# Landlessness and Child Labour in Cambodia

**PHANN Dalis, PHAY Sokcheng, TONG Kimsun and PON Dorina**

**Cambodia Development Resource Institute (CDRI)**
CDRI – Cambodia's leading independent development policy research institute

**Phnom Penh, January 2014**

# Contents

**Tables and Figures**



**Case Studies**



**Appendices**

**Abstract**

This paper investigates the relationship between landlessness and child labour participation and working hours. Furthermore, it investigates how landlessness may affect child labourers' perceptions of their work. The descriptive analysis, including probit and tobit models, is used to see the effect of landlessness on child labour. These quantitative results draw from CSES data from 2004 to 2011. The qualitative methodology examines perceptions of children and household decision makers regarding child labour. Five provinces were selected—Pursat, Oddar Meanchey, Preah Vihear, Kratie and Koh Kong—because they have many households that have lost land and a high occurrence of child labour. In these provinces, the study collected information through 20 focus group discussions and 30 in-depth interviews with male and female child labourers. The models yield results consistent with the descriptive statistics and previous literature. Firstly, the study found that children of landless households are 42 percent less likely to participate in work than those of land-holding households. Furthermore, the working hours of children in landless households are 10 hours a week less than of those in land-holding households. Secondly, the study found differences in child labour within landless households that were correlated with household wealth. Poor landless households have a 26 percent greater child labour participation rate than rich landless households. Children of the poor landless work 8 hours a week more than those from rich landless households. From the qualitative information, children of the landless households are more likely to sell labour to support their families. They take up heavier, longer and more distant and hazardous work. They are absent from school more often than those in the land-holding households.

## 1. Introduction

Child labour has existed at least since the Industrial Revolution. It was much discussed as part of the Asian development agenda during the 1970s. Although efforts have been made to reduce child labour, it remains prevalent in developing nations, including Cambodia. An estimated 755,250 children aged between 5 and 17 are engaged in labour—19 percent of children in this age group. Among these child labourers, 30 percent are involved in hazardous occupations such as sex work and smuggling or are trafficked (National Institute of Statistics and International Labour Organization 2013).

As in other developing countries, child labour in Cambodia is primarily a rural phenomenon. Most working children are engaged in tasks such as feeding livestock, growing crops, collecting wood and fishing. Those occupations are mostly unpaid family jobs or in the informal sector, without legal protection or social support. Less than 2.0 percent of child labour is in sweatshops making goods for export (National Institute of Statistics 2004-11). Child labour is not an individual decision but in most cases is determined by adult family members. To help the family, which is one reason for child labour, children are put to work at times when there is not enough income from adult members or an increase of adult unemployment (Basu and Van 1998; Siddiqui 2012). Children provide additional labour when there is a shortage of family workforce and inability to hire labour from outside (Bhalotra and Heady 2003). From all accounts, the explanation of child labour is mainly poverty.

For rural households, the most important livelihood source is land. They live on land and earn from it. Land is a productive asset and can be used as collateral for credit to overcome income shocks. Thus, to have little or no land is to lack an income source (Medina 1992). Landless households have been described as an asset-less, marginalised group of agricultural hired workers in rural communities. In 2007, landless households (including families that do not rent land) were 38 percent of the total households, according to CSES data. This increased slightly to 40 percent in 2010 and 2011. It is expected to increase in the future due to factors such as sale of land, government land concessions, withdrawing of untitled land or forest/community land and environmental changes. Losing land means losing a portion of family income, which leads the family to put children into employment.

The root causes of child labour should be carefully examined to better understand and prevent child labour. The existing literature has shown landlessness to increase poverty, and poverty in turn has been linked to child labour. However, there is limited literature about more direct relationships between landlessness and child labour in Cambodia. Therefore, the study examines the effect of landlessness on the likelihood of child labour and changes in family perception about child labour after land is lost. The study seeks to answer to the following questions:

1. How is landlessness related to child labour?
2. How do children in landless and land-holding households differ from each other in work status and formal schooling?
3. How do households decide on their children's roles in contributing to household livelihood? How do these decisions change after the loss of land?

4. What are boys' and girls' perceptions of their role in the family's livelihood, and how do these perceptions change after the loss of land? How is this perception influenced by the decisions of their family members? How do girls' and boys' perceptions differ, and what shapes the differences?

The paper uses probit and tobit models[1] to analyse data of the Cambodian Socio-Economic Survey (CSES) between 2004 and 2011 to show the relationship between landlessness and child labour as well as to explore the difference between children in landless households and those in households holding land. Answers to the questions on perception are based on in-depth interviews with the vulnerable children and focus group discussions with families having land conflicts or poor landless households in the selected provinces–Pursat, Oddar Meanchey, Preah Vihear, Kratie and Koh Kong. These provinces were chosen due to their involvement in land conflicts[2] causing households to lose land, and the consequent prevalence of child labour.

The next section reviews the literature on the relationship between landlessness, poverty and child labour. The third section presents the methodology and data sources. Section four describes the characteristics of landless and non-landless households with and without child labour. The fifth section interprets the empirical result from probit and tobit regression and analyses the qualitative information with a few case studies. Section six concludes.

## 2. Literature Review

### 2.1. Definition of Child Labour and Landlessness

**Child Labour:** Child labour often refers to the involvement of children in economic and/or non-economic activities that could possibly be harmful to the child's health or physical, mental, spiritual, moral or social development. Its legal boundaries are in line with three principal international conventions: ILO Convention No. 138 (Minimum Age), United Nations Convention on the Rights of the Child and ILO Convention No. 182 (Worst Forms).

However, there is at present no consistent definition of child labour as both theoretical and empirical concept or between countries (Edmonds 2008). Theory has simply defined child labour based on time allocation, while the empirical concept requires detailed information on how the allocation of child time varies according to age, work including market and domestic work, working conditions and working hours.

In practice, the majority of international empirical studies define child labour as market work: "a child labourer is a child who works outside their household for wages or other compensation or a child who helps on the family farm or business" (Edmonds 2008: 13). The more detailed

1 The probit model is the probability of the outcome variable (taking only two values – in this case whether child is involved in labour) changing when there is a change in the value of a regressor.
A tobit or censored normal regression model is used when data is censored (too many zeroes that might not be observed in simple regression (OLS)).

2 Identification of provinces involved in land conflicts is mainly based on the A Source of Human Rights Information Sharing in Cambodia website, http://sithi.org/temp.php?url=land_case/_land_case_new.php#.U-MDeUAxWho;. The research team followed the website to find the affected communes and called them to assure the availability of targeted interviewees before selecting the sample villages.

definition of child labour was developed by ILO's Statistical Information and Monitoring Program on Child Labour:

**Table 1: Working Hours Defining Child Labour (1)**

| Age groups | Non-hazardous | Hazardous[3] |
|---|---|---|
| < 12 | ≥ 1 hour per week | |
| ≤ 14 | ≥ 14 hours per week | |
| ≤ 17 | ≥ 43 hours per week | ≥ 1 hour per week |

Source: Edmonds (2008: 19)
*Note: (1) represents the child labour definition from source 1.

Empirical studies in Cambodia have defined child labour differently. For example, Ministry of Planning (2012) defined children aged 5-17 as child labourers if involved in economic and/or non-economic activities at least one hour per week. Phoumin and Seiichi (2006) considered a child aged 5-14 who engaged in either economic or non-economic activities as a child labourer. Phoumin, Seiichi and Kana (2008) defined a child involved in agricultural activities for 1 hour or more during the reference week as a working child. Meanwhile, the National Institute of Statistics and International Labour Organization International Programme on the Elimination of Child Labour (2013) defined child labour as follows:

**Table 2: Working Hours Defining Child Labour (2)**

| Age | Non-hazardous | Hazardous |
|---|---|---|
| 5-11 | ≥ 1 hour per week | |
| 12-14 | ≥ 12 hours per week | Even ≤ 12 hours per week |
| 15- 17 | ≥ 48 hours per week | Even ≤ 48 hour per week |

Note: Economically active children who fell into any of the five categories were considered child workers.
Source: NIS and ILO (2013)

In line with the Cambodian Labour Law (adopted by the National Assembly in 1997) which set the minimum working age at 15 but allowed children aged 12-14 to perform "light" work[4], this paper defines child labour as in Table 3.

**Table 3: Working Hours Defining Child Labour (3)**

| Age Groups | Non-hazardous | Hazardous |
|---|---|---|
| 5-11 | ≥ 1 hour per week | |

3 Hazardous work is defined as (ILO 2002: 34):
- work which exposes children to physical, psychological or sexual abuse; to temperatures, noise levels or vibrations damaging to health
- work underground, underwater, at dangerous heights or in confined spaces
- work with dangerous machinery, equipment and tools or carrying heavy loads; or work for long hours at night

4 "Light work" is defined as work taking less than 14 hours a week of children aged between 12 and 14.

| | | |
|---|---|---|
| 12-14 | ≥ 14 hours per week | Even ≤ 14 hours per week |

**Landlessness:** The definition of landlessness varies according to country and circumstances. The study on landlessness in rural Pakistan conducted by Irdan and Arif (1988) defines the "pure landless" as persons working in agriculture but not owning or renting land, and not able to purchase land.[5] Nayenga (2003) describes the "landless" in Uganda as families that have less than 0.01 hectare to support 10 people or more. In Cambodia, the literature seems to suggest that "those who have involuntarily lost land, possess no skills other than in farming and face uncertain livelihood because of the loss of land, can be termed landless" (Chan, Saravy and Acharya 2001: 44), while Pel et al. (2008) define an "agricultural landless household" as one that has never had farm land or has sold its agricultural land under distress.[6] However, such detailed information is unavailable in the national household survey data. Therefore, the study simply defines agricultural landless households as those do not have farm land, regardless of reason.

## 2.2. Causes of Child Labour

Factors inducing child labour were divided into supply and demand sides. On the supply side, Khan (n.d.) included farmed land, family income, household size, parents' education, ethnic background and other household characteristics in a simple ordinary least squares model as the factors determining child labour. He suggested that poverty incidence, family circumstances (family breakdown, single parenthood and migration) and traditional attitude toward girls encouraged children to enter the labour market. On the demand side, employers requiring cheap and obedient workers, weak regulations and laws, poor infrastructure and lack of access to education were emphasised as increasing child employment.

Bhalotra (2000) estimated structural labour supply models for boys and girls using a sample of 2400 households in rural Pakistan. She put actual hours of waged work conditional on labour participation as the centre of interest in a simple ordinary least squares model. In the model, the wage of the child, household income, child's years of schooling, child's age, child's current health, parents' school years and ages (proxies for parents' wage rate), household size and other demographic variables were the controlled factors. She found that waged work attracted children. Working hours of children were close to "full time" and disrupted school attendance.

Rodgers and Standing (1981), cited in Khalid and Shahnaz (n.d.), stated that child labour stemmed from intensive production when there is not a large enough workforce. They concluded further that family background was one of the main factors determining economic engagement of children. Children in families with low earning and low education and few earning sources were pushed into work at young ages. This was consistent with the study of Basu and Van (1998), which emphasised an increase of child employment when the family adult wage was not enough for family subsistence. Emerson and Souza (2003) made a similar argument in their study of the persistence of child labour in Brazil. They used household survey data in a probit model functioned by parents' years of schooling, child labourer's age, grandparents' schooling, female child, parents' ages, household members and region. They added occupational background,

5 They define the "near landless" as those employed in agriculture who lack sufficient land to meet subsistence needs.

6 Some scholars define "near landless" as a household that owns 0.5 hectares of land or less in Cambodia (Guttal 2007, Ullenberg 2009 cited in Schneider 2011; Chan and Acharya 2002) .

especially when parents started to work at very young ages, as also making a difference. Siddiqui (2012) supported the idea that in poor and large families of illiterate parents and many unemployed adults, children are put to work because of their cheap labour and obedience. Resources per person are smaller with each additional member in a large family, so each member had to take economic measures for their own survival, and children were not an exception.

Children will be threatened if their families have a very low income and face an economic shock without any savings or assets to exchange for basic needs. However, engaging children to work outside might be the family's last alternative. The poor might first involve children, especially girls, in helping with household tasks to enable adult members to be in productive work (Cain 1977; Andvig 2001). In this case, girls might be taken out of school to perform household chores. Children in waged employment were observed mostly in very poor families, while children working on farms were more common in richer families, according to Bhalotra and Heady (2000). There were very limited opportunities for rural children in income-producing employment. Therefore, the number of child labourers in rural areas seems to be mainly those in domestic work and unpaid family businesses.

### 2.3. Effects of Landlessness on Child Labour

The link between landlessness and child labour is complex and the literature very limited. Landlessness is assumed to contribute to poverty because a substantial proportion of the poor are landless. Lawson, McKay and Okidi (2003), studying child labour in Uganda, concluded that chronically poor households and moving into poverty were caused by the loss of land.

Poor landless and nearly landless households tend to depend on informal credit to meet their immediate needs. They have to bear high interest rates, small loan and short loan periods (Sharma n.d.). This then forces them to earn more to repay debt while still meeting other needs. In consequence, such families put their children to work for money. According to Medina (1992), without land, families have to depend heavily on selling labour. However, there are very scarce opportunities for children of the poorest households to work because of their lack of networks and the few economic activities in rural areas (Bhalotra 2000). Therefore, some studies find a negative relationship between landlessness and child labour and instead a positive relationship between resource-rich households and child labour.

Bhalotra and Heady (2000), using micro-data for several developing countries, confirmed that children in land-poor households seem to work less and are more likely to be in school than those of land-rich households. The authors explained this phenomenon from labour and land market imperfections, which leave adults without work. Families rich in productive assets engage their children in work at very young ages to adapt them to the productive environment, to give them experience, to ensure continuation of cultural skills, to socialise them and to provide them economic independence, while they tend to hire outsiders for household tasks (Bass 2004).

When the labour market for adults is not smooth, increasing household production from their productive assets will increase child labour, according to Cockburn (2000) in a study of child labour in Ethiopia. Bhalotra and Heady (1998) found that having land, livestock and family businesses increased the likelihood of children working. Land-rich families, when it is difficult to hire labour for their farms, tend to employ their own children. Therefore, child labour

increases when household farm size expands (Bhalotra and Heady 2000; Cigno, Rosati and Tzannatos 2001; Cockburn 2000).

Bhalotra and Heady (2003) used a tobit model to explain working children's relationship with farm size under the condition of land, labour and credit market imperfection in Pakistan and Ghana. Their main explanatory variables were land ownership status, household wealth, wages, price of rented land and other household characteristics. The study showed that land size greatly increased children's working hours, especially girls', in both countries. The girls in land-rich households tended to work more than those in the land-poor ones.

To sum up, child labour occurs in both land-poor and land-rich households, but the literature seems to indicate land-rich households have a greater likelihood of child labour. In poor landless households, children are engaged in both economic activities and household tasks to allow other members to take income-producing work. In rich households, children are involved in economic tasks to help them learn skills and socialise them for their inherited future, while the family tends to hire outside labour for less productive household tasks or heavy work.

### 2.4. Regulation of Child Labour in Cambodia

Combating child labour has always been a strategic development goal in Cambodia. A Millennium Development Goal has been to reduce the proportion of children aged 5-17 in the labour force from 16.5 percent in 1999 to 13 percent in 2005, 10.6 percent in 2010 and 8.0 percent in 2015.To reach the goals, the country has signed and ratified several ILO conventions as well as adopted UN conventions. These include minimum employment ages and the worst forms of child labour convention. The Labour Law is the prime means to keep children safe. This law alone could not be effective for reducing child labour, so many *prakas* (ministerial orders) and inter-ministerial bodies have been established to supplement the law. The Cambodia National Council for Children has been created to address children's issues.

Cambodia's commitment to eradicate child labour has not been less than that of other countries. However, the weakness of the legal system and limited institutional capacity have retarded enforcement of the legislation. Although the minimum age of working children is set at 15 years (article 177(1)), the Labour Law still leaves it open for children to work due to poor living conditions. Children aged 12-14 can be employed in "light work" that does not harm their health, school attendance, safety or morality according to article 177(4). However, "light work" was not defined or specifically identified. Work in fields, fishing, brick making, salt production, garment and shoe making are in the proposed but not yet approved list for employment of children aged 12 to 14. The law has not been effective for children in informal work such as on family farms or domestic service. As a result, child labour remains a concern and will not be completely eliminated in a short time.

## 3. Methodology and Data

### 3.1. Quantitative Method

The estimated model of child labour is guided by the theoretical model in Emerson and Souza (2003). The study used the parental preferences and child's human capital accumulation to generate the child labour supply model. It began by assuming that there are only adults and a child in the family. Adults value importantly of both current family consumption and educational

attainment of the child. Consequently, adults decide whether to send children to work, which can be written in the adult's utility function:

$$U = U(c_t, h_{t+1}) \qquad (1)$$

$$h_{t+1} = f(e_t), \qquad e_t \in (0,1) \qquad (2)$$

where $c_t$ is the current family consumption, and $h_{t+1}$ is the human capital achievement of the child. $e_t$takes 1 for school attainment and 0 otherwise. However, adult would give different weight $(\alpha)$ on consumption and human capital achievement under limited household income. Therefore, the Cobb-Douglas utility function is considered.

$$U(c_t, h_{t+1}) = c_t^{\alpha} h_{t+1}^{1-\alpha}, \qquad \alpha \in (0,1) \qquad (3)$$

Referring to (3), if the adult puts more weight on current consumption, the return on education $(h_{t+1}^{1-\alpha})$ will decrease, meaning that the adult is more likely to choose zero education for the child and tends to engage the child in work. Models (1), (2) and (3) show the links between the adult's decision on the child. They serve as guidelines for the empirical model.

The study estimates two models to investigate the effect on child labour, with the control of others variables, especially agricultural land dummy, based on previous studies of Bhalotra (2000), Emerson and Souza (2003), Khan (n.d) and Bhalotra and Heady (2003). First, a probit model is used to estimate the likelihood of child labour in economic activities.[7] Second, a tobit model is preferable because many children might not work, which produces many zeroes for a nontrivial fraction. The tobit model takes the same variables as the probit model:

$$Y = \alpha + \beta L_d + \delta X + \gamma Z + e \qquad (4)$$
$$H = \vartheta + \pi L_d + \rho X + \varphi Z + \mu \qquad (5)$$

In model (4), *Y* takes 1 for child labour and 0 otherwise. $\alpha$ is a constant term, and $\beta$ is the most focused coefficient that reveals the effect of agricultural land dummy $L_d$) on child labour likelihood. $\delta$ and $\gamma$ are the coefficients of other controlled variables, while $e$ is the error term representing remainders excluded from the models. The agricultural land dummy $L_d$) is1 for landless and 0 for land-holding households. *X* is child characteristics of age, sex and school completion. Household characteristics *Z* include age, marital status, sex, education and occupation of household head, household members by age group, household's ethnic background, region and wealth quintile dummy.

In (5), *H* is child working hours, and $\vartheta$ is a constant term. $\pi$ is the main coefficient showing the effect of $L_d$ on child working hours, while $\rho$ and $\varphi$ are the coefficients of other controlled variables. $\mu$ is a disturbance term. $L_d$, *X* and *Z* are the same as in model (4).

7 According to Kim (2009), economic activities are productive activities, for market or not, paid or unpaid, legal or illegal, and excluding household chores done in the child's own house.

Besides models (4) and (5), the study also explores the interaction between variables, especially between land and wealth quintile, and land and consumption quintile. The variables are described in more detail in Appendix 4.

The study checks the correlation coefficients to avoid approximate linear relationship between variables, and to partly prove the robustness of the model. Most of the coefficients in both models are smaller than 0.5, so the problem of multicolinearity can be ignored (Appendices 1 and 2).

### 3.2. Qualitative Method

The quantitative approach enables only quantifying the relationship between landlessness and child labour including working status and educational attainment (research questions #1 and #2). The study therefore used a qualitative approach to understand the nuances of the relationship, including how household decision makers decide to put their children into the labour market, the perception of the children (boy vs. girl) on their role in family livelihood and how their perception is influenced by household decision makers (research questions #3 and #4). Two qualitative methods were used: in-depth interviews were employed to collect information on individual histories, perspectives and experiences, while focus groups gathered broader opinions on issues. Given the nature of the research questions, the study used in-depth interviews to capture the perceptions of children on supporting their family, the differences of that perception between boys and girls and the differences between children belonging to landless and land-holding households in terms of working status and educational attainment. Focus groups addressed these questions and also discussed perceived differences between boys' and girls' roles in the family livelihood, the decision maker in putting children into the labour market and adult general view on how to reduce child labour from both household and national perspectives.

The FGDs and in-depth interviews do not represent the overall view of Cambodian adults and children but of the participants in selected villages. Several interview guides were developed based on the research questions and literature. The guides were divided into two for landless and land-holding groups. The study included households both with and without child labour in each FGD but differentiated the groups by landlessness and landholding.

A research team with two more experienced enumerators conducted the interviews. All the interviewers got together for a few days in order to develop a deeper understanding on the nature of the questions, the particular group of interviewees and the purpose of the study. The team was divided into FGD and in-depth interview groups. Each group consisted of two researchers: a moderator and a note taker. The team worked interchangeably. During the fieldwork, the interviewees were purposively selected with the intention of having both men and women participating equally in accordance with the criteria set by the research team (Appendix 3) and with the guidance of the village chief. However, there was a major challenge to recruit participants for the land-holding group because they did not have time for the interview, which took around an hour. The research team synthesised and categorised the information under different themes for each question and took note of powerful quotes using Microsoft Word.

### 3.3. Data

The quantitative analysis is drawn from the national representative household survey data i.e. Cambodia Socio-Economic Survey (CSES) conducted by the National Institute of Statistics (NIS) during 2004-11[8] (Table 4). The sample sizes in 2004 and 2009 were almost the same and about three times those in 2007, 2008, 2010 and 2011. However, the sampling frame for 2004 was slightly different from that of 2009. The 2004 survey was based on the 1998 population census and that of the 2009 survey on the 2008 census. Also, the samples for 2007 and 2008 were sub-samples of 2004 and those of 2010 and 2011 sub-samples of 2009 since only half of the villages and one-third of the households were interviewed. Therefore, a simple comparison of indicators across all survey rounds should be done with caution.

**Table 4: Sample Size of Households in CSES Surveys**

| | 2004 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|
| Phnom Penh | 1116 | 737 | 729 | 1113 | 744 | 747 |
| Other urban | 1710 | 628 | 626 | 1332 | 640 | 638 |
| Other rural | 9159 | 2228 | 2193 | 9526 | 2208 | 2207 |
| Total | 11,985 | 3593 | 3548 | 11,971 | 3592 | 3592 |

Source: CSES 2004-11

The survey data sets contain detailed information on household member characteristics such as age, sex, marital status, ethnic group, educational attainment, health care seeking and expenditure, economic activities, housing condition, household consumption, agricultural landholding and durable assets. To a great extent, this information could be used to define child labour, child working status, child educational attainment and agricultural landless households for the study. Given the durable assets, housing condition and agricultural landholding, the study was also enabled to construct a wealth index that aggregated those indicators into a single variable and then categorise the sample households into five groups –the first quintile represents the poorest households and the fifth the richest.

The qualitative analysis is primarily based on the fieldwork conducted in the five selected provinces from 14 August to 1 September 2014. In each province, two villages were chosen based on their historic or current land conflicts, which were largely due to economic land concessions or land grabbing. In each village, two focus group discussions, three in-depth interviews and one key informant interview were conducted.[9] This yielded four focus groups, six in-depth interviews and two key informant interviews per province. To identify respondents, the study team initially consulted with the village chief to categorise all households within the village into four groups: IDPoor[10] households with agricultural land, IDPoor households without

8 The NIS conducted the CSES survey once in 2004 and not again until 2007. It has done the survey every year since then.

9 Key informant interviews were mainly conducted with the village chief to have an overview of the village situation and to learn about the local authorities' perceptions of the livelihood of the villagers.

10 The Identification of Poor Households (IDPoor) programme is led by the Ministry of Planning with the collaboration of the Ministry of the Interior with financial support of Germany, European Union, AusAID, UNICEF, and the government of Cambodia with technical assistance of Deutsche Gessellschaft Fűr Internationale

agricultural land, Non-IDPoor households with agricultural land and Non-IDPoor households without agricultural land. Then the study team decided which particular group within the village would be involved in a focus group discussion. Once the particular group had been interviewed, a different group was selected for the following interview and the process continued in the following villages. The study team also discussed further with the selected household representatives to identify children aged 5-14 years who formerly or currently worked in economic activities for in-depth interviews. In addition, the study team identified the participants in the FGD whose life history would be explored in detail. This was to look into the effects of agricultural landlessness on their livelihoods, including the cause of child labour.

## 4. Descriptive Statistics

### 4.1. Landlessness

Agricultural landless households amount to 28 percent of the total in Cambodia during 2004-11 (Table 5). Agricultural land-holding households own around 1.6 hectare per household with a declining trend in the last two years. More precisely, agricultural land-holding households with less than 1 hectare are the largest group – 47 percent. There was no confirmation as to whether farmers could fulfil their basic needs from less than a hectare of farmland, because this would depend on household size.

**Table 5: Landless and Land-Holding Households (%)***

| | 2004 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|
| Agricultural landless | 27 | 27 | 29 | 28 | 28 | 29 |
| Agricultural land less than 1 ha | 47 | 46 | 46 | 47 | 48 | 47 |
| Agricultural land 1-2 ha | 30 | 31 | 29 | 28 | 27 | 28 |
| Agricultural land 2-3 ha | 12 | 11 | 12 | 11 | 12 | 13 |
| Agricultural land larger than 3 ha | 10 | 12 | 12 | 14 | 12 | 12 |
| Agricultural land per household (ha) | 1.57 | 1.68 | 1.51 | 1.76 | 1.52 | 1.45 |

*Sampling weight is applied.
Source: Authors' calculations

The limitation of CSES is that it contains little data on the reasons for landlessness. The 2014 CDRI survey of 1183 households in 11 rural villages in nine provinces—Battambang, Kompong Thom, Kratie, Kampot, Kandal, Prey Veng, Kompong Speu, Preah Sihanouk and Preah Vihear—found that the largest number of landless households "had never had land". Other reasons were selling land, giving it to children, moving from other place and "land grabbing" (Table 6).

**Table 6: Reasons of Agricultural Landlessness, 2001-14 (%)**

| | 2001 | 2004 | 2008 | 2011 | 2014 |
|---|---|---|---|---|---|
| Sold it | 18.3 | 34.7 | 19.1 | 37.5 | 30.7 |
| Given all to children | 7.5 | 2.4 | 2.1 | 3.9 | 6.8 |

Zusammenarbeit (GIZ). The purpose is to identify the individual poorest households in order to target services and development assistance. Several variables including housing condition, productive land area and tools for earning income, animal raising, electronic and durable assets, means of transportation, accessing to rice and ratio of dependency are scored to determine household poverty level, also considering shock or crisis effects on households.

| | | | | | |
|---|---|---|---|---|---|
| Never had land | 39.2 | 50.6 | 72.5 | 44.5 | 56.8 |
| Displacement | 33.9 | 12.4 | 5.9 | 12.9 | 4.5 |
| Grabbed by others | 1.1 | 0.0 | 0.4 | 1.2 | 1.1 |
| **Total landless households** | **186** | **170** | **236** | **256** | **264** |

Source: CDRI survey data of the "Inclusive Growth Project" in 11 rural villages, 2001-14.

Landless households were concentrated in urban areas (63 percent of the total), while 89 percent of land-holding households were in rural areas, according to the CSES samples between 2004 and 2011. Landless households seem to have heads with a higher educational level and to be wealthier than land-holding households (Table 7). In addition, landless households are often headed by females and more likely to be engaged in services than land-holding households. To identify the characteristics of landless households, the paper employed a probit model to regress a landless dummy on a set of household head characteristics (age, marital status, gender and occupation), household wealth (wealth index or consumption per capita) and regional dummies (plain, Tonle Sap, coastal, plateau and mountain and rural). Holding other factors constant, landless households were negatively associated with household size, age of household head, gender of household head and educational attainment of household head.

**Table 7: Characteristics of Landless and Land-Holding Households, 2004-11**

| | **2004** | | **2009** | | **2011** | |
|---|---|---|---|---|---|---|
| | **Landless** | **Land** | **Landless** | **Land** | **Landless** | **Land** |
| Household size | 5 | 5 | 5 | 5 | 4 | 5 |
| Age of hhh (years) | 45 | 45 | 45 | 46 | 46 | 47 |
| Male hhh (%) | 73 | 80 | 74 | 80 | 73 | 79 |
| Married hhh (%) | 75 | 81 | 74 | 81 | 73 | 80 |
| No schooling hhh (%) | 25 | 31 | 20 | 26 | 12 | 21 |
| Incomplete primary education hhh (%) | 36 | 45 | 37 | 47 | 35 | 49 |
| Completed primary education-hhh (%) | 23 | 19 | 23 | 19 | 25 | 21 |
| Attending lower secondary school-hhh (%) | 10 | 4 | 13 | 6 | 16 | 7 |
| Attending upper secondary school-hhh (%) | 3 | 1 | 1 | 1 | 4 | 1 |
| Attending technical training-hhh (%) | 2 | 1 | 1 | 0 | 1 | 1 |
| Attending university-hhh (%) | 2 | 0 | 4 | 0 | 7 | 1 |
| HHH works in agriculture (%) | 16 | 63 | 19 | 66 | 11 | 64 |
| HHH works in industry (%) | 13 | 9 | 15 | 10 | 13 | 10 |
| HHH works in service (%) | 56 | 17 | 51 | 16 | 61 | 18 |
| Wealth index | 1.02 | -0.27 | 1.94 | 0.75 | 2.96 | 1.3 |
| Per capita food consumption (riels per day) | 2420 | 1632 | 5313 | 3781 | 6306 | 3898 |
| Per capita non-food consumption (riels per day) | 1635 | 837 | 4162 | 2606 | 5098 | 2876 |
| Households in Phnom Penh (%) | 29 | 1 | 28 | 2 | 47 | 3 |
| Households in plain area (%) | 29 | 49 | 31 | 46 | 20 | 45 |
| Households in Tonle Sap area (%) | 28 | 31 | 30 | 32 | 25 | 31 |
| Households in coastal zone (%) | 7 | 8 | 5 | 8 | 4 | 9 |
| Households in plateau and mountain area (%) | 7 | 11 | 6 | 13 | 4 | 12 |
| **Total sample** | **3575** | **8394** | **3467** | **8504** | **1447** | **2145** |

*Note: HHH or hhh is household head; the higher the wealth index, the richer the household.
Source: Authors' calculation

### 4.2. Child Labour Prevalence

Children become supplementary earning sources at times of shock and crisis. Table 8 shows that the proportion of child labour was higher in rural than in urban households during 2004-11. Among working children, 10 percent did not attend school but only worked, 80 percent combined work and schooling, and 10 percent did not respond. The proportion of children only working was higher in landless (18 percent) than in land-holding households (9.0 percent).

**Table 8: Child Labour by Region, 2004-11**

| | 2004 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|
| **Children aged 5-14** | **15,603** | **4024** | **3632** | **12674** | **3348** | **3287** |
| Phnom Penh | 1107 | 634 | 583 | 884 | 533 | 513 |
| Other urban | 2178 | 743 | 652 | 1286 | 579 | 599 |
| Rural | 2318 | 2647 | 2397 | 10,504 | 2236 | 2175 |
| **Percentage of child labour of each region** | | | | | | |
| **Total child labour** | **21.8** | **23.3** | **21.1** | **25.1** | **18.6** | **18.7** |
| Phnom Penh | 6.1 | 5.2 | 4.6 | 3.2 | 3.0 | 1.6 |
| Other urban | 15.8 | 14.3 | 14.4 | 11.0 | 9.0 | 9.0 |
| Rural | 24.3 | 30.2 | 27.0 | 28.6 | 24.8 | 25.4 |

Source: CSES, 2004-11

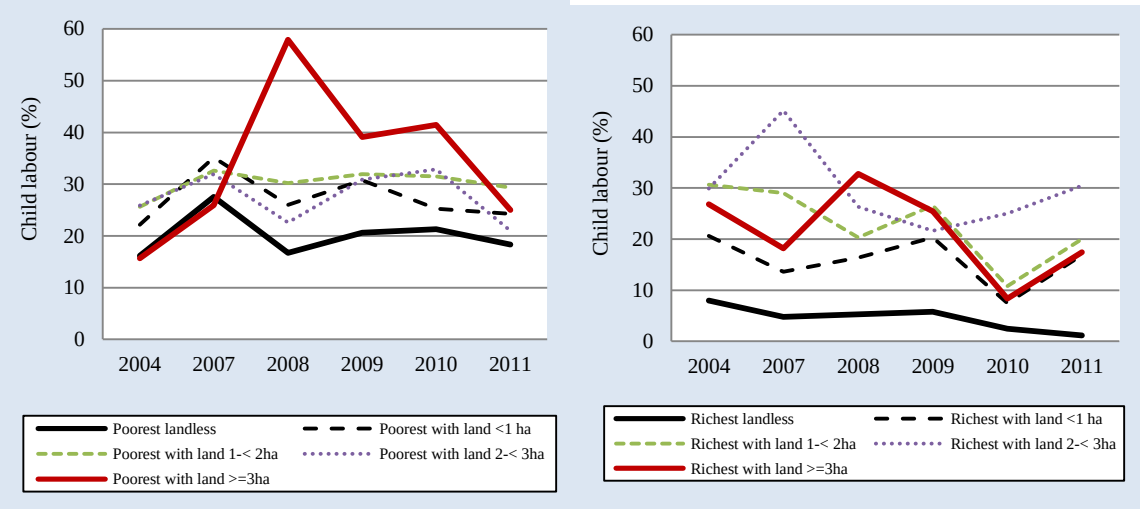
Among agrarian households, child participation in economic activities was more frequent in land-holding than in landless households. The more land held by a household, the more likely its children were to work. The incidence of child labour of households with at least a hectare of agricultural land was around 30 percent between 2004 and 2011. Child labour in landless households fluctuated around 19 percent (Table 9).This phenomenon was confirmed by the literature saying that poor landless households might not have enough means to involve their children in economic activities (Cain 1977; Bhalotra and Heady 2000). When the data set is broadened to include households in all occupations, the overall relationship remains the same: there is less child labour in the landless households (10 percent), while it 28 percent in the land-holding households. However, among landless families, child labour was more prevalent in poor than in rich families (Figure 1).

**Table 9: Incidence of Child Labour, by Land Size of Agrarian Households, 2004-11 (%)**

| | 2004 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|
| Landless household (land=0) | 18.9 | 20.0 | 17.1 | 19.1 | 18.3 | 20.7 |
| <1 ha | 25.9 | 29.7 | 26.4 | 29.0 | 24.7 | 23.9 |
| 1-2 ha | 29.6 | 34.6 | 33.0 | 34.1 | 25.4 | 30.1 |
| 2-3 ha | 30.3 | 39.4 | 26.8 | 29.6 | 31.0 | 28.4 |
| >=3 ha | 28.9 | 33.3 | 35.7 | 32.5 | 25.1 | 28.2 |

Source: CSES 2004-11

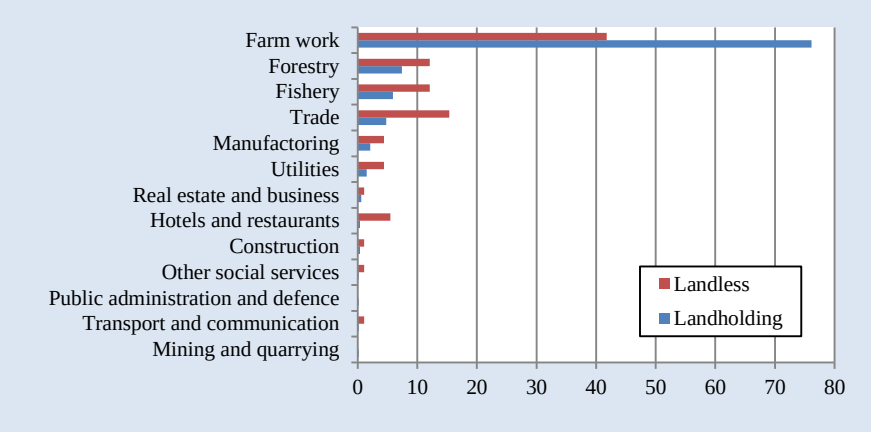
**Figure 1: Child Labour by Wealth and Land Quintiles, 2004-11**




Note: Only first and fifth wealth quintiles are presented here. There are more wealth quintiles shown in Appendix 5.
Source: CSES 2004-11

Children of both land-holding and landless households most commonly worked in unpaid family work. However, child labourers in landless households had a greater participation in paid employment outside the family. In 2011, only 5.7 percent of children of land-holding households worked as paid employees, compared to 27 percent of children from landless households. There was almost no change in this incidence after 2004. Girls from landless households had a smaller chance to be in paid employment than boys in 2011. Among all female children, 25 percent were in paid employment, while for boys the figure was 32 percent. Children from landless households were substantially employed in agriculture and trade. From land-holding households, the great majority of child labour was agricultural (Figure 2).

**Figure 2:Sectoral Distribution of Working Children, 2011**




Source: CSES 2011

Children generally started to work in paid employment at age 10, for at least eight hours/week. Children began unpaid family work around age 5, at a minimum of seven hours/week. Of child labour, girls accounted for 48 percent. Employed children of landless households were 53 percent female, and of land-holding households 47 percent female. The share of female

employment was similar from one year to another. Most child labourers combined school with work. Only 79 percent of child workers from landless households were still in school along with working, while 90 percent from land-holding households were. Children of the landless families tended to quit or to not attend school when they were able to work. On average, children of landless households worked 26 hours per week and earned KHR104,888/month.

The study found that majority of heads of landless households with working children did not finish primary education (Table 10). However, the education of landless household heads tended to be higher than that of the land-holding. The explanation for this is that most landless household heads strongly depended on work other than agriculture, requiring them to have more education. Among only agrarian households, the heads of landless households had less schooling.

**Table 10: Characteristics of Child Workers and Their Households, 2004-11**

| | Average 2004-11 | | | 2011 | | |
|---|---|---|---|---|---|---|
| | **All households** | **Land-holding** | **Landless** | **All households** | **Land-holding** | **Landless** |
| **Child labour characteristics** | | | | | | |
| Female child labour(% of total child labour) | 48.2 | 47.3 | 53.0 | 52.0 | 51.0 | 58.2 |
| Child age | 11.6 | 11.6 | 11.8 | 11.6 | 11.6 | 12.0 |
| Child education (average years) | 3.5 | 3.5 | 3.4 | 3.8 | 3.8 | 3.4 |
| Child currently in school (% of child labour) | 88.7 | 90.3 | 79.2 | 88.5 | 91.1 | 72.6 |
| Child working hours (per week-all occupations) | 25.9 | 26.0 | 25.6 | 24.8 | 24.6 | 26.5 |
| Child working days (per month-main occupation) | 20.9 | 21.0 | 20.0 | 20.1 | 20.2 | 19.7 |
| Child real earning (per month-main occupation) | 109,431.2 | 111,257.1 | 104,887.8 | 120,460.0 | 95,746.8 | 153,531.7 |
| Child labour(% of total children aged 5-14 year-old) | 23.7 | 27.7 | 12.1 | 22.0 | 25.7 | 10.8 |
| **Household characteristics** | **All households** | **Land-holding** | **Landless** | **All households** | **Land-holding** | **Landless** |
| Household size | 4.1 | 4.1 | 4.0 | 4.0 | 4.0 | 4.0 |
| Age of household head (hhh) | 44.7 | 44.7 | 44.5 | 45.4 | 45.6 | 44.0 |
| Education of hhh(% of total child labour households) | | | | | | |
| No formal schooling | 24.9 | 24.1 | 28.8 | 23.4 | 22.5 | 28.2 |
| Primary incomplete | 51.5 | 53.2 | 42.3 | 50.4 | 51.9 | 42.3 |
| Primary complete | 17.9 | 17.9 | 18.2 | 17.7 | 18.4 | 14.1 |
| Lower secondary | 4.7 | 4.1 | 8.0 | 6.9 | 5.7 | 12.8 |
| Upper secondary | 0.5 | 0.3 | 1.2 | 0.8 | 0.7 | 1.3 |
| Technical/vocational training | 0.4 | 0.3 | 0.6 | 0.8 | 0.7 | 1.3 |
| University | 0.2 | 0.0 | 1.1 | 0.0 | 0.0 | 0.0 |
| Household head works in agriculture (% of total child labour households) | 66.7 | 72.8 | 33.6 | 69.1 | 75.4 | 35.5 |
| Real household per capita expenditure (riels/day-2006 base year) | 3438.3 | 3381.0 | 3833.9 | 3748.0 | 3720.9 | 3930.6 |

Source: CSES, 2004-11, with population weight applied.

## 5. Empirical Results

### 5.1. Regression Models

Table 11 estimates the marginal effect of landlessness on child participation in economic activities. It shows in probit (1) and (2) that children in landless households are less likely to be involved in the labour market than those of land-holding households, which is consistent with the conclusion of Cain (1977) and Bhalotra and Heady (2000) as well as the result from descriptive statistics. Education of children and of the household head has a strong effect, indicated in the regression results that if the household head completed at least primary education, their children have less chance of being at work. A male household head also reduces the probability of child labour, as does the presence of adult family members of either gender. Male children are more likely to participate in economic activity than females. Children are more likely to work if they live in rural areas and in agrarian households, and especially if the household has many dependencies aged less than four. Other control variables did not show a statistically significant effect on child labour participation.

The study tried to look more into the interaction between wealth and land on child labour probability in probit (3) (Table 11). The result shows that households having no agricultural land are less likely to involve their children in work than land-holding households, regardless of how rich or poor they are. However, children in poor and landless households have a larger probability of working than those in rich and landless households. These results are consistent with the assumption that the poor are more likely to put their children to work than the rich.

**Table 11: Probit and Tobit Results of Landlessness and Child Labour Participation and Child Working Hours, 2004-11**

| | Child labour participation (marginal effect) | | | Child working hours | | |
|---|---|---|---|---|---|---|
| **Variables** | **Probit (1)** | **Probit (2)** | **Probit (3)** | **Tobit (1)** | **Tobit (2)** | **Tobit (3)** |
| Landlessness (1=no land, 0=have land) | -0.415*** | | | -10.640*** | | |
| Land < 1ha | | 0.345*** | | | 8.668*** | |
| Land 1-< 2ha | | 0.493*** | | | 12.440*** | |
| Land 2-< 3ha | | 0.441*** | | | 11.500*** | |
| Land >= 3ha | | 0.486*** | | | 13.070*** | |
| Poorest with land <1 ha (wealth) | | | 0.283*** | | | 6.820*** |
| Poorest with land 1-< 2ha (wealth) | | | 0.368*** | | | 9.259*** |
| Poorest with land 2-< 3ha (wealth) | | | 0.287*** | | | 7.393*** |
| Poorest with land >=3ha (wealth) | | | 0.436*** | | | 10.180*** |
| Poor landless (wealth) | | | -0.073 | | | -2.755** |
| Poor with land <1 ha (wealth) | | | 0.265*** | | | 6.094*** |
| Poor with land 1-< 2ha (wealth) | | | 0.381*** | | | 9.267*** |
| Poor with land 2-< 3ha (wealth) | | | 0.271*** | | | 6.792*** |
| Poor with land >=3ha (wealth) | | | 0.414*** | | | 10.070*** |
| Middle landless (wealth) | | | -0.265*** | | | -7.944*** |
| Middle with land <1 ha (wealth) | | | 0.183*** | | | 3.526*** |
| Middle with land 1-< 2ha (wealth) | | | 0.404*** | | | 9.020*** |
| Middle with land 2-< 3ha (wealth) | | | 0.339*** | | | 7.282*** |
| Middle with land >=3ha (wealth) | | | 0.369*** | | | 9.430*** |
| Rich landless (wealth) | | | -0.205*** | | | -6.839*** |
| Rich with land <1 ha (wealth) | | | 0.154*** | | | 2.542** |

| | | | | | | |
|---|---|---|---|---|---|---|
| Rich with land 1-< 2ha (wealth) | | | 0.314*** | | | 6.183*** |
| Rich with land 2-< 3ha (wealth) | | | 0.336*** | | | 8.334*** |
| Rich with land >=3ha (wealth) | | | 0.319*** | | | 8.197*** |
| Richest landless (wealth) | | | -0.255*** | | | -8.294*** |
| Richest with land <1 ha (wealth) | | | 0.111* | | | 0.318 |
| Richest with land 1-< 2ha (wealth) | | | 0.352*** | | | 7.166*** |
| Richest with land 2-< 3ha (wealth) | | | 0.334*** | | | 6.725*** |
| Richest with land >=3ha (wealth) | | | 0.271*** | | | 6.484*** |
| Children sex | 0.031** | 0.031** | 0.032** | 0.689* | 0.698* | 0.749* |
| Children education | -0.027*** | -0.027*** | -0.021*** | -0.945*** | -0.933*** | -0.722*** |
| Sex of household head (hhh) | -0.070** | -0.078** | -0.077** | -2.022** | -2.235** | -2.225** |
| Household member aged 0-4 | 0.056*** | 0.057*** | 0.056*** | 1.668*** | 1.663*** | 1.657*** |
| Male adult member | -0.082*** | -0.087*** | -0.080*** | -2.028*** | -2.166*** | -1.923*** |
| Female adult member | -0.028*** | -0.032*** | -0.026*** | -0.903*** | -1.050*** | -0.818*** |
| Complete primary education_hhh | -0.089*** | -0.087*** | -0.070*** | -2.923*** | -2.887*** | -2.282*** |
| Occupation of hhh (1=agriculture, 0=others) | 0.171*** | 0.159*** | 0.148*** | 5.136*** | 4.793*** | 4.369*** |
| Region | 0.308*** | 0.299*** | 0.278*** | 8.963*** | 8.711*** | 8.015*** |
| Constant | -6.223*** | -6.604*** | -6.443*** | -171.5*** | -180.7*** | -175.3*** |
| | | | | | | |
| **Observations** | **42,553** | **42,553** | **42,550** | **42,553** | **42,553** | **42,550** |
| **Pseudo R-squared** | **0.226** | **0.226** | **0.226** | **0.100** | **0.100** | **0.100** |

Note: The blank represents the excluded variables in each model (there are different land variables described in Appendix 4). More variables are included in the models in Appendices 5 and 6.
*** p<0.01, ** p<0.05, * p<0.1
The study compared Land<1, Land 1-<2ha, Land 2-<3 and Land>=3ha with No land; base group of wealth and land interaction was poorest landless.
Source: CSES, 2004-11

Table 11 shows further the effect of landlessness on child working hours. It indicates a result similar to that of the effect on children's participation in work. Tobit (1) and (2) reveal that children in landless households work 10 fewer hours per week than those in land-holding ones at a very significant level, while education and adult members in the family reduce child labour. Children in poor and landless households (tobit 3) tend to work more than those in rich and landless households. Children of households that have agricultural land, even if less than a hectare and regardless of whether they are poor or rich, are more likely to work more hours than the children of landless households.

The poverty level is determined by the consumption as well as wealth index. The study also examined the interaction between consumption and land on child participation in economic activities and child working hours. These new regressions give similar signs to the regression on the interaction between wealth and land quintiles, though the effects might be slightly different (probit (4) and tobit (4) in Appendices 6 and 7).

### 5.2. Key Findings from Qualitative Method

Ten villages from five provinces were selected for interviews. Six villages are located along a main road, while the other four are 3-12 km from the main road. The smallest village consists of 86 households, while the largest has 804. The landless households accounted for 8 to 33 percent. The villagers mainly work on their own rice and crop fields, and sell labour. The crops grown

depend on geography. In villages on the sea, fishing is an important income source besides farming and forestry. Approximately 70 percent of children in each village currently attend school, and about 20 percent of them work as day labourers. Only three villages have a local primary school, while in other villages, the closest school is at least 1.5 km distant. If the children in most of the villages want to continue to secondary or high school, they have to travel to the commune, district or provincial centre (7-72 km).

The findings are mainly compiled from FGDs. They do not present the whole picture of the relationship between landlessness and child labour in the country, but of selected provinces having landless poor households.

### 5.2.1. Importance of Agricultural Land

FGDs highlighted that land is crucial for household existence. Arable land can be used for farming rice or other crops for own consumption and sale. Land is a shelter for household members and an inheritance for the next generation. It can be sold or pawned during emergencies such as illness, or to establish or expand a business. Titled land can be collateral for loans from banks or MFIs.

"Agricultural land is very important. If we had land, our children would have been to school. They would not be working as day labourers, and we would not have migrated to work in neighbouring countries." (FGD in Ou Preah village, Kratie province, 24 August 2014)

### 5.2.2. Differences between Children in Landless and Land-Holding Households

Landless families' basic needs cannot be fulfilled if the households depend only on the parents. It would be even worse if the household head or any active members were sick and unable to work. Hence, shortages of adult labour push children to work. Also, because work opportunities are very limited in the village, parents and children have to work together when they have the chance. Members who are able to work help provide the family's livelihood or at least do housework to relieve the burden of earners. Among the interviewed villagers, some households take children from school once or twice per week to help meet their daily needs. Some children are willing to work because they do not like staying in school while there is no food at home or when they see their parents working ceaselessly.

"Our children choose to be uneducated to take care of younger siblings at home to free us for work … We pity them that they do not have a chance like others to go to school … but if they do not help out, we cannot have enough to feed them and the small children. We risk our lives for food; so do our children." (FGD in Kralanh village, Pursat province, 16 August 2014)

Children in landless households work primarily to get money for their parents to buy food, according to the FGDs. These children mainly sell labour on rice and cash crop fields. According to the FGDs and interviews, children work very hard so that they are not perceived as lazy by employers; otherwise there would be nothing to eat for the whole family. FGDs said that children accepted any type of work as long as they were paid daily—these children had little or no time for play. They are always ready for work and never tire or complain when working in sunlight or rain. They do not have much time to be with their parents. They do not get enough nutrition, while good clothes are impossible. Children tend to be absent from school more often (two or three days/week) because of working or because there is no food, proper school material or

transport. Some follow their parents to work elsewhere. Consequently, their schooling is not very successful. Some children repeat class, while others quit. The highest grade for them is mostly four to seven. When they are sick, their parents cannot afford to take them to formal medical treatment, so they practise traditional Khmer massage and other traditional medicine. The children are thin and pale or have chronic diseases.

"Our children dare not go into the shade … they would be seen as lazy and would not be hired again … Rice is in their field and cooking pot is in our house (we do whatever work is offered to get rice for our empty cooking pot). So we have to take all tasks and should not have any complaint." (FGD in Chrey Kroem village, Pursat province, 15 August 2014)

"Putting aside their school bags soon after school, our children go to collect wild vegetables, look after smaller siblings and help with housework … they do not have time to review lessons or anyone to guide them in reviewing because the oldies have never attended school." (FGD in Kralanh village, Pursat province, 16 August 2014)

FGDs said that the working conditions for children of land-holding families differ from landless families. Children of land-holding families (considered rich if they own five hectares or more) work mainly on their own farm and in family businesses when they are not in school. They can stay close to their parents, who guide their work. The family can hire others to do heavy or hazardous work (like fertilising or spraying pesticide). The motivation to work also differs between child labourers of land-holding and landless families. Children from wealthy land-holding families occasionally sell labour just to meet with friends or to save money for themselves. The rich children can choose whether to work or not because they will still have sufficient food and other necessities if they do not work. They do not need to worry about the future. Their parents plan for them or bequeath land to them, and having land is having everything. They have all means to go to school. In the opinion of FGDs, some rich children can go to grade 12 or university in the province because their parents can afford their accommodation, while some quit school once their parents engage them heavily in family businesses or when they do not see the value of education.

"Rich children get tired using their mouths, while the poor use their labour … they have never worked alone but have the poor as companion or helper … if they want anything, they get it quickly." (FGD in Kralanh village, Pursat province, 16 August 2014)

"Children of the rich eat fish from the market, while the poor go fishing to eat and sell …" (FGD in Daun Mea village, Kratie province, 26 August 2014)

### 5.2.3. Decisions on Children's Role in Family Livelihood

For children, parents are the most powerful persons within the family, followed by older siblings and grandparents. They decide children's responsibility for work; otherwise children would not do anything but play. Though sometimes children are given a chance to choose what to do, they still consult with parents beforehand. Some children learn their tasks without instruction by observing the activities of other family members.

In most cases, children of land-holding households were busy with simple tasks on their own fields. If their family had enough adults to work on the field, children stayed at home to help

with housework, raise livestock or poultry and take care of younger siblings. They sometimes went hunting with their elders. Their parents were less likely allow them to sell labour and kept them in school. Children could go out to work for their personal expenses after finishing their farm work if they wished.

According to FGDs, children of families who have lost their land are keenly aware of their circumstances. After losing agricultural land, the family had no more own production. Livestock and poultry were sold to provide daily food. Children became more thoughtful, understanding hardship and poverty in the house. They then started to get involved in producing livelihoods. They had no more field to rely on but had to sell their labour to support their parents and younger siblings. They did not need to be forced to work because hunger pushed them to do everything they were able to. Children would not stay at home even if their parents wished them to but went out to earn when they had the chance. Still, they lived from hand to mouth because they were not able to find good jobs because they are too young for legal employment and do not have skills or education.

"We used to have at least enough to eat but now we are destitute … our children can't concentrate on study … they are ashamed before their classmates due to not having pocket money, good clothes or proper school materials … they are worried about not having food at home … they feel stupid among their friends." (FGD in Chhuk village, Koh Kong province, 31 August 2014)

"Little children do not go to school regularly because the school is located far from the village (primary school is 3 km away), and we do not have transportation for them. Frequently, when the landlord hires them to work a half day for 4000 riels, they decide to skip class and work to get money for their parents." (FGD in Tuol Kokir village, Koh Kong province, 30 August, 2014)

### 5.2.4. Boys' and Girls' Perceptions of Their Roles in Family Livelihood

According to FGDs and interviews, children expect that boys will follow their father's work, which is mostly heavy work using force: cutting forest and cane, digging up cassava, ploughing, collecting fodder, cutting bamboo, spraying pesticides and herbicides, fertilising, fishing, carrying water, chopping firewood, making charcoal, digging holes, carrying heavy loads, loading and unloading agricultural products, driving a hand-tractor or ox-cart, using dangerous utensils (axe, saw, machete), slaughtering livestock, hunting and construction. These tasks have more risks. Boys can do most of the things, but would not choose to do housework. They think housework is for girls. They have their work and can go far from home, including overnight.

Girls are seen as weak and easily scared, according to FGDs and interviews. They are suited to take their mother's tasks, considered as mostly light work such as baby sitting, cutting and drying cassava, growing cassava, transplanting, clearing grass, collecting fodder, embroidering pillows, weaving mats, making and repairing nets, digging sweet potatoes, collecting wild vegetables and firewood around the house, cleaning, cooking, carrying water and feeding livestock and poultry. The girls have to learn "female" household chores from their parents or their grandmother. If they go to the forest, they have to go with relatives or someone their family knows well, for safety. The girls rarely go hunting because they are not interested and have never been taught. Girls should not play like boys, and they should act properly, especially with their tasks at home.

"I already quit school at grade 4 … my father died, and I had to work to help my two older brothers to earn money … my mother is old and I have to help with cooking, cleaning and washing if I am free from wage work … I wash my brothers' clothes … they work harder so they earn more than me ... children get lower pay than adults, and girls get less than boys … girls do light work and work more slowly than boys … Mother said I am a girl; I have to learn housework even though I can earn." (In-depth interview with a 14-year-old girl in Daun Mea village, Kratie province, 26 August 2014)

Parents, adults and elders in the family are the most influential on children's work and lives in the community. They are the role models for children. Some children can observe what is done in the family and do it by themselves. It becomes a family custom, and children have the responsibility to respond. They know what girls and boys should do in the family. However, not all children can learn their roles by themselves; they are taught, especially by their mother or grandmother.

"No one told me what to do … they are too busy to teach me … no one taught my older brothers and sisters to work but they observed my parents, and I follow them ... we learn by seeing … later we get used to the work." (In-depth interview with a 12-year-old girl in Prey Veng village, Oddar Meanchey province, 18 August 2014)

To sum up the quantitative and qualitative results of this study, child labour is observed in land-holding families more than in landless ones. Land-holding households tend to use their family labour in their own farm work or family business, while hiring outsiders for heavy or unproductive work such as housework. However, among the landless, the poor engage their children in economic activities more than the rich. The poor have few means to earn. Consequently, their family members, including children, have to seize every opportunity, with minimal concern for severe conditions or risk or distance of work. Children tend to quit school for work. However, economic opportunities for the landless poor in rural areas, mostly seasonal work, seem to be limited. Therefore, not many children of poor landless households are employed. The employed children, especially females, receive lower wages than adults, relating to their lighter and slower work. Nonetheless, little is better than nothing when adults cannot provide the family subsistence. If wages for adults were better, children would be kept in school or do housework to let adults earn. For the children in rich land-holding families, wage work is just to give them extra pocket money. They are less likely to be allowed to sell labour to others. Their parents would prefer them to focus on their schooling and family business or farm.

Case Study 1: Fourteen-Year-Old Child Labourer from Landless Household

The 14-year-old boy in Kralanh village, Pursat province, is the youngest son in a family of four. His parents became seriously ill a year ago. Only his older sister and he work for subsistence and to buy medicine. The boy both studies in grade six and sells labour in a cassava field 10 km from the village.

The boy started work at age 13, when his farmland was grabbed and his parents fell sick at the same time. If he works in a nearby field, he has to be absent from school one or two days per

week, using the excuse of taking care of his sick parents. On his vacation, he goes with his aunt to work and sleeps at the farm. He comes home once every half month. The boy works eight hours a day and is paid 10,000 to 15,000 riels/day. He needs to work like an adult or he would not be employed.

Because of his hard and heavy work, the boy just wants to do nothing. He feels tired after lifting and carrying cassava in the sun. He has to do whatever the owner requires of him. Sometimes he is allowed almost no rest. He does not eat properly or sleep well due to being too exhausted after work. The boy can go to school and rest when his one-day wage lasts him for three to four days.

Case Study 2: Fifteen-Year-Old Child Labourer from a Landless Household

The 15-year-old boy lives with his mentally ill older brother and an old grandmother in Pursat province. His parents died of HIV/AIDs when he was 4 years old, and he is infected. He earns his own living with help from his great-aunt. The boy quit school in grade nine because he had no means to go to school and had to work. He works as a day labourer, mostly in cassava fields. He spends everything he earns.

The boy began to work at age 13 when his grandmother contracted Alzheimer's. Just like adults in the village, he works in the cassava field for eight hours/day and is paid 12,000-15,000 riels. He is able to do everything that other male villagers do despite his illness, such as spraying pesticides and herbicides, fertilising, digging, cutting and carrying cassava and carrying water. However, he cannot transplant rice because his legs (affected by AIDs) do not allow him to move back and forth easily. If he cannot find work, he borrows money from his great-aunt and works on her farm to repay it.

Being the only breadwinner, the boy has to work hard and fight his chronic illness at the same time. Also, exposure to sunlight and chemicals that he works with make him itch and be short of breath at night. Sometimes, his legs are so swollen and painful from heavy work and the virus that he cannot do anything.

Case Study 3: History of Mrs. Sun Nan (Family Remains Poor)

Mrs. Sun Nan lives in Kralanh village, Pursat. She was born in 1979, the third of five children of a poor family living in a hut. At 12 years old, Nan started selling her labour for farm work after her father left with a new wife. She did not go to school after grade three. Nan could not support her family with her wages from farm work, so when she was 22 she travelled to Phnom Penh to work as a maid for 50,000 riels a month.

In 2007, Nan and her husband squatted on seven hectares of forest land but were able to clear and transform into farmland only two hectares. They grew rice and raised poultry, making enough money even to help their siblings. Nan's family lived happily until 2009, when, to please her husband, they sold their farmland for USD1200 to run a battery recharging business

requiring USD1400. The family got a loan for the business, but it did not make any profit. Her husband went drinking and spending with friends. Nan's family was becoming worse off. Nan decided to migrate to Malaysia to work as a domestic and was paid USD196 per month. She travelled back home at her own expense at age 31 after learning her husband had left her. She married a man in the same village in the same year, expecting a better life. They split up after two years and the arrival of another baby. During that time, the oldest kid stopped studying to help her earn money. Since then she and her daughter have worked for their living and to feed the two boys.

When her daughter was 11 years old, she stopped going school in grade 3 to get jobs. She sold labour wherever she could, such as in rice, cassava and maize fields or cutting wood in the forest (with adults). It was a heavy task and in the sun for this little girl, who worked just like an adult. Yet she had to help her single mother raise her small siblings. The girl worked seven days/week and eight hours/day with a rest of half an hour at lunch time. She was paid 15,000 riels/day. Nan relied on her daughter for her family's livelihood and looked after the smaller children.

Case Study 4: History of Mrs. Sam Sokum (Family Becomes Better Off)

Mrs. Sam Sokum currently lives in Daun Mea village, Kratie province. She was born in Kompong Cham province in 1981 to a poor family having two hectares of rice field, and her mother made Khmer noodles for sale. In 1991, Sokum was sent to work as a maid in Phnom Penh. Fortunately, she was sent to school like the children of the house owner. In grade 6 in 1998, Sokum stopped working and schooling to take care of her sick mother and rice field in her village.

Two years later, Sokum married a man from Kompong Cham who inherited five hectares of rubber plantation. She became a housewife and helped her husband work on the rubber plantation. She had her first baby in 2002. Her family's livelihood declined because of a dispute about the land between her husband and his siblings. In 2005, the rubber fields were taken by the siblings because her family lost the suit. They had borrowed USD1500 because the lawsuit over the land had taken three years to conclude.

Having lost all their land, Sokum's family went to live with her mother. They started to make Khmer noodles for sale in 2007, and her first son went to school. When things didn't improve, the family came to Daun Mea in 2010. They lived with Sokum's aunt for more than a year, selling labour on a rubber plantation. Sokum's husband did whatever he could to support the family and save to repay their debt. They finally repaid the debt and bought 0.16 hectare of farmland in the village. They support their two children's schooling by selling labour and farming their rice field with some help from the oldest child.

The oldest boy, aged 11, just started to sell labour in a rubber plantation with his parents in grade 6 only when he was not in school. With help from his parents, the boy's work was not so difficult and heavy. However, he did not have time to play like other kids.

## 6. Conclusion

Landlessness and child labour are interrelated in agrarian households. This paper examined the effects of landlessness on child labour from the econometric perspective and perception-based analysis. It used probit and tobit models to explore the likelihood of child labour and the effects of landlessness on working hours, while the perception study was based on information from FGDs and in-depth interviews with working children and their household heads. The results indicate that children in landless households are less likely to participate in work than those of land-holding households, which is consistent with the descriptive statistics as well as the results of Cain (1977) and Bhalotra and Heady (2000), based on the limited opportunity for children to be employed in rural seasonal work and an inability to work elsewhere. However, 26 percent more of children of poor landless households participate in work than those of rich landless households. The results are the same for child working hours: children of landless households work 10 hours per week less than those of land-holding households, but children of poor landless households work eight hours more than those of rich landless households. Factors that reduce child labour participation and their working hours are the education of household head and children themselves, living in a male-headed household and the presence of adults in the family. Factors contributing to an increase of child labour are being in an agrarian household, having many small children aged below 4 years and residing in a rural area.

Children in land-holding households mostly do simple tasks on their own farm under the supervision and protection of their parents. They are engaged in work to learn, to gain skills and to socialise in order to operate the family's farm or business in the future. If they sell labour, they mostly work for pocket money or just want to benefit from more productive opportunity especially to gain experience. Meanwhile, the children of poor landless families struggle for food and survival. They take any work offered that is more hazardous, heavier and longer than that of children in land-holding rich families. They are prone to health problems, abuse and trafficking if they move far from the village without going through a safe network. They face being withdrawn from or quitting school because of workload and not having enough means to attend.

To eliminate child labour in land-holding families, it is most important to introduce or make it possible for families to access the labour-saving technology that can replace child labour. Land-holding families should be guided to understand the long-term value of education. At the same time, the educational system should benefit families by educating children in practical skills that allow them to help their families' businesses or farms. Because children to a certain extent acquire skills and experience from productive work, they should be supported and given the chance to catch up with school. School programmes should be more flexible to keep child labourers in education. To solve the child labour problem of landless households, it would be important first to provide them basic food security, in which land and advice on farming would have a substantial role. It would be enough if landless households received one to five hectares of productive farmland according to household size. Promoting income generation for adults via training in skills like tailoring and making and preserving food or cakes and sweets would help ensure a family's living. Moreover, children's education would be less of a burden for landless families if they were provided school meals, materials, school uniforms and transport to school.

**References**


Andvig, Christopher Jens. 2001. *Family-Controlled Child Labour in Sub-Saharan Africa: A Survey of Research.* Washington, DC: World Bank.

Bass, Elizabeth Loretta. 2004. *Child Labour in Sub-Saharan Africa.* Boulder, CO: Lynne Reinner.

Basu, Kaushik and Pham Hoang Van. 1998. "The Economics of Child Labour." *American Economic Review* 88(3): 412-427.

Bhalotra, Sonia. 2000. *Is Child Work Necessary?* London: Suntory Centre.

Bhalotra, Sonia and Christopher Heady. 2000.*Child Farm Labour: Theory and Evidence.* London: Suntory Centre.

Bhalotra, Sonia and Christopher Heady. 2003. "Child Farm Labour: The Wealth Paradox." *World Bank Economic Review* 17(2): 197-227.

Cain, T. Mead. 1977. "The Economic Activities of Children in a Village in Bangladesh." *Population and Development Review* 3(3): 201-227.

Chan, Sophal and Sarthi Acharya. 2002. *Land Transactions in Cambodia: An Analysis of Transfers and Transaction Records.* Working Paper No. 22. Phnom Penh: CDRI.

Chan, Sophal, Tep Saravy and Sarthi Acharya. 2001. *Land Tenure in Cambodia: A Data Update.* Working Paper No. 19. Phnom Penh: CDRI.

Cigno, Alessandro, Furio Camillo Rosati and Zafiris Tzannatos. 2001. *Child Labour, Nutrition and Education in Rural India: An Economic Analysis of Parental Choice and Policy Options.* World Bank Social Protection Discussion Paper. Washington, DC: World Bank.

Cockburn, John. 2000. "Child Labour Versus Education: Poverty Constraints or Income Opportunities?" Oxford: Centre for the Study of African Economies and Nuffield College.

Edmonds, V. Eric. 2008. *Defining Child Labour: A Review of the Definitions of Child Labour in Policy Research.* Geneva: ILO.

Emerson, M. Patric and Andre Portela Souza. 2003. *Is There a Child Labour Trap? Intergenerational Persistence of Child Labour in Brazil.* Working Paper 02-W14. Nashville: Department of Economics, Vanderbilt University.

International Labour Organization. 2002. *Eliminating the Worst Forms of Child Labour: A Practical Guide to ILO Convention No. 182*. Handbook for Parliamentarians No. 3. Geneva: ILO.

Irdan, Mohammad and Ghulam Mohammad Arif. 1988. "Landlessness in Rural Areas of Pakistan and Policy Options: A Preliminary Investigation." *Pakistan Development Review* 27(4): 567-576.

Khalid, Umer and Lubna Shahnaz. n.d. "Socio Economic Conditions of Child Labourers in Pakistan: Evidence from the Labour Force Survey." *Labore Journal of Economics* 9(1): 85-105.

Khan, Himayatullah. n.d. "Child Labour in Pakistan and Other Developing Countries." *Revista Tinerilor Economisti* 1(8): 121-132.

Kim, Chae-Young. 2009. "Is Combining Child Labour and School Education the Right Approach? Investigating the Cambodian Case." *International Journal of Educational Development* 29: 30-38.

Lawson, David, Andy McKay and John Okidi. 2003. *Poverty Persistence and Transitions in Uganda: A Combined Qualitative and Quantitative Analysis.* Manchester: University of Manchester.

Medina, T. Cecillia. 1992. "Landlessness in a Village in Pampanga: Implications for Policy Reforms in Agrarian Communities." *Philippine Social Sciences Review* 1(1-4): 189-212.

Ministry of Planning. 2012. "2012 Annual Progress Report." (Phnom Penh: Cambodia)

Nayenga, Nabbumba Rosetti. 2003. *Landlessness amidst Abundance?* Kampala: Ministry of Finance, Planning and Economic Development.

National Institute of Statistics and International Labour Organization. 2013. *Cambodia Labour Force and Child Labour Survey 2012: Child Labour Report.* ILO International Programme on the Elimination of Child Labour and National Institute of Statistics.

National Institute of Statistics. "Cambodia Socio-Economic Survey (2004, 2007-2011)." Unpublished data.

Pel, Sokha, Pierre-Yves Le Meur, Sam Vitou, Laing Lan, Pel Setha, Hay Leakhen and Im Sothy. 2008. *Land Transactions in Rural Cambodia: A Synthesis of Findings from Research on Appropriation and Derived Rights to Land.* Coll. Etudes et Travaux. Serie en Ligne. No 18. Editions du Gret. www.gret.org. May 2008. 249p.

Phoumin, Han and Seiichi Fukui. 2006. *Hours Supplied of Cambodian Child Labour and School Enrolment: Simple Theoretical and Empirical Evidence for Policy Implications.* GSICS Working Paper No. 5. Kobe, Japan: Kobe University.

Phoumin, Han, Fukui Seiichi and Miwa Kana. 2008. *Testing the 'Wealth Paradox' on the Incidence of Child Labour: A Case Study in Cambodia.* Kobe, Japan: Kobe University.

Schneider, Elizabeth Alison. 2011. *What Shall We Do Without Our Land? Land Grabs and Resistance in Rural Cambodia*. Brighton and Hove: University of Sussex.

Sharma, Shiva. n.d. "Land Tenure and Poverty in Nepal." (MIMAP: Nepal)

Siddiqui, A.B. 2012. "An Analytical Study of Child Labour—An Exploitation and Not Employment." *International Journal of Advanced Research in Management and Social Sciences* 1(3).

## Appendices

## Appendix 1: Correlation Result of Model (1)

| | Model (1) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Child labour participation** | 1.00 | | | | | | | | | | | | | | | | | | | |
| 2 | **Landlessness** | -0.18 | 1.00 | | | | | | | | | | | | | | | | | | |
| 3 | **Children sex** | 0.01 | 0.01 | 1.00 | | | | | | | | | | | | | | | | | |
| 4 | **Children ages** | 0.37 | 0.00 | 0.00 | 1.00 | | | | | | | | | | | | | | | | |
| 5 | **Square children ages** | 0.36 | 0.00 | 0.00 | 0.99 | 1.00 | | | | | | | | | | | | | | | |
| 6 | **Children ethnicity** | -0.01 | -0.03 | 0.01 | 0.00 | 0.00 | 1.00 | | | | | | | | | | | | | | |
| 7 | **Children education** | 0.21 | 0.08 | -0.03 | 0.74 | 0.75 | 0.05 | 1.00 | | | | | | | | | | | | | |
| 8 | **Sex of hhh** | -0.02 | -0.10 | 0.00 | -0.04 | -0.04 | 0.00 | -0.01 | 1.00 | | | | | | | | | | | | |
| 9 | **Age of hhh** | 0.05 | 0.04 | 0.01 | 0.20 | 0.20 | 0.00 | 0.17 | -0.18 | 1.00 | | | | | | | | | | | |
| 10 | **Marital status of hhh** | -0.02 | -0.10 | -0.01 | -0.05 | -0.05 | 0.00 | -0.02 | 0.81 | -0.25 | 1.00 | | | | | | | | | | |
| 11 | **Male adult member** | -0.01 | -0.02 | 0.00 | 0.11 | 0.11 | 0.00 | 0.09 | 0.24 | 0.20 | 0.24 | 1.00 | | | | | | | | | |
| 12 | **Female adult member** | 0.01 | 0.02 | 0.01 | 0.11 | 0.11 | 0.00 | 0.10 | -0.07 | 0.31 | -0.04 | 0.25 | 1.00 | | | | | | | | |
| 13 | **Incomplete primary education-hhh** | 0.05 | -0.10 | 0.00 | 0.01 | 0.01 | 0.02 | -0.02 | 0.04 | 0.00 | 0.04 | 0.05 | 0.03 | 1.00 | | | | | | | |
| 14 | **Complete primary education-hhh** | -0.04 | 0.05 | 0.00 | -0.01 | -0.01 | 0.05 | 0.08 | 0.11 | -0.08 | 0.11 | 0.00 | -0.04 | -0.47 | 1.00 | | | | | | |
| 15 | **Occupation of hhh** | 0.15 | -0.43 | 0.00 | -0.02 | -0.02 | -0.03 | -0.13 | 0.08 | -0.08 | 0.08 | 0.00 | -0.03 | 0.11 | -0.11 | 1.00 | | | | | |
| 16 | **region** | 0.18 | -0.50 | 0.00 | -0.02 | -0.02 | 0.01 | -0.16 | 0.05 | -0.08 | 0.05 | -0.05 | -0.08 | 0.11 | -0.07 | 0.38 | 1.00 | | | | |
| 17 | **consum_2nd quintile** | 0.04 | -0.12 | 0.00 | 0.00 | -0.01 | 0.00 | -0.04 | 0.02 | -0.01 | 0.02 | -0.01 | -0.02 | 0.05 | -0.01 | 0.11 | 0.13 | 1.00 | | | |
| 18 | **consum_3rd quintile** | 0.01 | -0.03 | 0.00 | 0.00 | 0.00 | -0.01 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | -0.01 | 0.03 | 0.01 | 0.00 | 0.02 | -0.27 | 1.00 | | |
| 19 | **consum_4th quintile** | -0.03 | 0.12 | 0.01 | 0.03 | 0.03 | 0.00 | 0.10 | 0.00 | 0.03 | -0.01 | 0.00 | 0.00 | -0.04 | 0.07 | -0.12 | -0.15 | -0.24 | -0.21 | 1.00 | |
| 20 | **consum_5th quintile** | -0.09 | 0.25 | -0.01 | 0.03 | 0.03 | 0.01 | 0.16 | 0.00 | 0.03 | 0.00 | 0.00 | 0.01 | -0.12 | 0.07 | -0.26 | -0.34 | -0.21 | -0.18 | -0.16 | 1.00 |

Source: Authors' calculations based on CSES 2004-11 (other variables also tested including household members by age groups, household head education, region zones and year)

## Appendix 2:Correlation Result of Model (2)

| | Model (2) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Child working hours | 1.00 | | | | | | | | | | | | | | | | | | | |
| 2 | Landlessness | -0.15 | 1.00 | | | | | | | | | | | | | | | | | | |
| 3 | Children sex | 0.01 | 0.01 | 1.00 | | | | | | | | | | | | | | | | | |
| 4 | Children ages | 0.39 | 0.00 | 0.00 | 1.00 | | | | | | | | | | | | | | | | |
| 5 | Square children ages | 0.39 | 0.00 | 0.00 | 0.99 | 1.00 | | | | | | | | | | | | | | | |
| 6 | Children ethnicity | -0.01 | -0.03 | 0.01 | 0.00 | 0.00 | 1.00 | | | | | | | | | | | | | | |
| 7 | Children education | 0.21 | 0.08 | -0.03 | 0.74 | 0.75 | 0.05 | 1.00 | | | | | | | | | | | | | |
| 8 | Sex of hhh | -0.03 | -0.10 | 0.00 | -0.04 | -0.04 | 0.00 | -0.01 | 1.00 | | | | | | | | | | | | |
| 9 | Age of hhh | 0.06 | 0.04 | 0.01 | 0.20 | 0.20 | 0.00 | 0.17 | -0.18 | 1.00 | | | | | | | | | | | |
| 10 | Marital status of hhh | -0.03 | -0.10 | -0.01 | -0.05 | -0.05 | 0.00 | -0.02 | 0.81 | -0.25 | 1.00 | | | | | | | | | | |
| 11 | Male adult member | 0.00 | -0.02 | 0.00 | 0.11 | 0.11 | 0.00 | 0.09 | 0.24 | 0.20 | 0.24 | 1.00 | | | | | | | | | |
| 12 | Female adult member | 0.02 | 0.02 | 0.01 | 0.11 | 0.11 | 0.00 | 0.10 | -0.07 | 0.31 | -0.04 | 0.25 | 1.00 | | | | | | | | |
| 13 | Incomplete primary education-hhh | 0.04 | -0.10 | 0.00 | 0.01 | 0.01 | 0.02 | -0.02 | 0.04 | 0.00 | 0.04 | 0.05 | 0.03 | 1.00 | | | | | | | |
| 14 | Complete primary education-hhh | -0.05 | 0.05 | 0.00 | -0.01 | -0.01 | 0.05 | 0.08 | 0.11 | -0.08 | 0.11 | 0.00 | -0.04 | -0.47 | 1.00 | | | | | | |
| 15 | Occupation of hhh | 0.14 | -0.43 | 0.00 | -0.02 | -0.02 | -0.03 | -0.13 | 0.08 | -0.08 | 0.08 | 0.00 | -0.03 | 0.11 | -0.11 | 1.00 | | | | | |
| 16 | region | 0.15 | -0.50 | 0.00 | -0.02 | -0.02 | 0.01 | -0.16 | 0.05 | -0.08 | 0.05 | -0.05 | -0.08 | 0.11 | -0.07 | 0.38 | 1.00 | | | | |
| 17 | consum_2nd quintile | 0.04 | -0.12 | 0.00 | 0.00 | -0.01 | 0.00 | -0.04 | 0.02 | -0.01 | 0.02 | -0.01 | -0.02 | 0.05 | -0.01 | 0.11 | 0.13 | 1.00 | | | |
| 18 | consum_3rd quintile | 0.00 | -0.03 | 0.00 | 0.00 | 0.00 | -0.01 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | -0.01 | 0.03 | 0.01 | 0.00 | 0.02 | -0.27 | 1.00 | | |
| 19 | consum_4th quintile | -0.03 | 0.12 | 0.01 | 0.03 | 0.03 | 0.00 | 0.10 | 0.00 | 0.03 | -0.01 | 0.00 | 0.00 | -0.04 | 0.07 | -0.12 | -0.15 | -0.24 | -0.21 | 1.00 | |
| 20 | consum_5th quintile | -0.08 | 0.25 | -0.01 | 0.03 | 0.03 | 0.01 | 0.16 | 0.00 | 0.03 | 0.00 | 0.00 | 0.01 | -0.12 | 0.07 | -0.26 | -0.34 | -0.21 | -0.18 | -0.16 | 1.00 |

Source: Authors' calculations based on CSES 2004-11 (other variables also tested including household members by age groups, household head education, region zones and year)

**Appendix 3: Characteristics of Respondents and Targeted Villages**

<table>
<tr><td colspan="4">FGDs (2): Select 5 participants in each group. One group is for landless households and the other land-holding households.</td></tr>
<tr><td colspan="2">Landless Participants</td><td colspan="2">Land-holding Participants (exclude renters)</td></tr>
<tr><td colspan="2">• From agricultural landless households, regardless of reason<br>• Household head or key adult member<br>• Having or not having child labour in the family<br>• No need to be village resident<br>• Half male and half female</td><td colspan="2">• From agricultural landholding households<br>• Household head or key adult member<br>• Having or not having child labour in the family<br>• No need to be village resident<br>• Half male and half female</td></tr>
<tr><td colspan="4">In-depth interviews (3): Select one land-holding household with child labour and two landless households with child labour.</td></tr>
<tr><td colspan="2">Landless Households</td><td colspan="2">Land-holding Households</td></tr>
<tr><td colspan="2">• Lacking agricultural land, regardless of reason<br>• Working in economic activities (paid or unpaid) or doing household chores<br>• At ages of child labour at time of interview<br>• Working or previously worked<br>• Still or no longer in school<br>• No need to be village resident<br>• Half male and half female</td><td colspan="2">• Having agricultural land<br>• Working in economic activities (paid or unpaid) or doing household chores<br>• At ages of child labour at time of interview<br>• Working or previously worked<br>• Still or no longer in school<br>• No need to be village resident<br>• Half male and half female</td></tr>
<tr><td colspan="4">Selected Villages (10): Having land conflict or being poor.</td></tr>
<tr><td>Chrey Kroem village, Pteah Rung commune, Phnom Kravanh district</td><td rowspan="2">Pursat</td><td>Daun Mea village, Svay Chreah commune, Snuol district</td><td rowspan="2">Kratie</td></tr>
<tr><td>Kralanh village, Kbal Trach commune, Krakor district</td><td>Ou Preah village, Ou Krieng commune, Sambour district</td></tr>
<tr><td>Prey Veng village, Kork Mon commune, Banteay Ampil district</td><td rowspan="2">Oddar Meanchey</td><td rowspan="2">Tuol Kokir village, Tuol Kokir commune, Mondol Seima district</td><td rowspan="3">Koh Kong</td></tr>
<tr><td>Bos village, Kriel commune, Samraong district</td></tr>
<tr><td>Sa Em village, Kantout commune, Choim Ksan district</td><td rowspan="2">Preah Vihear</td><td rowspan="2">Chhuk village, Chi Kha Leu commune, Srae Ambel district</td></tr>
<tr><td>Srayang Tboung village,</td></tr>
</table>

| | | | |
|---|---|---|---|
| Srayang commune, Kuleaen district | | | |

## Appendix 4: Variables and Description

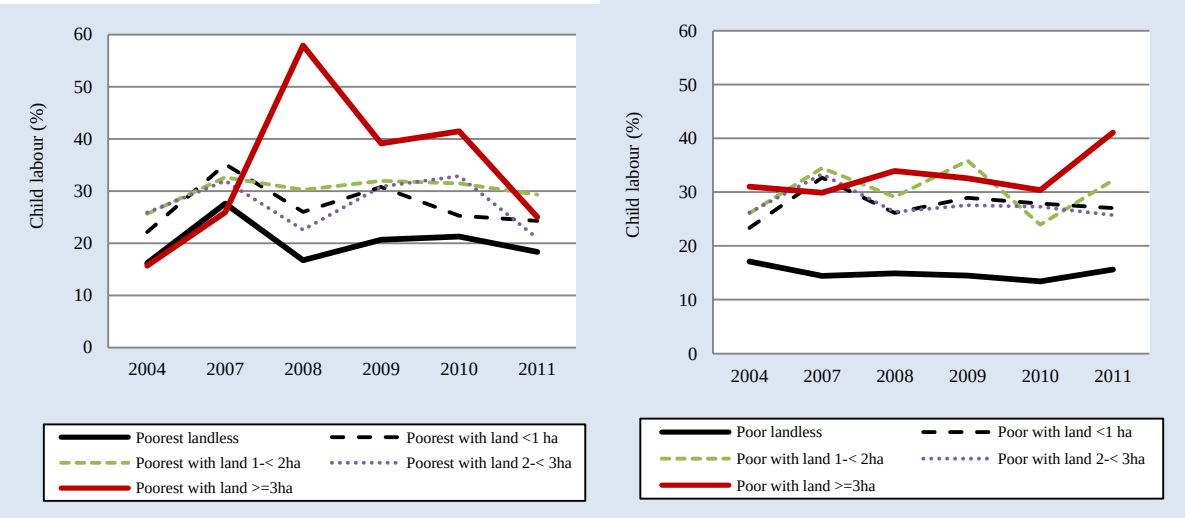
| Variable | Full Words | Description |
|---|---|---|
| *Outcomes* | | |
| Child labour participation | Likelihood of children being involved in economic activities | 1 if children work in economic activities and 0 otherwise |
| Child working hours | Child working hours per week | Discrete number of child working hour per week |
| *Control Variables* | | |
| Landlessness | Landless household | 1 if household did not have land, 0 otherwise |
| Poorest landless | Poorest landless household (wealth basis) | 1 for poorest landless household, 0 for else |
| Poorest with land <1 ha | Poorest household holding land less than 1 ha (wealth basis) | 1 for poorest household holding land less than 1 ha, 0 otherwise |
| Poorest with land 1-< 2ha | Poorest household holding land 1 to less than 2 ha (wealth basis) | 1 for poorest household holding land 1 to less than 2 ha, 0 otherwise |
| Poorest with land 2-< 3ha | Poorest household holding land 2 to less than 3 ha (wealth basis) | 1 for poorest household holding land 2 to less than 3 ha, 0 otherwise |
| Poorest with land >=3ha | Poorest household holding land 3 ha or more (wealth basis) | 1 for poorest household holding land 3 ha or more, 0 otherwise |
| Poor landless | Poor landless household (wealth basis) | 1 for poor landless household, 0 otherwise |
| Poor with land <1 ha | Poor household holding land less than 1 ha (wealth basis) | 1 for poor household holding land less than 1 ha, 0 otherwise |
| Poor with land 1-< 2ha | Poor household holding land 1 to less than 2 ha (wealth basis) | 1 for poor household holding land 1 to less than 2 ha, 0 otherwise |
| Poor with land 2-< 3ha | Poor household holding land 2 to less than 3 ha (wealth basis) | 1 for poor household holding land 2 to less than 3 ha, 0 otherwise |
| Poor with land >=3ha | Poor household holding land 3 ha or more (wealth basis) | 1 for poor household holding land 3 ha or more, 0 otherwise |
| Middle landless | Average landless household (wealth basis) | 1 for average landless household, 0 otherwise |
| Middle with land <1 ha | Average household holding land less than 1 ha (wealth basis) | 1 for average household holding land less than 1 ha, 0 otherwise |
| Middle with land 1-< 2ha | Average household holding land 1 to less than 2 ha (wealth basis) | 1 for average household holding land 1 to less than 2 ha, 0 otherwise |
| Middle with land 2-< 3ha | Average household holding land 2 to less than 3 ha (wealth basis) | 1 for average household holding land 2 to less than 3 ha, 0 otherwise |
| Middle with land >=3ha | Average household holding land 3 ha or more (wealth basis) | 1 for average household holding land 3 ha or more, 0 otherwise |
| Rich landless | Rich landless household (wealth basis) | 1 for rich landless household, 0 otherwise |

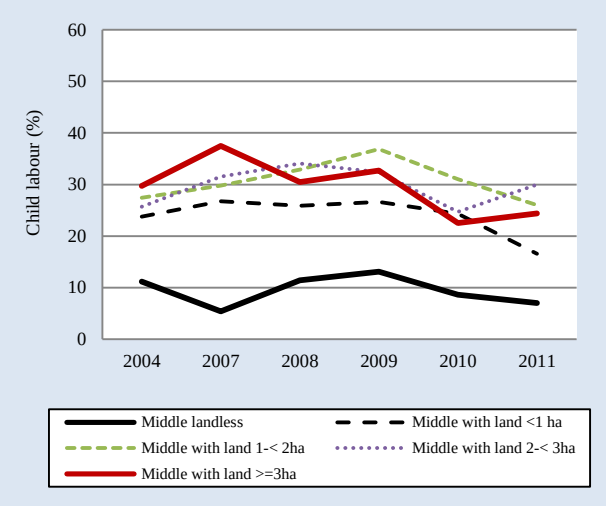
| | | |
|---|---|---|
| Rich with land <1 ha | Rich household holding land less than 1 ha (wealth basis) | 1 for rich household holding land less than 1 ha, 0 otherwise |
| Rich with land 1-< 2ha | Rich household holding land 1 to less than 2 ha (wealth basis) | 1 for rich household holding land 1 to less than 2 ha, 0 otherwise |
| Rich with land 2-< 3ha | Rich household holding land 2 to less than 3 ha (wealth basis) | 1 for rich household holding land 2 to less than 3 ha, 0 otherwise |
| Rich with land >=3ha | Rich household holding land 3 ha or more (wealth basis) | 1 for rich household holding land 3 ha or more, 0 otherwise |
| Richest landless | Richest landless household (wealth basis) | 1 for richest landless household, 0 otherwise |
| Richest with land <1 ha | Richest household holding land less than 1 ha (wealth basis) | 1 for richest household holding land less than 1 ha, 0 otherwise |
| Richest with land 1-< 2ha | Richest household holding land 1 to less than 2 ha (wealth basis) | 1 for richest household holding land 1 to less than 2 ha, 0 otherwise |
| Richest with land 2-< 3ha | Richest household holding land 2 to less than 3 ha (wealth basis) | 1 for richest household holding land 2 to less than 3 ha, 0 otherwise |
| Richest with land >=3ha | Richest household holding land 3 ha or more (wealth basis) | 1 for richest household holding land 3 ha or more, 0 otherwise |
| Children sex | Sex of children | 1 for male children, 0 otherwise |
| Children ages | Ages of children | Ages of children |
| Square children ages | child age square | child age square |
| Children education | Years of child's school completion | Years of school completion of children |
| Children ethnicity | Child ethnicity | 1 for Khmer, 0 otherwise |
| Sex of household head (hhh) | Sex of household head | 1 if male household head, 0 otherwise |
| Age of hhh | Ages of household head | Ages of household head |
| Marital status of hhh | Marital status of household head | 1 for married household and living together, 0 otherwise |
| Occupation of hhh | Occupation of household head | 1 for agrarian household, 0 otherwise |
| Incomplete primary education_hhh | Household head did not complete primary education | 1 for not completing primary education, 0 otherwise |
| Complete primary education_hhh | Household head completed primary education | 1 for completing primary education, 0 otherwise |
| Complete lower secondary school_hhh | Household head completed lower secondary school | 1 for completing lower secondary school, 0 otherwise |
| Complete upper secondary school_hhh | Household head completed upper secondary school | 1 for completing upper secondary school, 0 otherwise |
| Attending vocational training_hhh | Household head attended vocational training | 1 for completing vocational training, 0 otherwise |
| Attending university_hhh | Household head attended university | 1 if household head attended university, 0 otherwise |
| Household member aged 0 and 4 | Household member aged between 0 and 4 year-old | Number of household member aged between 0 and 4 year-old |
| Household member aged 5 and 9 | Household member aged between 5 and 9 years | Number of household member aged between 5 and 9 years |
| Household member aged 10 and 14 | Household member aged between 10 and 14 year-old | Number of household member aged between 10 and 14 years |
| Male adult member | Male adult member in family | Number of male adult member in family |

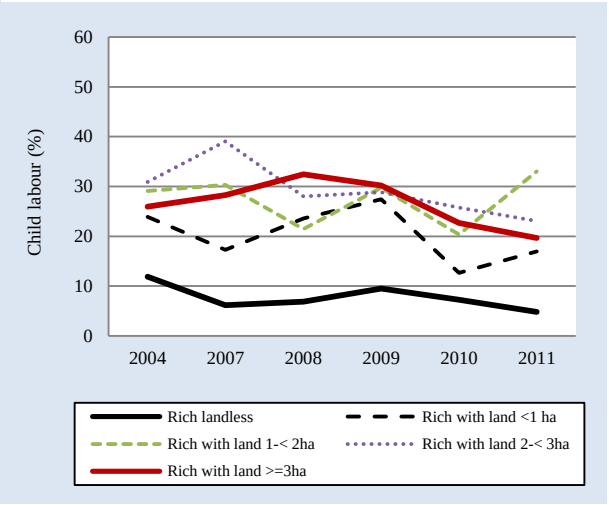
| | | |
|---|---|---|
| Female adult member | Female adult member in family | Number of female adult member in family |
| Household member aged 65 and over | Household members aged 65 up | Number of household members aged 65 up |
| Region | household lives in rural/urban | 1 if household living in rural area, 0 otherwise |
| Plain area | household lives in plain area | 1 if the plain area, 0 otherwise |
| Tonle Sap area | household lives in Tonle Sap area | 1 if Tonle Sap area, 0 otherwise |
| Coastal area | household lives in coastal zone | 1 if coastal zone, 0 otherwise |
| Plateau area | household lives in mountainous/plateau area | 1 if mountainous/plateau area, 0 otherwise |
| consum_nq1-consum_nq2 | Household living situation | 1 for each consumption quintile, 0 otherwise (first quintile is the poorest and 5th is the richest) |
| No land | Household agricultural land size | 1 for no land, 0 otherwise |
| Land < 1ha | Household agricultural land size | 1 for household having land < 1ha, 0 otherwise |
| Land 1-< 2ha | Household agricultural land size | 1 for household having land 1 to < 2ha, 0 otherwise |
| Land 2-< 3ha | Household agricultural land size | 1 for household having land 2 to < 3ha, 0 otherwise |
| Land >= 3ha | Household agricultural land size | 1 for household having land >= 3ha, 0 otherwise |
| year_04-year_11 | year of survey | 1 for each year, 0 otherwise (survey 2004, 2007-2011) |

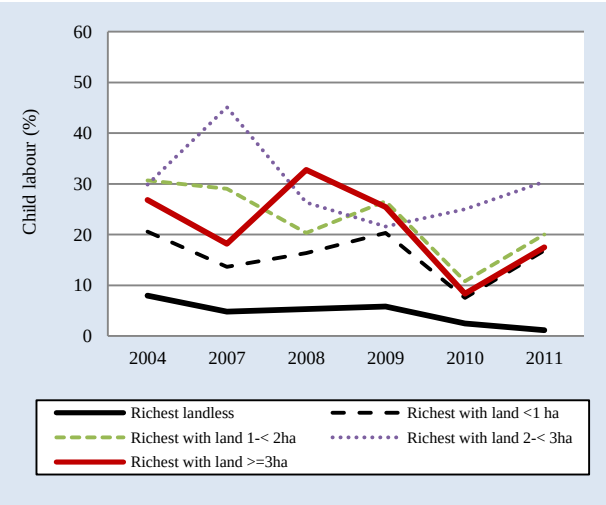
*Note: Consumption interacting with land quintiles has the same meaning as wealth index interacting with land quintiles.

## Appendix 5: Child Labour by Wealth and Land Quintiles (%)






Source: CSES 2004-11

## Appendix 6: Probit of Child Participation in Economic Activities, 2004-11

| | Child labour participation (marginal effect) | | | |
|---|---|---|---|---|
| **Variables** | **Probit (1)** | **Probit (2)** | **Probit (3)** | **Probit (4)** |
| Landlessness (1=no land, 0=have land) | -0.415*** | | | |
| Land < 1ha | | 0.345*** | | |
| Land 1-< 2ha | | 0.493*** | | |
| Land 2-< 3ha | | 0.441*** | | |
| Land >= 3ha | | 0.486*** | | |
| Poorest with land <1 ha (wealth) | | | 0.283*** | |
| Poorest with land 1-< 2ha (wealth) | | | 0.368*** | |
| Poorest with land 2-< 3ha (wealth) | | | 0.287*** | |
| Poorest with land >=3ha (wealth) | | | 0.436*** | |
| Poor landless (wealth) | | | -0.073 | |
| Poor with land <1 ha (wealth) | | | 0.265*** | |
| Poor with land 1-< 2ha (wealth) | | | 0.381*** | |
| Poor with land 2-< 3ha (wealth) | | | 0.271*** | |
| Poor with land >=3ha (wealth) | | | 0.414*** | |

| | | | | |
|---|---|---|---|---|
| Middle landless (wealth) | | | -0.265*** | |
| Middle with land <1 ha (wealth) | | | 0.183*** | |
| Middle with land 1-< 2ha (wealth) | | | 0.404*** | |
| Middle with land 2-< 3ha (wealth) | | | 0.339*** | |
| Middle with land >=3ha (wealth) | | | 0.369*** | |
| Rich landless (wealth) | | | -0.205*** | |
| Rich with land <1 ha (wealth) | | | 0.154*** | |
| Rich with land 1-< 2ha (wealth) | | | 0.314*** | |
| Rich with land 2-< 3ha (wealth) | | | 0.336*** | |
| Rich with land >=3ha (wealth) | | | 0.319*** | |
| Richest landless (wealth) | | | -0.255*** | |
| Richest with land <1 ha (wealth) | | | 0.111* | |
| Richest with land 1-< 2ha (wealth) | | | 0.352*** | |
| Richest with land 2-< 3ha (wealth) | | | 0.334*** | |
| Richest with land >=3ha (wealth) | | | 0.271*** | |
| Poorest with land <1 ha (consumption) | | | | 0.300*** |
| Poorest with land 1-< 2ha (consumption) | | | | 0.391*** |
| Poorest with land 2-< 3ha (consumption) | | | | 0.347*** |
| Poorest with land >=3ha (consumption) | | | | 0.456*** |
| Poor landless (consumption) | | | | -0.054 |
| Poor with land <1 ha (consumption) | | | | 0.270*** |
| Poor with land 1-< 2ha (consumption) | | | | 0.475*** |
| Poor with land 2-< 3ha (consumption) | | | | 0.345*** |
| Poor with land >=3ha (consumption) | | | | 0.432*** |
| Middle landless (consumption) | | | | -0.152*** |
| Middle with land <1 ha (consumption) | | | | 0.287*** |
| Middle with land 1-< 2ha (consumption) | | | | 0.473*** |
| Middle with land 2-< 3ha (consumption) | | | | 0.383*** |
| Middle with land >=3ha (consumption) | | | | 0.318*** |
| Rich landless (consumption) | | | | -0.187*** |
| Rich with land <1 ha (consumption) | | | | 0.263*** |
| Rich with land 1-< 2ha (consumption) | | | | 0.415*** |
| Rich with land 2-< 3ha (consumption) | | | | 0.370*** |
| Rich with land >=3ha (consumption) | | | | 0.403*** |
| Richest landless (consumption) | | | | -0.082 |
| Richest with land <1 ha (consumption) | | | | 0.090 |
| Richest with land 1-< 2ha (consumption) | | | | 0.152* |
| Richest with land 2-< 3ha (consumption) | | | | 0.528*** |
| Richest with land >=3ha (consumption) | | | | 0.393*** |
| Consumption_2nd quintile | 0.004 | -0.001 | 0.0124 | |
| Consumption_3rd quintile | -0.014 | -0.023 | -0.001 | |
| Consumption_4th quintile | -0.043 | -0.052** | -0.014 | |
| Consumption_5th quintile | -0.079** | -0.090*** | -0.039 | |
| Children sex | 0.031** | 0.031** | 0.032** | 0.031** |
| Children ages | 0.750*** | 0.751*** | 0.750*** | 0.752*** |
| Square children ages | -0.024*** | -0.024*** | -0.024*** | -0.024*** |
| Children ethnicity | -0.038 | -0.031 | -0.044 | -0.035 |
| Children education | -0.027*** | -0.027*** | -0.021*** | -0.027*** |
| Sex of household head (hhh) | -0.070** | -0.078** | -0.077** | -0.075** |
| Age of hhh | -0.001 | -0.001 | -0.001 | -0.001 |

| | | | | |
|---|---|---|---|---|
| Marital status of hhh | 0.028 | 0.023 | 0.028 | 0.022 |
| Household member aged 0 and 4 | 0.056*** | 0.057*** | 0.056*** | 0.057*** |
| Household member aged 5 and 9 | 0.008 | 0.007 | 0.008 | 0.007 |
| Household member aged 10 and 14 | 0.003 | 0.001 | 0.002 | 0.001 |
| Male adult member | -0.082*** | -0.087*** | -0.080*** | -0.086*** |
| Female adult member | -0.028*** | -0.032*** | -0.026*** | -0.031*** |
| Household member aged 65 and over | 0.011 | 0.007 | 0.017 | 0.007 |
| Incomplete primary education_hhh | 0.010 | 0.012 | 0.019 | 0.012 |
| Complete primary education_hhh | -0.089*** | -0.087*** | -0.070*** | -0.088*** |
| Complete lower secondary school_hhh | -0.172*** | -0.170*** | -0.146*** | -0.172*** |
| Complete upper secondary school_hhh | -0.272*** | -0.271*** | -0.240** | -0.275*** |
| Attending vocational training_hhh | -0.301*** | -0.302*** | -0.266** | -0.304*** |
| Attending university_hhh | -0.623*** | -0.622*** | -0.598*** | -0.636*** |
| Occupation of hhh (1=agriculture, 0=others) | 0.171*** | 0.159*** | 0.148*** | 0.157*** |
| Region | 0.308*** | 0.299*** | 0.278*** | 0.295*** |
| Plain area | 0.468*** | 0.481*** | 0.447*** | 0.484*** |
| Tonle Sap area | 0.287*** | 0.274*** | 0.234*** | 0.277*** |
| Coastal area | 0.344*** | 0.349*** | 0.313*** | 0.352*** |
| Plateau area | 0.514*** | 0.512*** | 0.478*** | 0.516*** |
| year_07 | 0.228*** | 0.227*** | 0.215*** | 0.230*** |
| year_08 | 0.128*** | 0.126*** | 0.114*** | 0.130*** |
| year_09 | 0.221*** | 0.221*** | 0.215*** | 0.221*** |
| year_10 | 0.050 | 0.049 | 0.037 | 0.050 |
| year_11 | 0.077** | 0.076** | 0.066** | 0.077** |
| Constant | -6.223*** | -6.604*** | -6.443*** | -6.552*** |
| | | | | |
| Observations | 42,553 | 42,553 | 42,550 | 42,553 |
| Pseudo R-squared | 0.226 | 0.226 | 0.226 | 0.226 |

***p<0.01, **p<0.05, *p<0.10
Source: Authors' calculations based on CSES 2004-11

## Appendix 7: Tobit of Child Working Hours, 2004, 2007-11

| | Child working hours | | | |
|---|---|---|---|---|
| **Variables** | **Tobit (1)** | **Tobit (2)** | **Tobit (3)** | **Tobit (4)** |
| Landlessness (1=no land, 0=have land) | -10.640*** | | | |
| Land < 1ha | | 8.668*** | | |
| Land 1-< 2ha | | 12.440*** | | |
| Land 2-< 3ha | | 11.500*** | | |
| Land >= 3ha | | 13.070*** | | |
| Poorest with land <1 ha (wealth) | | | 6.820*** | |
| Poorest with land 1-< 2ha (wealth) | | | 9.259*** | |
| Poorest with land 2-< 3ha (wealth) | | | 7.393*** | |
| Poorest with land >=3ha (wealth) | | | 10.180*** | |
| Poor landless (wealth) | | | -2.755** | |
| Poor with land <1 ha (wealth) | | | 6.094*** | |
| Poor with land 1-< 2ha (wealth) | | | 9.267*** | |
| Poor with land 2-< 3ha (wealth) | | | 6.792*** | |
| Poor with land >=3ha (wealth) | | | 10.070*** | |

| | | | | |
|---|---|---|---|---|
| Middle landless (wealth) | | | -7.944*** | |
| Middle with land <1 ha (wealth) | | | 3.526*** | |
| Middle with land 1-< 2ha (wealth) | | | 9.020*** | |
| Middle with land 2-< 3ha (wealth) | | | 7.282*** | |
| Middle with land >=3ha (wealth) | | | 9.430*** | |
| Rich landless (wealth) | | | -6.839*** | |
| Rich with land <1 ha (wealth) | | | 2.542** | |
| Rich with land 1-< 2ha (wealth) | | | 6.183*** | |
| Rich with land 2-< 3ha (wealth) | | | 8.334*** | |
| Rich with land >=3ha (wealth) | | | 8.197*** | |
| Richest landless (wealth) | | | -8.294*** | |
| Richest with land <1 ha (wealth) | | | 0.318 | |
| Richest with land 1-< 2ha (wealth) | | | 7.166*** | |
| Richest with land 2-< 3ha (wealth) | | | 6.725*** | |
| Richest with land >=3ha (wealth) | | | 6.484*** | |
| Poorest with land <1 ha (consumption) | | | | 6.806*** |
| Poorest with land 1-< 2ha (consumption) | | | | 9.369*** |
| Poorest with land 2-< 3ha (consumption) | | | | 8.439*** |
| Poorest with land >=3ha (consumption) | | | | 10.640*** |
| Poor landless (consumption) | | | | -2.519* |
| Poor with land <1 ha (consumption) | | | | 6.501*** |
| Poor with land 1-< 2ha (consumption) | | | | 11.540*** |
| Poor with land 2-< 3ha (consumption) | | | | 8.485*** |
| Poor with land >=3ha (consumption) | | | | 11.350*** |
| Middle landless (consumption) | | | | -4.500*** |
| Middle with land <1 ha (consumption) | | | | 6.509*** |
| Middle with land 1-< 2ha (consumption) | | | | 11.280*** |
| Middle with land 2-< 3ha (consumption) | | | | 9.500*** |
| Middle with land >=3ha (consumption) | | | | 8.235*** |
| Rich landless (consumption) | | | | -5.461*** |
| Rich with land <1 ha (consumption) | | | | 5.780*** |
| Rich with land 1-< 2ha (consumption) | | | | 9.564*** |
| Rich with land 2-< 3ha (consumption) | | | | 8.986*** |
| Rich with land >=3ha (consumption) | | | | 11.86*** |
| Richest landless (consumption) | | | | -3.015** |
| Richest with land <1 ha (consumption) | | | | 1.742 |
| Richest with land 1-< 2ha (consumption) | | | | 1.967 |
| Richest with land 2-< 3ha (consumption) | | | | 13.270*** |
| Richest with land >=3ha (consumption) | | | | 9.850*** |
| Consumption_2nd quintile | 0.309 | 0.139 | 0.621 | |
| Consumption_3rd quintile | -0.303 | -0.568 | 0.229 | |
| Consumption_4th quintile | -0.914 | -1.232* | 0.124 | |
| Consumption_5th quintile | -2.073** | -2.447*** | -0.671 | |
| Children sex | 0.689* | 0.698* | 0.749* | 0.702* |
| Children ages | 19.120*** | 19.100*** | 19.010*** | 19.100*** |
| Square children ages | -0.504*** | -0.504*** | -0.505*** | -0.504*** |
| Children ethnicity | -1.544 | -1.300 | -1.728 | -1.508 |
| Children education | -0.945*** | -0.933*** | -0.722*** | -0.934*** |
| Sex of household head (hhh) | -2.022** | -2.235** | -2.225** | -2.173** |
| Age of hhh | -0.006 | -0.007 | -0.007 | -0.008 |

| | | | | |
|---|---|---|---|---|
| Marital status of hhh | 0.459 | 0.307 | 0.547 | 0.294 |
| Household member aged 0 and 4 | 1.668*** | 1.663*** | 1.657*** | 1.659*** |
| Household member aged 5 and 9 | 0.556** | 0.514* | 0.542** | 0.520* |
| Household member aged 10 and 14 | -0.056 | -0.134 | -0.074 | -0.145 |
| Male adult member | -2.028*** | -2.166*** | -1.923*** | -2.144*** |
| Female adult member | -0.903*** | -1.050*** | -0.818*** | -1.009*** |
| Household member aged 65 and over | 0.306 | 0.206 | 0.578 | 0.210 |
| Incomplete primary education_hhh | -0.292 | -0.237 | 0.026 | -0.231 |
| Complete primary education_hhh | -2.923*** | -2.887*** | -2.282*** | -2.881*** |
| Complete lower secondary school_hhh | -5.252*** | -5.184*** | -4.315*** | -5.203*** |
| Complete upper secondary school_hhh | -9.835*** | -9.796*** | -8.683*** | -9.867*** |
| Attending vocational training_hhh | -7.581*** | -7.640*** | -6.428** | -7.747*** |
| Attending university_hhh | -19.22*** | -19.160*** | -18.250*** | -19.480*** |
| Occupation of hhh (1=agriculture, 0=others) | 5.136*** | 4.793*** | 4.369*** | 4.731*** |
| Region | 8.963*** | 8.711*** | 8.015*** | 8.578*** |
| Plain area | 13.880*** | 14.22*** | 13.13*** | 14.140*** |
| Tonle Sap area | 8.893*** | 8.453*** | 7.185*** | 8.394*** |
| Coastal area | 9.767*** | 9.902*** | 8.775*** | 9.857*** |
| Plateau area | 14.820*** | 14.730*** | 13.680*** | 14.680*** |
| year_07 | 5.345*** | 5.307*** | 4.803*** | 5.381*** |
| year_08 | 1.916** | 1.811** | 1.344* | 1.926** |
| year_09 | 6.563*** | 6.505*** | 6.277*** | 6.507*** |
| year_10 | 1.928** | 1.897** | 1.421* | 1.887** |
| year_11 | 1.658* | 1.595* | 1.202 | 1.604* |
| Constant | -171.5*** | -180.7*** | -175.3*** | -178.3*** |
| | | | | |
| Observations | 42,553 | 42,553 | 42,550 | 42,553 |
| Pseudo R-squared | 0.100 | 0.100 | 0.100 | 0.100 |

***p<0.01, **p<0.05, *p<0.10
Source: Authors' calculations based on CSES 2004-11