Economic Growth, Agriculture and Poverty Reduction in Cambodia[1]

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I. Introduction

Agriculture must be placed at the center of the development agenda if the goals of halving extreme poverty and hunger by 2015 are to be actualized (World Bank, 2008). This is because globally 75 percent of poor people reside in rural areas and agricultural development attributed 50 percent of the poverty reduction in the past two or three decades. The centrality of agriculture has become greater in the aftermath of the 2008 food crisis. The global donor community has soared up both pecuniary and technical aid to advance agriculture in developing countries. To exemplify, funding for agriculture and rural development in the World Bank between 2008 and 2009 increased 2.5 times and the USA at the G20 meeting in 2010 pledged US$1 billion to support agricultural development in low-income countries and other donors made similar commitments (Lin, 2010).

In Cambodia, approximately 80 percent of the population live in rural areas, and 71 percent depend primarily on agriculture (largely rice) for their livelihoods (World Bank, 2006). Agriculture accounted for 32 percent of GDP in 2008 and employed 57 percent of the labor force in 2006 (NIS, 2009 cited in Ngo & Chan, 2010a). Although the current economy is still contributed to significantly by industry (at 22 percent of GDP in 2008) and services (45 percent of GDP in 2007), given that 30 percent of the populace are living in poverty (in 2007) and most of them are farmers in rural areas, an improvement in agriculture would seem the most effective approach in accelerating poverty reduction in Cambodia (RGC, 2006; World Bank, 2006; NGOF, 2007). Agriculture has also been identified as a key to diversifying the sources of economic growth, with the potential to reduce poverty, if focused on smallholders (CDRI-IDS, 2006). If growth in agricultural

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productivity can be increased between 3 and 4 percent, the Cambodian Millennium Development Goal (MDG) on poverty targeted at 19.5 percent in 2015 can be achieved.

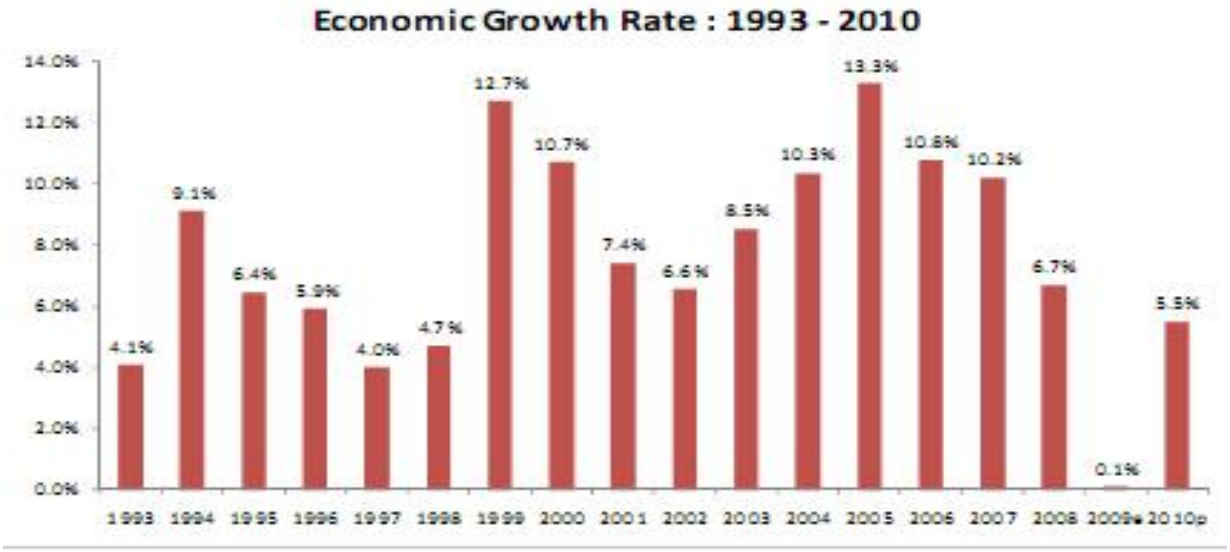
This paper examines the role of agriculture in economic growth in relation to poverty reduction in Cambodia. It argues that agriculture is a key tenet of the comparative advantage of the economy and ergo a major driver to accelerate poverty alleviation.

The paper will be divided into the following four parts. The next section (II) will discuss the sources of economic growth in the past decade in Cambodia. Section III will deliberate the nature of poverty and the progress of poverty reduction. Section IV will provide a discussion on the role of agriculture in poverty reduction, delving into the sector's performance in economic growth and ways for its refinement to mitigate poverty in a sustainable manner. Finally, the last section will deliver a conclusion and outline pertinent policy implications.

II. Sources of Economic Growth

The Cambodian economy has rapidly developed, with an average growth rate of over 9 percent for the last decade (see Figure 1). The highest growth rate of 13.3 percent was in 2005 and was thanks to strong growth in garments, tourism and construction, and agriculture due to the blessing weather in the year (Hang, 2010). In 2007 the economy continued to rise at 10.2 percent even during the critical period of the global economy. Notwithstanding, the GDP growth was contracted to 6.7 percent in 2008 due to the inflationary pressure from high oil and commodity prices (IMF, 2009 cited in Tong & Hem, 2010) and to 0.1 percent in 2009 because of impacts from the world economic crisis. Cambodia is gradually recovering from the global economic crisis, and the growth rate in 2010 was forecast at 5.5 percent. The recovery is chiefly owing to the re-emerging growth in industry (at 5.7 percent in 2010) and services (at 2.4 percent in 2010) sectors, while agriculture grew at 2.3 percent in 2010, a downturn from 5.7 percent and 5.6 percent in 2008 and 2009 respectively (see Table 1). Growth in garment exports (over 21 percent in the first nine months of 2010 and estimated 15 percent in 2011) significantly attributes to the spur in industry sector (Hang, 2010). This pattern of economic growth highlights the central proportions of industry and services sectors in the GDP increase in relation to agriculture sector's in the last decade (see Figure 2).

Figure 1: Economic Growth Rate: 1993-2010



Source: Hang (2010)

Table 1: Macroeconomic Indicators: 2008-2010

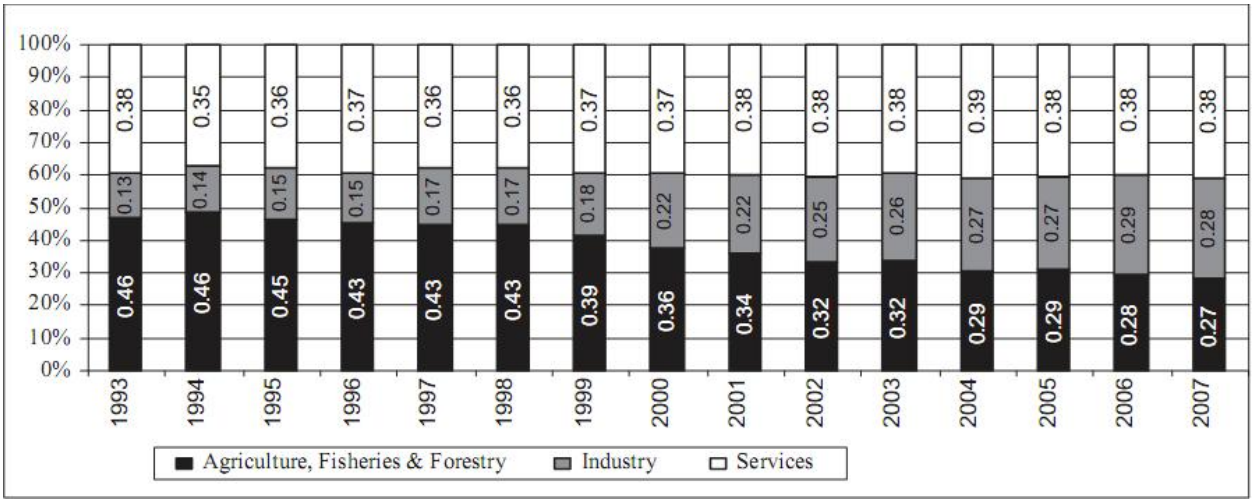
	2008	2009	2010
GDP (nominal, in $ million)	10,337	10,391	11,304
GDP (per capita, in $)	738	731	783
GDP (Growth rate)	6.7%	0.1%	5.5%
Agriculture	5.7%	5.6%	2.3%
Industry	4.0%	-2.5%	5.7%
Service	9.0%	4.6%	2.4%
Budget revenue (% GDP)	**13.3%**	**11.8%**	**12.5%**
Budget expenditure (% GDP)	15.9%	20.4%	18.4%
Overall deficit (% GDP)	-2.9%	-6.4%	-5.9%
Inflation (average)	19.7%	-0.6%	4%
Gross Foreign Reserves ($ million)	2,164	2,367	2,500

Source: Hang (2010)

The economic growth needs to be reflected with the employment of the labor force. As depicted in Table 2, Cambodia is predominantly agrarian. In 1995, 81 percent of the labour force was engaged in agriculture. Nonetheless, the percentage of the employment in agriculture shrank to 57 percent in 2006 due to the mushrooming of garments industry

since the early 1990s. Conversely, manufacturing and construction employed merely 3 percent of the labour force in 1995, but it rose to 14 percent in 2006. Likewise, the services sector has absorbed more labour force, surging from 16 percent in 1995 to 28 percent in 2006. This trend of labor force signifies that despite the dominance of agriculture its contribution to GDP is increasingly minimal, down from 46 percent in 1993 to 27 percent in 2007 (see Figure 2).

Figure 2: GDP Share by Sector, 1993–2007



Source: NIS cited in Tong & Hem (2010)

Table 2: Cambodian Employment by Sector, 1995–2006 (percent)

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Agriculture	81	78	79	77	76	74	70	67	64	60	59	57
Industry	3	5	5	4	6	8	10	11	12	13	13	14
Services	16	17	16	19	17	18	20	21	24	27	27	28

Source: IMF cited in Tong & Hem (2010)

III. The Nature of Poverty and Progress in Poverty Reduction

3.1 Characteristics and Causes of Poverty

Poverty in Cambodia is measured in terms of food poverty and nonfood allowance (see Table 3). The food poverty lines were 1,965 Riel in rural areas and 2,274 Riel in urban areas (excluding Phnom Penh) in 2007 (with 1 USD = 4,100 Riel). The nonfood allowances were 402 Riel in rural areas and 430 Riel in urban areas (excluding Phnom Penh) in the same year. In sum, the overall poverty lines were 2,367 Riel in rural areas and 2,704 Riel in urban areas (excluding Phnom Penh). With this measurement, 30.1 percent of the population lived below the poverty line in 2007 (with 34.7 percent in rural areas and 21.9 percent in urban areas excluding Phnom Penh) (World Bank, 2009a).

Table 3:Food poverty lines, nonfood allowances and overall poverty lines, 2004 and 2007

Region	**2004**	**2007**
Food poverty lines (current Riel)		
Phnom Penh	1,782	2,445
Other urban	1,568	2,274
Rural	1,389	1,965
Nonfood allowances (current Riel)		
Phnom Penh	569	647
Other Urban	384	430
Rural	364	402
Overall poverty line (= food poverty line + nonfood allowance)		
Phnom Penh	2,351	3,092
Other Urban	1,952	2,704
Rural	1,753	2,367

Source: 2004 and 2007 CSES cited in World Bank (2009a)

According to the 2006 Poverty Assessment (World Bank, 2006), the poor lack human capital (in terms of education and health), have limited access to roads, markets and basic services, and lack secure land tenure and access to irrigation facilities. For instance, the mean years of schooling of the poorest household heads was only 2.75 in 2004. Households with farmers (48 percent) and domestic workers (13 percent) as heads experienced the highest incidence and worst severity of poverty. Put another way, almost two-thirds of the poor household heads was employed in these two occupations.

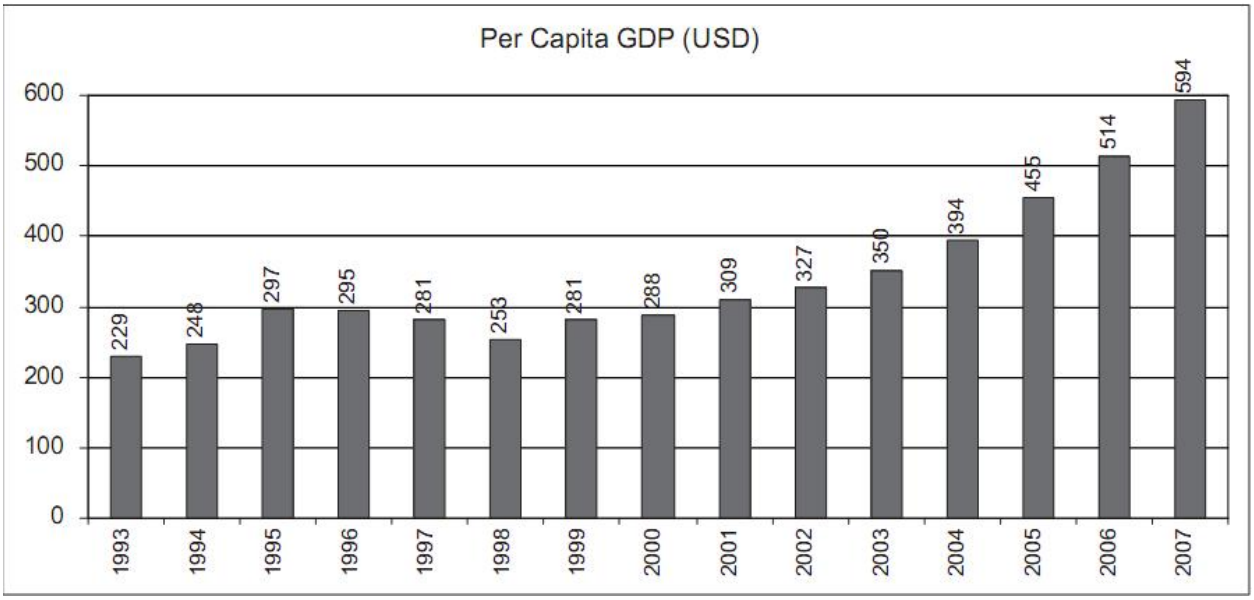
In the area of health, the poor have virtually no access to modern energy sources and water and sanitation. Merely 2 percent of poor households were accessible to piped/tap

water and only 3.5 percent of the poorest households were accessible to decent sanitation in 2004. For agriculture, a substantial number of the poorest households in rural areas have no access to land for cultivation. In 2004, 19.6 percent of the population, 22 percent of rural households, and 15 percent of the poorest households were landless. Twenty-four percent of rural households had land of less than half a ha or 45 percent of them held 1 ha or less (CDRI, 2008). The poor households who own land have little security of land tenure. Only 37 percent of the poorest households owned land secured by documentation; and only 15 percent of the poorest households who possessed land had a land title. Landholding is not always secure, even if landholders have titles and certificates, and the poor are most vulnerable to land grabbing.

3.2 Progress in Poverty Reduction

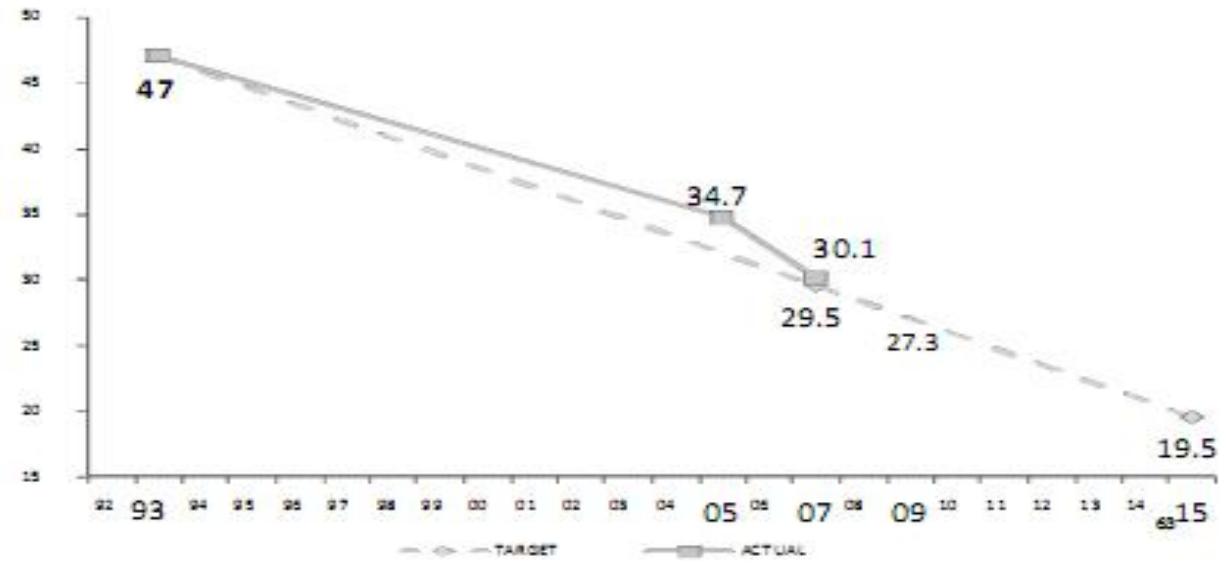
As a culmination of the economic growth, GDP per capita has soared up considerably in the past decade (see Figure 3). GDP per capita was USD229 in 1993, but it stood at USD594 in 2007. The present income per capita is USD783 in 2010 (Hang, 2010). Assuming the growth rate is maintained at the pace in the last decade, it is forecast that GDP per capita will reach USD1,075 by 2017. In the meantime, income poverty has declined significantly (see Figure 4). The poverty rate dropped from 47 percent in 1993 to 30.1 percent in 2007 (with 34.7 percent in rural areas and 21.9 percent in urban areas excluding Phnom Penh). It is aimed to be mitigated to 19.5 percent by 2015.

Figure 3: GDP per Capita 1993–2007 (USD)



Source: NIS cited in Tong & Hem (2010)

Figure 4: Evolution of planned and actual poverty reduction

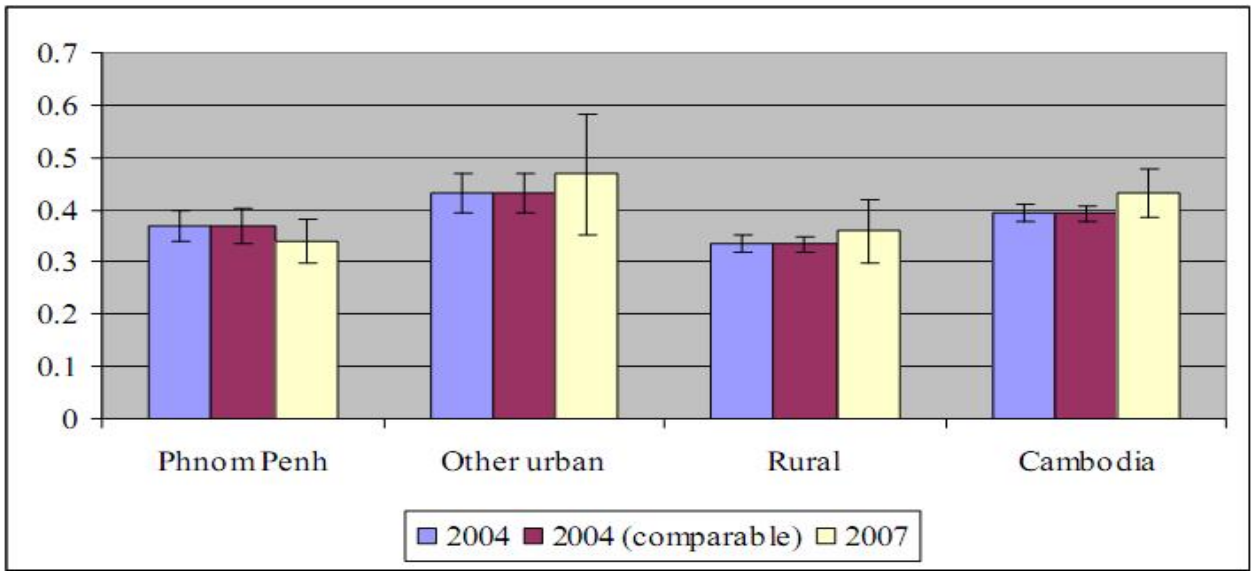


Source: Hang (2010)

In spite of the increase in GDP per capita and the decrease in poverty, the income disparity has become larger in general and between urban and rural areas. Figure 5 indicates that income inequality has risen as revealed in the increase in the overall Gini coefficient from 0.39 in 2004 to 0.43 in 2007 (2004 and 2007 CSES cited in World Bank, 2009a). Similar increases occurred in urban areas (excluding Phnom Penh) from 0.43 to 0.46 and in rural areas from 0.33 to 0.36.

Furthermore, the increases in inequality within and between regions, particularly in rural areas, have attributed to the increase in overall inequality (2004 and 2007 CSES cited in World Bank, 2009a). As unveiled in Table 4, increases in inequality within regions accounted for two-thirds of the increased inequality between 2004 and 2007, while increases in inequality between regions comprised the remaining one-third. Among regions, increases in inequality within rural areas, with 63 percent of total household income in 2007, made up 41 percent of the total increase in inequality, while increases within urban areas (excluding Phnom Penh), with 14 percent of total income, represented 21 percent of the total increase in income inequality.

Figure 5: Gini coefficients of income inequality by region, 2004 and 2007



Note: 2004 (comparable) means
the sample limited to villages in the 2007 CSES sampling frame.
Source: 2004 and 2007 CSES cited in World Bank (2009a)

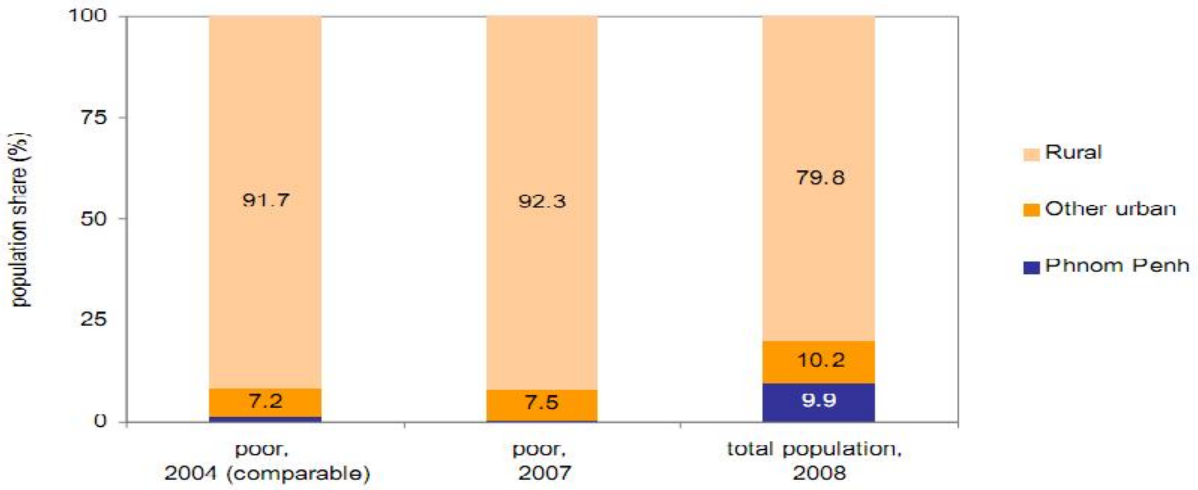
Another notable characteristic of poverty is that the poor are disproportionately concentrated in rural areas and this concentration has increased (see Figure 6) (2004 and 2007 CSES cited in World Bank, 2009a). The share of the poor population living in rural areas shored up from 91.7 percent in 2004 to 92.3 percent in 2007.

Table 4:
Decomposition of the Theil index of income inequality by region, 2004 and 2007

Component	2004 (comparable)	2007	Change	% distribution
Within regions				
Phnom Penh	0.0449	0.0497	0.0048	4.6
Other Urban	0.0446	0.0669	0.0223	21.3
Rural	0.1691	0.2120	0.0429	40.9
Between regions	0.0552	0.0901	0.0349	33.3
Total	0.3138	0.4187	0.1049	100.0

Source: 2004 and 2007 CSES cited in World Bank (2009a)

Figure 6: Regional shares of the poor in 2004 and 2007 (relative to the overall poverty line)
compared to the total population (2008 Census)



Source: 2004 and 2007 CSES cited in World Bank (2009a)

IV. The Role of Agriculture in Poverty Reduction

4.1 Centrality of Agricultre in Poverty Reduction

Agriculture performs a pivotal role to ensure broad-based, inclusive economic growth, and thus more effectual poverty alleviation, for three major reasons: (1) 71 percent of the population rely on agriculture for their livelihoods; (2) 92.3 percent of the poor live in rural areas; and (3) abundance in agricultural land and young, low-skill labor is the comparative advantage of the Cambodian economy.

Two key tenets of comparative advantage that Cambodia endows are arable agricultural land and young, low-skill labor (World Bank, 2009b). This comparative advantage signifies a potential for economic diversification, particularly in agriculture and agro-processing. Cambodia has an abundance of land (over 0.25 ha of land per capita), with 24 percent of its territory classified as protected areas. Of the total territory of about 18 million ha, 61 percent is under forest cover, and only 16 percent (2.87 million ha) is agricultural land, of which 84 percent is under rice cultivation and the rest is shared equally between subsidiary and industrial crop production (MAFF, 2005 cited in Ngo & Chan, 2010b). This ampleness signals the potential role of land-intensive production. Moreover, land can be expanded. First, landmine clearance has increased land for agriculture. Around 210,000 ha (about 1.16 percent of the total territory) is filled with landmines (JBIC, 2001 cited in Ngo & Chan,

2010b). Second, the population (and agriculture) is concentrated in the center of the country: 89 percent of the population lives in the middle part of Cambodia, with 55 percent of the area used for agriculture, while the rest of 11 percent lives at the periphery, with only 5 percent of the area used for agriculture (Boulakia et al., 2008 cited in World Bank, 2009b). Hence, it is estimated that there remains 10 million ha that could be exploited for agriculture if the surface area were efficiently managed. The Cambodian work force is young and abundant, who can be more effectually employed to extend agricultural production. More than half of the population is within labor-force age (i.e., 14 and over) (NIS, 2008). Labor supply is increasing, with some 250,000 new entrants annually.

4.2 Hurdles of Agricultural Development

In spite of its criticality, the agricultural sector presents many bottlenecks. Based on the World Bank (2009b), agricultural growth is constrained by the poor use of fertilizers, weak irrigation systems and rural roads, limited access to credit, poor research and extension, and limited linkage to global markets.

The agricultural soil is generally infertile due to centuries of continuous cultivation without adequate replenishment of lost nutrients. It is estimated that 50 percent of the area under rice cultivation has low soil fertility (Nesbitt, 1997 cited in World Bank, 2009b). Only 30 percent of cultivated areas has high potential for yield improvement. Dry season flood recession areas tend to be more fertile than rain-fed lowland areas. The rain-fed lowland ecosystem, the most important system in Cambodia, is affected the most by the decline in soil fertility. Poor soil fertility is a major production hindrance in most lowland areas, and could be improved by tailor-made soil and fertilizer management technologies. Farmers have poor knowledge about using fertilizers at the appropriate time or in the right volume. This is exacerbated by imported diluted fertilizers, which discourages farmers to use it. Fertilizer usage in Cambodia is substantially low, at about 5-6 kg/ha. Only 27 percent of rain-fed farms use inorganic fertilizers, compared to 70 percent of dry season farmers who are accessible to irrigation.

Cambodia is significantly short of irrigation facilities. Only around 7 percent of crop land is irrigated. The bulk of the agricultural zones are contingent on rainfall, which leads to production uncertainties, a single crop per year and non-diversification of local farming systems. It is estimated that potential irrigation area could reach 1 million hectares, which is about a quarter of arable land (MoWRAM, 2003 cited in World Bank, 2009a). Nevertheless, most irrigation schemes are dilapidated, built in the 1960s and 1970s, and are inefficient because of poor design and lack of maintenance and financial and technical scaffolding.

The weak system of research and extension is another shortcoming to agricultural growth. Cambodia has no national agricultural research system and only a few specialized

research institutions. While the existing institutes produce some information and technology, these products are not used by smallholders because of their unawareness due to the limited extension services or their financial incapacity to consume the materials and equipment required by the technology (see also Ngo & Chan, 2010b). As a result, farmers use unimproved seeds for their crops or weak seeds from too many crop generations; too little fertilizer; and too small (or sometimes too large) applications of farm chemicals. The agricultural research entities also face limitations in technical capability, funding, planning and coordination. Subsequently, linkages between research and extension are quite minimal.

The rural infrastructure is characterized by insufficient roads and poor road maintenance, little and costly electrification, and low and expensive telecommunication services. This paucity in infrastructure makes farmers lose value of their produce in various ways. First, high infrastructure-pertinent costs make their production uncompetitive. Second, they cannot bargain for a good farm gate price as they are not well informed about market conditions. Third, transportation of products is dear in terms of time and fee. Compounding the cost of poor infrastructure are informal charges paid to many government agencies during transportation and at border gates.

Limited access to credit is also a constraint for farmers to scale up and diversify their production and to cope with risks and vulnerability. The formal banking sector lacks capacity and is unwilling to provide loans to farmers owing to the higher transaction costs, the difficulty of assessing credit risks, and the absence of reliable collateral. Consequently, in times of emergency farmers sell their produce at a low price. With financial aid, farmers can deal with variability of incomes and vulnerability and profit from available economic opportunities.

Ultimately, limited linkage to global markets presents a critical pitfall for agricultural produce exports. Vietnam and Thailand are the chief countries that absorb agricultural products from Cambodia for exports to international markets. Recently, the European Union has granted free tariffs for rice exports from Cambodia, an incentive that prompts the government to put forward a rice export policy (RGC, 2010). The government aims to export one million tons of milled rice by 2015 given the present paddy rice surplus of over two million tons per year. In addition, to enlarge the global market share for its agricultural products, the government is promoting large farms through provision of economic land concessions (ELCs) to domestic and foreign investors (supposedly with access to global value chains, technology and finance), with an intent to expand production and exports. Yet, among 87 ELCs approved, covering over 1 million ha or about 35 percent of present rice cultivation land (Ngo and Chan, 2010a), only a small fraction are operational. Moreover, the ELC process is untransparent and risky for investors as allocated land is often in conflicts with local communities.

Hence, to refine agricultural production and exports, the afore-mentioned malfeasances need to be tackled. Notwithstanding, to accelerate poverty reduction, the issues of landlessness and smallholders are of primacy to be concurrently addressed. Land distribution in Cambodia is extremely unequal (with a Gini coefficient of 0.65, excluding the effect of ELCs). As indicated earlier, 19.6 percent of the population, 22 percent of rural households, and 15 percent of the poorest households were landless. Twenty-four percent of rural households had land of less than half a ha or 45 percent of them held 1 ha or less (CDRI, 2008). The poor households who own land have little security of land tenure. Only 37 percent of the poorest households owned land secured by documentation; and only 15 percent of the poorest households who possessed land had a land title. Therefore, these landless and land-poor households need to be provided with (more) land and titling through the ongoing social land concessions (SLCs) schemes. Plus, for these small farmers to reap better fruits from agricultural growth, their collective bargaining power for production, markets and price needs to be bolstered through their effective participation in the growth process. Cambodian farmers' associations have week internal organizational capacity and external relations (Ngin, 2010). The focus on smallholders is essential as they are more productive for many crops (World Bank, 2008c). Moreover, sustainable agricultural practices anchored in local knowledge and resource-conserving techniques make the best use of nature's goods and services without degrading the environment (Pretty et al., 2006 cited in Altangerel & Henao, 2010). Investment in the capacities of small farmers to adopt sustainable practices will thus help garner higher yields and profits, and will foster local food consumption.

V. Conclusion

In conclusion, the most effective way for poverty reduction in Cambodia is to promote broad-based, inclusive growth with a particular emphasis upon agricultural development. This is viable given the facts that most of the population live on agriculture, the bulk of the poor live in rural areas, and the comparative advantage of the Cambodian economy lies in abundance in agricultural land and young, low-skill labor. Despite the proportion of agriculture to GDP growth has declined in relation to industry and services, agriculture remains crucial in the overall economic development and poverty amelioration.

Nonetheless, agriculture is encountering the following hurdles: the poor utilization of fertilizers, weak irrigation systems and rural roads, limited access to credit, poor research and extension, and limited linkage to global markets. These pitfalls combined render weak production, diversification and competition both regionally and internationally. Moreover, tackling these hurdles alone is inadequate to make agricultural growth pro-poor. While large-scale agricultural investments (for instance through ELCs) are central, the issues of landless and land-poor farmers are of equal essence to be addressed given their critical part

in the agrarian structure of the country. These smallholders need to be provided with (more) land and titling; and their collective bargaining authority for increasing production, markets and values need to be enhanced. Otherwise, agricultural development cannot help mitigate the widening inequality brought along by the economic growth thus far.

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