THE PHYSICAL IMPACT OF AGRARIAN LABOR ON CHILDREN IN CAMBODIA: DO CAMBODIAN CHILDREN WORKING IN THE AGRICULTURAL SECTOR FACE A HIGHER LIKELIHOOD OF NEGATIVE HEALTH OUTCOMES?

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By

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THE PHYSICAL IMPACT OF AGRARIAN LABOR ON CHILDREN IN CAMBODIA: DO CAMBODIAN CHILDREN WORKING IN THE AGRICULTURAL SECTOR FACE A HIGHER LIKELIHOOD OF NEGATIVE HEALTH OUTCOMES?

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ABSTRACT

This study investigates the impact of agrarian labor on Cambodian children working in the sector. Specifically, it assesses whether children in the agrarian workforce face a higher likelihood of injury or illness than children working in other sectors. While several studies agree that agricultural work in childhood has a negative impact on health, very few studies exist that compare the rate of injury across sectors. In Cambodia, approximately 52 percent of 7-14 year olds (more than 1.4 million children) were active in economic activities in 2001, with the majority employed in the agricultural sector. This study investigates the risk of injury to children in the agricultural sector in comparison to children working in other industries. The results show that agricultural child workers have a higher likelihood of occupational injury than those in other sectors. These findings imply that the United States and the International Labor Organization (ILO) will have to place more pressure on the Cambodian government to enforce its national legislation on child labor. The ILO and Cambodian government should also collaborate with other international organizations to design programs that mitigate the risk factors associated with the illness and injury of child agrarian workers. The data analyzed is from the 2001 Cambodian Survey on Children, an International Labor Organization-sponsored SIMPOC survey with a nationally representative sample of over 5,000 children.
Special thanks to family and friends for their patience and support over the past year as I completed my thesis. Thanks to Professor Robert Bednarzik for his guidance and assistance with this work.

Sincerely,

Eman Patel
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Introduction

Globalization has created an interconnected world where trade has become of extreme significance to the economies of developing countries. To be competitive in the global economy, these countries are under increased pressure to meet rising consumer expectations and produce high quantities of marketable goods for export. In the most poverty-stricken countries, poor workers, especially children, tend to be exploited in the production of these goods. Although the majority of countries have ratified the International Labor Organization’s (ILO) Conventions 182 and 138, (the Convention concerning the Prohibition and Immediate Action for the Elimination of the Worst Forms of Child Labor and the Minimum Age Convention), child labor continues to be widespread across the developing world. In reality, these standards are violated at the expense of millions of children in developing countries. Their childhoods are exploited and their health and well-being are continually compromised by working under hazardous conditions.

The majority of the world’s working children are found in agriculture. This is particularly true in developing countries that rely heavily on agricultural exports to support their Gross Domestic Product (GDP). Of the nearly 250 million children engaged in child labor throughout the world, the majority (nearly 70 percent), about 170 million children, worked in agriculture in 2002 (Human Rights Watch, 2002). The share of agriculture in
GDP appears to have a significant effect on the share of child workers, even after controlling for income and illiteracy (Fares and Raju, 2007).

Agrarian work frequently causes children to forgo their education because it requires long working hours, particularly during seasons where crops are at their peak. The difficult and arduous nature of agricultural work leaves children prone to injury and illness. Health risks occur due to long working hours (usually between nine and thirteen hours a day), pesticide exposure, the high rate of injuries sometimes associated with falling off of ladders, cuts from sharp knives and other sharp objects, crushing or maiming by equipment, contaminated water and poor sanitary conditions, and general ill treatment by bosses and supervisors (Human Rights Watch, 2002; Castro, 2007). It is highly probable that agrarian child workers will frequently experience illness or injury associated with working. This paper will examine the risk factors associated with injury and illness amongst agrarian child workers in Cambodia. While accounting for these factors, the study will then analyze whether or not there is a stronger association between the incidence of injury and agricultural work as compared to work in Cambodia’s nonagricultural sector.
Literature Review

The number of studies on child labor is growing. The subject is gaining importance because it is increasingly being seen as a deterrent to the Millennium Development Goal (MDG) of achieving universal primary literacy, since children who are working full time cannot attend school or complete their studies. There has also been an increased awareness in recent years of the effects of trade and globalization on workers rights, particularly children’s rights (Children’s work in Cambodia, 2006). The magnitude of the problem across the developing world, in addition to the specific concerns about child labor as an undesirable social or economic outcome has generated a large amount of research into understanding the causes and effects of children’s work. (Fares and Raju, 2007).

Agricultural Work in Developing Countries

Child labor is evident throughout the developing world because parents in poverty-stricken nations are unable to support their families, and therefore need their children to contribute to the gross family income. Studies confirm the dominance of child labor in agriculture and developing countries (Castro, 2007; Fares and Raju, 2007; Human Rights Watch, 2002). Agriculture is a large component of GDP in most developing countries, which does not bode well for children who find themselves compelled to work in this sector since jobs are easily available. It has been found that holding all other factors
constant, a one percentage point increase in the share of agriculture GDP is associated with a 3.2 percent share of children working (Fares and Raju, 2007).

**Child Labor and Health**

Recently, several studies have been conducted through the Understanding Children’s Work project, (UCW) that analyzed the relationship between child labor and health (Guarcello, Lyon and Rosati, 2007; Rosati and Straub, 2006; O’Donnell, Rosati and van Doorslaer, 2002 and 2003). They revealed that the relationship between health and labor force participation varies depending on the nature of the work. In addition, frequent exposure to unsafe work activities during a child’s formative years was found to be hazardous to his or her physical health.

An analysis for Guatemala reconfirms the notion that child labor is harmful to long-term health (Rosati and Straub, 2006). It puts forth the idea that children are more prone to injury through accidents and are more sensitive to noise, heat and toxicity. The impact of arduous physical labor on growing bones and joints can cause stunting and spinal injury, and has an overall negative effect on a child’s physiology. Many of the health effects associated with child work arise much later during adulthood. Child work also negatively impacts long-term health because child laborers forego education in order to maintain the working hours required by their employers. This subsequently reduces lifetime earnings and limits knowledge of proper healthcare and sanitation (Rosati and Straub, 2006; Guarcello, Lyon, and Rosati, 2004). Studies focused on child work in Brazil support the
findings that child labor negatively affects adult health. The data show that, controlling for other factors, entry into the labor force before the age of 10 has a strong and statistically significant impact on adult health (Kassouf, McKee and Mossialos, 2001). Thus, previous studies concur that child labor has a long run negative impact on health, driven in part by foregone education.

**Agricultural Work and Health Effects**

Although agriculture is the major industry in which most child workers are involved and it is consistently cited as a hazardous working environment, it is not classified as being amongst the international community’s Worst Forms of Child Labor (WFCL). Thus, it is unlikely that regulations of child labor on farms will be adhered to, thereby increasing the likelihood of physical harm to the child (Castro, 2007).

Given that Cambodia’s history has long emphasized the importance of an agrarian workforce, and because of the high rates of risky physical activity involved, it is intuitive that health risks are higher in agriculture than in other sectors within the country. In poor developing countries such as Cambodia where core labor standards are not well enforced, unregulated child labor can be extremely dangerous.

In this study, exposure to chemicals and pesticides will be an integral part of examining health effects across sectors in Cambodia, and will be counted towards the occurrence of injuries. It will be captured in the “hazardous work” variable. It is essential to include
this information because previous studies have excluded it and potentially underestimated
the negative health effects present in agricultural work. This exclusion occurs because
the effects often manifest themselves years later, once the child worker has reached
adulthood. Also, agricultural child workers are typically unaware of the dangers of
pesticides, and how they can protect themselves. In poor societies, populations are not
well-educated about the dangerous long term effects of chemicals, and children continue
to work in environments where exposure is high. Pesticide exposure is especially risky
for young children because their organs are still developing. Furthermore, they breathe at
a much quicker rate than adults, which increases the concentration of toxic chemicals that
they absorb (Human Rights Watch, 2002).

The aforementioned studies on child labor in developing countries support the intuition
that agricultural work is particularly detrimental to children’s health. Regression results
from the UCW study of the Cambodian workforce indicates that Cambodian children
working in agriculture appeared to be 12 percentage points more likely to suffer injuries
than those working in the manufacturing sector (Understanding Children’s Work, 2006).
In Brazil, children involved in manufacturing, agriculture or services industries had an
increased probability of injury. In Bangladesh, children working in agriculture are 3.4
percentage points more likely to suffer bad health than those working in commerce.
(Kassouf, McKee, Mossialos, 2001)
These studies also cited long working hours as a major risk factor for child workers. They are common in agricultural work, especially during peak seasons for important crops. This contributes to the links between sector, working hours and ill health amongst children in developing countries. (Guarcello, Lyon and Rosatti, 2004). Other prior work comparing the physical impact on children in agricultural and nonagricultural labor confirms the unsafe nature of the industry (Castro, 2007). In the Philippines, children working in agriculture had a five times relative risk of injury compared to children working in other industries. The main occupational risk was the use of tools and equipment at work. In addition, the hazards of agrichemicals to children were clearly documented. Although the studies did not find a strong association between chemical exposure and injury occurrence, the missing connection can be attributed to the fact that children were unaware that they had been exposed to chemicals while working on farms (Castro, 2007).

Although numerous studies exist that examine the health effects of child labor, it is important to recognize that some of these studies have undermined their own validity by cautioning readers of the inherent selection bias when surveying child laborers (O’Donnell, Rosati and van Doorslaer, 2002). They claim that any negative impact of child labor on health may be at least partially hidden because the healthiest youngsters are generally those selected for physical work. This is particularly relevant to agricultural work which requires frequent and strenuous physical labor. This is important to keep in mind when comparing health effects across agricultural and nonagricultural industries.
because the actual effects may be greater in magnitude than if the sample of child workers had been completely random.

Most studies concur that the majority of child labor exists in agriculture. Ashagrie (1997) and Fares and Raju (2007) find that the proportion of economically active children is highest for those employed in agriculture (70 percent), followed by services (21 percent) and manufacturing (7 percent), and applies more or less equally to both genders. Further studies have corroborated the statistics on the number of children involved in agrarian work, and concur that one in eight child workers suffer illness or injury in this very unsafe industry (Guarcello, Lyon and Rosati, 2004). The general conclusion emerging from the majority of analyses is that agrarian child work has little or no effect in the short term, although there is substantial evidence of longer term negative consequences for health (Guarcello, Lyon and Rosati, 2004; Rosati and Straub, 2006; Understanding Children’s Work in Guatemala, 2003). These long term effects can be debilitating, and include cancer, brain damage, sterility or decreased fertility, as well as birth defects.

**Labor Laws**

Cambodia’s economy has always relied heavily on agriculture. However, the Khmer Rouge regime furthered this reliance by implementing an agrarian-based economy that forced labor on its citizens, even children. One of the lasting effects of the transformation is that child involvement in agriculture is still widespread throughout the country. Furthermore, Cambodia has an extremely young population. With well over
half the population below the age of 20, Cambodia faces a growing problem of providing decent work for its young population, perpetuating the cycle of vulnerability to exploitative child labor. Extreme poverty rates make it necessary for children to contribute to household income. In 1997, the most recent year for which data are available, 34.1 percent of the population in Cambodia were living on less than US $1 a day. An estimated 49 percent of five to 14 year olds (more than 1.4 million children) were in economic activities in 2001. This is much higher than many other developing countries, such as Bangladesh (13.4 percent), Brazil (5.3 percent), El Salvador (10.2 percent), Guatemala (16.1 percent), and Nepal (40 percent), making it an ideal candidate for further study. (U.S. Department of Labor, 2005)

A high percentage of these economically active Cambodian children face work-related hazards and dangers, leaving them vulnerable to injury and illness. Adults interviewed as part of the Cambodian Child Labor Survey (CCLS) in 2001 reported considering “some aspects of their children’s work risky or dangerous” in almost two out of three cases. Many working children also appear to have far less workplace protection than adults working in the same environment. The children who themselves were not using safety equipment indicated that adults performing similar work benefited from such equipment. The survey also revealed that the incidence of work-related illness is very high among Cambodian working children, as nearly 50 percent of child laborers have experienced some form of work-related injury or illness at some point in time (Understanding Children’s Work in Cambodia, 2006).
Cambodia has made a number of important legal commitments in the area of child labor, but significant ambiguities and gaps remain in its national legislation. The Constitution and Labor Code guarantee worker rights, but these rights are not consistently enforced in practice. Cambodia has ratified ILO Convention 138 on Minimum Age and specified age 14 as the national minimum age for work. However, children between 12 and 14 are permitted to perform “non-hazardous” work, a term that the Labor Code does not clearly define. It has also ratified ILO Convention 182 on the Worst Forms of Child Labor (WFCL), and became a signatory to the United Nations Convention on the Rights of the Child (CRC) in 2000, thereby condemning exploitative child work. Nonetheless, given the aforementioned statistic citing an estimated 49 percent of Cambodian children aged five through 14 as economically active, its adherence to international labor standards is questionable (U.S. Department of Labor, 2003 and 2005).

Gaps in Existing Child Labor Literature

While the majority of child labor literature emphasizes that many developing economies have ratified the International Labor Organization’s conventions 138 and 182, it fails to elaborate on how effective individual governments have been in enforcing adherence to these standards. Research shows that national legislation in many developing countries is not fully consistent with international labor norms (Understanding Children’s Work in Guatemala, 2003; O’Donnel, Rosati, and van Doorslaer, 2002; Rosati and Straub, 2006; U.S. Department of Labor, 2005). So, while these countries are benefiting from their
positions as signatories to the various labor conventions, in practice they are not working towards the elimination of the WFCL. Therefore, the real impact of the adoption of international labor conventions is questionable, and further research on adherence to these standards is critical for evaluating their effectiveness.

While studies conclude with a high degree of certainty that agricultural work in childhood has a negative impact on health, very few studies exist that compare the rate of injury across sectors (O’Donnell, Rosati and van Doorslaer, 2003; World Health Organization, 2006). In order for developing countries to fulfill their commitments to adhering to ILO Conventions 138 and 182, and the United Nation’s CRC, a renewed focus on child labor and its associated health effects is necessary. Expanding the current state of knowledge on the relationship between different forms of child labor and health will provide a framework on how to overcome the negative health affects resulting from children’s work.

Like Cambodia, the status of labor laws is problematic in the majority of poor, developing countries. Protective legislation is rarely enforced and there is little awareness about the danger associated with child labor. Poor economic conditions and weak enforcement mechanisms make it extremely difficult to reduce child work. Identifying the likelihood of injury and illness across sectors is a necessary step to develop programs to better protect the health of child workers. Since a large proportion of Cambodians work on farms, it would be useful to understand the health risks
specifically associated with agriculture. In addition, understanding the health effects of agrarian work is important because standards for children working in agriculture are less stringent than those in other industries (Castro, 2007; Children’s work in Cambodia, 2006; Guarcello, Lyon and Rosati, 2004; ILO, 2006). For that reason, identifying risk factors in agrarian work is necessary for developing protective measures that reduce the incidence of injury and illness amongst child workers.

Enforcement of child labor laws are difficult to implement because child labor in each country is tied to cultural norms. Labor policies in Cambodia are of particular concern because they have not been extended to the informal sector, where the majority of hazardous child work is concentrated (Foreign Labor Trends: Cambodia, 2003).

Agrarian work is difficult to regulate because of the “family farm” mentality in agriculture. Child work on family farms is considered obligatory, despite hazardous working conditions and the potential for physical injury (ILO, 2006). Also, family-based agriculture is not governed by national legislation. This poses an additional challenge to the government when they try to enforce child labor laws. Since family obligation is the major reason why children work, this issue requires closer examination. The existing child labor literature lacks plausible policy options on how to overcome enforcement problems that stem from cultural traditions.
Conclusion

Cambodia’s government has pledged its commitment to a number of international standards condemning exploitative child labor and is intent on achieving the Cambodian Millennium Development Goals (CMDG). In order to fulfill its obligations it needs to address the long-term health risks associated with agrarian work as well as the lax enforcement of child labor laws within the sector. Clearly, agricultural work is one of the highest risk industries to children. Although the government does not have the capacity to monitor existing laws, those which shield children from physically harmful work should not be neglected. Enforcing child labor laws in agriculture should be of primary concern to policy makers as they move towards achieving the CMDG, and consequently establishing a lasting policy framework for eliminating the WFCL.

Hypothesis

This thesis will test the hypothesis that Cambodian children working in the agricultural sector face a higher likelihood of occupational injury and illness than those working in other sectors. Is there a stronger association between the incidence of injury and illness in agricultural work as compared to the incidence of injury and illness in nonagricultural labor?

The incidence of injury and illness will be the dependent variable as measured by occupational health and job safety. The main independent variables in the study include age, sex, exposure to hazards, adult supervision, stress/boredom at work, use of
machinery/equipment, use of protective wear and the type of industry, (either agricultural or non-agricultural). By running a multivariate regression with these variables, it will be possible to determine whether or not there is a higher risk of injury for Cambodian children working in the agricultural sector as compared to Cambodian children working in non-agricultural sectors.

**Data and Preliminary Analysis**

The study will use survey data from Cambodia’s National Child Labor Survey which was conducted in 2001. The dataset was obtained from the International Labor Organization’s (ILO) International Program on the Elimination of Child Labor (IPEC). It is provided by the Statistical Information and Monitoring Programme on Child Labour (SIMPOC), which is the statistical arm of IPEC. The data set is comprised of over 5,000 observations and contains variables that are necessary in controlling for social, demographic, health, and occupational characteristics of Cambodian children aged 5-17.
The model is based on a prior study completed by Charita Castro in 2007. Castro undertook a study on the risk factors for non-fatal injuries among child workers in agriculture in the Philippines. Her study will be replicated using SIMPOC data from

<table>
<thead>
<tr>
<th>Exhibit I: Overview of Variables in the Model and Expected Effects</th>
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<tbody>
<tr>
<td><strong>Variable</strong></td>
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<tr>
<td><strong>Independent Variables</strong></td>
</tr>
<tr>
<td>Sex</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td><strong>Workplace and Exposure Characteristics</strong></td>
</tr>
<tr>
<td>Adultsupervision</td>
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<tr>
<td>Stressborwork</td>
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<tr>
<td>Hazardwork</td>
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<tr>
<td>Opmachequip</td>
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<tr>
<td>Protwear</td>
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<td>Agwork</td>
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<tr>
<td><strong>Dependent Variable</strong></td>
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<td>III_hurtdurwork</td>
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Cambodia, with an emphasis on hazardous work in agriculture. The variables chosen reflect the nature of agricultural work, and its major risk factors.

The analytical approach is an OLS regression model utilizing the logit function. Through regressions, explanatory variables associated with high odds for injury will be identified. With the inclusion of the key dummy variable for agricultural work (versus non-agricultural work), the regression will indicate whether or not agricultural work has a higher potential for physical injury or illness when compared to non-agricultural industries.

Besides analyzing a different country, the model used in this study will differ from Castro’s because the Cambodia SIMPOC data set contained different variables than those found in the Philippines data set. This analysis is limited insofar as the data set does not have the agricultural work variable broken down into sub-categories such as the growing of rice, corn, coconut, sugarcane, fruits, vegetables and nuts, as well as livestock and hog farming. Therefore, it is impossible to isolate sub-sectors with elevated odds of injury as Castro did. So, this model will simply include one blanket term for agricultural work which will not be specifically broken down. Aside from not further disaggregating the sector of activity, another different is that the variable measuring hours of work was omitted from the Cambodia model because it had a high number of missing observations. This was unfortunate because other empirical examples point towards the relationship
between working hours and the health effects of agricultural child workers (Guarcello, Lyon, Rosati, 2004).
Model in Parameter Form

\[ Y = B_0 + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 + B_5X_5 + B_6X_6 + B_7X_7 + B_8X_8 + E \]

**Dependent:**
\( Y = \text{Ill\_hurtdurwork} \)
Whether or not hurt or injured during work.

**Independent:**
\( X_1 = \text{Sex} \)
Whether male or female.

\( X_2 = \text{Age} \)
Age in total years.

\( X_3 = \text{Adultsupervision} \)
Whether or not the person has adult supervision.

\( X_4 = \text{Stressborwork} \)
How often the respondent found work to be stressful or boring.

\( X_5 = \text{Hazardwork} \)
Whether the respondent considered some aspect of work physically risky or dangerous.

\( X_6 = \text{Opmachequip} \)
Whether respondent has operated any machine/equipment in work.

\( X_7 = \text{Protwear} \)
Indicate whether or not personal protective equipment was used.

\( X_8 = \text{Agwork} \)
Indicates whether work was agricultural or non-agricultural.

\( E = \text{Unexplained Variance, Error Term} \)

\( B_0 = \text{Y-intercept} \)

\( B_1, B_2, B_3, B_4, B_5, B_6, B_7, B_8 = \text{coefficients of respective independent variables: partial slope coefficients.} \)

Policy Relevance

In recent years, public interest in U.S. trade policy and workers’ rights has been triggered due to many factors, including increased trade, the popularity of Export-Processing Zones and the adoption by many countries of ILO Convention 182 calling for an end to the worst forms of child labor. The U.S. passed the Trade and Development Act in 2000 and the Trade Act in 2002 which made it mandatory for the U.S. to evaluate a country’s efforts in eliminating the worst forms of child labor. Since then, trade benefits are conditional on a country receiving an adequate assessment of their commitments to overcome child labor issue. In 2005, the Trafficking Victims Protection Act was reauthorized. This act ranks countries into one of three tier groups, with the third group designating those countries whose governments have made no visible effort to prosecute, punish and prevent human trafficking crimes. Designation as a “Tier Three” country also brings with it the threat of sanctions, although to date no country has been officially sanctioned for being ranked a “Tier Three.” The very existence of these acts and their linkage with trade issues proves the increasing importance that child labor is gaining within U.S. trade policy. Historically, developing countries like Cambodia were not unduly concerned with adhering to their officially endorsed labor standards. Now, as labor issues are gaining importance, the threat of weakened economic ties with the United States acts as an incentive to comply with international legislation.
In Cambodia, as in other developing countries, labor practice is not consistent with the international standards that it claims to adhere to. This comparison of the incidence of illness and injury in the agricultural versus the nonagricultural sectors in Cambodia provided a better understanding of the hazards associated with different forms of child labor. Proving that the incidence of illness and injury is higher in agricultural sectors than in non-agricultural sectors is a first step towards changing policy at the national level and perhaps eventually, at the international level. For example, although the majority of child workers are employed in agriculture, which has been proven to be extremely harmful to the health, it is still not considered amongst the WFCL. If the results of this study corroborate the findings of similar studies in other developing countries, (that agricultural work is more detrimental to health than non-agricultural work), there is a possibility that international labor experts could consider including agrarian work amongst the WFCL. If the hazardous and unsafe nature of the sector is fully recognized, then governments may come under more pressure to enforce child labor laws. Conversely, if the findings demonstrate that agricultural works does not have a higher incidence of illness or injury than non-agricultural work, it may be appropriate that agricultural work is not included amongst the WFCL. In that case, the Cambodian government will not have to enact a stricter policy framework for agricultural work and will focus their resources on targeting more appropriate sectors.

In conjunction with the Trafficking Victims Protection Reauthorization Act of 2005, the International Labor Affairs Bureau (ILAB) within the Department of Labor is currently
compiling a list of goods from various countries that are believed to have been made or produced through child labor. By 2008, they plan to reveal to Congress and the general public this list of “sensitive” goods. Countries with goods on this list are in danger of losing their Generalized System of Preferences (GSP) status, a formal system of exemption from the more general rules of the World Trade Organization. Another possibility is that the public will divest of those goods included on the list, thereby discouraging those companies that market the products from using child labor and forced labor in the production of their goods. Once Congress becomes aware of the goods on the list, it is hoped that they will place pressure on foreign governments to reform labor practices within their countries so that they are consistent with international labor standards. Earlier studies have confirmed that child labor is widespread within Cambodia’s agricultural sector. Since results from the analysis of the agricultural industry and negative health effects demonstrate a strong and significant relationship, it could be argued that agricultural products from Cambodia are eligible for this list.

A positive association between agricultural work and injury and illness would show that the Cambodian government needs to be more rigorously evaluated for its lack of progress against child labor. If it is regarded as tolerating hazardous child labor within its agricultural sector, this could affect its trade relations with the U.S. The Cambodian government is at a critical stage. It has the opportunity to make strides in development by working towards the Millennium Development Goals while leveraging its agrarian economy to benefit from open trade. However, with the growing relationship between
open trade and improved labor standards, Cambodia must first enforce its own national legislation in order to provide its economy with significant gains.
Figure 1. Percentage of Cambodian Children Ages 5-17 who Suffered Illnesses/Injuries in the Work Place

N= 5,336


Injury and illness were very prevalent among working children in Cambodia in 2001. Figure 11 illustrates that more children reported suffering from some kind of illness or injury at work than those who did not. Out of a sample size of 5,366, about 3,278 reported being hurt or sick while 2,058 did not.
Table 2. Incidence of injury/illness for children by whether worked in agricultural sector, Cambodia 2001

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Worked in agriculture?</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>No (%)</td>
<td>Yes (%)</td>
<td></td>
</tr>
<tr>
<td>Not Injured/ill</td>
<td>2,058</td>
<td>56</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>Injured/ill</td>
<td>3,278</td>
<td>42</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5,336</td>
<td>47</td>
<td>53</td>
<td></td>
</tr>
</tbody>
</table>

N= 5,366

Table 2 shows that children working in the agricultural industry are much more likely to be injured than those in non-agricultural sectors. Nearly 60 percent of the children ill or injured worked in agriculture in Cambodia. These statistics corroborate previous studies in developing countries that show agriculture to be the sector where illness and accidents are more likely (Castro, 2007; Understanding Children’s Work in Cambodia, 2006). It is also supported by the predicted probabilities in Table 9, which shows that children who work in agriculture are six percentage points more likely to get hurt than children working in non-agricultural sectors. Clearly, agricultural work is very hazardous to children’s health (Guarcello, Lyon, Rosati, 2004; O’Donnell, Rosati, van Doorslaer, 2003; Understanding Children’s Work in Nepal, 2003).
Table 3. Incidence of injury/illness for children by gender, Cambodia 2001

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Gender</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Girls (%)</td>
</tr>
<tr>
<td>Not Injured/ill</td>
<td>2,058</td>
<td>48</td>
</tr>
<tr>
<td>Injured/ill</td>
<td>3,278</td>
<td>45</td>
</tr>
<tr>
<td>Total</td>
<td>5,336</td>
<td>46</td>
</tr>
</tbody>
</table>

N= 5,366

Table 3 shows that boys are only slightly more likely than girls to be injured while working. This supports studies from other developing countries that show that girls are less likely than boys to suffer from ill health. These statistics suggest that there may be underlying differences in the nature of the tasks performed by boys and girls (Cambodia Child Labor Survey Background Report, 2001; Understanding Children’s Work in Cambodia, 2006). These results mirror those in other developing countries, such as Brazil and Bangladesh, where boys are also more likely than girls to be injured. The difference between these countries is that in Brazil and Bangladesh boys are more likely than girls to be involved in economic activity, while in Cambodia the opposite is true (Guarcello, Lyon, Rosati, 2004).

Table 4. Incidence of injury/illness of children by whether or not used protective wear while working, Cambodia 2001

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<tr>
<th></th>
<th>Number</th>
<th>Wore protective wear?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No (%)</td>
</tr>
<tr>
<td>Not injured/ill</td>
<td>2,058</td>
<td>40</td>
</tr>
<tr>
<td>Injured/ill</td>
<td>3,278</td>
<td>17</td>
</tr>
<tr>
<td>Total</td>
<td>5,336</td>
<td>26</td>
</tr>
</tbody>
</table>

N= 5,366
Table 4 shows that those wearing protective gear are more likely to be ill or injured than those who do not. Of those injured, more than four out of five wore protective gear. This could be because protective wear/equipment is not properly designed, or that the protective wear prescribed is inadequate, or it is a signal of a dangerous job. This provides food for thought for those policymakers who are looking to reform child labor policies in Cambodia. Clearly, standards surrounding protective wear are ineffective, or children are being assigned tasks that are hazardous to their health. The Cambodian Ministry of Labor should proactively address this problem.

Table 5. Incidence of injury/illness of children by whether or not they are stressed or bored at work, Cambodia 2001

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Stressed/bored at work?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No (%)</td>
</tr>
<tr>
<td>Injured/ill</td>
<td>2,058</td>
<td>40</td>
</tr>
<tr>
<td>Not injured/ill</td>
<td>3,278</td>
<td>17.4</td>
</tr>
<tr>
<td>Total</td>
<td>5,336</td>
<td>26</td>
</tr>
</tbody>
</table>

N= 5,366

Table 5 shows that those who are stressed or bored at work are more likely to be ill or injured than those who are not. One possibility for these results could be that stress or boredom may lead a child worker to not pay attention to the task at hand or be unaware of his or her surroundings. This inattention could lead to the child hurting his or herself while on the job because they are not as careful as they would have been if they were more positively engaged in their work. Unfortunately, many of the job tasks that children are directed to could probably be classified as boring.
Table 6. Incidence of injury/illness of children by whether or not they have adult supervision, Cambodia 2001

<table>
<thead>
<tr>
<th>Supervised by adults?</th>
<th>Number</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No (%)</td>
<td>10</td>
<td>90</td>
</tr>
<tr>
<td>Yes (%)</td>
<td>90</td>
<td>10</td>
</tr>
</tbody>
</table>

N= 5,366

Surprisingly, children who are supervised by adults are more likely to be injured or ill than those who work without any oversight. (See table 6) However, these results are not very informative and should be taken lightly because the proportion of children not supervised by adults is significantly smaller than those who are supervised by adults. The number of children not supervised is too small to provide for much variation.

Table 7. Incidence of injury/illness of children by whether or not they operate machine equipment, Cambodia 2001

<table>
<thead>
<tr>
<th>Operates machines/equip?</th>
<th>Number</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No (%)</td>
<td>94</td>
<td>6</td>
</tr>
<tr>
<td>Yes (%)</td>
<td>6</td>
<td>94</td>
</tr>
</tbody>
</table>

N= 5,366

Table 7 shows that whether or not a child operates machines or equipment at work does not affect his or her likelihood of injury. This finding runs counter to other empirical
examples that point to the use of machines and equipment as a major risk factor for illness and injury (O’Donnell, Rosati, van Doorslaer, 2003). However, once again, the number of children operating machinery or equipment is significantly smaller than the number of children who do not and there is not much variation. It can therefore be inferred that the results in Table 7 do not provide significant information on the effects of operating machinery and equipment on illness and injury.

Table 8. Regression results

| ill_hurtdu-k | Coef. | Std. Err. | z   | P>|z| | [95% Conf. Interval] |
|--------------|-------|-----------|-----|-----|----------------------|
| age          | .0179991 | .0105832 | 1.70 | 0.089 | -.0027435 - .0387417 |
| sex          | .0479141 | .0590374 | 0.81 | 0.417 | -.0677971 - .1636253 |
| adultsup     | .3609093 | .1066616 | 3.38 | 0.001 | .1518564 - .5699621 |
| stressborw-k | .6044819 | .0702526 | 8.60 | 0.000 | .4667893 - .7421746 |
| hazwork      | -.0031086 | .0856818 | -0.04 | 0.971 | -.1710419 - .1648247 |
| opmachequip  | .4884726 | .123334 | 4.03 | 0.000 | .2506623 - .726283 |
| ag_current   | .2602714 | .0647238 | 4.02 | 0.000 | .1334152 - .3871277 |
| protwear     | 1.017073 | .0700643 | 14.52 | 0.000 | .8797497 - 1.154397 |
| _cons        | -1.511633 | .2003793 | -7.54 | 0.000 | -1.904369 - -1.118896 |

The logit results show that the relationship between a child’s likelihood of being ill or injured at work and agricultural work is positive. With a z-statistic of 4.41 and the positive coefficient on ag_current, we can say with 99 percent confidence that a child agricultural worker in Cambodia, between the age of 5 and 17, is more likely than a child working in a non-agricultural sector to be injured. The result is significant when controlling for sex, and whether or not the child had adult supervision, found work stressful or boring, perceived the work he or she was currently doing as hazardous,
operated machine or equipment while on the job, and wore protective wear while working. The predicted probability of a child working in agriculture getting hurt is six percentage points more likely than a child working in the non-agricultural sector. These results support earlier literature that states that agricultural work has more hazardous effects on children’s health than non-agricultural work (Castro, 2007; O’Donnel, Rosati, van Doorslaer, 2003; Understanding Children’s Work in Cambodia, 2006; Understanding Children’s Work in Nepal, 2003; Understanding Children’s Work in Vietnam, 2003).

Clearly, safety standards in this sector are far from acceptable and the government needs to do more to improve the social protection of children (Guarcello, Lyon, Rosati, 2004). These findings support this paper’s hypothesis that Cambodian child workers in the agricultural sector are more likely to suffer from injury or illness than non-agricultural workers.

Similarly, the regression results indicate that other factors are related to the likelihood of a child worker being injured. The variables adult supervision, stressed/bored at work, operates machine equipment, and uses protective wear are statistically significant and have an association with the likelihood of working children getting hurt or sick. It can be inferred that at the 99 percent confidence level, with a z-statistic of 8.6, a child who is stressed or bored at work is more likely to than a child who is not stressed or bored at work to fall ill or be injured. For example, a child who has to climb ladders may feel stressed at work because they are scared and know that they could suffer injury if they fall. Or, boredom or stress could lead to inattention to detail, which could result in injury.
Furthermore, children are more sensitive to the effects of noise, heat, lead and radiation. While physical exposure to these things may not have as much of an effect on adults because of their more mature physiological and physical processes, this same exposure could be very stressful and unpleasant for a child (Guarcello, Lyon, Rosati, 2004). The predicted probability for stress/boredom at work supports the regression results. A child who is stressed or bored at work is 14 percentage points more likely to be hurt or ill that a child who is not.

The variable “protective wear” is the most robust and statistically significant in the model and shows a strong, positive relationship with the incidence of illness and injury. There is a large difference in the predicted probabilities of injury and illness in Table 9, with those using protective gear being 24 percentage points more likely to be hurt or sick than those not using protective gear. This statistic should serve as a red flag to those looking to reform child labor policies in Cambodia. Clearly, protective wear is not being designed properly, or children are being assigned tasks that are hazardous to their health, and the Cambodian Ministry of labor should address this problem. If similar studies are conducted in other developing countries the same results are found, then the ILO should consider expanding the scopes of their existing conventions, (such as Convention 182 on the Worst Forms of Child Labor), so that international law is stricter about what type of labor children are allowed to engage in. Moreover, it could draft a new convention that specifically addresses the need for adequate and effective protective gear, especially for children because of their smaller body types, general inexperience and the strenuous
nature of children’s work in developing countries (Human Rights Watch, 2002). Even when protective gear is available, it is less likely to be effective for children because it is designed for adults. The effects of protective wear on children’s health has not been adequately researched, either quantitatively or qualitatively, so there is no other evidence to corroborate these findings or put forth a counterfactual (Guarcello, Lyon, Rosati, 2004).

The coefficient on ‘operates machine equipment’ is also positive and statistically significant at the 99 percent confidence level with a z-statistic of 4.03. Prior empirical evidence from developing countries such as Vietnam also cite the use of machinery and equipment as positively associated with illness and injury (O’Donnell, Rosati, van Doorslaer, 2003). If a child is operating machinery on a farm, such as a tractor or a plow, it is conceivable that he or she could injure themselves while using the equipment because it is heavy and difficult to maneuver. Table 9 shows that the predicted probability of illness or injury for a child who operates machinery or equipment at work is 12 percentage points more than a child who does not.

The likelihood of illness or injury for a child worker in Cambodia is not significantly associated with their sex. In the regression results, sex equals one (male), and although there appears to be a weak positive association, the z-statistic is insignificant (0.81) and therefore does not have any bearing on the incidence of illness or injury.
The regression results on adult supervision and hazardous work are less intuitive than the regression results on the other variables. Holding all other factors constant, children who have adult supervision at work are more likely to be hurt or injured than those who do not have adult supervision. The results are positive and significant at the 99 percent confidence level with a z-statistic of 3.38. While it would seem that adult supervision would render a child less likely to hurt or injure his or herself on the job, the coefficient shows that it potentially makes children more likely to be injured than those who do not have oversight from adults. One possible explanation is that when children do have oversight it is because the job is risky and therefore requires adult supervision. The predicted probability in Table 9 indicates that children who have adult supervision at work are nine percentage points more likely to be hurt or ill at work than those who do not.

It is unclear as to why hazardous work is insignificant. One possibility is that children were unsure how to answer the question. Or, although the correlation coefficients show that there is no multicollinearity amongst the variables, the variable “stressed/bored at work” could be soaking up some of the effect of this variable. It is plausible that a child would be stressed at work because they feel that the work they are doing is unsafe or hazardous to their health. In addition, children may have been unsure how to answer the question and whether their duties qualified as hazardous (Cambodia Child Labor Survey Background Paper, 2001). To investigate whether or not child agricultural workers engaged in hazardous work were more likely to be injured, a regression with only
agricultural workers was run; it also yielded insignificant results for the hazardous work variable. This supports the idea that children were unclear about how to answer the question and uncertain as to whether or not their work qualified as hazardous. Perhaps in the future a survey collecting data on hazardous work could be designed so that the question is clearer and can be more easily understood by children in the 5-17 year age bracket.
Table 9. Predicted probabilities for illness or injury, Cambodia 2001

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Likelihood of Injury</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model with x=mean</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Total likelihood of child getting injured when variables are at the mean</strong></td>
<td>Percent (%)</td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>61%</td>
</tr>
<tr>
<td>Female</td>
<td>63%</td>
</tr>
<tr>
<td><strong>Agricultural work</strong></td>
<td></td>
</tr>
<tr>
<td>Yes, child works in the agricultural sector</td>
<td>65%</td>
</tr>
<tr>
<td>No, child works in the non-agricultural sector</td>
<td>59%</td>
</tr>
<tr>
<td><strong>Adult supervision</strong></td>
<td></td>
</tr>
<tr>
<td>Yes, child had adult supervision at work</td>
<td>63%</td>
</tr>
<tr>
<td>No, child did not have adult supervision at work</td>
<td>54%</td>
</tr>
<tr>
<td><strong>Stressed/bored at work</strong></td>
<td></td>
</tr>
<tr>
<td>Yes, child is stressed or bored at work</td>
<td>65%</td>
</tr>
<tr>
<td>No, child does not ever feel stressed or bored at work</td>
<td>51%</td>
</tr>
<tr>
<td><strong>Operates machinery/equipment at work</strong></td>
<td></td>
</tr>
<tr>
<td>Yes, child does operate machinery/equipment at work</td>
<td>73%</td>
</tr>
<tr>
<td>No, child does not operate machine/equipment at work</td>
<td>61%</td>
</tr>
<tr>
<td><strong>Wears protective gear at work</strong></td>
<td></td>
</tr>
<tr>
<td>Yes, child wears protective gear at work</td>
<td>68%</td>
</tr>
<tr>
<td>No, child does not wear protective gear at work</td>
<td>44%</td>
</tr>
</tbody>
</table>

* Statistically significant
Policy Recommendations

In order to fully address the problem of dangerous child agricultural work, it is necessary to engage the strongest forces in the fight against child labor. These include the ILO, various international organizations that help children, the U.S. Department of Labor because it funds and manages numerous child labor programs in the developing world, and the Cambodian government since any changes will happen under its jurisdiction. Cambodia also claims to be vigilant about combating exploitative child labor within its borders and working towards the Millennium Development Goals. By providing individual recommendations to these groups, it is hoped that their progress in separate areas of the fight against child labor will eventually coalesce and lead to a significant reduction in the incidence of exploitative child agrarian work.

Recommendations to the ILO

Cambodia has signed and ratified international legislation put forth by the ILO and UN that protects child workers. It has ratified ILO Conventions 138 and 182, as well as the UN Convention on the Rights of the Child. Thus, Cambodia has committed itself to its international obligations to protect children from hazardous and harmful work.

Previous researchers have also concluded that there is a higher likelihood of harm to agrarian child workers as compared to those working in other sectors (Understanding Children’s Work in Cambodia, 2006; Castro, 2007). These findings here support that conclusion, with children in agricultural work seven percentage points more likely to
experience illness or injury than those in non-agricultural work. The empirical evidence therefore suggests the need for new policy on child agricultural work to be integrated into international labor legislation since it evidently has a hazardous effect on children’s health. Castro put forth several recommendations on how to prevent and protect children in agricultural work from injury. Her recommendations include policy suggestions as well as the need for further research. On the policy side, in her assessment on improving the health effects of agricultural work on children in the Philippines, Castro suggests a resource called the North American Guidelines for Children’s Agricultural Tasks (NAGCAT). The NAGCAT includes a training manual on injury prevention strategies to prevent children involved in crop production and other farm work from hazardous work situations. The statistical analysis on Cambodia supports the need to disseminate this training manual in Cambodia as well and implement training on injury prevention strategies in accordance with the strategies in the training manual. The independent variables that showed a positive and statistically significant association with injury and illness in the regression include adult supervision, stress/boredom at work, operating machinery/equipment, use of protective wear, and work in agriculture. The training manual should integrate directions and strategies for dealing with risk factor specific to the Cambodian context. For example, since protective gear was the most robust statistic, the manual should elaborate on the proper use of protective gear, and provide information on what type of protective wear should be used by children as opposed to adults to mitigate the risk of injury. The significance of the operates machinery/equipment variable is not surprising because the equipment used may have been too large or too
heavy for a child to properly maneuver, resulting in injury. Also, adult supervision was associated with higher risks of injury, meaning that adults were either doing an insufficient job of providing oversight or the duties assigned to a child were simply too dangerous for them. The manual can integrate these risk factors into its strategies and procedures. By doing so it can provide guidelines for farm owners and workers on how to mitigate these risk factors and avoid the negative health consequences of children’s agricultural work.

In terms of research, Castro discusses the need to improve the Occupational Safety and Health Module of the ILO-IPEC SIMPOC surveys. For example, questions can be added to elicit more information on the nature of the illness or injury so that details are recorded on the exact task that the child was undertaking when the incidence occurred; the types of tools and equipment that were being used; and specific information on the nature of the injury (Castro, 2007). This information was not available for my study of child labor in Cambodia, and would have proved extremely helpful in isolating the specific sectors within agriculture where working children faced the highest risk of injury. By doing this, countries can use household surveys to come up with a global estimate of injuries by occupation and gather information on the specific hazards associated with agricultural work. Any new information gleaned from improved surveys will be applicable towards improving child labor policy and practices since the majority of child labor in the developing world is unpaid work on family farms (Cambodia Child Labor Survey Background Report, 2001; O’Donnell, Rosati, van Doorslaer, 2003). Although this
additional research and data gathering will be costly and time consuming to the ILO and member countries, they may be willing to cooperate because Recommendation 190 to Convention 182 calls for “detailed information and statistical data on the nature and extent of child labor that should be kept up to date to serve as a basis for determining priorities for national action for the abolition of child labor, in part for the prohibition and elimination of WFCL” (Guarcello, Lyon and Rosati, 2004).

With this newly acquired data, the ILO and other researchers can use SIMPOC data to run multivariate regression analyses to determine risk factors in different target countries. After this, more targeted research can be conducted on how to best prevent injuries resulting from the most robust risk factors. The ILO can identify best practices in combating child labor in other countries where similar risk factors exist, and integrate these lessons learned into their own action plan for Cambodia.

Also, the next Global Report on Child Labor is scheduled to be released in 2010. Since regression results here and from different studies have proven the harmful nature of child agrarian work, and because of the prevalence of agricultural work in the developing world, it is recommended that part of the Global Report highlights specifically the health risks of agricultural work (Castro, 2007; O’Donnell, Rosati, van Doorslaer; Rosati, FC, Straub R, 2006; Understanding Children's Work in Cambodia, 2006; Understanding Children’s Work in Nepal, 2003). This would generate awareness within the international community on the hazards of agricultural work and its detrimental effects on
children’s health. Increased knowledge on agriculture-related injuries will help the ILO as it strives to develop effective policy interventions to reduce the health risks to children. For example, the empirical evidence from Cambodia shows that the use of protective wear, operating machinery and stressful job tasks are all associated with higher rates of injury. New policy can focus on the need for improved protective wear, or for new legislation banning child work with heavy duty machinery and prohibiting hazardous or cumbersome job tasks that could threaten a child’s safety. Moreover, the significance of protective gear to injuries indicates that hazardous work of children poses a serious health risk to them and should therefore be restricted. These results could be used to clearly delineate in the Global Report where benign child agrarian work ends and exploitative child labor begins.

Other international organizations with similar scopes of work should be tapped in order to heighten awareness on the risk factor of child work on farms. To draw attention to the issue it would be beneficial to frame it as a public health issue. With regards specifically to the World Health Organization’s (WHO) 2006-2015 strategic plan for preventing childhood and adolescent injuries worldwide, consultations should take place between the ILO and WHO to incorporate the results of these analyses into their action plan (Castro, 2007). In addition, the Understanding Children’s Work project is currently very active in their research and projects in Cambodia. A coordinated effort between UCW and the ILO could improve existing practices and programs protecting children from health
hazards in the workplace. By working with other organizations on the health risks of
farm work, the ILO will be able to raise awareness on the issue and guide policy.

Recommendations to the Government of Cambodia

The empirical examples and literature show that Cambodian children are aware of the
work hazards associated with agricultural work (Cambodia Child Labor Survey
Backgrounds Report 2001; Understanding Children’s Work in Cambodia, 2006). The
magnitude of their awareness of their occupational hazards is indicative of the
socioeconomic pressures faced by children and their families, since they have to work
despite the physical dangers they encounter on the job. For example, the data show that
six of every ten working children in Cambodia falls ill or becomes injured. Moreover,
like in many developing countries, although the Cambodian Ministry of Labor has
implemented laws regulating children’s work, they do not extend to the informal sector.
This undermines the efficacy of existing labor laws since the majority of child work in
Cambodia occurs in the informal sector (Understanding Children’s Work in Cambodia,

Given that the Cambodian government is committed to the economic empowerment of its
people, the development of the social sector and achievement of the Millennium
Development Goals (Understanding Children’s Work in Cambodia, 2006; Cambodia
Child Labor Survey Background Paper, 2001) they should be committed to alleviating
health hazards to children. The government should take action to correct this problem.
The regression results show that a simple solution like having an adult supervisor does not work. The findings indicate that in fact, it could make matters worse since the incidence of illness and injury is higher for those children who have adult supervisors. The government will have to take a more comprehensive approach, which could include doing targeted trainings in rural areas and also conducting outreach and awareness-raising campaigns so that citizens learn about the consequences of child agricultural work.

Improved access to education has long been a critical part of any program aimed at combating child labor (O’Donnell, Rosati, van Doorslaer, 2003). In Nepal, long travel times to schools increased the probability of a child working by 4.1 percentage points (Understanding Children’s Work in Nepal, 2003). The Cambodian government can help prevent children from working in the fields if they continue constructing primary schools in both rural and urban areas. A major factor that leads children to work is the lack of suitable education and training programs (Cambodian Child Labor Survey Background Report, 2001; Castro, 2007; O’Donnell O, Rosati FC, van Doorslaer E., 2003; Understanding Children’s Work Country Report: Guatemala, 2003). This is particularly true of child labor in rural areas, where the majority of farms are located. If children were instead attending school for a large part of the day, it is less likely that they would be spending hours engaging in hazardous farm work. This model has been tried in other developing countries such as Nepal and has helped remove many children from harmful work by making primary and secondary education attainable, particularly in
areas where farming is a major source of income (Cambodia Child Labor Survey Background Report, 2001; Understanding Children’s Work in Nepal, 2003). Increased emphasis on improving access to schools is a way for the Cambodian government to deter children from being employed in occupations that are hazardous to their health. Easy access to educational institutions removes a major barrier that prevents children from going to school. It also provides a way out of the cycle of agricultural work for children. With education, they are more likely to develop other skills sets and find work in other industries that are not as hazardous to their health. Although the effects of this type of intervention will be visible only in the long run, a sustainable impact can be achieved.

The Cambodian government should also take legal action to address the negative health effects of children’s agricultural work. The child labor laws that apply to the formal sector must also be expanded to the informal sector. Enforcement will be difficult, but not impossible. Although the Ministry of Labor Inspectorate asserts that it is understaffed and unable to comprehensively monitor child labor practices, the statistical results show that agricultural work has serious effects on children’s health, which could pose a serious problem is carried over into adulthood. This will very likely impose a severe health care cost on the government. Therefore, the Cambodian government should make a conscientious effort to procure the fiscal resources necessary to develop laws, implement legislation and strengthen the enforcement capacity of the labor inspectorate. Although it is a challenge, there are resource organizations that could provide loans and
funding for a cause that prevents exploitative child labor practices, such as the Asian Development Bank, the World Bank and ILO groups such as IPEC. Once funding is procured, the government can work with a non-governmental organization to streamline their inspection processes so that the process is faster and does not require as much manpower. With improved processes, they will more likely fine or even prosecute violators. For the Cambodian government to ignore their commitment to ILO Conventions 182 and 138, as well as their ratification of the UN Convention on the Rights of the Child is not acceptable. Finding available sources of funding for this endeavor should be a top priority for the government as they move towards increased economic growth and achieving the CMDG.

Recommendations to the United States Government

Since the empirical evidence shows that agricultural work is clearly associated with injury or illness, the U.S. Department of Labor should make a point to investigate agricultural products from Cambodia that were imported under the GSP Program. The empirical evidence show that many of the goods produced on farms in Cambodia, which could include popular imports such as vegetables and rice, were done so through child labor. As part of its research plan, analysts at the Department of Labor should make a focused effort to determine if products coming from farms were made with exploitative child labor, given the dangerous health effects such work clearly has (Understanding Children’s Work in Cambodia, 2006; Cambodia Child Labor Survey Background Paper, 2001). By including a high number of agricultural products on this list, not just for
Cambodia but also for other developing countries, the US Government will be able to highlight the detrimental effects of agricultural work on children’s health. The government can then engage in negotiations with other countries, such as Cambodia, where child labor in agricultural work is common. If countries agree to implement action plans and meet targeted goals in reducing exploitative child labor practices on farms, then it is possible that they will have their GSP status will be restored. By shining a light on this child labor problem in individual countries, their governments may be compelled to prove to the outside world that they are eradicating the problem. Also, non-governmental organizations and non-profits will be able to make a stronger case for themselves if they solicit money from the U.S. government for implementation of projects aimed at diffusing this widespread practice.

Conclusion

The hazards faced by Cambodian children working on farms are real and serious. The statistical results obtained support prior work in developing countries and clearly show that agricultural work is hazardous to children’s physical health (Castro, 2007; Guarcello, Lyon and Rosati, 2004; Understanding Children’s Work in Nepal, 2003). The results presented in this paper also point towards other risk factors that contribute to the likelihood of child injury and sickness, such as ineffective protective wear, use of machinery, adult supervision, and stress/boredom at work. Even though it may not be possible to completely eliminate children’s work on farms for socioeconomic reasons, using these data it is possible to improve upon current practices and find ways to
minimize major risk factors. Hope remains for alleviating the plight of these children. The combined efforts of the United States, the Cambodian government, the ILO and other international organizations can work towards reducing the amount of injuries and illnesses occurring as a result of unsafe agricultural work conducted by children. With a renewed commitment to ILO Commitments 138 and 182, as well as the United Nations Convention on the Rights of the Child, Cambodia can continue its development as a progressive country aimed at sustainable political and economic growth. By addressing child labor problems within its borders, it can guide policy and alleviate the plight of the next generation of Cambodian children.
Annex 1. Linktest

linktest

Iteration 0:  log likelihood = -3557.9244
Iteration 1:  log likelihood = -3336.2037
Iteration 2:  log likelihood = -3335.2803
Iteration 3:  log likelihood = -3335.2802

Logistic regression

Number of obs = 5336
LR chi2(2) = 445.29
Prob > chi2 = 0.0000
Log likelihood = -3335.2802
Pseudo R2 = 0.0626

| ill_hurtdu~k | Coef.  | Std. Err. | z     | P>|z| | [95% Conf. Interval] |
|--------------|--------|-----------|-------|------|---------------------|
| _hat         | .8903695 | .0631335  | 14.10 | 0.000 | .7666301 1.014109   |
| _hatsq       | .2329532 | .0864346  | 1.58  | 0.007 | .0635445 1.4023618  |
| _cons        | -.0798301 | .0473292  | -1.69 | 0.092 | -.1725937 .0129335 |

The results of the linktest are encouraging because they demonstrate that the model is properly specified. The “_hat” term is significant at the 99 percent confidence level with a z-statistic of 14.1. The “_hatsq” term is insignificant, with a t-statistic of 1.58. These statistics demonstrate that the model is well-specified.
Annex 2. Correlation Coefficients

correlate ill_hurtdurwork age sex adultsup stressborwork hazwork opmachequip ag_current protwear

<table>
<thead>
<tr>
<th>ill_hurtdurwork</th>
<th>age</th>
<th>sex</th>
<th>adultsup</th>
<th>stressborwork</th>
<th>hazwork</th>
<th>opmachequip</th>
<th>ag_current</th>
<th>protwear</th>
</tr>
</thead>
<tbody>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<td>0.0044</td>
<td>1.0000</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sex</td>
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<td>0.0289</td>
<td>1.0000</td>
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The correlation coefficients table reveals that there is no multicollinearity in the model.
References


