daily incomes increased 22 percent from the same month last year to KHR8558. Sixty-two percent of rice-field workers were in debt in August.

Garment workers increased their daily earnings by 16.7 percent to KHR9683. They spent KHR5909 for food per day and KHR36,971/month for rented housing. They didn't spend on transportation but for medical care spent KHR12,941/month. They saved KHR184,368/month. Fifty-three percent of them worked overtime frequently, 32 percent sometimes and 15 percent never. Forty percent of them were members of a union in their factory; the other 60 percent did not know much about union activities.

In August, motorcycle taxi drivers increased their daily income by 21.4 percent compared with the same period last year. They averaged 25.4 working days per month. Their average daily income was KHR12,919, while they spent KHR8412 on food. The survey found that they worked more than 10 hours/day. All of motorcycle taxi drivers migrated to Phnom Penh and 58 percent of them migrated alone and 42 percent with family to Phnom Penh or Siem Reap.

The daily income of skilled construction workers rose by 14 percent compared with the same month in 2011, from KHR12,405 to KHR14,152. Only 5 percent of them said that they could support their family, which on average consisted of four people. They worked for 26.5 days/month. Only 7.5 percent of them had heard about a construction workers association; none of them had joined it. All of them stated that construction activity had increased in the last three months.

Table 1. Private Investment Projects Approved, 2005–12*

	2005	2006	2007	2008	2009	2010	2011					2012	
						Q4	Q1	Q2	Q3	Q4	Q1	Q2	
	Fixed Assets (USD m)												
Agriculture	26.8	498.0	135.6	92.0	615.0	36.7	4.1	156.4	123.9	440.6	154.7	81.2	
Industry	914.6	365.3	709.1	724.9	818.5	87.7	67.1	257.1	2361.0	174.9	208.7	173.7	
. <i>Garments</i>	174.4	89.4	170.7	142.8	90.1	50.0	57.1	108.4	109.7	118.7	139.4	97.5	
Services	155.5	2939.1	1742.5	10,003.2	4432.0	1096.2	209.5	2229.2	264.1	722.6	50.9	18.0	
. <i>Hotels and tourism</i>	102.6	345.0	1048.3	8758.1	3980.1	1087.4	107.9	2221.9	264.1	257.0	50.9	0.0	
Total	1096.9	3802.4	2587.2	10,570.9	5865.5	1220.6	280.72	2642.7	2748.9	1338.1	414.4	273.0	
Total	-	-	-	-	-	278.8	-77.0	841.4	4.0	-51.3	-69.0	-34.1	
Total	275.6	246.6	-32.0	308.6	-44.5	-71.3	-44.2	1115.0	752.9	9.6	47.6	-89.7	

*Including expansion project approvals. Source: Cambodian Investment Board

Table 2. Value of Construction Project Approvals in Phnom Penh, 2005–12

	2005	2006	2007	2008	2009	2010	2011					2012	
						Q4	Q1	Q2	Q3	Q4	Q1	Q2	
	USD m												
Villas and houses	45.5	33.1	79.1	154.7	87.1	9.5	4.1	5.9	106.3	60.9	64.8	66.6	
Flats	204.2	213.3	297.2	221.6	73.3	20.3	16.1	22.8	90.0	58.5	60.8	219.3	
Other	109.1	76.8	259.6	740.9	268.8	76.2	23.6	48.7	51.1	29.3	197.2	47.8	
Total	358.8	323.3	635.8	1117.0	196.8	106.0	43.8	77.4	247.4	148.7	322.8	333.6	
Total	-	-	-	-	-	35.3	-58.7	76.7	219.7	-39.9	117.1	3.3	
Total	36.2	-9.9	96.7	75.7	-82.4	58.7	-14.8	-61.7	215.6	40.29	637.1	331.1	

Source: Department of Cadastre and Geography of Phnom Penh municipality

Table 3. Foreign Visitor Arrivals, 2005–12

	2005	2006	2007	2008	2009	2010	2011					2012	
						Q4	Q1	Q2	Q3	Q4	Q1	Q2	
	Thousands												
By air	856.5	1029.0	1296.5	1239.4	1111.7	383.7	427.4	286.9	335.3	430.7	513.6	317.1	
By land and water	565.1	672.9	718.6	881.9	999.7	321.4	351.0	319.6	364.5	366.3	481.5	424.3	
Total	1421.6	1701.9	2015.1	2121.3	2111.5	705.1	778.4	606.5	699.8	797.1	995.2	761.4	
Total	-	-	-	-	-	21.2	10.4	-22.1	15.4	13.9	24.9	-23.5	
Total	34.7	19.7	28.4	5.3	0.5	15.8	19.4	20.0	13.9	12.8	20.2	13.0	

Source: Ministry of Tourism

Table 4. Exports and Imports, 2005–12

	2005	2006	2007	2008	2009	2010	2011					2012	
						Q4	Q1	Q2	Q3	Q4	Q1	Q2	
	USD m												
Total exports	2352.8	2810.9	3050.3	3097.8	2901.6	1070.3	1017.7	1132	1455.6	1324.2	1280.1	1243.2	
Of which: <i>Garments</i>	2253.3	2698.8	2938.9	2986.2	2565.3	942.74	880.48	964.15	1285.71	1129.23	1070.8	1030.4	
. <i>To US</i>	1546.1	1847.2	1956.5	1908.3	1512.6	524.75	464.47	466.71	619.38	504.71	493.3	441.76	
. <i>To EU</i>	503.1	601.0	654.3	689.0	644.7	248.03	232.02	301.37	397.53	391.28	328.4	350.8	
. <i>To ASEAN</i>	2.28	2.6	3.2	10.76	6.9	2.99	3.77	4.18	4.73	4.95	6.4	7.69	
. <i>To Japan</i>	23.5	29.4	28.5	25.2	44.5	26.25	34.32	28	43.4	41.25	50.1	35.31	
. <i>To rest of the world</i>	178.3	218.7	296.4	352.9	356.5	140.72	145.9	163.89	220.68	187.03	192.5	194.84	
Agriculture	61.25	59.7	55.7	44.5	73.1	71.67	74.01	97.07	98.91	92.06	80.5	71.41	
. <i>Rubber</i>	36.8	41.5	41.0	35.8	51.6	38.08	49.86	48.6	56.11	43.06	40.3	34.26	
. <i>Wood</i>	10.3	8.6	8.7	3.4	3.5	18.1	6.2	16.8	16.1	9.7	8.9	6.7	
. <i>Fish</i>	10.05	6.0	3.2	2.3	3.9	0.8	0.6	0.4	1.4	0.7	0.5	0.4	
. <i>Rice</i>	2.8	2.5	1.5	2.6	10.9	12.1	16.9	30.3	22.4	37.0	27.1	27.0	
. <i>Other agriculture</i>	1.7	1.2	1.2	0.5	3.0	2.6	0.5	1.0	2.9	1.6	3.9	3.0	
Others	38.29	52.33	55.8	67.1	263.22	55.9	63.2	70.8	71.0	102.9	128.8	141.4	
Total imports	2509.0	3047.9	3770.2	4272.5	4331.5	1336	1454.9	1690.1	1519.1	1711.9	1609.2	1885.4	
Of which: <i>Gasoline</i>	40.1	49.4	73.6	84.8	91.13	30.5	62.2	76.7	73.8	81.8	70.7	76.7	
. <i>Diesel</i>	92.94	121.6	133.7	119.5	180.67	50.4	92.7	129.9	118.9	105.5	139.4	126.6	
. <i>Construction materials</i>	46.6	33.8	44.31	56.3	49.74	13.9	11.8	12.7	11.6	12.0	13.5	14.1	
. <i>Other</i>	2329.5	2843.1	3518.5	4011.8	4010	1241	1288	1471	1315	1513	1386	1668.0	
Trade balance	-156.2	-237.0	-719.9	-1174.7	-1429.9	-265.7	-437.2	-558.1	-63.5	-387.6	-329.1	-642.2	
Total garment exports	-	-	-	-	-	0.5	-6.6	9.5	33.4	-12.2	-5.2	-3.8	
Total exports	-	-	-	-	-	2.4	-4.9	11.2	28.6	-9.0	-3.3	-2.9	
Total imports	-	-	-	-	-	-9.2	8.9	16.2	-10.1	12.7	-6.0	17.2	
Total garment exports	11.2	19.8	8.9	1.6	-14.1	42.7	40.8	34.5	37.0	19.8	21.6	-6.9	
Total exports	11.6	19.5	8.5	1.6	-6.3	45.3	46.7	37.9	39.3	23.7	25.8	-9.8	
Total imports	17.1	21.5	23.7	13.3	1.4	21.2	30.1	33.7	3.2	28.1	10.6	11.6	

Import data include tax-exempt imports. Sources: Department of Trade Preference Systems, MOC, and Customs and Excise Department, MEF (web site)

Table 5. National Budget Operations on Cash Basis, 2005–12 (billion riels)

	2005	2006	2007	2008	2009	2010	2011				2012	
						Q3	Q4	Q1	Q2	Q3	Q4	Q1
Total revenue	2625.0	3259.2	1146.1	5290.0	5988.993	1436.04	1346.07	1400.46	1564.25	1510.1	1776.61	1728.9
Current revenue	2474.0	2881.8	1141.6	5210.7	5859.075	1431.2	1337.65	1378.61	1563.01	1497.59	1740.12	1725.8
Tax revenue	1911.0	2270.9	965.2	4409.9	4692.958	1225.46	1224.09	1142.29	1367.52	1313.35	1454.33	1403.82
Domestic tax	-	-	661.8	3248.4	3533.567	916.886	808.541	875.569	1095.26	996.642	1104.12	1092.27
Taxes on international trade	-	-	303.5	1161.5	1159.394	308.577	303.389	266.719	272.27	316.709	350.207	311.253
Non-tax revenue	563.0	610.9	176.4	800.8	1166.13	205.74	225.72	236.329	195.48	184.23	285.8	330.98
Property income	-	-	13.6	78.0	291.13	19.52	14.3	10.6426	18.64	15.19	19.35	91.28
Sale of goods and services	-	-	124.3	424.7	460.072	127.02	121.881	129.982	138.92	144.192	175.627	166.899
Other non-tax revenue	-	-	38.5	298.2	408.906	59.193	89.53	95.7053	37.9	24.856	90.815	63.8
Capital revenue	152.0	377.4	4.5	79.3	129.918	4.842	8.425	21.8524	1.25	12.513	36.486	3.148
Total expenditure	3295.0	4174.7	1689.7	6297.8	8784.648	2390.26	1877.09	1581.62	2025.15	2310.61	3115.05	1688.33
Capital expenditure	1328.0	1638.1	807.4	2574.4	2853.233	886.954	634.92	579.818	721.01	801.167	1444.89	699.937
Current expenditure	1967.0	2536.8	882.3	3809.0	4773.067	1503.3	1332.34	857.492	1304.13	1509.44	1670.15	988.398
Wages	711.0	822.0	362.6	1397.0	2048.81	562.4	642.5	401.0	531.6	629.697	608.253	508.919
Subsidies and social assistance	-	-	194.2	927.1	1099.419	401.513	195.578	257.356	450.85	323.282	487.345	189.594
Other current expenditure	-	-	325.5	1384.9	1624.838	539.4	494.3	199.1	321.7	556.5	574.6	289.9
Overall balance	-670	-915.5	-543.6	-1007.8	-2795.66	-954.2	-531.0	-181.2	-460.9	-800.5	-1,338.4	40.6
Foreign financing	-396.0	-445.1	-185.8	-127	1845.207	409.1	406.4	544.4	576.9	272.9	985.0	577.8
Domestic financing	-	-	-	-	938.644	343.3	254.0	-1,745.2	238.7	312.5	105.6	-565.7

Source: MEF web site.

Table 6. Consumer Price Index, Exchange Rates and Gold Prices (period averages), 2005–12

	2005	2006	2007	2008	2009	2010	2011				2012	
						Q4	Q1	Q2	Q3	Q4	Q1	Q2
(October-December 2006:100)	Consumer price index (percentage change over previous year)											
Phnom Penh												
- All Items	5.8	4.7	5.8	19.7	-0.7	3.3	3.6	6.3	6.7	4.9	2.9	2.9
- Food & non-alcoholic bev.	8.6	6.4	9.9	33.1	-0.3	4.1	3.9	7.6	8.2	6.2	3.4	3.4
- Transportation	11.4	9.1	5.8	19.4	-10.7	3.1	5.0	7.3	8.8	6.3	3.0	5.3
	Exchange rates, gold and oil prices (Phnom Penh market rates)											
Riels per US dollar	4119.7	4119.0	4062.7	4058.2	4140.5	4122.6	4041.9	4044.9	4095.7	4071.9	4046.0	4054.3
Riels per Thai baht	102.6	108.7	122.8	123.5	121.1	137.3	132.7	133.8	135.2	131.1	130.2	129.0
Riels per 100 Vietnamese dong	25.8	25.1	25.0	24.8	23.4	21.1	19.9	19.6	19.8	19.4	19.3	19.4
Gold (US dollars per chi)	54.0	70.6	83.2	105.9	113.1	165.7	147.9	181.5	204.6	203.8	204.1	194.4
Diesel (riels/litre)	2633.0	3140.0	3262.3	4555.2	3170.9	4066.1	4427.2	4784.6	4924.5	4908.3	5193.9	4458.3
Gasoline (riels/litre)	3442.0	4004.0	4005.0	4750.8	3593.1	4535.2	4750.1	5065.5	5248.4	5113.8	5395.8	5308.3

Sources: NIS, NBC and CDRI

Table 7. Monetary Survey, 2005–12 (end of period)

	2005	2006	2007	2008	2009	2010	2011				2012	
						Q3	Q4	Q1	Q2	Q3	Q4	Q1
	Billion riels											
Net foreign assets	5475.0	7224.0	10,735.0	10,345.0	14,655.0	16,903.0	16,697.9	17,079.1	18,099.9	17,695.2	17,893.9	18,652.3
Net domestic assets	-450.0	-282.0	576.0	1513.3	1573.0	1984.8	2778.9	3199.2	3907.7	4961.6	5760.8	6211.2
Net claims on government	-421.0	-953.0	-1816.0	-2987.0	-2252.0	-2120.4	-2126.6	-2252.7	-2184.2	-1925.8	-2123.1	-2542.4
Credit to private sector	2394.0	3630.0	6386.0	9894.0	10,532.0	12,479.8	13,331.2	13,909.0	15,290.6	16,385.7	17,552.8	18,789.0
Total liquidity	5025.0	6942.0	11,311.0	11,858.0	16,228.0	18,887.8	19,476.8	20,278.3	22,007.6	22,656.8	23,654.7	24,863.5
Money	1323.0	1658.0	2052.0	2399.0	3120.0	3061.7	3220.9	3497.2	3539.8	3681.3	3956.2	3984.6
Quasi-money	3702.0	5285.0	9259.0	9459.0	13,108.0	15,826.1	16,255.9	16,781.1	18,467.8	18,975.5	19,698.5	20,878.9
	Percentage change from previous year											
Total liquidity	16.1	38.1	62.9	4.8	36.9	26.7	20.0	17.7	20.5	20.0	21.5	20.2
Money	14.7	25.3	23.8	16.9	30.1	10.4	3.2	11.1	13.6	20.2	22.8	11.4
Quasi-money	16.6	42.8	75.2	2.2	38.6	30.4	24.0	19.1	21.9	19.9	21.2	22.0

Source: National Bank of Cambodia

Table 8. Real Average Daily Earnings of Vulnerable Workers (base November 2000)

	Daily earnings (riels)									Percentage change from previous year		
	2007	2008	2009	2010	2011	2012			2012			
					Aug	Nov	Feb	May	Aug	Feb	May	Aug
Cyclo drivers	8075	12,628	8091	9055	9343	9296	9380	10,954	10,783	-11.8	32.1	15.4
Porters	8588	9005	9549	9964	9994	11,490	10,804	13,033	12,588	-3.4	32.2	26
Small vegetable sellers	8220	9926	8273	8266	8027	7077	12,292	10,150	10,438	34.3	18	30
Scavengers	5422	4652	5857	6698	7217	10,289	7986	8473	9219	15.2	-2.2	27.7
Waitresses*	4482	4327	4646	5607	5166	6236	6179	6418	5617	0.4	5.8	8.7
Rice-field workers	5516	8697	6197	5691	7015	4552	4690	6592	8558	-2.4	10.2	22
Garment workers	7568	6554	7085	7746	8687	8572	8555	8602	9683	2.9	8.2	16.7
Motorcycle-taxi drivers	10,634	15,691	10,685	10,623	11,645	12,899	12,256	13,958	12,919	7.1	31.3	21.4
Unskilled construction workers	6155	8779	8343	8790	10,052	9859	10,658	11,880	10,783	-5.6	26.2	7.3
Skilled construction workers	11,154	12,710	12,487	11,952	12,405	14,930	13,824	13,169	14,152	10.7	6.5	14.1

* Waitresses' earnings do not include meals and accommodation provided by shop owners. Surveys on the revenue of waitresses, rice-field workers, garment workers, motorcycle taxi drivers, unskilled construction workers, and skilled construction workers began in February 2000. Source: CDRI

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on *Transformed Society in the Face of D&D: Implications of State Society Reciprocal Relations in Cambodia* was revised and fieldwork conducted in Battambang province. The project document for *Urban Governance in Decentralised Cambodia* was finalised and fieldwork carried out in Kompong Cham province. Preliminary interviews were held at local and national levels for the *Nested Governance of Water for Agriculture: Decentralisation, Multi-level Government, and Local Community in Tonle Sap Basin*, a study partially supported by the Challenge Programme on Water and Food (CPWF) Research Fellowship Programme of the Mekong Programme on Water, Environment and Resilience (M-POWER). For the project on *Gendered and Democratic Decentralisation: Analysis of Gender in Political Parties in Cambodia*, fieldwork in four provinces has been completed and the data is now being analysed.

Two projects are in the early stages of implementation. Interviews with key informants for *'All Good Things Do Not Go Together' – Analysing Contradictions between Peace-building and Democratisation* are in progress. This project, a partnership with the University of Gothenburg, is to identify how and why conflicts emerge (in the short- and long-term) in the wake of, and possibly triggered by, peace-building interventions. *State Capacity in Support of Labour Management in Cambodia*, a follow-up study on state capacity, has been initiated and is at the design stage.

Economy, Trade and Regional Cooperation Programme (ETRC)

The *Vulnerable Worker Survey*, *Provincial Price Survey* and *Monthly Flash Report* are in good progress. Other ongoing studies are *The Global Financial Crisis and Vulnerability in Cambodia Project* funded by the International Development Research Centre (IDRC), and the Sida-supported five-year research project on *Inclusive Growth* which focuses on high and sustainable economic growth; economic growth, inequality and poverty reduction; assessing the pro-poorness of fiscal policy; economic growth, trade and poverty reduction; and how to achieve inclusive growth.

The first draft report on *Assessing Economic*

Inclusiveness in Cambodia: Income and Non-income Pro-poor Approach (Greater Mekong Sub-region Development Analysis Network: GMS-DAN 9) and its key findings are to be presented at the GMS-DAN workshop on 27 August in Kunming City of Yunnan Province, China. The second draft reports on *What are the Constraints to Inclusive Growth in Cambodia?* and *Industrial Clusters, Business Associations and SMEs' Productivity: Evidence from Enterprise Survey of Cambodia* have been submitted to Asia-Pacific Research and Training Network on Trade (ARTNeT) for further comment.

The concept paper on *Economic and Demographic Determinants of Labour Migration in Cambodia* has been selected by the Mekong Economic Research Network (MERN) for development into a full research proposal which was submitted in early July; the team is presently awaiting response from MERN.

The book on "Costs and Benefits of Cross-Country Labour Migration in the GMS" has been released.

Natural Resources and The Environment Programme (NRE)

The report for the MRC-supported *Project on Social Impact Monitoring and Vulnerability Assessment (SIMVA)* on Cambodia has been completed and is pending a second technical review in mid-September prior to publication.

Four research projects are in progress. The *Strengthening Aquatic Resources Governance (STARGO)* team has conducted a community-based training course on conflict resolution in fisheries, and drafted a technical case-study on the Tonle Sap titled "After the Reforms: Strengthening Governance of Tonle Sap Aquatic Resources". The team for *Gender and Water Governance: Irrigation Management and Development in the Context of Climate Change*, a Sida-supported project, has drafted the literature review and one article for publication in this CDR volume, and is presently conducting field work in Kompong Thom, Kompong Chhnang and Pursat.

The team for the joint project with RUPP on *Climate Change and Resilience: Land Use,*

Rainfall Change, and Water Governance Affecting Food Security and Livelihoods continues its support in compiling hydrological information by using available data from the Water Resources Management Research Capacity Development Programme (WRMRDP). The NRE researcher for the *Impact Assessment of CARF-Funded Projects*, a joint project with PARD, is assisting with the assessment of nine Cambodia Agricultural Value Chain Program (CAVAC)-funded projects to determine levels of success and adoption of projects implemented since 2005.

The programme also submitted six proposals to various funding partners in Cambodia and overseas.

Poverty, Agriculture and Rural Development Programme (PARD)

Seven projects are being undertaken. The report for the ADB-supported project *Promoting Gender Equality for the Labour Market for more Inclusive Growth* is being finalised. For the *Study on the Contribution of Arbitration Council (AC) Services in Improving Industrial Relations in Cambodia: A Case of Garment Factories*, problems with data have been encountered because the garment factories have not provided the needed quantitative information. The Arbitration Council Foundation (ACF) and Garment Manufacturers Association of Cambodia (GMAC) are now helping CDRI to access this data from GMAC members. Preliminary results for the project on *Developing Agricultural Policies for Rice-based Farming Systems in Cambodia and Laos* were presented at a regional workshop in Danang, Vietnam, on 17-19 July, which was held to share findings and integrate the results of all four country (Cambodia, Laos, Thailand and Vietnam) study teams. The study on the *Impact of Contract Farming on Smallholder Livelihoods*, with financial support from Sida, is in the design phase. Data is being collected for the project on *Impact Assessment of the Cambodian Agricultural Research Fund (CARF)-Funded Projects*. For the *Arbitration Council Mid-line Follow Up Study*, data collection has been done and data analysis and the draft report are in progress. Finally, survey instruments and sampling frame are being finalised for the recently contracted *Baseline Assessment Study* of United States Agency for International

Development (USAID) - The Helping Address Rural Vulnerabilities and Ecosystem Stability (HARVEST) Programme and planned field work started in mid-August will complete in early October 2012.

Social Development Programme (SD)

Four main research projects are being carried out. The project on *Building Pro-Poor Health Systems during the Recovery from Conflict "ReBUILD"* has completed its inception year and the study team has started three sub-projects: (i) *The Impact of Health Financing Policy on Poor Household Health Expenditure*; (ii) *Policies to Attract and Retain Health Workers in Rural Areas – A Review of Policy Drivers, Implementation and Effectiveness in Post-conflict Cambodia*; and (iii) *The Change Process of Contracting Arrangements in Cambodia*. Additional CSES data is currently being reviewed for the first sub-project's model specification. For the second sub-project, preliminary assessment in five provinces has been completed and the work plan and dummy tables are being updated for secondary data collection. The third sub-project is awaiting project approval from the National Ethics Committee. All three sub-project teams are reviewing related literature and collecting secondary data. Primary data collection for these three projects is planned for early 2013.

The project *Tertiary Education Governance in Cambodia*, funded by Sida, aims to identify gaps in education policies towards strengthening the quality of tertiary education and identifying feasible governance models of tertiary education service delivery for Cambodia. The team is now writing the report. The *Supply and Demand of Workforce*, another Sida-funded project, is in the literature review stage. This project identifies the dynamics and gaps between higher education and the labour market, and reviews the roles of higher education institutes and firms in relation to labour market supply and demand in Cambodia. The project on *Critical Incident Inquiry: Cambodians Negotiating Gender Norms* funded by GIZ is in the data analysis phase and concludes in September. The SD Programme is also working with PARD on the *Impact Assessment of the CARF-Funded Projects*.

CDRI UPDATE

MAJOR EVENTS

CDRI and Cambodia's ANZ Royal Bank have signed a new three year partnership agreement to support the co-hosting of the annual Cambodia Outlook Conference for 2013-15. The next Outlook Conference, on the broad theme of securing Cambodia's future - food, energy and natural resources - will be held in February 2013.

On 21 August 2012, after more than two decades of working on peace building and conflict resolution, education and training in Cambodia, CDRI held a celebration event to bring its peace building training programme to a close. Reflections on the genesis of the programme and its major achievements were presented by CDRI's founding Executive Director, Ms Eva Mysliwiec, the former Coordinator of CDRI's Centre for Peace and Development, and Facilitator of the Conflict Prevention in Cambodia Elections (COPCEL) programme, Mr Ok Serei Sopheak, Mr Soth Phlai Ngarm, the former Director of the Alliance for Conflict Transformation, and Ms Huy Romduol, former senior trainer in CDRI's Peace Building and Conflict Training Programme. Ms Huy Romduol and Ms Touch Varine were presented with certificates of appreciation for their longstanding commitment to peace building in Cambodia. CDRI will however continue to undertake policy relevant research on peace building and conflict prevention and management in Cambodia, particularly on conflict related aspects of access to natural

resources - land, water, forests and fisheries.

CDRI's mid-year Board of Directors meeting was held on 30 August 2012. The Board considered a draft Resource Mobilisation Strategy, a key commitment in CDRI's 2011-15 strategic plan designed to build a more secure and sustainable future for CDRI in a changing Cambodian environment, to be finalised for endorsement by the full Board at its next meeting in February 2013. At the same time CDRI continues to follow up and generate potential opportunities for new and deeper resource partnerships with particular development agencies and institutions.

In September, CDRI's Executive Director again participated in the Korean Institute for International Economic Policy (KIEP)'s annual East Asian Institutes Forum, this year held in Vientiane, Lao PDR, on the theme *East Asian Economic Integration and Development Cooperation: Assessment and Future Tasks*. He contributed a presentation on *Future Development Cooperation in East Asia: What do the LDCs – Cambodia, Lao PDR and Myanmar – most need from it?*

RESEARCH

Democratic Governance and Public Sector Reform (DGPSR)

Six research projects, mainly funded by the Swedish International Development Cooperation Agency (Sida), are being undertaken. The semi-structured questionnaire for the study

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**CAMBODIA
DEVELOPMENT REVIEW**

A Publication of CDRI—
Cambodia's leading independent
development policy research institute

Volume 16, Issue 3 (OCTOBER 2012)

Cambodia Development Review is published four times a year in simultaneous English- and Khmer-language editions by the Cambodia Development Resource Institute in Phnom Penh.

Cambodia Development Review provides a forum for the discussion of development issues affecting Cambodia. Economy Watch offers an independent assessment of Cambodia's economic performance.

Cambodia Development Review welcomes correspondence and submissions. Letters must be signed and verifiable and must include a return address and telephone number. Prospective authors are advised to contact CDRI before submitting articles, though unsolicited material will be considered. All submissions are subject to editing. CDRI reserves the right to refuse publication without explanation.

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CDRI's Contact Details

56, Street 315, PO Box 622, Phnom Penh, Cambodia
☎ (855-23) 881-701/ 881-384; ☎ (855-23) 880-734
e-mail: cdri@cdri.org.kh / pubs@cdri.org.kh
website: <http://www.cdri.org.kh>



Publisher: CDRI
Managing Editor: YOU Sethirith,
Production Editor: OUM Chantha
Cover Photograph: CDRI's staff courtesy

Printing: Print Master Enterprise, Phnom Penh

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ISSN 1560-7607 / ISBN 978-99950-52-05-8