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Abstract

Slow agricultural development has restrained economic growth and poverty alleviation in Cambodia. The country's volatile history has left a legacy of weak tenure security and large areas of underutilized land. This study estimates the impact of access to land on poverty in a logistic regression framework using household survey data. Increased access to land is shown to significantly lower the risk of household poverty. Tenure security, land improvements and irrigation strengthens this effect. Simulations of the potential impact of a land reform package predicts a 16 percentage points fall in poverty incidence among landowning rural households and a 30-point fall when targeting the landless. The analysis suggests that improved tenure security should be at the top of the policy agenda. Given political and economic constraints, implementation of reforms remains a key challenge.

JEL Codes: I32, O12, O53, Q12 and Q15.

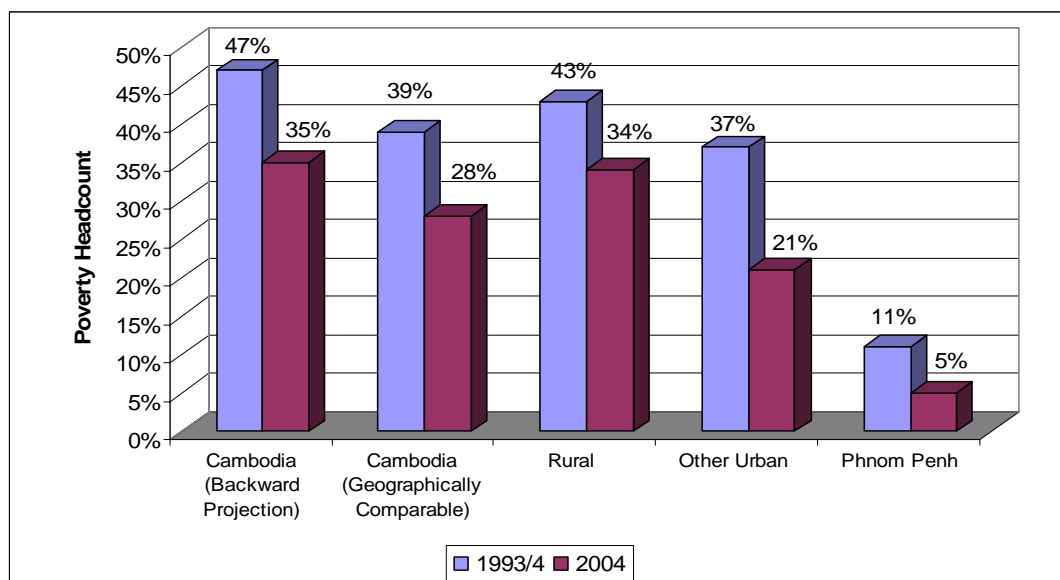
Keywords: Cambodia; Economic Development, Poverty; Property Rights; Land Reform.

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I. Introduction and Background

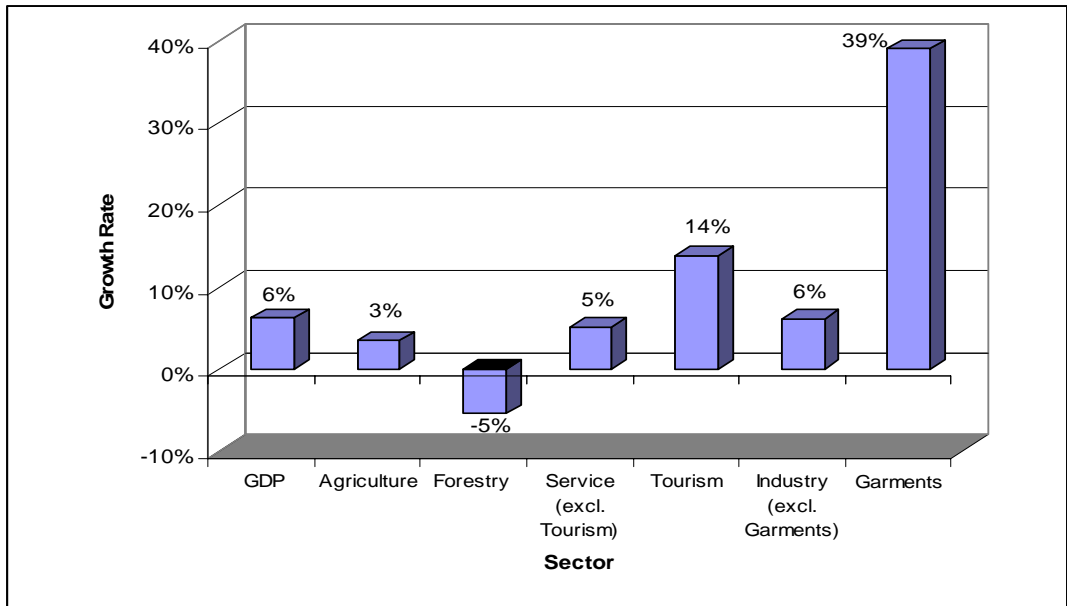
The Cambodian Millennium Development Goals sets ambitious future development targets for the country, including eradication of extreme poverty and cutting in half the proportion of people who suffer from hunger by 2015 (Kingdom of Cambodia, 2003). The ambitious goals for the future should be seen against a decade of strong progress in improving livelihoods and alleviating widespread poverty. Figure 1 shows an impressive decline in poverty rates of about ten percentage points during the past decade. The improvement in human development has been faster in the more prosperous parts of the country, as indicated by the marked fall in poverty in urban areas. In urban Phnom Penh, poverty incidence has been reduced to single-digit figures. Thus, a decade of progress in improving human development has also led to an increased concentration of underdevelopment to rural areas, and in 2004 more than 90 percent of Cambodia's poor lived in rural areas (World Bank, 2006).



Source: CSES, 2004.

Figure 1: Poverty Headcount, 1993/4 to 2004.

Behind the increase in living standards lies a period of strong economic growth in Cambodia. For the past ten years, the average yearly growth rate has been approximately 6 percent. This growth has been largely driven by garment manufacturing and tourism, while agricultural growth has been very modest (see Figure 2). The urban growth bias explains the poverty trends noted above. If this uneven development persists, Cambodia risk mimicking the example of some other developing countries, such as neighboring Thailand, where growth has been overtly biased towards urban areas, leaving substantial pockets of poverty in the countryside (NESDB and World Bank, 2005). With about 80 percent of the labor force in agriculture, and about 60 percent of the total labor force in subsistence farming, rural development remains at the center of the current policy agenda (Ramamurthy et.al., 2001). To achieve the ambitious Cambodian development goals, it will be essential to turn agriculture into a driver of economic growth and spread human development to the poor in the countryside.



Source: National Institute of Statistics, 2006.

Figure 2: GDP Growth by Sector, 1994-2004 at Constant Prices.

During this decade of strong growth in the urban economy, Cambodia has witnessed a rapid structural transformation. In the mid-1990s the garment sector was of negligible size and agriculture and forestry accounted for almost half of the Cambodian economy (Figure 3). Ten years later, the GDP share of garments and other manufacturing industry is of the same size as agriculture. This shows both the phenomenal performance of the garment sector, but also the stagnation of the rural economy and the failure to achieve sufficient growth in the agricultural sector.

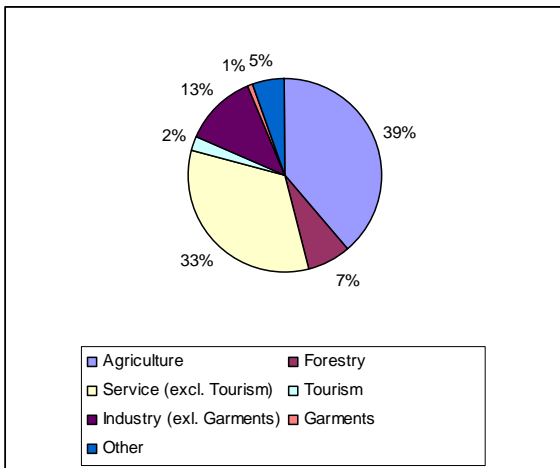


Figure 3: GDP Shares by Sector 1994.

Source: National Institute of Statistics (2006).

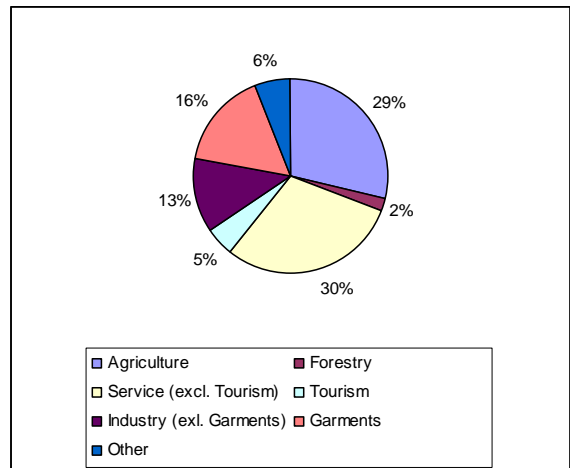
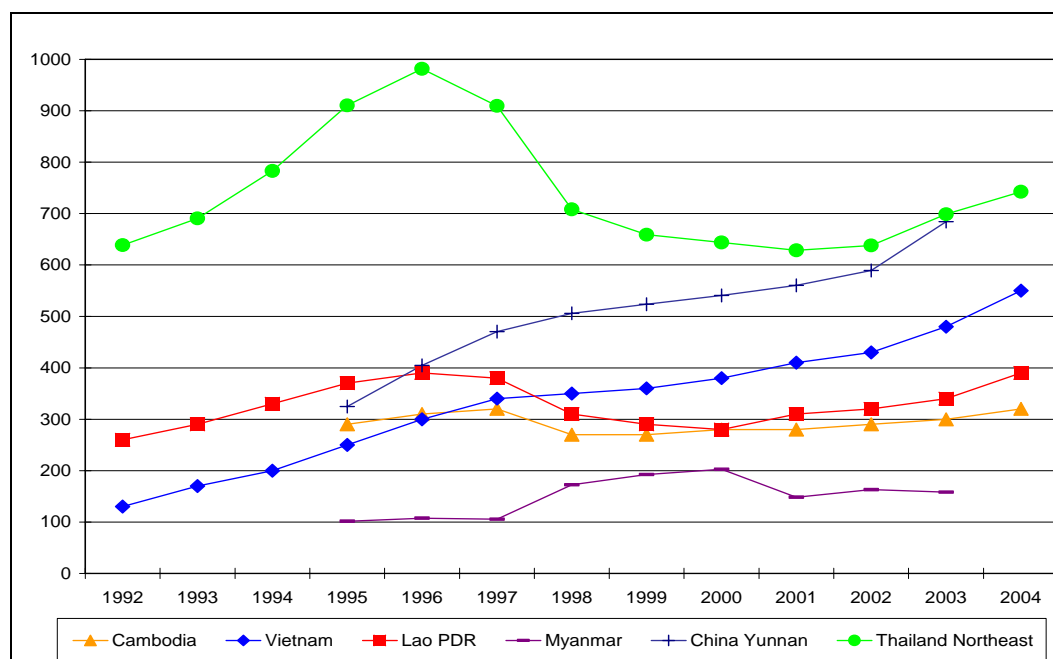


Figure 4: GDP Shares by Sector 2004.

Source: National Institute of Statistics (2006).

Compared to neighboring countries, Cambodia emerges as an average performer, lagging behind developments in China and Vietnam, but staying clearly ahead of Myanmar (Burma), the regional underperformer. At least part of the explanation for the Cambodian inability to achieve growth figures on par with the most successful economies in the region can be found in the limited contribution from the rural sector to overall growth. To keep up with China and Vietnam, the country must draw on

sources of growth other than just garments and tourism. In particular, the agricultural sector where a large part of the labor force still remains, must be increasingly activated as a driver of economic growth and human development.



Source: Engvall, Magnoli and Richter, 2005.

Figure 5: GNI Per Capita Greater Mekong Region, 1992-2004 (US Dollar).

There are ample opportunities for the rural economy to increase its contributions to economic growth and human development improvements (EIC, 2006). Since substantial areas of land are unused or underutilized, there is a potential for increasing access to productive land for rural households. Increased security of property rights to land could also strengthen the incentives for investments in land improvement and new technologies. Furthermore, secure property rights could help farmers get access to credits, which is often a prerequisite for engaging in land improvement and participating in technical progress. Taken together, these and other measures would contribute to raising the crop yields that are currently among the lowest in the region. To promote agricultural growth, the Government of Cambodia has therefore launched several ambitious reform initiatives, with support from the international donor community (Kingdom of Cambodia, 2002).

The objective of this study is to analyze the potential impact of various land reform initiatives on human development and poverty, to identify some of the challenges regarding the implementation of the reforms, and to discuss reform design in order to maximize the human development impact of agricultural reforms. To reach this objective, the report proceeds as follows: the next section describes general issues related to land, as well as the status of land, landlessness, and land disputes in Cambodia. Then the role of land as a determinant of human development is discussed, and the potential impact of land reform is identified in a quantitative analysis. Some key challenges for implementation are also highlighted. A final section concludes and discusses policy implications.

II. Land Property Rights in Cambodia

A precondition for social and economic development in any society is its ability to define and enforce property rights. Property rights to land are particularly critical. Economic growth, the development of markets, and increased population density tend to raise the value of land, which can lead to either the development of institutions that define and protect property right or costly conflicts over land rights (World Bank, 2003). The necessary institutions are unlikely to develop spontaneously, leaving an important role for the state. There are at least three strong motives for public involvement in the establishment and protection of property rights to land (World Bank, 2003):

- Lower need for individuals to spend resources in order to establish and protect their property rights.
- The cost and equity advantages normally associated with a systematic approach (i.e. “fairness”).
- The network effects resulting from consistent availability of information across administrative units.

The benefits from appropriate interventions to strengthen property rights and tenure security can be significant, both in terms of equity and reduced expenditure on defensive activities and in terms of economic growth, as a result of improved access to credits and higher investments among the land holders. However, to increase the security of property rights, legal and institutional issues need to be handled together with the broader social and economic environment within which land rights are embedded. On the legal side, the definition of property rights to land and the way in which people can acquire and transfer such rights must be clear and equitable, consistent with traditions and practices, and defined over sufficiently long periods of time. The risk of losing the rights to discretionary bureaucratic behavior must be minimized. On the institutional side, the procedures need to be simple, transparent, and accessible, and the services should be provided effectively and at low cost.

Cambodia has gone through dramatic political changes during the past four decades, and each new government has introduced its own system for the use and ownership of land – these changes have created both confusion and conflict. The legal and institutional framework set up by the French colonial administration was completely destroyed when the Khmer Rouge took control of the country in 1975. They rejected private ownership of land, and instituted a comprehensive program for the resettlement of people, to break up the existing fabric of society. After the Khmer Rouge regime, under the People’s Republic of Cambodia (1979-1989), land remained under collective ownership and was used according to the socialist ideology of the regime.

Soon after the departure of the Vietnamese in early 1989, it became clear that Cambodia needed a new national constitution, including a land reform and a new land law, to recognize private property and to mark the shift from socialism to a market economy. Shortly before the adoption of the Constitution establishing the State of Cambodia (1989-1993), Sub-Decree No. 25 was issued. This act, along with the passage of a complementary land management policy later in the year, led to the redistribution of collectively owned land to the population and the establishment of private land rights. The land rights were only available to Khmer citizens who had

used and cultivated their land continuously for at least one year before the promulgation of the market oriented policies. The reform recognized ownership rights to residential land-plots not bigger than 2 000 square meters, possession rights for cultivated land-plots of less than 5 hectares, and concession rights for plantation land-plots larger than 5 hectares. The ownership rights from the earlier regimes were not recognized in the land allocation process: instead, the redistribution was based on a formula including household size and other household characteristics. The reason was that there were no documents left to prove formal land ownership from the colonial period, at the same time as claims based on historical or traditional land ownership rights were considered too vague or imprecise. One consequence was that the nominal distribution of land after the reforms in 1989 was remarkably egalitarian.

The reforms also attempted to create a land use and possession registration program by establishing a Department of Land Titles. However, the Department was overwhelmed by the receipt of 4.5 million applications for titles over the course of two years and quickly became permanently backlogged. Most of the land holdings established through the 1989 land redistribution program are therefore not properly documented. Three years later the National Assembly passed the 1992 Land Law. This act formally completed the process of land reform that had begun with Sub-Decree No. 25. The Land Law was very similar to previous Cambodian Civil Codes, recognizing succession, will, sale, gift, and possession as the processes by which ownership could be transferred. To acquire ownership through possession, the possessor of the land had to a) be in possession of the land for at least five years, b) submit a written application to the local authorities and c) regularly pay taxes (State of Cambodia 1992, Article 65).

With the departure of UNTAC in 1993, the National Assembly passed a new constitution establishing the Kingdom of Cambodia, finally returning full control of the country to its own people. The constitution reasserted the right of individuals to own land but limited it to Cambodian citizens. However, it soon became clear that the 1992 Land Law had significant weaknesses (Williams, 1999). In particular, the possibility to claim ownership solely on the basis of possession, coupled with the lack of documentation of the ownership and possession rights established through the 1989 land reforms and the 1992 Land Law, set the stage for land grabbing and power abuses. As the Vietnamese withdrew from Cambodia, a massive land grab began, especially in Phnom Penh. Some officials began to act as though State property and vacant private property (or property that could be rendered vacant by the use of force) was theirs to occupy, “own” and therefore sell. The rushed passage of the 1992 Land Law to some extent legitimized these expropriations. It has even been claimed that the 1992 law became a “get rich quick” manual for the upwardly mobile who knew how to satisfy the formal registration requirements: few rural families had managed to secure the necessary documentation to prove their land ownership rights.

Over the course of the next decade numerous drafts for a new land law were put forth. A new law was finally passed in August 2001, addressing many of the weaknesses of the 1992 legislation. For instance, in the new law temporary possession is removed as a means of acquiring land. Only those people who were already in legal possession of a plot of unoccupied land at the time of passage were allowed to complete the 5-year period of occupation required to become legal owner (Kingdom of Cambodia 2001, Article 31). No-one who attempts to acquire land by temporarily possessing a plot

after the law came into effect is allowed to gain ownership. Also, for those who had taken possession of their land before the law was enacted, the part of the 1992 law that required a written application in order for a household to secure legal ownership was removed (State of Cambodia 1992, Article 42).

To make up for the removal of temporary possession as an avenue to ownership, the new law creates the possibility to establish social concessions. While the government granted large-scale economic concessions to large firms in the 1990s, the social concessions under the new law allow landless people to apply for a piece of land to be used for residence or subsistence farming free of charge (Kingdom of Cambodia 2001, Article 51). The new law also provides for the implementation of a nationwide land titling system, including a simpler land registration system that can be implemented at the village level. Thanks to these adjustments, there is consensus that the formal legal law is now sufficient to handle most of the challenges related to the land market. The 2001 Land Law provides legal protection to establish the security of land tenure. It provides a fundamental basis for the reduction of land disputes, and facilitates land management by clarifying the ownership regime for land and creating protection for state property.

For effective implementation of the Land Law a number of sub-decrees and regulations in the area of land management are required. These include e.g. sub-decrees to ensure a fair and just resolution of land disputes, to register land ownership, and to manage social land concessions. The process of setting up this supporting legislation has been underway since 2001, and some important advances have been made. For instance, to ease the pressure on the overburdened and inefficient judicial system, a Cadastral Commission was established in 2002 to resolve land disputes outside the formal legal system. Yet, the promulgation of other necessary sub-decrees and regulations has been slow because of the limited resources available for legislative drafting and training in the relevant ministries and the judiciary. The legal and institutional framework in this area is therefore still weak, and the existing laws are not implemented in a fully satisfactory manner. For example, the Cambodia Office of the High Commissioner for Human Rights and World Bank (2005) has called attention to the need for more transparency in the allocation of economic land concessions, as well as stricter rules for how concessions are managed. There are continuous complaints that the land titling process is slow and only a minority of Cambodian households has formally registered their land ownership. The Cadastral Commission has also been criticized on grounds that it is subject to similar problems that motivated the transfer of land disputes from the regular court system.

Landlessness and Land Disputes

Since Cambodia is still a predominantly agrarian society, with over 70 percent of the population engaged in agriculture and subsistence consumption absorbing nearly two-thirds of agricultural output, it is obvious that access to land is a crucial determinant of human development. To survive, most rural families need access to farm land. To escape poverty, they need enough land to feed their families and property rights that are secure enough to motivate long-term investments in land improvements and technical progress. However, many rural households in Cambodia suffer either from landlessness or near landlessness, or lack formal property rights to the land they live on. Consequently, poverty is widespread in Cambodia's rural areas, and agricultural productivity growth is lower than in most other parts of East Asia. Land conflict is

common, and there are signs that the number of land disputes is actually increasing: both the formal court system and the NGOs monitoring the land sector report an increase in land disputes since the late 1990s. A likely consequence of the many disputes is that landlessness or near landlessness is also on the rise. This, in turn, constrains rural development (Ramamurthy et.al., 2001).

Involuntary landlessness is one of the main causes of poverty and weak human development in Cambodia, and although it is considered an increasingly severe problem, there are no reliable national data on the number of landless people in the country. It is therefore hard to determine the precise causes of the increase in landlessness. Economic factors provide a part of the explanation; as increased land values induce households to sell their land and focus on alternative, non-farm activities. Moreover, a stronger economy improves the possibilities to find non-farm employment. This can be characterized as voluntary landlessness, and is probably a desirable outcome of economic growth and development; the role of agriculture as a major source of income will decrease over time.

However, involuntary landlessness is more problematic, and it is also likely to be an increasing problem. Demographics clearly play an important role. With a population that has grown from around 8 million in the late 1980s to 14 million today, it obvious that land has become an increasingly scarce resource. Younger families are often in a weak position in the land market; there is little unused land, land prices are high, and the parents' land is often too small to offer a reasonable livelihood for all their children. Another problem is related to the lack of savings and access to credits among poor households. Vulnerable households are subject to shocks; crop failures, illness among household members, and livestock mortality are major threats causing unexpected economic stress. These can have catastrophic consequences for the household. Since most poor rural families have limited access to credits, repeated shocks may eventually result in distress sales of land and landlessness.

Another cause of landlessness is weak legal protection for land ownership. Few poor rural households have completed the registration procedures that are necessary to prove their property rights, and they are therefore vulnerable to land grabbing and forced evictions. In addition, economic land concessions restrict the local communities' access to natural resources, such as fishing and hunting grounds, seriously damaging their income earning possibilities. In addition, there is a large proportion of households that can be characterized as nearly landless, with 0.5 hectares of land or less: in some provinces, this group accounts for one-fourth of the rural population (see e.g. Sophal & Acharya, 2002).

There are no reliable data on the exact number of land disputes. Many disputes never reach the courts, either because they are settled by local authorities or the Cadastral Commission, or because the families involved in the disputes lack the knowledge and resources to take their complaints to court. With the private costs for a court case reaching several hundred dollars, poor families are often unable to afford the process even if they borrow money or sell assets. Because of the weak institutional framework for land dispute resolution, it is also risky for individual families to engage in a formal complaint. In the absence of official data on land disputes, it is necessary to rely on information from NGOs to gauge the extent and character of land conflict in Cambodia. For instance, Oxfam GB has collected a data set covering over 1,500 dispute cases in 23 provinces/municipalities: in about half of these cases, Oxfam has

interviewed the victims of the land conflicts; in the other half of the cases, the information is based on media and complaints. Although the total number of cases in the data set is not very large, it is clear that land conflict affects many people. Taken together, the cases affected over 6 percent of all families in Cambodia and involved about 2 percent of the country's total land area.

Table 1: Land Dispute Monitoring Networks.

Level	Activity	Active NGOs
National	Organize meetings	ADHOC, Licadho,
	Provide legal consultation	Vigilance, LAC, CDP,
	Advocate at national level	URC, TAF, Oxfam,
	Press conferences and press statements	NGO, Forum,
	Provide support for the provincial/municipal level organizations	KKKHRA, Comfrel etc.
	Act as assistant or defenders of the victims	
	Follow up land disputes from provincial/municipal level	
Provincial/ Municipal	Organize meetings,	ADHOC, Licadho,
	Provide legal consultation	Vigilance, LAC, CDP,
	Advocate at provincial/municipal levels	URC, NGO Forum,
	Maintain networks among civil society organizations	KKKHRA, KABB,
	Research and investigate disputes	Comfrel etc.
	Submit cases to Cadastral Commission	
	Organize the meetings between NGOs and Cadastral Commission	
	Provide support to local mechanisms	
Publish information		
Local	Establish community networks	ADHOC, Licadho,
	Petition	Vigilance, LAC, CDP,
	Peaceful demonstrations	URC, NGO Forum.

Source: Oxfam UK, 2005.

Judging from the Oxfam data, disputes are geographically concentrated, as four provinces accounted for over half of the disputes: Banteay Meanchey, Battambang, Kampong Cham, and Kampong Speu. The great majority of the victims were farmers, with indigenous people and refugees accounting for less than one-fifth of the cases. Unsurprisingly, almost 70 percent of the cases involved farmland or plantation land, with land for construction accounting for most of the remaining cases. In most cases, the victims had occupied the disputed land plots for a long time. Nearly half of the families affected by the disputes claimed that they had acquired their land before 1990: on average, the victims had occupied their land for about 16 years. The opponents in the disputes were mainly local, provincial, or national authorities (39 percent of cases), armed forces (30 percent), and wealthy elites (16 percent). Only 3 percent of cases involved companies. Nearly two-thirds of the cases were complaints about power violations or use of violence against the families using the land: the typical conflicts involved land grabbing and allocation of allegedly unused land for economic concessions and development projects. Most of the victims (70 percent) had no land ownership documents to prove their claims to the land. Interestingly, few of their opponents (in less than 10 percent of the cases) could support their claims to the land with formal land ownership titles.

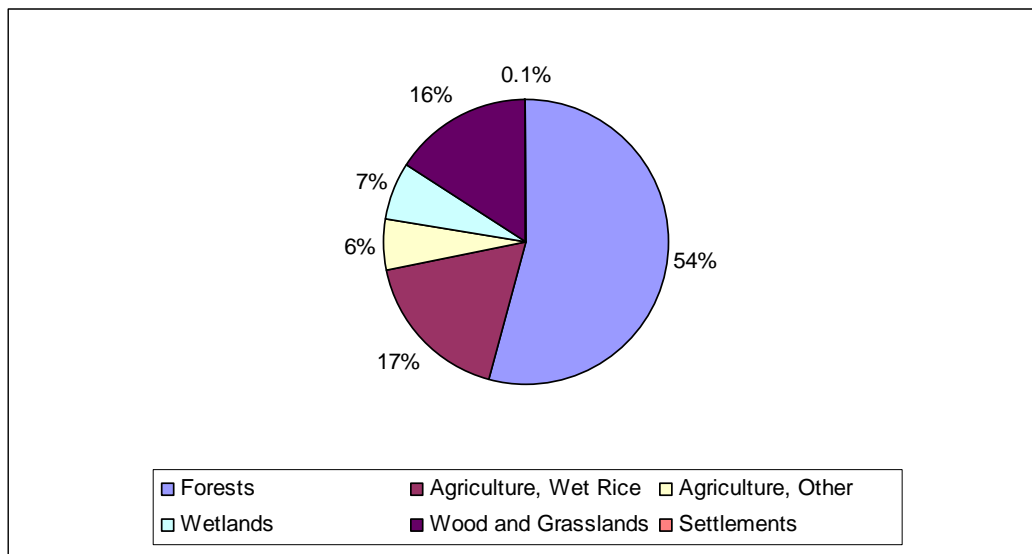
The cases in the Oxfam data set also illustrate the resolution mechanisms for land conflicts. Of the 797 cases documented through interviews, two-thirds went through the Cadastral Commission, 6 percent were handled by the commune council, and 27 percent ended up in courts. Less than 40 percent of the cases had been resolved by 2005, about 20 percent were still under investigation by the authorities, and the

remaining 40 percent had dropped out of the dispute resolution system without any conclusion. Many of these cases had been given up by the victims, who had been forced to leave their land.

Due to uneven bargaining power, which leaves most poor rural families unable to defend their property rights on their own, a large number of NGOs have become engaged in land issues. By supporting the most vulnerable population groups involved in land disputes and by pressuring authorities to implement existing laws in a fair manner, the NGO community hopes to balance the strong bargaining position of more privileged population groups. Table 1 identifies some of these NGOs and their activities at different levels of the land dispute monitoring networks.

Patterns of Land Use and Ownership

Cambodia began to privatize land in 1989, after the Vietnamese retreat from the country, and it is widely believed that the distribution of land established in connection with the privatization was fair (Sovannarith et.al., 2001). Household with agriculture as their main occupation received land according to household size and other household characteristics. However, since that time, there have been significant socio-economic changes (refugee repatriation, urbanization, economics growth, and population growth) that have placed varied demands on land.



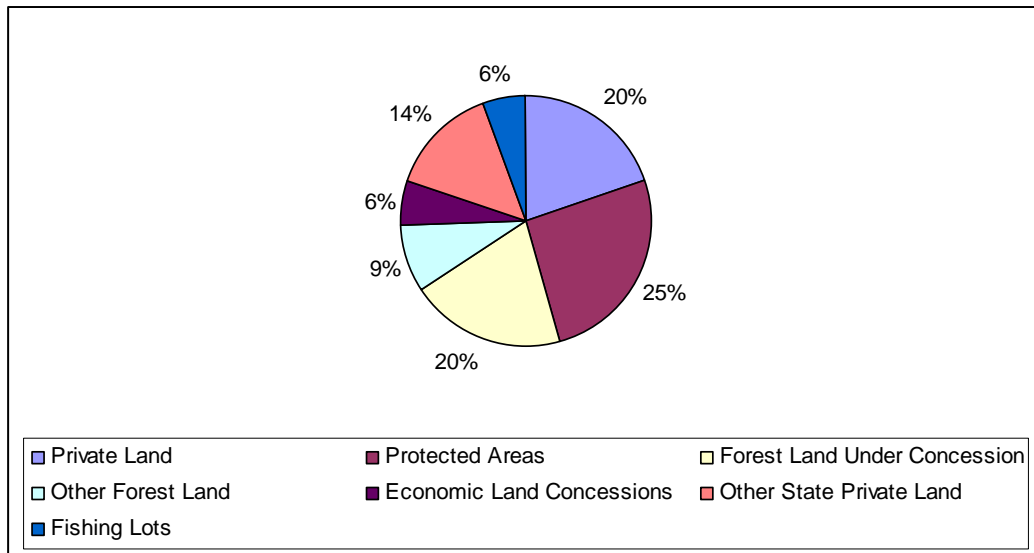
Source: JICA 2002 Dataset.

Figure 6: Land Cover.

The country’s total land area of 18.1 million hectares is divided among several land use categories, as shown in Figure 6. Some 23 percent of the total land area is used for agriculture, but less than 20 percent are available for farming households. The low share of farm land is partly due to geographic conditions – all land is not suitable for agriculture – but also related to institutional factors. Large areas of land are outside the access of rural households. These are tied up in economic concessions or protected for environmental reasons. (In addition, there are some areas that are unusable due to unexploded ordinance and mines).

Gender disparities in access to and control of productive assets as land often hinders women’s ability to participate in and take advantage of the opportunities afforded by

development (World Bank, 2001). In many developing countries, titles to land are typically vested in men. Indeed, gender also influences land use and agricultural production in Cambodia. Female heads of households are more likely to work in agriculture than male heads of households and yet are also more likely to be landless or have smaller plots of land (UNIFEM et. al., 2004). Despite the important role women play in the agricultural sector, they also have considerably lower access to the resources and assets that would increase their potential to contribute to improved productivity, greater food security and reduced poverty.



Source: GTZ, 2006.

Figure 7: Legal Categories of Land.

The economic land concessions are areas set aside for large scale commercial plantations. They are motivated by the argument that the commercial use of land will generate larger returns than subsistence farming, at the same time as it creates employment opportunities for local communities. However, the experience to date of economic land concessions has been disappointing. Apart from the conflicts that have resulted when land concessions have caused deforestation, obstructed local communities’ access to natural resources, polluted rivers and water tables, and uprooted the natural habitats of local and indigenous communities, they have not been efficient in generating incomes and employment. There are only few cases where the investors have actually managed to reach the production targets indicated in the concession contracts. In addition, there are widespread complaints regarding the economic conditions offered to the investors. For example, the royalties for the economic concessions are calculated on the basis of production, and since most of the concession land (an estimated 838 000 hectares) has not been used for agriculture, little public revenue has been generated. Instead, many investors have focused on harvesting the existing forest resources and left the land areas idle once the trees were cut; others have held on to their concessions expecting an increase in the land value as the Cambodian economy grows. This has been possible largely because there has been no cost to the investor of leaving the land idle.

This underutilized land is a potentially important resource when considering land reform and distribution of land to poor households. A substantial proportion of the land currently under economic land concessions could potentially be redistributed

through social land concessions. In addition, a share of the land classified as forest concessions, protected areas and forest land is in reality degraded forests with a limited environmental value. Some of this degraded forest could be used for social land concessions. Based on various conversations with policy makers and experts, our estimate is that 15 percent of the land area could be targeted for land reform. This is made up of the 6 percent in economic land concessions and another 9 percent from degraded forest land. This is equivalent to 2.7 million hectares.

Land reform can have different primary objectives. A common objective is to increase the amount of land available for target households. Another objective could be to provide stronger ownership rights for land already possessed by the households. In addition, there is a possibility of including complementary reforms aiming at increasing the productivity of land. In the present analysis, an effort is made to assess the potential impact of all of these types of reforms.

Programs for improving access to land often rest on the assumption that land has a strong human development potential for beneficiaries. Yet, many studies have failed to find any large effects of increased access to land for rural households (McCulloch & Baulch, 2000; Lopez & Valdés, 2000). The reason is that the empirical literature has often ignored a number of important considerations when measuring the human development impact of access to land (Finan et.al., 2005). First, many studies use an unnecessarily narrow definition of human development, solely represented by monetary income or consumption. Second, the need for vital qualifying factors to ensure the full human development potential of land is often ignored. This relates both to the access to skills and physical capital, as well as outside markets and infrastructure. If these conditioning factors are constrained, the ability of households to reap full benefits from increased land endowments is limited.

So far, we have argued that slow agricultural growth has limited the overall economic development in Cambodia and led to lagging human development in rural areas. Important obstacles to rural development can be found in the weak enforcement of ownership rights and large areas of under-utilized land. This indicates that there are possibilities to increase the contribution from agriculture to development through reforms aimed at improving tenure security and redistributing land. The following section analyzes the potential impact of these reforms as well as the challenges for implementation.

III. Linking Land and Human Development

This section studies the relationship between land and human development in a regression framework. In a first step, a logistic regression estimation is used to establish the impact of land and other household and environmental variables on household poverty. In essence, this can be considered as an analysis of the determinants of poverty in the rural areas of Cambodia. In a second step, the results from the initial analysis are used to simulate the expected impact of various land reform programs. Third, the challenge of implementing land reforms is analyzed. Before proceeding to the analysis, the methodology is briefly discussed.

Method

In the empirical development literature, it is common to analyze the determinants of poverty by relating measures of human development to various individual, household, and community characteristics in a multiple regression framework (Singh et. al., 1986). This method allows the researcher to compare the significance and impact of various potential determinants of human development, identify sources of differences between population groups, and simulate the effects of various policy interventions. The overall methodology is not controversial, but there are a number of theoretical issues that deserve attention. These concern the choice of dependent and independent variables, the econometric specification, the estimation method, and the interpretation of the results.

The first issue is the choice of human development measure or dependent variable. In principle, the quantitative analysis can be based on either of three alternative measures: consumption expenditure, income, or binary indicators of poverty. In this study, we are focusing on a binary measure of poverty. This indicates whether or not an individual belongs to a poor household, and it has the advantages of analytical clarity and straight-forward interpretation in reform simulations. The drawback is that it introduces sensitivity to the choice of poverty line. Income measures are more volatile and more sensitive to measurement errors, and will therefore not be used.

Since the surveys used for our empirical analysis collect information at the household level and not the individual level, consumption totals and poverty are calculated on a household basis. It is possible to either treat the household as the unit whose human development is being analyzed or to use some rule to divide household consumption between its members. Using the individual as the unit of analysis is conceptually clearer, so this is the approach used here. There is a variety of methods for calculating individual consumption measures, involving needs-based adult equivalence scales (Deaton, 1997). However, none is completely satisfactory since they all require strong assumptions about the consumption needs of individuals and the distribution of consumption across household members. Even if such adjustments are made, it is still possible that the distribution of income within the household systematically differs from what is assumed. In light of these practical difficulties in compensating for differences in requirements between adults and dependents, a straight per capita normalization is used.

A further theoretical issue is the choice of explanatory variables. In principle, the choice should be based on a model for human development determination. At a basic level, the outcome depends on the household's access to resources – labor, capital, land, and technology – as well as the quality of these resources. In addition, human

capital is an important input in the household’s production function. The environment in which the household or individual operates influences the outcome of the production process in many ways. The degree and nature of competition varies between locations, and affects both productivity and the prices in the local market place. Institutions and public policy influence incentives and investment decisions, and may vary between locations. Similarly, the availability and quality of public infrastructure is important.

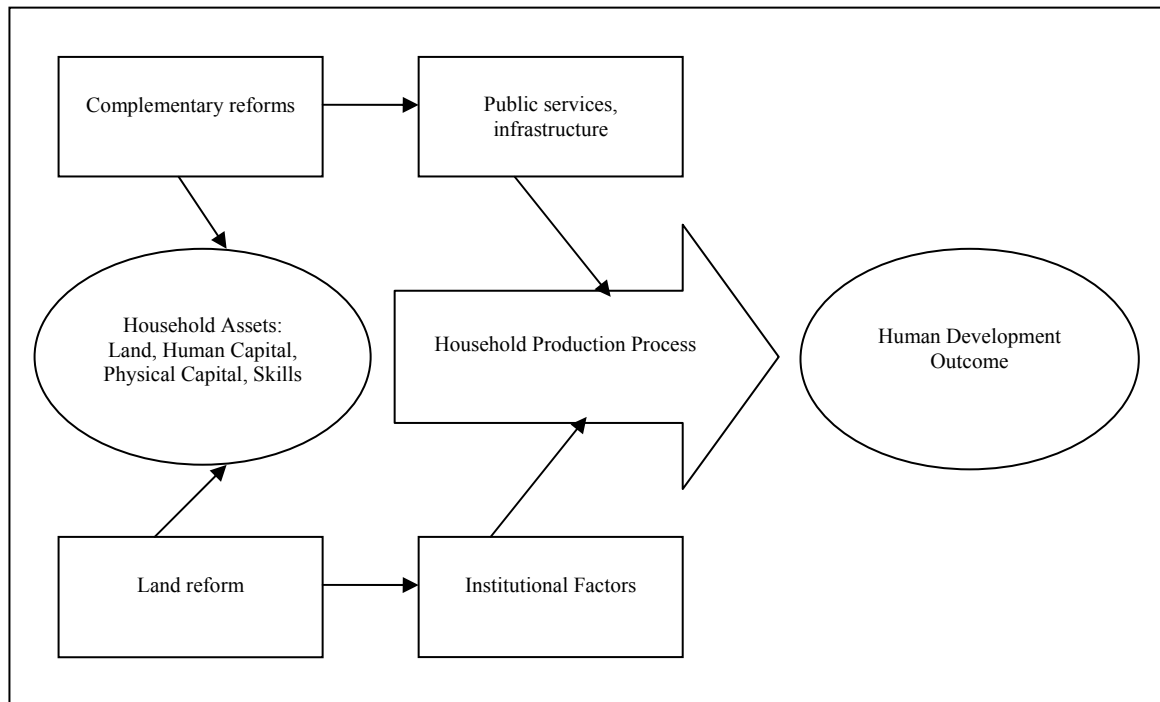


Figure 8: Conceptual Model; Human Development Outcomes of Reforms.

On the basis of these considerations, Figure 8 illustrates a conceptual model of human development. The household’s assets go into a production process where they are transformed into an output or a human development outcome. The efficiency of the production process is influenced by institutional and geographic factors, as well as the availability of infrastructure and public services. Reforms can target either the household’s endowment of productive resources, or the services and infrastructure determining the efficiency of the production process. In addition, land reforms might have an impact on institutions by affecting social and political power and stability.

The model captures several human development effects of land. First, it is possible that access to land has a direct impact on human development outcomes through the production process. It may also be that the effects of land depend on the existence of formal ownership or tenure rights to land. It is important to distinguish between these two effects, since the policy prescriptions and prospects for change may be quite different. For instance, it is possible that access to land without protected ownership rights has a substantially smaller effect on human development than access to land with formal title: households without formal property rights have weaker incentives to invest in land improvement and other fixed assets with a long turn-over period. If this is the case, merely providing land may not be sufficient to reduce poverty, whereas titling and protection of property rights may have a large effect on investments and productivity.

To statistically estimate the model outlined in Figure 8, we use an econometric specification based on the theory of agricultural household models (Bardhan and Udry, 1999; Singh et al., 1986). This yields an empirical model relating poverty or per capita consumption measures to a set of determinants as specified in equation (1) below.

$$(1) \quad Y_i = \alpha + \beta_1 X_i + \beta_2 V_i + \beta_3 W_i + \beta_4 Z_i + \beta_5 D_i + \varepsilon_i$$

where Y_i is the binary poverty measure for household i , the variables X_i , V_i , W_i , and Z_i are vectors of independent variables capturing the household's holdings of land and agricultural production factors, various household characteristics, and the households access to infrastructure and linkages, D_i is a vector of province variables, α is a constant, β_1 to β_5 are the corresponding vectors of coefficients, and ε_i is a normally distributed random error term.

This formulation is attractive since it has a relatively straightforward functional form while being consistent with established models for human development. The regression model permits inferences to be made about the direction and strength of the relationship between a set of independent variables and the dependent variable. Most variables used in the model are measured at the household level: the infrastructure and geographic variables are defined at the village and province level.

Variables and Data

Although theoretical concepts like poverty, capital, technology, and infrastructure may seem clear, there is a gap between theories and available empirical data. These concepts are typically difficult to operationalize and measure with accuracy. In many cases, it is therefore necessary to settle for proxy variables. Moreover, in the choice of explanatory variables, it is desirable to avoid highly correlated variables that would introduce identification problems. This is necessary to make it possible to distinguish the individual contribution from each factor. The choice is also limited to exogenous variables that are expected to influence household poverty without themselves being directly determined by economic status. This excludes some potentially interesting variables, such as ownership of assets that may be determined by current income.

The primary data source for this study is CSES, the Cambodian Socio-Economic Survey 2004. The survey gathered information on 12 000 households from all provinces in Cambodia, but the relevant data set is limited to the rural households. The main dependent variable is a dummy equal to 0 if the household is poor, and equal to 1 if the household is non-poor. The poverty line used is defined by the World Bank (2006). The explanatory variables are intended to reflect the household's holdings of land and other production factors, and control for various household characteristics and environmental variables, like access to infrastructure and public services.

Table 2 provides a list of the variables used in the regression analysis. The variables measuring the household's *land holdings* include the total land area to which the household has access, as well as three variables intended to capture the quality of land. The first variable for land quality measure the share of the landholdings to which the household has formal ownership title. This is based on self-reporting, which introduces some risk for errors: it is not always clear whether the household's claim to

formal ownership is undisputed. However, this should not be any major problem in the present context, since the household's incentives to invest in land improvements and fixed assets are likely to depend on their own judgments rather than formal rules. Secondly, we include the share of irrigated and improved land as a more direct measure of land quality. A variable is also included to indicate whether the household has been involved in any land conflict. The expected effects of the first four variables are positive, whereas the land conflict variable is expected to have a negative coefficient. To control for the household's *agricultural production inputs*, we use measures of livestock ownership, agricultural mechanization and fertilizer use. All three variables are expected to have a positive effect.

Table 2: Variables.

Variable	Definition and Comment
Dependent Variables	
Cons. Per Capita	Real Per Capita Consumption Expenditure
HH Poverty	1 if household is poor; 0 otherwise
Land	
Land Area	Log household land access
Share Titled Land	Share of household land that is owned and titled
Share Irrigated Land Area	Share of household land that is irrigated
Share Improved Land Area	Share of household land that is improved land
Land Conflict	1 if household has experienced land conflict; 0 otherwise
Agricultural Production Factors	
Livestock Conversion Units	Log number livestock owned by household (Livestock To Tropical livestock Conversion Units)
Agricultural Mechanisation	1 if household owns tractor, bulldozer or semi-tractor; 0 otherwise
Fertilizer Use	1 if household used chemical fertilizer during last planting season; 0 otherwise
Household Characteristics	
Household Business	1 if household run a business; 0 otherwise
Head of Household Age	Age of head of household in years.
Male Head of Household	1 if Male Head of Household; 0 if Female Head of Household
Adults	Log number of adults in household
Dependency Ratio	Ratio of dependents, below 18 year and above 59, versus adults 18-59
Max Education Index	Index for highest educational attainment in Household
Literate Female	1 if household has literate female adult; 0 otherwise
Infrastructure and Linkages	
Distance to All Weather Road	Log distance to all weather road
Industrial or Commercial Enterprise	1 if industrial or commercial enterprise in village or less than 10km away; 0 otherwise
Electricity Access	1 if village has access to electricity; 0 otherwise
Primary School	1 if village has primary school, 0 otherwise
Healthservice Access	1 if village has access to clinic, dedicated drug shop, communal health center, hospital, doctor, nurse or trained midwife; 0 otherwise
Province Variables	
	1 if household is located in province; 0 otherwise

Since household income and consumption is shared among its members we need to account for *household characteristics*, such as household size and the share of working age adults relative to dependent children and elders. The two variables we use are number of adults in the household and the dependency ratio. The expected effect of the dependency ratio is negative, since dependents do not contribute directly to production. The expected effect for number of adults is more uncertain, since it depends on production technology and average household size. Although all adults can be expected to contribute positively to the household's total production, there are often diminishing returns because of the fixed amount of land, so that each additional

adult contributes less than the previous ones. This would generate a negative coefficient.

The other variables in the household characteristics category are the existence of some type of household business, the age and gender of the household head (with a variable equal to one for male household heads), a measure of the highest educational attainment of any household member, and a variable for female literacy. General literacy is sometimes used in studies of other developing countries, but does not perform well in the Cambodian context, since almost all rural households have at least one literate household member. These variables are expected to have positive effects on human development and consumption capacity.

To capture the effects of *infrastructure and linkages*, we include the distance to the nearest all weather road and four variables to capture access to non-farm employment and public services. These distinguish households located close to industrial or commercial enterprises, and households with access to electricity, primary schools, and health services. Our human development measure is expected to be negatively related to the distance to all weather roads, but positively affected by the other infrastructure and linkage variables.

Table 3: Variable Mean Values.

	Rural with Land	Rural Landless
Observations		
Poor	31%	34%
Land		
Land Area	1.11	N/A
Share Titled Land	0.37	N/A
Share Irrigated Land Area	0.27	N/A
Share Improved Land Area	0.07	N/A
Land Conflict	2%	N/A
Agricultural Production Factors		
Livestock Conversion Units	1.49	0.30
Agricultural Mechanisation	3%	N/A
Fertilizer Use	80%	N/A
Household Characteristics		
Household Business	39%	N/A
Head of Household Age	44.8	43.7
Male Head of Household	79%	72%
Adults	2.51	2.16
Dependency Ratio	1.15	1.23
Max Education Index	6.33	5.28
Literate Female	91%	63%
Infrastructure and Linkages		
Distance to All Weather Road	2.96	3.14
Industrial or Commercial Enterprise	28%	36%
Electricity Access	22%	36%
Primary School	43%	49%
Healthservice Access	49%	53%

Source: CSES, 2004.

Table 3 presents average variable values for rural households with access to land and rural landless household. Households with businesses have been excluded from the landless category, as we are mainly interested in those landless households that remain solely active in the agricultural sector.

A comparison between the categories of households in Table 3 reveals some interesting patterns. In general, the landowning and landless households display some striking similarities, for example regarding access to infrastructure and linkages. One notable difference between the two categories of households is that landless households are more often headed by females and that their dependency ratios are higher. These characteristics reflect the gender bias discussed earlier and are presumably connected, since the dependency ratio will be higher if the husband is absent.

Analysis

The results for the logistic regression models are presented in Table 4. The tables report results for rural households with land and landless households deriving their main income from agriculture. A first observation is related to the signs of the coefficients. The construction of the poverty dummy means that independent variables with positive coefficients raise the likelihood that a household will be non-poor. It should be noted that all significant variables display the expected signs. This indicates that the variables included in the model do indeed influence household welfare as expected. The following paragraphs discuss the coefficient estimates in closer detail.

Table 4: Logistic Regression, Rural Households With and Without Access to Land.

Measure Dependent Variable	Rural with Land			Rural Landless		
	Coefficient	z-value	Sig.	Coefficient	z-value	Sig.
	HH Non-Poverty			HH Non-Poverty		
Constant	-0.15	-0.40		0.35	0.68	
Land						
Land Area	0.08	3.28	***	N/A		
Share Titled Land	0.22	3.69	***	N/A		
Share Irrigated Land Area	0.15	2.27	**	N/A		
Share Improved Land Area	0.54	4.26	**	N/A		
Land Conflict	-0.06	-0.32		N/A		
Agricultural Production Factors						
Livestock Conversion Units	0.11	5.32	***	0.08	1.36	
Agricultural Mechanisation	0.42	2.89	***	N/A		
Fertilizer Use	0.46	6.52	***	N/A		
Household Characteristics						
Household Business	0.62	9.77	***	N/A		
Head of Household Age	0.60	6.27	***	0.72	2.58	**
Male Head of Household	0.40	5.49	***	0.42	2.11	***
Adults	-2.29	-25.27	***	-1.82	-7.27	***
Dependency Ratio	-1.13	-27.95	***	-1.03	-9.71	***
Max Education Index	0.07	8.19	***	0.06	2.85	**
Literate Female	0.53	7.91	***	0.74	4.03	***
Infrastructure and Linkages						
Distance to All Weather Road	-0.06	-1.82	*	0.29	3.47	**
Industrial or Commercial Enter	0.10	1.39		0.29	1.60	
Electricity Access	0.69	8.15	***	0.38	1.88	*
Primary School	0.02	0.38		-0.10	-0.61	
Healthservice Access	0.06	0.93		0.10	0.54	
Province Variables						
Observations		9460			969	
Model Chi-Square		2400.25	***		182.99	***
Degrees of Freedom		[42, 408]			[12, 280]	

Coefficients statistically significant at a 99% (***), 95% (**), and 90% (*) confidence levels.

Source: Authors' calculations based on CSES, 2004.

All of the **land** variables in Table 4 have the expected positive sign (even though the land conflict variable is not statistically significant). This suggests that the risk for household poverty is reduced with increased access to land, and in particular when this land is secured by a title. Land improvements and irrigation provides additional improvements in human development outcomes. All agricultural production factors also have the expected positive effects.

The variables for **household characteristics** also record significant coefficients with expected signs. The strongest effects are recorded by the household composition variables. As expected, larger households and those with many dependents have a higher risk of poverty. Owning a household business has a strong positive effect on the likelihood that a household is non-poor, which provides strong support for policies focusing on diversification of rural activities. Furthermore, education matters, as both the education index and female literacy have positive effects. Households with male heads are less likely to be poor. Taken together with the strong positive impact of female literacy, this suggests that households with illiterate female heads are in a very vulnerable position.

The results for the **infrastructure** variables are less significant. Distance to road and access to electricity have significant coefficients of expected signs (except the positive influence of increased distance to road among landless households). Overall, the results from Table 4 are well in accordance with the results from analyses of neighboring countries (Andersson et al., 2006).

The results for landless households follow a similar pattern as those for households with access to land, with the peculiar exception of the distance to the road variable noted above. It is hard to rationalize this finding, but it does not change the overall conclusion, that the production process of landless agrarian households are determined by roughly the same set of factors as that of households with land. It is therefore reasonable to assume that landless households targeted for land reform would be able to improve their human development outcomes and get a chance to escape poverty.

Assessing the Impact of Land Reform

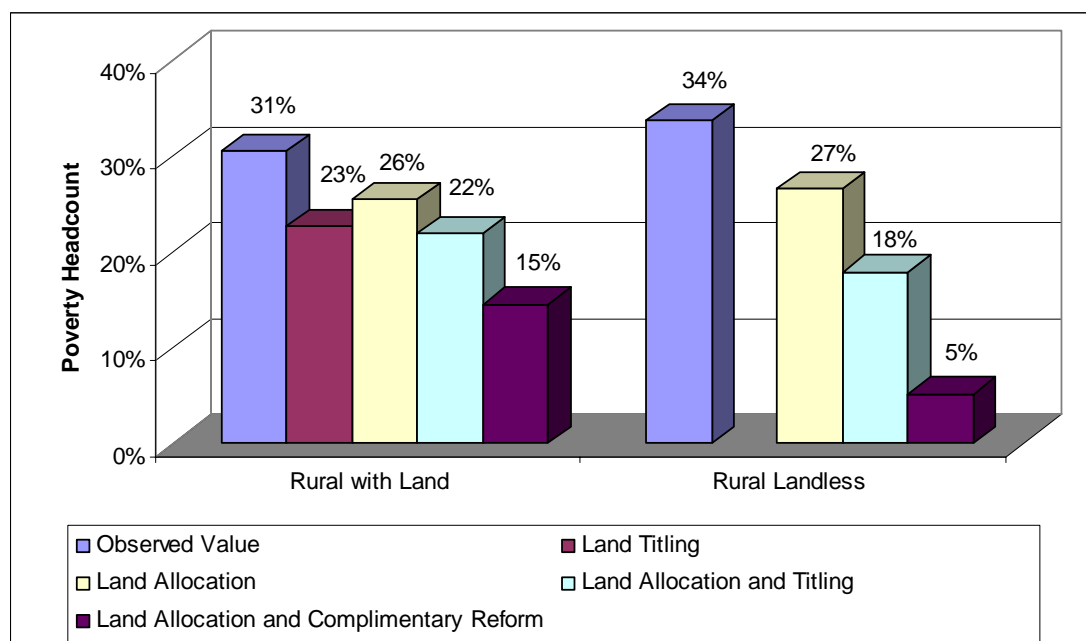
A final step in the empirical analysis is a simulation of the effects of land reforms on human development and poverty. Four different reform scenarios with different combinations of land redistribution, land titling, and complementary reforms are explored. This can be thought of as a comparison between different potential policy interventions to improve the conditions for the rural poor, and a test of the economic significance of the results provided this far. The four reform scenarios are summarized in Box 1 below.

All four scenarios are applied to households with access to land, while scenarios II, III and IV will be tested for the group of landless households. The simulations are based on coefficient estimates from a logistic regression similar to that presented in Table 4.

Box 1: Reform Scenarios.

- I. **Land Titling.** In this scenario, all households are given formal title to all their current land, strengthening ownership rights. Other factors are held constant.
- II. **Land Allocation.** In this reform scenario, all households are given access 5 hectares of land, holding other factors constant.
- III. **Land Allocation and Titling.** In this scenario, land allocation is combined with titling. Giving all households access to 5 hectares of titled land.
- IV. **Land Allocation and Complementary Reforms.** In this scenario, household access to titled land is increased and complementary reforms providing electricity access to all households are undertaken.

The simulations focusing on households with land are made by changing the variable values for land area and titled land to correspond with the assumptions in scenarios I-IV. For the landless households, it is assumed that they will receive a return to land equal to that of a matched sample of similar households from the same geographic area. In scenario IV, we also set the variable for electricity to one, assuming that complementary investments are made to provide electrical access to all households. This should be seen as a proxy for general infrastructure development.



Source: Authors' calculations based on CSES, 2004.

Figure 9: Poverty Headcount under Reform Scenarios.

The effects of the four reform scenarios on poverty rates of households with some initial access to land are displayed in Figure 9. In the base case, 31 percent of the households in this sample are classified as poor. Providing title to all their land would

reduce the incidence of poverty to 23 percent, i.e. a reduction of 8 percentage points. This is a lower effect than what has been estimated in some other studies, although it should be pointed out that our methodology is not directly comparable to earlier studies. If all households were instead given additional land, so that their total land holdings would increase to a minimum of 5 hectares (with no change in the land holdings of families with more than 5 hectares), the reduction in the incidence of poverty would be roughly the same – about 5 percentage points. Although the effects on poverty rates from the two experiments are roughly similar, there is reason to emphasize the impact of land titling. It is probably less controversial than land reform, but it would have at least as strong an effect on the households that already have access to some agricultural land.

If titling and land distribution are combined, as in scenario III, the joint effect is on par with only providing title, reducing the incidence of poverty to about 22 percent. This indicates that the additional effect of land redistribution is only marginal if ownership protection has already been secured. Finally, adding our rough proxy for complementary reform – electrification – there is a very substantial effect on poverty, reducing the poverty rate from 31 percent to 15 percent. Considering electrification as a proxy for infrastructure investment in general, this is an intuitively appealing result, suggesting that markets and public services are critically important for the long-term growth prospects of the Cambodian countryside.

The simulations for landless poor households, as reported in Figure 9, are more complicated. In addition to adjustments to the land area, titled land, and electricity access variables as discussed above, it is necessary to take into account some of the differences in the characteristics between the landless and land holding households. In particular, we know that one of the responses to landlessness has been a stronger emphasis on income generating household businesses. We have therefore excluded household with a business from the analysis (just as we did in the logistic regression) to focus on landless agricultural household.

Allocating land to these landless households gives a simulated effect of a 7 percentage point fall in poverty. Combining allocation of land with titling gives an additional 9 percentage point fall in poverty; with investments in infrastructure the poverty rate is brought down to 5%, which is a fall with almost 29 percentage points. This indicates that there is a possibility to substantially improve the human development outcomes for agricultural landless households through a broad land reform program.

IV. Implementing Land Reforms

While it is clear that large human development benefits may be reaped from land reforms, it is also necessary to discuss how to achieve such reforms. This section highlights some of the key issues to be considered when developing and implementing land reform policies. The basis for this section is the view that there is no quick solution for the land related problems in Cambodia. Instead, the necessary reform agenda needs to be based on a long-term perspective with strengthened ownership rights as the main short-term priority.

Building Support for Reform

There are strong political motives for addressing the biased land ownership structure in Cambodia. In many countries, land reforms have contributed to mitigating social unrest and creating a foundation for increased **political and social stability**. There is no doubt that conflicts over land resources have contributed to political and social problems in Cambodia. To secure future political stability, it is essential that land related problems are resolved. Equitable and secure access to land can be viewed as part of a social contract, which creates a base for successful future economic, political and social development.

Priorities, Sequencing, and Targeting

Strengthened land ownership rights should be the main priority for policy makers. In the short run, this includes further land titling as well as more efficient legal protection for land owners. Only on a basis of secure land ownership can further steps in the land reform program be implemented. While far from a quick win strategy, increased tenure security is the first step to building stronger agricultural development, to be followed by efforts to increase the land holdings of target households and to strengthen their productive capacity.

The unequal distribution of land ownership observed in Cambodia is to some extent the outcome of distortionary policies in the past; in particular, many of the current problems related to land ownership can be traced back to the Khmer Rouge era and the catastrophic effects of abolishing private property. It is unreasonable to expect markets alone to generate land redistribution at the rate that would be required to maximize human development outcomes (World Bank, 2003). This provides a justification for support to land reforms, both on grounds of productive efficiency and because of the wider social consequences of a severely unequal land distribution.

The impact of land reforms is often reduced by a desire to award land plots large enough to enable beneficiaries to derive a livelihood from agriculture only. This may be an inefficient strategy as it neglects the diverse options and the scope for beneficiaries to rely on non-agricultural sources of income. It also ignores the restraints preventing beneficiaries from making full use of the land they receive due to a lack of complementary resources. A more efficient basis for a land reform program may be to support a **dual-income approach**. By encouraging beneficiaries to continue supplementary income opportunities while increasing agricultural incomes a maximum effect of land reforms may be derived. An additional benefit of this reform approach is that it enables households to diversify and reduce the vulnerability to shocks.

Targeting of policies to vulnerable yet capable groups is important. Experience shows that giving access to land has been easier than securing the competitiveness of beneficiaries, and that the failure to address capabilities has rendered a number of reforms incomplete (Warriner, 1969). As a consequence, longer term issues related to securing the ability and competitiveness of reform beneficiaries must be addressed. The quantitative analysis supports the view that the rural land poor might be a more appropriate target group than those landless that has left the agricultural sector. This can also involve identifying **geographic priorities** through additional descriptive data on spatial patterns of land and population. The selected provincial statistics presented in Table 5 may give some indications for geographic targeting of land reforms in Cambodia. For example, the Tonle Sap region could be a suitable starting point for future efforts at land redistribution, as the region has large areas of land tied up in economic land concessions, and human development is lagging behind as indicated by the high poverty incidence and low access to water and health services.

Table 5: Provincial Agricultural and Human Development Statistics.

Province/Agro-Ecological Region	Population	Poverty Incidence (%)	Rice Yield (Tons/ha)	Economic Concessions (ha)	Safe Drinking Water (%)	Population per Health Facility
Phnom Penh		5				
Phnom Penh	1 002 000		2.7		4	24 000
Plains		31				
Kampong Cham	1 747 000		2.5	12 670	27	16 000
Kampot	575 000		2.3	35 800	12	12 000
Kandal	1 186 000		3.3	-	29	13 000
Prey Veng	1 066 000		2.2	-	74	11 000
Svey Rieng	530 000		1.8	-	71	14 000
Takeo	882 000		2.6	-	21	12 000
Coast		17				
Kep	34 000		2.5	-	12	7 000
Koh Kong	131 000		1.6	67 700	14	9 000
Sihanoukville	174 000		2.7	12 800	14	17 000
Tonle Sap		33				
Banteay Meanchey	587 000		1.8	-	15	11 000
Battambang	949 000		2.2	8 000	19	11 000
Kampong Chhang	444 000		1.7	138 963	22	12 000
Kampong Thom	625 000		1.4	19 863	8	12 000
Pursat	385 000		1.9	179 065	7	10 000
Siem Reap	777 000		1.4	-	21	13 000
Plateau/Mountain		58				
Kampong Speu	691 000		1.9	128 906	28	13 000
Kratie	285 000		2.9	-	25	9 000
Mondul Kiri	47 000		1.9	29 900	25	3 000
Oddar Meanchey	144 000		1.7	-	15	10 000
Pailin	54 000		2.8	-	19	11 000
Preah Vihear	142 000		1.9	-	25	10 000
Rattanak Kiri	124 000		2.1	31 380	25	6 000
Stung Treng	93 000		2.0	172 877	25	10 000

Source: Population: Commune Database 2004, Poverty: World Bank 2006, Yield: MAFF 2004, Concessions: MAFF, Water: CIPS 2004, Health: MoH 2003.

In the Cambodian context, it is often noted that unforeseen shocks, in particular health related ones, are a main contributor to landlessness. **Complementary reforms** play a key role in enabling land reform beneficiaries to cope with future shocks and be able to keep possession of their land. Given the devastating effect of health shocks, health services are at the top of the list of complementary reforms. Access to credit is another important factor for enabling households to develop agricultural activities,

move into alternative employment and withstand shocks. Education will serve to improve the ability to effectively use land as well as to facilitate a transition out of agriculture. Furthermore, market access through infrastructure improvements can increase the value of agricultural surplus and enable diversification of crops and create alternative employment opportunities.

Policies for Equitable Access to Land

Weak enforcement of ownership rights has made it possible for influential individuals and groups to acquire large landholdings for speculative or unproductive purposes. This has been done through both through legal and illegal means, including outright land grabbing. To achieve a more efficient and equitable land ownership structure, it is necessary to address the causes for land ownership concentration.

Unlawful acquisition of land is essentially a governance problem and should be addressed through **strengthened land ownership protection**. Legal processes for revoking unlawfully acquired land should be established. It is clear that influential individuals and groups have exploited **economic concessions** for acquiring large land holdings. There is reason to introduce a moratorium on the establishment of new economic concessions and existing concessions should be subject to impartial scrutiny. Economic concessions that have been established in an unlawful manner should be revoked and transformed into social land concessions.

Even if illegal acquisition of land could be stopped, problems with land ownership concentration would likely remain. Land concentration is also driven by the vulnerability of poor households to economic shocks, the lack of investment opportunities outside real estate, and speculation on future increases in land prices. To address land hoarding through legal purchase, other policy alternatives has to be considered. To limit distress sales and enable existing owners to keep their land it is essential to introduces policies to **reduce shocks to vulnerable households**. Policies for reducing vulnerability include affordable health care, credit programs and improvements of agricultural productivity. Land speculation may also be contained by **improving alternative investment opportunities** beside real-estate speculation. This involves development of the domestic banking and financial system.

Taxation is a common policy-instrument for improving socially desirable land use in many countries. Theoretically, taxes may be used to achieve a wide variety of policy objectives (Brueckner, 2000). Yet, there are many examples of un-successful implementation of land taxes in developing countries (Skinner, 1991). Property taxes risk undermining the processes that aim to strengthen the legal protection of ownership rights. When taxes are levied on ownership of registered property, a disincentive for obtaining title is created. When taxes are levied on both titled and non-titled land, confusion regarding the exact status of non-titled land will occur. All taxes on land may, if not properly structured, be disadvantageous to the poor. In extreme cases, levying a tax can increase land concentration as vulnerable households are forced to sell land to finance tax payments. In the Cambodian context, any land tax high enough to discourage land concentration will run a risk of hurting poor households. International experience of progressive land taxes is particularly negative. The almost universal failure of progressive taxes on rural land in developing countries is due to the political influence of large landowners in rural areas and the formidable technical obstacles involved in assessing taxes (Strasma et.al., 1987). These

challenges should be kept in mind when considering taxes as a policy-instrument in Cambodia.

A general **land tax** with an exception of land holdings below a certain level to exclude poor households, would introduce a recurrent cost for those that accumulate large land tracts and discourage unproductive holding of land. A land tax could also contribute to provincial revenue collection, and decentralization of public service delivery. There are also potential problems since a land tax creates incentives for evasion, for example through ownership through proxies or by outright bribing of tax collectors. Experiences from other developing countries suggest that these problems could undo some of the impact on land hoarding.

Another alternative is a **transaction tax** on the sale of titled land. This would target the purchase rather than the ownership of land and could thus limit speculation by introducing a cost of acquiring new assets. A transaction tax can be attractive since it does not force distress sales, while it might make selling land to outside investors less desirable. To target speculation by outsiders rather than normal transactions, a higher tax rate can be levied on transactions with outsiders (compared to close family members) and on the sale of recently acquired land. However, this policy also carries potential drawbacks. As with other taxes, there will be incentives for evasion, potentially creating unregistered shadow transactions and bribing of tax collectors. Furthermore, transaction taxes may limit socially desirable transactions and the scope for revenue collection is very limited as the tax base is limited.

Based on these considerations it is clear that; **in the short run introducing land taxes might not be effective in Cambodia** due to capacity constraints and institutional weakness. This analysis has highlighted the importance of strengthened ownership protection through land-titling and improvements of the legal system – taxation is not a substitute to improved governance or strengthened legal protection. There are substantial risks with introducing a tax before legal institutions has been strengthened as a tax might hurt the poor and undermine ongoing land titling. Taxes will only be an effective policy when legal protection has reached a sufficient level. **The introduction of a provincial land tax shall be considered when titling and legal ownership protection has been improved.** At that point, a general land tax can be used both for local revenue collection and for addressing land hoarding. The timing for introducing a land tax can be determined on provincial level based on the progress of titling and institutional development.

V. Conclusions and Policy Implications

During the past decade, Cambodia has experienced strong economic growth and a good record of poverty alleviation. Yet, progress has been uneven and concentrated to a few sectors, such as tourism and garment manufacturing. Growth in the agricultural sector has been slow, resulting in an increased concentration of the poor in rural areas.

There are several reform initiatives aiming to improve the human development outcomes of rural households. Based on household survey data, this paper has analyzed the potential benefits of agricultural reforms for the poor. Simulations indicate large potential human development benefits from land reform. With a full reform package, a fall in poverty rates of about 16 percentage points for households with prior access to land and almost 30 percentage points for landless households can be expected. There is also a notable impact of more limited reform initiatives involving distribution of land, with particular benefits accruing to the landless poor.

The analysis highlights the importance of complementary reforms. Only distributing land to landless households has a limited impact on poverty and human development. The large gains are realized when increased access to land is combined with strengthened ownership rights, investments in land improvement and irrigation, as well as complementary reforms in infrastructure.

There are a number of challenges that have to be met in order to realize these benefits. One challenge is to obtain sufficient land and financial resources for the reforms. An overview of current land use in Cambodia indicates that at least 15% of the land area, or more than 2.1 million hectares, are underutilized and could be targeted for land reform. This would be sufficient to meet the reform needs of the current rural landless poor.

Another major challenge is to ensure implementation of reforms. Support and cooperation from all levels of government are necessary to implement land reforms. Previous reform initiatives have been stalled by insufficient support from either the local, provincial, or national levels. In this context, it should be noted that land reforms can be an important component for ensuring political and social stability.

In sequencing reforms, increasing tenure security through the strengthening of legal institutions should be at the top of the agenda. Future redistribution of land should be based on a dual-income approach, acknowledging the importance of supplementary, non-agricultural sources of income. Reforms should be targeted to vulnerable groups, whose capabilities to take advantage of the new opportunities should simultaneously be strengthened. The complementary reforms needed to achieve this objective include public services, in particular health care and education, as well as measures to improve market infrastructure.

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