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Survey Research on Child Labor in West African Cocoa Growing Areas

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**School of Public Health and Tropical Medicine
Tulane University**

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List of Acronyms

ACRONYM	NAME
CLCCG	Child Labor in Cocoa Coordinating Group
ENSEA	Ecole Nationale de Statistique et d'Economie Appliquée
FAO	Food and Agriculture Organization of the United Nations
GOG	Government of Ghana
ICCO	International Cocoa Association
ICLS	International Conference of Labour Statisticians
ISSER	Institute of Statistical, Social And Economic Research
ILO	International Labor Organization
IPEC	International Programme on the Elimination of Child Labour
MDG	Millennium Development Goal
MMYE	Ministry of Manpower, Youth and Employment
UN	United Nations
USDOL	United States Department of Labor
WFCL	Worst Forms of Child Labor

Abstract

Objectives. The objective of this report is to assess the prevalence of, and measures changes in, estimates of working children, children in child labor, and children in hazardous work in the West African cocoa sector between the 2008/09 and the 2013/14 cocoa harvest seasons. This report does not cover the WFCL other than hazardous work (including child trafficking and forced labor) as defined by the ILO and/or the national governments and it does not assess cocoa/chocolate industry and/or government efforts to eliminate child labor and the WFCL in the cocoa sectors in Côte d'Ivoire and Ghana.

Methods. The measurement of children's work and the definitions of child labor used in this report are based on the ILO definitions and guidelines, including the 18th International Conference of Labour Statisticians (ICLS) Resolution Concerning Statistics on Child Labor, as well as the relevant national laws and hazardous activity frameworks of Côte d'Ivoire and Ghana. Children's exposure to hazardous work was operationalized using a methodology developed between 2012 and 2013 in consultations with stakeholders including the US Department of Labor (USDOL), the Governments of Côte d'Ivoire and Ghana, the International Labor Organization (ILO) and the international cocoa/chocolate industry. Survey data collected by Tulane University are used to identify children's exposure to child labor and hazardous work in cocoa agriculture. Data collected in 2013/14 are compared with data collected in 2008/09 to determine children's involvement in child labor, including hazardous work, in the cocoa growing areas of Côte d'Ivoire and Ghana. The estimates presented in this report are representative of agricultural households in the cocoa growing areas of the two countries. Child-level estimates are representative of the population of children, 5-17 years, living in these households.

Results. In 2013/14, 2.26 million children were working in cocoa production, 2.12 million children were working in child labor in cocoa production and 2.03 million children were working in hazardous work in cocoa production in Côte d'Ivoire and Ghana combined. In the aggregate the numbers of children working in cocoa production, in child labor in cocoa production, and in hazardous work in cocoa production increased by about 440,000, 360,000, and 310,000 respectively. The percentages of children in agricultural households in each of these categories also rose between the two survey years: 19% for children working in cocoa, 16% for child laborers in cocoa, and 13% for children in hazardous work in cocoa. In Côte d'Ivoire the number of children in hazardous work in cocoa production increased by 46% (from 0.79 million to 1.15 million) between 2008/09 and 2013/14. In Ghana the number of children in hazardous work in cocoa production decreased by 6% (from 0.93 million to 0.88 million) between 2008/09 and 2013/14. Results in both countries were impacted by strong growth in cocoa production (production increases of more than 40% in Côte d'Ivoire and more than 30% in Ghana between the years of data collection). Some hazardous activities performed by children in cocoa agriculture have decreased while others increased. There was a large decrease in the percentage of children working in cocoa production participating in the hazardous activity of land clearing (-29%) in both countries combined, while there was a major increase in the percentage participating in the hazardous activity of exposure to agro-chemicals (+44%). Overall, children working in cocoa were less likely to be exposed to multiple types of hazardous work in 2013/14.

Access to education has improved with more children working in cocoa production attending school in both countries. In Côte d'Ivoire 71% of children working in cocoa production attended school in 2013/14, compared with just 59% in 2008/09. In Ghana, 96% attended school in 2013/14 compared with 91% in 2008/09. The percentage of children in school in all agricultural households in the cocoa growing areas also increased in both countries.

1. Introduction

The following report presents baseline and follow-up estimates on the number of children working, in child labor, and in the worst forms of child labor (WFCL) in the production of cocoa in Côte d'Ivoire and Ghana using hazardous work as a proxy for the WFCL. The estimates presented in this report have been calculated based on survey data collected in West Africa during the 2008/09 and the 2013/14 cocoa harvest seasons. The data were collected to track progress towards full implementation of the Harkin-Engel Protocol and the elimination the WFCL in the cocoa growing areas of Côte d'Ivoire and Ghana by focusing on the most common WFCL, hazardous work. The data collection was financed by the US Department of Labor (USDOL) and implemented by a Tulane University team led by Dr. William Bertrand as the Principal Investigator and Dr. Elke de Buhr as the Co-PI.¹ The field research was carried out in collaboration with local partners: the École Nationale de Statistique et d'Economie Appliquée (ENSEA) in Côte d'Ivoire and the Institute of Statistical, Social And Economic Research (ISSER) in Ghana. This report was prepared by the Tulane team – Dr. William Bertrand, Dr. Elke de Buhr and Ms Susie Dudis – with input from USDOL, the Governments of Côte d'Ivoire and Ghana, ENSEA and ISSER, the ILO, representatives of the international cocoa/chocolate industry, and additional stakeholders, including those representing civil society organizations.

2. Background

Fifteen years ago, the West African cocoa sector came under increased scrutiny after media reports revealed incidences of child trafficking and other labor abuses in cocoa farming. On September 19, 2001, representatives of the international cocoa/chocolate industry (hereafter referred to as “Industry”) signed the Harkin-Engel Protocol² (hereafter the “Protocol”). Signing this agreement as witnesses were U.S. Senator Tom Harkin (D-IA) and U.S. Representative Eliot Engel (D-NY), the Government of Côte d'Ivoire, the ILO, and representatives of civil society. Based on ILO Convention 182, the Protocol's principal goal was “to eliminate the worst forms of child labor (WCFL) in the cocoa sectors of Ghana and Côte d'Ivoire.” The Protocol serves as a guiding principle for Industry and for all other stakeholders by outlining action steps in its six articles that Industry will take in order to eliminate WFCL. As such, the Protocol provides a framework for accountability.

In 2010, Secretary of Labor Hilda Solis, Ministers of Labor from Côte d'Ivoire and Ghana, and a representative of the international cocoa and chocolate Industry, signed a Declaration of Joint Action to Support the Implementation of the Harkin-Engel Protocol³ (“the Declaration”). This

¹ In September 2006, after a competitive bidding process, USDOL awarded a three-year, US\$ 4.3 million contract to the Payson Center for International Development at Tulane University in New Orleans to oversee the implementation of the Harkin-Engel Protocol on behalf of the US Congress. In September 2009, a second US\$ 1.2 million contract was awarded to Tulane by USDOL, which tasked the Payson Center with continuing its oversight activities with an expanded scope through March 2011. Since September 2012, Tulane University has been working with USDOL and the governments of Côte d'Ivoire and Ghana on survey research and training tasks as part of a third US\$ 1.5 million award, which was extended through March 2016. The data presented in this report are a result of these activities.

² Full name: Protocol for the Growing and Processing of Cocoa Beans and Their Derivative Products In a Manner that Complies with ILO Convention 182 Concerning the Prohibition and Immediate Action for the Elimination of the Worst Forms of Child Labor

³ US Department of Labor (USDOL), Declaration of Joint Action to Support the Implementation of the Harkin-Engel Protocol, (September 13, 2010).

Declaration was also witnessed by Senator Harkin, Congressman Engel and a representative of the International Labor Organization. The Declaration was accompanied by a Framework of Action to Support Implementation of the Harkin-Engel Protocol⁴ (“the Framework”). The Framework’s stated overarching goal is as follows:

By 2020, the worst forms of child labor as defined by ILO Convention 182 in the cocoa sectors of Côte d’Ivoire and Ghana will be reduced by 70 percent in aggregate through joint efforts by key stakeholders to provide and support remediation services for children removed from the worst forms of child labor, including education and vocational training, protective measures to address issues of occupational safety and health related to cocoa production, and livelihood services for the households of children in cocoa growing communities; the establishment and implementation of a credible and transparent sector-wide monitoring system across cocoa growing regions in the two countries; and the promotion of respect for core labor standards.

In support of the overarching goal, the Framework called for the following:

[C]ontinuation of nationally representative child labor surveys, recurring at least every 5 years. Nationally representative baseline data is established as the most recent data coming out of the 2008-2009 Tulane field surveys. The next nationally representative surveys in both countries will be in the field during the 2013-2014 harvest season, with a report made in 2014, and again in the field in 2018-2019, with a report in 2019. These surveys will provide comparable data for ongoing assessment of child labor prevalence in cocoa growing areas and a commitment to make publicly available the related survey methodologies, all raw data, and reports based on the findings of such surveys. In addition to such nationally representative surveys, efforts should also be made to incorporate a child labor component into existing national household surveys to support efforts to combat the worst forms of child labor nationally in each country.

Based on the language from the Framework, “nationally representative baseline data is established as the most recent data coming out of the 2008-2009 Tulane field surveys.” In addition, the Framework calls for the “continuation of nationally representative child labor surveys.” The baseline estimates based on the 2008/09 data and the results of the 2013/14 round of data collection, called for in the Framework of Action, are presented in this report.

In considering the figures presented in this report, it is important to highlight some of the changes that have taken place in cocoa growing areas of each country during the period from 2008/09 to 2013/14, including increases in population and in cocoa production. In addition, Côte d’Ivoire experienced political violence in 2010-2011, following the country’s presidential elections. The political violence caused human suffering and internal and cross-border migration. It also had a negative impact on the education infrastructure including schools and the availability of teachers, particularly in rural areas of the country. The political violence exacerbated an already fragile post-conflict context in Côte d’Ivoire. While this situation has improved since the cessation of the internal conflict, the country is still in the process of rebuilding its education infrastructure.

⁴ US Department of Labor (USDOL), Framework of Action to Support Implementation of the Harkin-Engel Protocol.

3. Objectives

The objective of this report is to assess the prevalence of, and measures changes in, estimates of working children, children in child labor, and children in hazardous work in the cocoa sectors of Côte d'Ivoire and Ghana between the 2008/09 and the 2013/14 cocoa harvest seasons. While the research presented in this report focuses on all households involved in agriculture in the cocoa growing areas in the two countries – and all children between 5 and 17 years living in these households – the main research focus is on assessing the WFCL in cocoa production using hazardous work as a proxy for the WFCL. This report does not cover the WFCL other than hazardous work as defined by the ILO and/or national government.

In addition, the report is not intended to assess cocoa/chocolate industry and/or government efforts to eliminate child labor and the WFCL in the cocoa sector in Côte d'Ivoire and Ghana. Such an assessment is beyond the scope of the report. (USDOL provides an assessment of both countries' efforts to address the WFCL in cocoa, as well as in other sectors, in its annual *Findings on the Worst Forms of Child Labor* report.⁵)

4. Research Framework

Working children, child labor and the WFCL have been defined in a series of ILO/UN conventions and recommendations including ILO Convention 138 (Minimum Age), ILO Convention 182 (WFCL) and ILO Recommendation 190 (Hazardous Work). The 18th International Conference of Labour Statisticians (ICLS) further refined the measurement frameworks for child labor and the WFCL, including hazardous work.⁶ The measurement of children's work and the definitions of child labor used in this report are based on the ILO definitions and guidelines, including the 18th ICLS Resolution Concerning Statistics on Child Labor, as well as the relevant national laws and hazardous activity frameworks of Côte d'Ivoire and Ghana. Children's exposure to hazardous work was operationalized using a methodology developed between 2012 and 2013 in consultations with stakeholders including USDOL, the Governments of Côte d'Ivoire and Ghana, the ILO and Industry.

4.1. Definition of Working Children

In accordance with ILO, working children are defined as “children in employment.” This definition does not include “children in other productive activities”, such as those performing household chores within their own households.

Children in employment: Children in employment are those engaged in any activity falling within the production boundary in the SNA for at least one hour during the reference period. They consist of: (a) those in child labor within the SNA production boundary; (b) children aged 12 to 14 years in permissible light work; and (c) adolescents

⁵ This report can be found on-line at <http://www.dol.gov/ilab/reports/child-labor/findings/>

⁶ International Labour Organization (ILO), Report of the Conference, 18th International Conference of Labour Statisticians, (2008), pages 56-66 may be seen for the text of the resolution on statistics of child labour available at: http://www.ilo.org/wcmsp5/groups/public/---dgreports/---stat/documents/meetingdocument/wcms_101467.pdf

in the age group 15 to 17 years engaged in work not designated as one of the worst forms of child labor.⁷

While the focus of this research is on work in agriculture – and in particular cocoa agriculture – data on productive activities other than agriculture were also collected and are reported as part of the discussion of working hours and household work (see sections 6.4.1. and 6.4.6.).⁸

Table 1. ILO Framework for the Statistical Identification of Child Labor

Framework for statistical identification of child labour						
Age group	General production boundary					
	SNA production				Non-SNA production	
	(1a) Light work ³	(1b) Regular work ⁴	Worst forms of child labour		(3a) Hazardous unpaid household services ¹	(3b) Other non-SNA production
(2a) Hazardous work			(2b) Worst forms of child labour other than hazardous work			
Children below the minimum age specified for light work (for example, 5–11 years) ²	Employment below the minimum age for light work	Employment below the general minimum working age	Employment in industries and occupations designated as hazardous, or work for long hours and/or at night in industries and occupations not designated as hazardous	Children trafficked for work; forced and bonded child labour; commercial sexual exploitation of children; use of children for illicit activities and armed conflict	Unpaid household services for long hours; involving unsafe equipment or heavy loads; in dangerous locations; etc.	
Children within the age range specified for light work (for example, 12–14 years) ²						
Children at or above the general minimum working age (for example, 15–17 years) ²						

¹ (3a) is applicable where the general production boundary is used as the measurement framework for child labour.
² Age-group limits may differ across countries depending upon the national circumstances.
³ Where applicable at the national level.
⁴ Children in employment other than those covered under columns (1a), (2a) and (2b).

 Denotes child labour as defined by the resolution.  Denotes activities not considered child labour.

Source: International Labour Organization (ILO), Report of the Conference, 18th International Conference of Labour Statisticians, (2008).

⁷ International Labour Organization (ILO), Report of the Conference, 18th International Conference of Labour Statisticians, (2008).

⁸ According to the ILO, children in productive activities include working children and “among others, children engaged within their household in unpaid household services (that is, unpaid production of domestic and personal services by a household member for consumption within one household), also commonly called ‘household chores.’” See International Labour Organization (ILO), Report III: Child Labour Statistics, (November 24 – December 5, 2008).

4.2. Definition of Child Labor and Worst Forms of Child Labor

Based on the 18th ICLS Resolution Concerning Statistics on Child Labor, the ILO distinguishes between three categories of child labor (see Table 1): (1) employment below minimum working age (light work/regular work), (2) worst forms of child labor, and (3) hazardous unpaid household services (if the concept of the "general production boundary" is used).

Child labor: For the purpose of statistical measurement, children engaged in child labor include all persons aged 5 to 17 years who, during a specified time period, were engaged in one or more of the following categories of activities:

1. Worst forms of child labor,
2. Employment below the minimum age, and
3. Hazardous unpaid household services.⁹

When calculating children's working hours and estimating exposure to child labor, the following activities are included: (a) work in cocoa agriculture, (b) work in agriculture other than cocoa, and (c) economic activities other than work in agriculture. The estimates of child labor in this report cover: (a) children working below minimum age (if they are under 12), (b) children exceeding the number of working hours allowable for their age group based on the ILO framework (if they are between 12 and 17 years), and (c) children performing hazardous work in the cocoa growing areas of Côte d'Ivoire and Ghana. The WFCL other than hazardous work and hazardous unpaid household services are not discussed in this report.

4.2.1. Employment Below Minimum Working Age

ILO Convention 138 on the Minimum Age for Admission to Employment defines child labor of children working below minimum age. The definition distinguishes between (1) the general minimum working age, (2) the minimum age for light work, and (3) the minimum age for hazardous work, while allowing some variations in general and light work minimum working ages for developing countries (see Table 2).

According to ILO Convention 138 on the Minimum Age for Admission to Employment, "the minimum age to be specified in conformity with the Convention shall not be less than the age of completion of compulsory schooling and, in any case, shall not be less than 15 years. Developing countries may initially specify a minimum age of 14 years." Additionally, light work is permissible for children as young as 13: "Young persons of 13 to 15 years of age – or at least 15 years of age who have not finished their compulsory schooling – may be permitted to carry out light work of certain types and under certain conditions to be determined."¹⁰

The ILO further specifies that "light work" can only include work that is: "(a) not likely to be harmful to their health or development; and (b) not such as to prejudice their attendance at school, their participation in vocational orientation or training programmes approved by the competent authority, or their capacity to benefit from the instruction received."¹¹ According to the

⁹ International Labour Organization (ILO), Report III: Child Labour Statistics, 18th International Conference of Labour Statisticians, Geneva, (November 24 – December 2008).

¹⁰ International Labour Organization (ILO), Convention 138 Concerning Minimum Age for Admission to Employment, (June 26, 1973).

¹¹ International Labour Organization (ILO), Report III: Child Labour Statistics, (November 24 – December 2008).

ILO, “in determining the hours threshold for *permissible light work*, national statistical offices should take into consideration the stipulations set forth in national legislation or, in their absence, use a cut-off point of 14 hours during the reference week, below which work can be considered permissible light work.”¹²

Table 2. Minimum Working Ages Based on ILO Convention 138

General minimum age	Light work	Hazardous work
<i>In general:</i>		
Not less than age of completion of compulsory schooling, and in any case not less than 15 years	13 years	18 years (16 years under certain strict conditions)
<i>Where the economy and educational facilities are insufficiently developed:</i>		
Not less than 14 years for an initial period	12 years	18 years (16 years under certain strict conditions)

Source: International Labour Organization (ILO), *Global Child Labour Trends 2000 to 2004*, (Geneva, ILO, 2006).

The Convention does not set the maximum number of working hours permissible for children. However, Article 7 paragraph 3 states that the “competent [national] authority” “shall prescribe the number of hours during which and the conditions in which such employment or work [light work for persons 13 to 15 years of age] may be undertaken.” The ILO has in the past used an operational definition of “regular work” as under 43 hours per week (see Table 3).

Hazardous work is absolutely proscribed for children under 16: “The minimum age shall not be less than 18 years – or 16 years under conditions – for any type of employment or work which is likely to jeopardize the health, safety or morals of young persons.” The ILO also specifies that the definition of work falling under this last category is to be regulated by local laws and regulations. The WFCL other than hazardous work (or “unconditional WFCL”) is absolutely prohibited for children of any age.¹³

¹² Ibid.

¹³ International Labour Organization (ILO), Convention 138 Concerning Minimum Age for Admission to Employment, (26 June 1973); International Labour Organization (ILO), Convention 182 Concerning the Prohibition and Immediate Action for the Elimination of the Worst Forms of Child Labour (1999); International Labour Organization (ILO), Report of the Conference, 18th International Conference of Labour Statisticians, (2008).

Table 3. Types of Child Labor by Age

Age groups	Forms of work			
	<u>Non-hazardous work</u> (in non-hazardous industries & occupations and <43 hrs./week)		<u>Worst forms of child labour</u>	
	<u>Light work</u> (<14 hrs/week)	<u>Regular work</u> (≥14 hrs/week and <43 hrs/week)	<u>Hazardous work</u> (in specified hazardous industries & occupations plus ≥43 hrs/week in other industries and occupations)	<u>Unconditional worst forms</u> (trafficked children; children in forced & bonded labour, armed conflict, prostitution & pornography, and illicit activities)
5-11				
12-14				
15-17				

Source: International Labour Organization (ILO), *Global Child Labour Trends 2000 to 2004*, (Geneva, ILO, 2006).

4.2.2. Worst Forms of Child Labor (WFCL)

Within the category of WFCL, the ILO distinguishes between (1) hazardous work and (2) worst forms of child labor other than hazardous work:

Hazardous work: “Employment in industries and occupations designated as hazardous, or work for long hours and/or at night in industries and occupations not designated as hazardous.”¹⁴

Worst forms of child labor other than hazardous work: “Children trafficked for work; forced and bonded child labour; commercial sexual exploitation of children; use of children for illicit activities and armed conflict.”¹⁵

ILO Convention 182 covers both hazardous work and WFCL other than hazardous work including “slavery or practices similar to slavery”, “prostitution”, “illicit activities” as well as any work “likely to harm the health, safety or morals of children” (see Box 1).

¹⁴ International Labour Organization (ILO), Report III: Child Labour Statistics, (November 24 – December 2008).

¹⁵ Ibid.

Box 1. Definition of WFCL in ILO Convention 182

According to Article 3 of ILO Convention No. 182, the worst forms of child labor comprise:

1. All forms of slavery or practices similar to slavery, such as the sale and trafficking of children, debt bondage and serfdom, as well as forced or compulsory labour, including forced or compulsory recruitment of children for use in armed conflict;
2. The use, procuring or offering of a child for prostitution, for the production of pornography or for pornographic performances;
3. The use, procuring or offering of a child for illicit activities, in particular for the production and trafficking of drugs as defined in relevant international treaties; and
4. Work which, by its nature or the circumstances in which it is carried out, is likely to harm the health, safety or morals of children.

Source: International Labour Organization (ILO), Convention 182 Concerning the Prohibition and Immediate Action for the Elimination of the Worst Forms of Child Labour (1999).

Hazardous work has been defined by the ILO as “work which, by its nature or the circumstances in which it is carried out, is likely to harm the health, safety or morals of children” (ILO Convention 182). The ILO further elaborates the concept of hazardous work in ILO Recommendation 190 (see Box 2).

Box 2. Definition of Hazardous Work in ILO Recommendation 190

According to ILO Recommendation No. 190, the following criteria should be taken into account when determining hazardous work conditions of children at the national level:

1. Work which exposes children to physical, psychological or sexual abuse;
2. Work underground, under water, at dangerous heights or in confined spaces;
3. Work with dangerous machinery, equipment and tools, or which involves the manual handling or transport of heavy loads;
4. Work in an unhealthy environment which may, for example, expose children to hazardous substances, agents or processes, or to temperatures, noise levels, or vibrations damaging to their health; and
5. Work under particularly difficult conditions such as work for long hours or during the night or work where the child is unreasonably confined to the premises of the employer.

Source: International Labour Organization (ILO), Recommendation 190 Concerning the Prohibition and Immediate Action for the Elimination of the Worst Forms of Child Labour (1999).

In addition to “employment in industries and occupations designated as hazardous”, ILO has classified “work for long hours and/or at night in industries and occupations not designated as hazardous” as hazardous to children (see Box 3).¹⁶

¹⁶ Ibid.

Box 3. ILO Definition of Long Hours of Work and Night Work

A child is considered to be working *long hours of work* if the number of hours actually worked at all jobs during the reference period is above a specified threshold. The threshold may be determined in terms of the maximum number of hours of work that the national law or regulation sets for children who have reached the minimum working age. In the absence of such a specific limit for children, the threshold may be decided taking account of the regulation on the adult workers' normal working time. Hours actually worked should be defined in accordance with the latest international standards on the topic.

Long hours of work may also be defined in terms of usual hours of work per week. The use of this concept would include in child labour, any children who usually work long hours but during the reference period were temporarily absent from work owing to illness, holidays or, for other reasons, worked fewer hours than usual.

A child is considered to be working at night if the work schedule includes hours of work defined as *night work* prohibited for children under national legislation, where it exists. In the case of children, the period of time spent commuting between work and home should be considered as part of the work schedule. Alternative statistical definitions of night work for children may be formulated on the basis of the ILO Night Work Convention No. 171 (1990), particularly Article 1(a) and (b). Where there is no legal prohibition of night work of children, national legislation and prevailing collective agreements, if any, on night work of adult workers could be used as the basis for determining night work of children.

Source: International Labour Organization (ILO), Report of the Conference, 18th International Conference of Labour Statisticians, (2008).

ILO Convention 184 on Safety and Health in Agriculture provides additional clarification on children working in agriculture (see Box 4). While Convention 184 considers any work in agriculture harmful to the health and safety of young people, issues of national supremacy dictate that for final classification of the types of employment or work, national laws and regulations need to be in agreement.

Box 4. ILO Convention 184 on the Safety and Health in Agriculture

Article 16:

1. The minimum age for assignment to work in agriculture which by its nature or the circumstances in which it is carried out is likely to harm the safety and health of young persons shall not be less than 18 years.
2. The types of employment or work to which paragraph 1 applies shall be determined by national laws and regulations or by the competent authority, after consultation with the representative organizations of employers and workers concerned.
3. Notwithstanding paragraph 1, national laws or regulations or the competent authority may, after consultation with the representative organizations of employers and workers concerned, authorize the performance of work referred to in that paragraph as from 16 years of age on condition that appropriate prior training is given and the safety and health of the young workers are fully protected.

Source: International Labour Organization (ILO), Convention 184 Concerning Safety and Health in Agriculture (2001).

4.3. National Laws and Regulations

According to the 2008 ICLS Resolution, “hazardous occupations for children shall be designated on the basis of national laws or regulations, where they exist.”¹⁷ The Governments of Côte d’Ivoire and Ghana have developed and enacted child labor laws and regulations based on the international standards. The Governments of Côte d’Ivoire and Ghana both have developed country frameworks that include lists of specific activities considered hazardous for children working in agriculture in the local context.

4.3.1. Regulatory Framework of Côte d’Ivoire

In Côte d’Ivoire legal regulation of child work was enacted by Le Code du Travail de 1995 (the Labor Code of 1995).¹⁸ Article 23.8 stipulates that children cannot be employed in any enterprise, even as an apprentice, before the age of 14, except when granted permission by a regulatory body. Article 31 of law 70-483 – La loi sur la minorité de 1970 (the Law Concerning Minors of 1970) states that a minor may not enter into an employment contract before the age of 16, except in regard to vocational training or apprenticeships.¹⁹

Hazardous work for children is addressed in Article 23.9 of the Labor Code of 1995, which states that the inspector of labor and social legislation may require women and children to be examined by an approved doctor to determine if the work they are doing exceeds their strength. A women or a child should not be held to a job found to be beyond his or her strength and should instead be given a more suitable task. If that is not possible, the contract must be terminated with severance pay and notice of termination if applicable.

Box 5. Hazardous Child Labor Activities Framework: Côte d’Ivoire (2005)*

Work activities prohibited for children under 18 years working in agriculture:

- Cutting of trees;
- Burning of fields;
- Application of chemicals (insecticides, herbicides, fungicides, etc.);
- Application of chemical fertilizer;
- Chemical treatment of fields/plants; and
- Carrying of heavy loads.

Source: Government of Côte d’Ivoire, Ministry of Civil Service and Labor, Arrêté No. 2250, (March 2005).

* Sections relevant to the measurement of hazardous work for children in agriculture (translation by Tulane).

The Government of Côte d’Ivoire released a first list of hazardous activities prohibited for children under age 18 in 2005 (see Box 5).²⁰ A revised and expanded version of this document was made available in 2012 (see Box 6).²¹ In addition to the regulations included in the

¹⁷ Ibid.

¹⁸ Government of Côte d’Ivoire, Code du travail: Loi n. 95/15, (January 1995).

¹⁹ Government of Côte d’Ivoire, La loi sur la minorité: Loi 70-483, (1970).

²⁰ Government of Côte d’Ivoire, Arrêté No. 2250, (March 2005).

²¹ Government of Côte d’Ivoire, Arrêté No. 009, (January 2012).

hazardous child labor framework, Article 22.2 of the Labor Code of 1995 prohibits work at night for all children under 18 years of age.²²

Box 6. Hazardous Child Labor Activities Framework: Côte d'Ivoire (2012)*

Work activities prohibited for children under 18 years:

Article 2: In establishments of any nature be they, agricultural, commercial or industrial, public or private, laic or religious, even when these establishments are in place for benevolent purposes or for vocational training, be they family businesses or those of individuals, it is prohibited to employ children of either sex in dangerous work if they are under the age of 18.

Article 3: Work is considered dangerous and prohibited to children under eighteen years of age if its nature or conditions:

- Put their lives in danger;
- Damage their health, security, or morality;
- Harm their physical or mental development;
- Deprive them of their childhood, their potential and their dignity;
- Deprive them of their schooling or the opportunity to go to school; and
- Prevent them from scholarly diligence or having the aptitude to benefit from the instruction received.

Article 7: Children are prevented from carrying, dragging or pushing loads whether in the interior or the exterior of the regular work site in certain sectors if the loads exceed the following:

- Carrying of loads
Children 14 to 16 years of age: 8Kg.
Children 16 to 18 years of age: 10 Kg.
- Transport by tip trucks circulating on railway
Children 14 to 17 years of age: 150 Kg, vehicle included.
- Transport by wheelbarrow
Children 14 to 17 years of age: 40 Kg, vehicle included.
- Transport by a vehicle with 3 or 4 wheels
Children 14 to 17 years of age: 35 Kg, vehicle included.
- Transport by handcart
Children 14 to 17 years of age: 130 Kg, vehicle included.
- Transport by tricycle-carrier:
Children 14 to 17 years of age: 50 Kg, vehicle included.

The modes of transport specified under n°2, 3, 5 and 6 are prohibited for children under 14 years.

Article 11: Children are also prohibited from engaging in the subsequent tasks (in agriculture and forestry):

- Cutting of trees;
- Burning of fields;
- The sale, transport, or handling of agro-pharmaceutical products (insecticides, herbicides, fungicide, chemical fertilizers, etc.);
- Hunting;
- Charcoal production or work as a lumber-jack; and
- Working with animal-drawn tools, machinery, or vehicles.

Source: Government of Côte d'Ivoire, Arrêté No. 009, (January 2012).

* Sections relevant to the measurement of hazardous work for children in agriculture (translation by Tulane).

²² *Système de Suivi du Travail des Enfants, Rapport National Sur la Lutte Contre la Traite et les Pires Formes de Travail dans le Secteur du Cacao en Côte d'Ivoire 2000-2009, (November 2009).*

4.3.2. Regulatory Framework of Ghana

In Ghana legal regulation of child work was enacted by the Children’s Act of 1998. Section 89 sets the minimum age for child work at 15 years of age and section 90 sets the minimum age for light work – defined as work that “is not likely to be harmful to the health or development of the child and does not affect the child’s attendance at school or the capacity of the child to benefit from school work” – at 13 years of age. Section 91 stipulates that hazardous employment is proscribed for all children under 18 years of age and Section 87 forbids the engagement of a child in “exploitative child labour” that “deprives the child of its health, education or development”, under all circumstances. In addition, night work, “work between the hours of eight o’clock in the evening and six o’clock in the morning”, is banned for children.²³

Box 7. Hazardous Child Labor Activities Framework: Ghana

Work activities prohibited for children under 18 years working in cocoa:

- Clearing of forest and/or felling of trees;
- Bush burning;
- Working with agrochemicals, i.e. purchasing, transport, storage, use (mixing, loading and spraying/applying), washing of containers and spraying machine, and disposal;
- Being present or working in the vicinity of farm during pesticide spraying, or reentering a sprayed farm within less than 12 hours of spraying;
- Using machetes/long cutlasses for weeding;
- Climbing trees higher than 3 meters (9 feet) to cut mistletoe with cutlass;
- Working with motorized mist blower, knapsack sprayer and/or chainsaw;
- Harvesting overhead cocoa pods with harvesting hook;
- Breaking cocoa pods with breaking knife;
- Carrying heavy load beyond permissible carrying weight, i.e. above 30% of body weight for more than 2 miles (3km);
- Working on the farm for more than 3 hours per day or more than 18 hours per week (for children on weekends, holidays and/or have completed school);
- For children in school, working more than 2 hours/day on a school day;
- Working without adequate basic foot and body protective clothing (e.g. long sleeves, trousers, Wellington boots and ‘Afro Moses’);
- A child working alone on the farm in isolation (i.e. beyond visible or audible range of nearest adult);
- Going to or returning from the farm alone or working on farm between 6.00 p.m. and 6.00 a.m.;
- A child withdrawn from school during cocoa season to do farm work; and
- Working full time on farm and not attending formal / non-formal school (applicable to children under 15 years).

Source: Government of Ghana, Ministry of Manpower, Youth and Employment, Hazardous Child Labour Activity Framework, (June 2008).

The Hazardous Child Labour Activity Framework, issued by the Ministry of Manpower, Youth, and Employment in 2008, defines hazardous work for local conditions. As such it supplements ILO Convention 182 and Recommendation 190. Ghana’s framework, published by the Ministry of Manpower, Youth and Employment in June 2008, is specific to the cocoa sector (see Box 7).

²³ Government of Ghana, Children’s Act: ACT 560, (1998).

Ghana's framework indicates the maximum allowable working hours for children under 18. Children are prohibited from working on a farm for more than "three hours per day or more than 18 hours per week (for children on weekends, holidays and/or children who have completed school)" or "more than 2 hours/day on a school day." The framework also specifies that "going to or returning from the farm alone or working on farm between 6.00 p.m. and 6.00 a.m." is prohibited for children. In addition, a child cannot be "withdrawn from school during cocoa season to do farm work" and cannot work "full time on farm and not attending formal/non-formal school (applicable to children under 15 years)." Any of these activities is considered hazardous under Ghana's framework (see Box 7).

5. Research Methodology

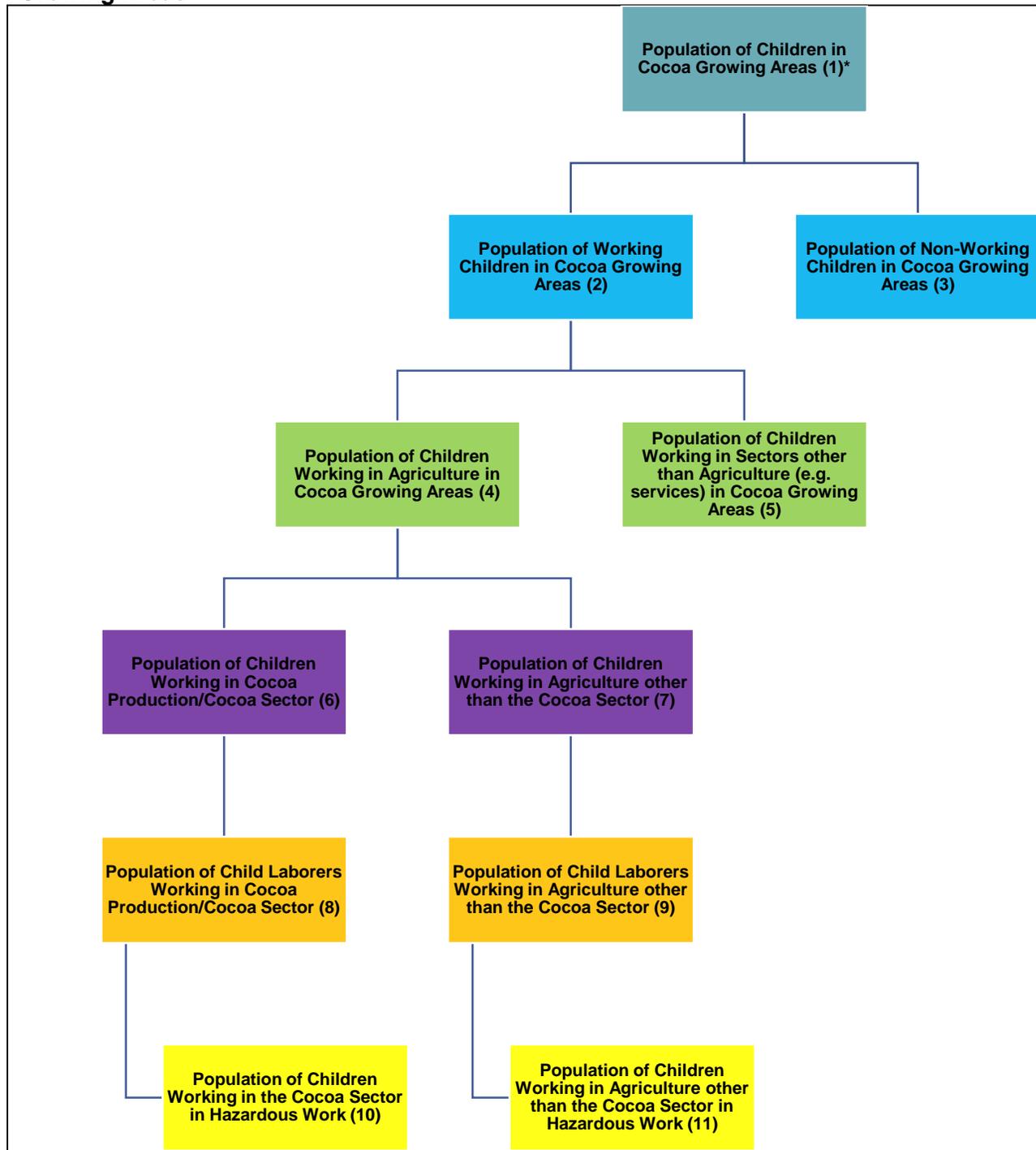
Baseline and follow-up estimates of the WFCL in the cocoa sectors of Côte d'Ivoire and Ghana have been calculated using hazardous work, the most common WFCL, as a proxy for the WFCL. Survey data collected by Tulane University are used to identify children's exposure to child labor and hazardous work in cocoa agriculture. Data collected in 2013/14 are compared with data collected in 2008/09 to determine children's involvement in child labor, including hazardous labor, in agricultural households.²⁴ Data are presented for all children in agricultural households in the cocoa growing areas of Côte d'Ivoire and Ghana as well as working children, children in child labor, and children in hazardous work. Both children working in agriculture and children performing productive activities other than agriculture are discussed in this report but the focus is on agriculture and, in particular, work in cocoa.²⁵

The different populations of children under study are presented in the measurement framework below (see Figure 1).

²⁴ A household was defined as "a person or group of persons who live together in the same house or compound, share the same housekeeping arrangements and are catered for as one unit. Members of a household are not necessarily related (by blood or marriage) and not all those related in the same house or compound are necessarily of the same household" (ILO definition). An agricultural household was defined as any household with at least one member – adult or child – involved in work in agriculture in the previous 12 months. The surveys were designed to be representative of all children living in agricultural households in the cocoa growing areas, including children working on cocoa farms as well as those performing other work and those who are not working.

²⁵ Children are defined as working in cocoa if they reported working at least one hour in the last 12 months in cocoa agriculture.

Figure 1. Measurement Framework for Survey Research on Child Labor in Cocoa Growing Areas



Source: Tulane University, *Recommended Methodologies for Developing Baseline Estimates on the Worst Forms of Child Labor and Proposed Estimates on Hazardous Child Labor in the West African Cocoa Growing Areas*, (March 28, 2014).

* Includes all children 5-17 years living in agricultural households in the cocoa growing areas.

5.1. Methodology for Calculating Baseline and Follow-Up Estimates

The approach to measuring hazardous work for children in the cocoa sector presented in this report was developed in 2012 and 2013 in consultations with stakeholders including USDOL, the Governments of Côte d'Ivoire and Ghana, the ILO and Industry. The objective of these consultations was to arrive at an agreed upon methodology that is not only based on the ILO definitions and guidelines but also in line with the national laws and hazardous activity frameworks of Côte d'Ivoire and Ghana. As a result, the methodology for generating baseline and follow-up estimates on hazardous work performed by children in cocoa agriculture focuses on the “common ground” between the Ghanaian and the Ivorian definitions within the broader ILO framework.²⁶

5.1.1. Variables for Measuring Hazardous Work for Children

For the purpose of calculating baseline and follow-up estimates, hazardous work is measured by assessing six variables. Children 5-17 years working in the cocoa sector reporting exposure in the last 12 months to any one of these variables are considered to be in hazardous work in cocoa agriculture:

1. Children (5-17 years) working in cocoa involved in land clearing (V1)
2. Children (5-17 years) working in cocoa carrying heavy loads (V2)
3. Children (5-17 years) working in cocoa exposed to agro-chemicals (V3)
4. Children (5-17 years) working in cocoa using sharp tools (V4)
5. Children (5-17 years) working in cocoa exposed to long working hours (V5)
6. Children (5-17 years) working in cocoa exposed to night work (V6)

Children Working in Cocoa Involved in Land Clearing (V1)

While many work activities performed in cocoa agriculture pose a risk to children, involvement in land clearing stands out among those that are especially dangerous. Burning forest and cutting trees pose a threat to the health of children working in agriculture. In addition to injuries sustained as a direct result of land clearing, smoke inhalation can have serious and long-lasting respiratory effects. The hazardous activities frameworks of Côte d'Ivoire and Ghana both cover land clearing among the list of activities that cannot be performed by children:

Côte d'Ivoire:

- “Cutting of trees”
- “Burning of fields”

Ghana:

- “Clearing of forest and/or felling of trees”
- “Bush-burning”

²⁶ This methodology is explained in greater detail in: Tulane University, Recommended Methodologies for Developing Baseline Estimates on the Worst Forms of Child Labor and Proposed Estimates on Hazardous Child Labor in the West African Cocoa Growing Areas, (March 28, 2014).

Box 8. Coding for V1 “Land Clearing”

A child is considered exposed to Variable 1 “Land Clearing”, if he or she was between 5-17 years old at the time of data collection, and worked in cocoa farming during the previous 12 months, and reported having worked in land clearing, or felling and chopping, or burning on a cocoa farm as part of these activities.

Source: Tulane University, Recommended Methodologies for Developing Baseline Estimates on the Worst Forms of Child Labor and Proposed Estimates on Hazardous Child Labor in the West African Cocoa Growing Areas, (March 28, 2014).

Children Working in Cocoa Carrying Heavy Loads (V2)

Children working in the cocoa sectors of Côte d'Ivoire and Ghana are frequently tasked with carrying loads such as water and cocoa beans, usually on their heads. A child who is still developing may lack the adequate strength or motor skills required, resulting in injury. Even though a child may be physically able to carry the load, the available evidence indicates that beyond 20% of body weight, children will experience adverse effects to their health. Head weight loading may come with particular risks including considerable amount of strain to the axial skeleton and the cervical spine.²⁷ The Ghanaian and Ivorian country frameworks both cover heavy loads among the activities that children are not allowed to engage in:

Côte d'Ivoire:

- “Children are prevented from carrying, dragging or pushing loads whether in the interior or the exterior of the regular work site in certain sectors if the loads exceed the following” (see Box 6 for detailed list of weights by age and mode of transport)

Ghana:

- “Carrying heavy load beyond permissible carrying weight, i.e. above 30% of body weight for more than 2 miles (3km)”

Box 9. Coding for V2 “Heavy Loads”

A child is considered exposed to Variable 2, if he or she was between 5-17 years old at the time of data collection, and worked in cocoa farming during the previous 12 months, and reported having carried heavy loads.

Source: Tulane University, Recommended Methodologies for Developing Baseline Estimates on the Worst Forms of Child Labor and Proposed Estimates on Hazardous Child Labor in the West African Cocoa Growing Areas, (March 28, 2014).

Children Working in Cocoa Exposed to Agro-Chemicals (V3)

Academic research documents the hazards associated with agro-chemicals. For a number of reasons, exposure to pesticides and other chemicals presents a greater risk to children than to adults. This stems from both greater exposure and increased vulnerability to the substances. There is also a growing body of research concerning environmental factors, including pesticide exposure, and their contribution to neurodegenerative diseases.²⁸ The Governments of Côte d'Ivoire and Ghana both prohibit the exposure of children to agro-chemicals as expressed in their country hazardous activities frameworks:

²⁷ Tulane University, Background Paper, Conference of Child Labor in the Cocoa Sector, (April 27-29, 2010).

²⁸ Ibid.

Côte d'Ivoire:

- “The sale, transport, handling of agro-pharmaceutical products (insecticides, herbicides, fungicide, chemical fertilizers, etc.)”

Ghana:

- “Working with agrochemicals, i.e. purchasing, transport, storage, use (mixing, loading and spraying/applying), washing of containers and spraying machine, and disposal”
- “Being present or working in the vicinity of farm during pesticide spraying, or reentering a sprayed farm within less than 12 hours of spraying”

Box 10. Coding for V3 “Agro-Chemicals”

A child is considered exposed to Variable 3 “Argo-Chemicals”, if he or she was between 5-17 years old at the time of data collection, and worked in cocoa farming during the previous 12 months, and reported exposure to any of the following activities:

1. Spraying of pesticides, insecticides;
2. Being present or working in the vicinity of farm during pesticide spraying;
3. Reentering a sprayed farm within less than 12 hours of spraying;
4. Carrying water for spraying; and/or
5. Having been involved in working with agrochemicals (such as purchasing, transport, storage, mixing, loading, spraying/applying, washing of containers and spraying machine, and/or disposal).

Source: Tulane University, Recommended Methodologies for Developing Baseline Estimates on the Worst Forms of Child Labor and Proposed Estimates on Hazardous Child Labor in the West African Cocoa Growing Areas, (March 28, 2014).

Children Working in Cocoa Using Sharp Tools (V4)

A child who is still developing may lack the adequate strength or motor skills required to perform certain tasks on the farm, resulting in injury. In the case of tools used in agriculture, “[a] child worker has not yet mastered the most efficient, or the fastest and safest working techniques; movements are not always well controlled and in proportion with the desired result, and he or she may not receive appropriate training.”²⁹ Children also have an especially difficult time safely using farm equipment and protective gear intended for adults. The Governments of Côte d'Ivoire and Ghana both prohibit the exposure of children to dangers to their health and activities likely to cause injury:

Côte d'Ivoire:

- Activities that are “damaging their health, security, or morality”
- Activities that “harm their physical or mental development”

Ghana:

- “Using machetes/long cutlasses for weeding”
- “Climbing trees higher than 3 meters (9 feet) to cut mistletoe with cutlass”
- “Working with motorized mist blower, knapsack sprayer and/or chainsaw”
- “Harvesting overhead cocoa pods with harvesting hook”
- “Breaking cocoa pods with breaking knife”

²⁹ Forastieri, V, Children at Work Health and Safety Risks, International Labour Organization (ILO), (2002).

Box 11. Coding for V4 “Sharp Tools”

A child is considered exposed to Variable 4, if he or she was between 5-17 years old at the time of data collection, and worked in cocoa farming during the previous 12 months, and reported exposure to any of the following activities:

1. Using machetes/long cutlasses for weeding;
2. Working with motorized mist blower, knapsack sprayer and/or chainsaw;
3. Harvesting overhead cocoa pods with harvesting hook;
4. Breaking cocoa pods with breaking knife; and/or
5. Climbing trees higher than 3 meters (9 feet) to cut mistletoe with cutlass.

Source: Tulane University, Recommended Methodologies for Developing Baseline Estimates on the Worst Forms of Child Labor and Proposed Estimates on Hazardous Child Labor in the West African Cocoa Growing Areas, (March 28, 2014).

Children Working in Cocoa Exposed to Long Working Hours (V5)

Long working hours have been classified as hazardous by the ILO. Based on the report from the 18th International Conference of Labour Statisticians, this indicator is typically operationalized as a child spending 43 hours or more working in the last 7 days (see Box 3). The Governments of Côte d’Ivoire and Ghana committed to implementing the ILO standards on child labor by ratifying the relevant international conventions and long working hours performed by children are prohibited by local labor laws and regulations.

Box 12. Coding for V5 “Long Working Hours”

A child is considered exposed to Variable 5 “Long Working Hours” if he or she was between 5-17 years old at the time of data collection, and worked in cocoa farming during the previous 12 months, and reported having spent 43 hours or more working in the previous 7 days.

Source: Tulane University, Recommended Methodologies for Developing Baseline Estimates on the Worst Forms of Child Labor and Proposed Estimates on Hazardous Child Labor in the West African Cocoa Growing Areas, (March 28, 2014).

Children Working in Cocoa Exposed to Night Work (V6)

Similar to long working hours, exposure to night work has been classified as hazardous by the ILO (see Box 3). In line with the ILO guidelines, night work is included in Ghana’s hazardous activities framework, which prohibits “going to or returning from the farm alone or working on farm between 6.00 p.m. and 6.00 a.m.”. Night work performed by children is also prohibited by the Ivorian Labor Code of 1995.

Box 13. Coding for V6 “Night Work”

A child is considered exposed to Variable 6 “Night Work” if he or she was between 5-17 years old at the time of data collection, worked in cocoa farming during the previous 12 months, and reported going to or returning from the farm alone or working on the farm between 6.00 p.m. and 6.00 a.m.

Source: Tulane University, Recommended Methodologies for Developing Baseline Estimates on the Worst Forms of Child Labor and Proposed Estimates on Hazardous Child Labor in the West African Cocoa Growing Areas, (March 28, 2014).

5.1.2. Measuring Access to Education

Since access to education is a major concern of the Governments of Côte d'Ivoire and Ghana, and references to a child's school attendance are included in both countries' hazardous activities frameworks (see Boxes 6 and 7), two additional variables measuring access to education are assessed in this report. These variables are:

1. Children (6-14 years) working in cocoa agriculture not attending school (V7)
2. Cocoa work interfering with schooling (for children 6-14 years) (V8)

The age range for these variables was reduced from 5-17 years to 6-14 years based on local laws and regulations. Since the ILO definition and measurement framework do not consider education when determining a child's exposure to hazardous work, the two variables measuring access to education are not included in the estimates of hazardous work. The data on access to education are discussed in a separate section of this report (see Section 6.5.).

Children Working in Cocoa Agriculture not Attending School (V7)

Child labor can be an obstacle to school attendance. If child labor is preventing children from attending school, it is considered a form of hazardous work by the Governments of Côte d'Ivoire and Ghana, as expressed in the provisions included in the hazardous activities frameworks presented below:

Côte d'Ivoire:

- "Deprive them of their schooling or the opportunity to go to school"

Ghana:

- "Working full time on farm and not attending formal/non-formal school (applicable to children under 15 years)"

Box 14. Coding for V7 "School Attendance"

A child, 6-14 years, is considered not attending school if he or she was within the age range at the time of data collection, and worked in cocoa farming during the previous 12 months, and reported not attending school or preschool in the previous 12 months.

Source: Tulane University, Recommended Methodologies for Developing Baseline Estimates on the Worst Forms of Child Labor and Proposed Estimates on Hazardous Child Labor in the West African Cocoa Growing Areas, (March 28, 2014).

Cocoa Work Interfering with Schooling (V8)

Work responsibilities may interfere with the education of children enrolled in school, who might, for example, be forced to drop out of school temporarily during harvest season. In other cases, work may result in fatigue or other negative health impacts, or just leave little time for homework and other school-related tasks. The country frameworks of Côte d'Ivoire and Ghana are both concerned with work activities interfering with schooling:

Côte d'Ivoire:

- "Preventing them from scholarly diligence or having the aptitude to benefit from the instruction received"

Ghana:

- “A child withdrawn from school during cocoa season to do farm work”
- “For children in school, working more than 2 hours/day on a school day”

Box 15. Coding for V8 “Interference with Schooling”

The schooling of a child, 6-14 years, is considered negatively impacted by work performed in cocoa agriculture, if he or she was within the age range at the time of data collection, worked in cocoa farming during the previous 12 months, and reported:

1. Having been withdrawn from school during cocoa season to do farm work; and/or
2. That schooling has been affected by his/her work.

Source: Tulane University, Recommended Methodologies for Developing Baseline Estimates on the Worst Forms of Child Labor and Proposed Estimates on Hazardous Child Labor in the West African Cocoa Growing Areas, (March 28, 2014).

5.1.3. Selection of Approach to Measuring Hazardous Work

Taking into account statistical strength, international standards as well as national legislation, a stakeholder consensus on the methodology for the measurement of hazardous work presented in this report was reached at the 2013 CLCCG meetings in Washington, DC. Based on this consensus, the estimates of the total number of children in hazardous work in the production of cocoa during the 2008/09 and 2013/14 cocoa harvest seasons are calculated using the six variables measuring hazardous work (V1-V6) introduced above, but excluding the educational variables (V7-V8). Each variable was given equal weight, and a child reporting exposure to at least one of these variables (V1-V6) is considered in hazardous work and thus in the WFCL.

5.2. Survey Design and Implementation

A stratified multi-stage cluster sampling approach was used for both rounds of survey data collection to select a representative sample of agricultural households in the cocoa growing areas, and a representative sample of children between 5 and 17 years living in these households. A household was defined as “a person or group of persons who live together in the same house or compound, share the same housekeeping arrangements and are catered for as one unit. Members of a household are not necessarily related (by blood or marriage) and not all those related in the same house or compound are necessarily of the same household” (ILO definition). An agricultural household was defined as any household with at least one member – adult or child – involved in work in agriculture in the previous 12 months. The surveys were designed to be representative of all children living in agricultural households in the cocoa growing areas, including children working on cocoa farms as well as those performing other work and those who are not working. Members of the family that had relocated to other areas, including children attending school in larger towns, were not included in the research. Some selected households did not have any children.

5.2.1. Sample Size and Sampling

A minimum sample size of 768 households was required for generating representative population estimates based on sample size calculations (see Box 16). For representative household survey research, the selection of no less than 30 clusters and no more than 40-50 households per cluster is also recommended. Based on the available sampling literature, “the use of 30 clusters in population-based surveys has become popularized” and “serves as a

rough working guideline, representing a figure adequate to ensure that samples of target group members are sufficiently well spread across enough clusters that survey estimates are not unduly influenced by a handful of clusters” (Magnani 2007).³⁰

The survey research summarized in this report exceeded these minimum requirements with approximately 800 households from 40 clusters in the cocoa growing areas of Côte d’Ivoire and Ghana included in the research in 2008/09. In 2013/14 the number of selected households was further increased to over 1,000 households, and survey data were collected in 60 clusters including the 40 original clusters, based on ILO recommendation. In each selected household, a household interview, a head of household interview (defined as the most knowledgeable adult available to be interviewed), interviews with all children between 5-17 years, and interviews with all adult workers living in the selected households were completed. In addition to the household interviews, a smaller number of community-based interviews were completed, including interviews with local community leaders, interviews with staff at the local health centers, interviews with teachers at the local schools, interviews at the local police stations, interviews with community-based projects targeted in improving the well-being of children and their families, as well as interviews at the local cocoa shed and depots. Data from the additional interviews are available but not covered in this report.

Box 16. Sample Size Calculation

Sample size required to estimate prevalence with 95% confidence limit:

$$N = \frac{1.96^2 \times (P)(1-P)}{d^2} \times \text{deft}$$

1.96 = Z value for $\alpha = 0.05$ or 95% confidence limits
P = estimated prevalence (varies, set at 0.5)
d = desired precision (0.05 for $\pm 5\%$)
deft = design effect = 2 (estimate)

$$N = \frac{1.96^2 \times (0.5)(1-0.5)}{0.05} \times 2 = 768 \text{ (agricultural HH)}$$

Census enumeration areas were used for sampling purposes to select the target number of clusters. Government census data were accessed for this purpose. The last available census data in Côte d’Ivoire were from 1998 while in Ghana a census was implemented in 2000 as well as 2010. In both countries and both years of data collection, only rural and semi-urban areas were included in the sampling frame, while urban areas were excluded. The enumeration areas were stratified based on levels of cocoa production:

- Stratum 1 = High cocoa production
- Stratum 2 = Medium cocoa production
- Stratum 3 = Low cocoa production

³⁰ Magnani, R., Sampling Guide, Food and Nutrition Technical Assistance Project (FANTA), (Washington, DC, Academy for Educational Development, 2007). According to Magnani, “as a general rule, selecting no more than 40-50 households per cluster should be relatively safe. Of course, if resources will not permit clusters of this size, the ‘cluster take’ could be increased, but it should be recognized that this will be at the cost of increased sampling error.”

Table 4a. Sampling and Stratification, Côte d'Ivoire, 2008/09 and 2013/14

	% of cocoa production	Total # of census districts/ enumeration area (rural and semi-urban only)	# of census districts/ enumeration areas selected
Survey 2008/09			
Stratum 1	84.5%	4,179	25
Stratum 2	15.2%	3,761	10
Stratum 3	0.3%	2,921	5
Total (Strata 1-3)	100%	10,861	40
Stratum 4	0%	1,450	10
Survey 2013/14			
Stratum 1	35.6%	4,179	31
Stratum 2	32.0%	3,761	19
Stratum 3	32.4%	3,803	10
Total (Strata 1-3)	100%	11,743	60

Table 4b. Sampling and Stratification, Ghana, 2008/09 and 2013/14

	% of cocoa production	Total # of census districts/ enumeration area (rural and semi-urban only)	# of census districts/ enumeration areas selected
Survey 2008/09			
Stratum 1	56.9%	1,178	19
Stratum 2	42.8%	6,351	17
Stratum 3	0.3%	389	4
Total (Strata 1-3)	100%	7,918	40
Stratum 4	0%	9,132	10
Survey 2013/14			
Stratum 1	61.5%	2,236	33
Stratum 2	37.5%	9,624	23
Stratum 3	1.0%	661	4
Total (Strata 1-3)	100%	12,521	60

The enumeration areas were selected with equal probability. Since the exact size of the selected enumeration areas was unknown and a current listing of households in the selected areas was not available, a complete enumeration was carried out by the survey teams prior to field data collection in each selected cluster. Parts of the country with high cocoa production were over-sampled to ensure that a large enough number of children working in cocoa were included in the research (see Tables 4a and 4b). While the 2008/09 survey included a comparison group of 10 enumeration areas outside of the cocoa growing areas (Stratum 4), this stratum was not included in the 2013/14 round of survey data collection, which focused on the cocoa growing areas only. The population estimates presented in this report are weighted.

5.2.2. Types and Number of Interviews Completed

Both rounds of survey data collection consisted of more than 4,500 individual interviews per country (see Table 5). While around 800 households were interviewed in Côte d'Ivoire and Ghana in 2008/09, the total sample size per country was over 1,000 households in 2013/14. (Weights adjust for the larger sample size.) The number of interviewed children also increased in Côte d'Ivoire, but slightly decreased in Ghana. The number of community-based interviews increased in 2013/14 due to the larger number of survey locations (which was expanded from 40 in 2008/09 to 60 in 2013/14).

Table 5. Number of Interviews Completed

Type of interview	Côte d'Ivoire		Ghana	
	2008/09*	2013/14	2008/09*	2013/14
Household	806	1,214	850	1,053
	Households	Households	Households	Households
Individuals	5,487	7,160	4,650	5,218
	Individuals	individuals	Individuals	individuals
Caregiver	803	1,223	835	1,061
Child	2,165	2,341	2,278	2,161
Adult worker	152	164	441	265
Community leader	40	60	42	60
Teacher	N/A	61	N/A	84
Law enforcement	N/A	56	N/A	30
Health center	N/A	51	N/A	46
Project	N/A	11	N/A	14
Cocoa shed	32	60	29	55
Cocoa depot	31	38	17	21
Infrastructure checklist	40	62	50	64

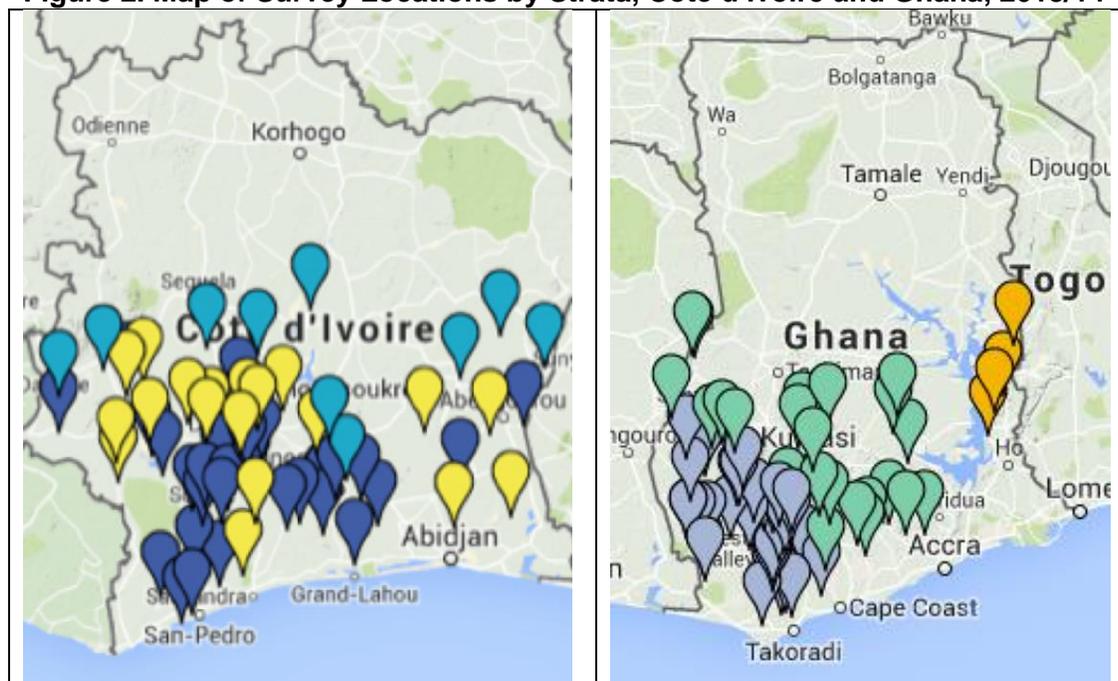
Source: Tulane child labor survey 2008/09 & 2013/14, survey count, strata 1-3.

*Does not include comparison group outside of cocoa growing areas.

5.2.3. Fieldwork and Data Entry

The fieldwork was carried out in Côte d'Ivoire by the École Nationale de Statistique et d'Economie Appliquée (ENSEA) and in Ghana by the Institute of Statistical, Social And Economic Research (ISSER).

Figure 2. Map of Survey Locations by Strata, Côte d'Ivoire and Ghana, 2013/14



All interviews were completed by small teams of surveyors led by a team leader. Supervisors, working closely with ENSEA and ISSER researchers, were responsible for monitoring the teams in the field. Surveyors, team leaders and supervisors were selected based on their experience in survey research and fluency in the relevant local languages. All data collection personnel were trained over a period of 1-2 weeks before the start of fieldwork, including participation in a pilot. Research methodology and questionnaires were developed by the Tulane University researchers and approved by the Tulane University Institutional Review Board (IRB) as well as locally in Côte d'Ivoire and Ghana prior to data collection. The data were entered electronically using handheld devices. ENSEA and ISSER researchers were in charge of data cleaning, which was supervised by Tulane University.

The field teams encountered some challenges as part of the data collection. When data were collected during the 2013/14 cocoa harvest period, household sizes had decreased in the cocoa growing areas compared to previous rounds of survey data collection, resulting in a lower than expected number of children in the selected households. In order to reach the target sample size of children, approximately 100 households were added in both countries compared to what had been originally planned. In addition, a data collection error in Côte d'Ivoire required a return to the field in early 2015 to supplement the sample of agricultural households not involved in the production of cocoa. Two hundred additional non-cocoa growing households were interviewed in Côte d'Ivoire as part of this effort and the results for Côte d'Ivoire were reweighted. Since all interviews with cocoa producing households had been completed as planned during the 2013/14 harvest period, the major target of interest was not impacted.

6. Analysis of Survey Findings

The estimates presented in this report are representative of agricultural households in the cocoa growing areas of Côte d'Ivoire and Ghana. Child-level estimates are representative of the population of children, 5-17 years, living in these households. Survey data collected by Tulane University are used to identify children's exposure to child labor and hazardous work in cocoa agriculture. Data collected in 2013/14 are compared with data collected in 2008/09 to determine children's involvement in child labor, including hazardous work, in agricultural households.

In comparing the data from the 2008/09 and 2013/14 rounds of survey data collection, the analysis shows that the cocoa growing areas went through major socio-economic changes in the last five years. These changes, which have the potential to impact the survey results, include: (a) increases in cocoa production, (b) population growth and migration, (c) fluctuations in number of children working in cocoa, and (d) political violence in Côte d'Ivoire.

- **Increases in cocoa production:** Cocoa production has gone up considerably in Côte d'Ivoire since the 2008/09 cocoa harvest season (more than 40%) and also increased in Ghana (over 30%), based ICCO statistics. In 2008/09, 1,223,200 tonnes of cocoa were produced in Côte d'Ivoire, the lowest number since 2001.³¹ In 2013/14, cocoa production in Côte d'Ivoire achieved a record high of an estimated 1.746 million tonnes.³² Ghana's 2013/14 cocoa season produced over 890,000 tons, or over 200,000 more tons than the

³¹ International Cocoa Association (ICCO), *The World Cocoa Economy: Past and Present*, (September 2012).

³² International Cocoa Organization (ICCO), *ICCO Quarterly Bulletin of Cocoa Statistics*, Vol. XLI, No. 1, Cocoa year 2014/15, (February 27, 2015).

2008/09 harvest. Overall, Côte d'Ivoire continues to produce almost twice as much cocoa as Ghana (see Section 6.4.7. for further discussion).

- **Population growth and migration:** There has been major population growth in both countries in the past decade, mostly in cities but to a lesser degree in rural areas. In rural areas, between 2009 and 2013, the population increased by approximately 3.4% in Ghana and 2.8% in Côte d'Ivoire based on World Bank statistics.³³ The average annual population growth rate for Côte d'Ivoire's urban areas between 2009 and 2013 was 3.6%, while for rural areas it was only 0.6%. For Ghana, the average rates were 3.6% in urban areas and 0.9% in rural areas.³⁴ Rural population growth was lower than the country-average due to outmigration of older children and adults of working age reducing the available workforce (see Section 6.4.7. for further discussion).
- **Fluctuations in number of children working in cocoa:** There have been fluctuations in the number of children reporting work in cocoa between the rounds of survey data collection. While around 40% of the children between 5 and 17 years in agricultural households in the cocoa growing areas reported work in the cocoa sector in Côte d'Ivoire in 2007/08 (Tulane's first survey) as well as in 2013/14 (current survey), only 23% reported working in cocoa in 2008/09 (baseline survey). These fluctuations may be attributed to variations in the strength of the cocoa harvest between the survey years, which are a problem in cocoa agriculture. For example, while Ghana had a very strong cocoa season in 2013/14 (current Tulane survey year), there is a fear that Ghanaian producers will not be able to fulfill their cocoa contracts in the 2014/15 season due to significant falls in production stemming from poor weather and delayed application of the pesticides and fungicides that protect cocoa trees from disease and blight (see Section 6.4.7. for further discussion).³⁵
- **Political violence in Côte d'Ivoire:** Côte d'Ivoire experienced political violence in 2010/11, following the country's presidential elections. The political violence caused human suffering and internal and cross-border migration. It disrupted project activities and government programs in the cocoa growing areas and had a negative impact on the country's infrastructure including schools and the availability of teachers, particularly in rural parts of the country. The political violence exacerbated a context already marked by internal divisions and tensions. While this situation has improved since the cessation of the internal conflict, the country is still in the process of rebuilding.

All estimates presented below are weighted to adjust for stratification as part of the sampling process and projected to the total population, except if otherwise noted. Findings from 2008/09 are reported for the cocoa growing areas (Strata 1-3) only and do not include the comparison group of households outside of the cocoa growing areas (Stratum 4).

³³ World Bank, World Development Indicators (online).

³⁴ Calculated based on annual population growth figures from the World Development Indicators (online).

³⁵ Nicholas Bariyo and Julie Wernau, Ghana Faces Huge Shortfall in Cocoa Crop, The Wall Street Journal, updated June 19, 2015.

6.1. Survey Demographic Characteristics

The majority of heads of households in both countries were male (see Table 6a). In Côte d'Ivoire the percentage of female heads of household fell from 14.6% in 2008/09 to 9.1% in 2013/14. In Ghana the percentage of female heads rose from 27.1% to 30.7%. The median age of an Ivorian head of household was 45 years in 2008/09 and 43 years in 2013/14, while in Ghana the median age was 46 in both years.

We found more male than female children in the 5-17 years age range in the selected households in both countries, but the difference was not large and there was little change in the percentages between the two survey years (see Table 6b). The median age of the interviewed children in Côte d'Ivoire was 10 years in both years. In Ghana, the median child age was 10.5 years in 2008/09 and 11 years in 2013/14. (Note that the data presented in Tables 6a and 6b describe the sample and the results are not weighted.)

Table 6a. Respondent Characteristics: Heads of Household

	Côte d'Ivoire		Ghana	
	2008/09	2013/14	2008/09	2013/14
Average age (years)	46.8	45.1	47.6	47.8
Median age (years)	45.0	43.0	46.0	46.0
Gender	M 688 (85.4%)	M 1,100 (90.9%)	M 609 (72.9%)	M 726 (69.3%)
	F 118 (14.6%)	F 110 (9.1%)	F 226 (27.1%)	F 321 (30.7%)

Source: Tulane household survey 2008/09 & 2013/14, survey count, strata 1-3.

Table 6b. Respondent Characteristics: Children, 5-17 Years

	Côte d'Ivoire		Ghana	
	2008/09	2013/14	2008/09	2013/14
Average age (years)	10.1	10.2	10.7	10.7
Median age (years)	10.0	10.0	10.5	11.0
Gender	M 1,195 (53.9%)	M 1,328 (53.7%)	M 1,218 (53.5%)	M 1,173 (52.7%)
	F 1,023 (46.1%)	F 1,147 (46.3%)	F 1,060 (46.5%)	F 1,054 (47.3%)

Source: Tulane household survey 2008/09 & 2013/14, survey count, strata 1-3.

Côte d'Ivoire has a large population of immigrants, particularly from Burkina Faso, in its cocoa growing areas. About one fifth of Ivorian heads of household were born outside the country and about one quarter had a non-Ivorian nationality (see Table 7a). In Côte d'Ivoire and Ghana, place of birth does not determine citizenship, and individuals born in the two countries do not always have Ivorian or Ghanaian nationality. While more than 98% of the children interviewed in Côte d'Ivoire's cocoa growing areas were born in the country, about one fifth had a non-Ivorian nationality (see Table 7c). The majority of those with non-Ivorian nationalities had Burkinabe citizenship.

Table 7a. Place of Birth and Nationality of Survey Respondents: Heads of Household, Côte d'Ivoire

	2008/09	2013/14
Place of Birth		
Côte d'Ivoire	665 (82.5%)	983 (81.2%)
Ghana	1 (0.1%)	3 (0.2%)
Burkina Faso	113 (14.0%)	185 (15.3%)
Mali	16 (2.0%)	29 (2.4%)
Other	11 (1.4%)	8 (0.7%)
No response	0 (0.0%)	0 (0.0%)
Nationality		
Ivorian nationality	622 (77.2%)	903 (74.6%)
Ghanaian nationality	2 (0.2%)	0 (0.0%)
Burkinabe nationality	151 (18.7%)	253 (20.9%)
Malian nationality	21 (2.6%)	41 (3.4%)
Other	9 (1.1%)	13 (1.1%)
No response	1 (0.1%)	0 (0.0%)

Source: Tulane household survey 2008/09 & 2013/14, sample count, strata 1-3.

Table 7b. Place of Birth and Nationality of Survey Respondents: Heads of Household, Ghana

	2008/09	2013/14
Place of Birth		
Côte d'Ivoire	1 (0.1%)	0 (0.0%)
Ghana	824 (98.7%)	1,032 (98.6%)
Burkina Faso	0 (0.0%)	2 (0.2%)
Mali	1 (0.1%)	1 (0.1%)
Other	9 (1.1%)	12 (1.3%)
No response	0 (0.0%)	0 (0.0%)
Nationality		
Ivorian nationality	1 (0.1%)	0 (0.0%)
Ghanaian nationality	825 (98.8%)	1,035 (98.9%)
Burkinabe nationality	0 (0.0%)	1 (0.1%)
Malian nationality	1 (0.1%)	1 (0.1%)
Other	6 (0.7%)	10 (1.0%)
No response	2 (0.2%)	0 (0.0%)

Source: Tulane household survey 2008/09 & 2013/14, sample count, strata 1-3.

Ghana's cocoa growing areas are home to a relatively small migrant population from neighboring countries. Few heads of households and children (less than 2%) were born outside of the country and almost all had Ghanaian nationality (see Tables 7b and 7d).

In addition to cross-border migration, internal migration is significant in both countries. This includes migration to the cocoa growing areas as well as migration away from them. As discussed below, older children and young adults are especially likely to move out of agricultural households and the data indicate that they leave in large numbers, resulting in a population in rural Côte d'Ivoire and Ghana in which the very young and older adults are overrepresented due to the impact of migration (see Figures 3 and 4).

Table 7c. Place of Birth and Nationality of Survey Respondents: Children, 5-17 Years, Côte d'Ivoire

	2008/09	2013/14
Place of Birth		
Côte d'Ivoire	2,178 (98.2%)	2,400 (97.0%)
Ghana	4 (0.2%)	0 (0.0%)
Burkina Faso	33 (1.5%)	66 (2.7%)
Mali	1 (0.0%)	5 (0.2%)
Other	2 (0.1%)	4 (0.2%)
No response	0 (0.0%)	0 (0.0%)
Nationality		
Ivorian nationality	1,808 (81.5%)	1,929 (77.9%)
Ghanaian nationality	9 (0.4%)	1 (0.0%)
Burkinabe nationality	316 (14.2%)	434 (17.5%)
Malian nationality	56 (2.5%)	98 (4.0%)
Other	29 (1.3%)	13 (0.5%)
No response	0 (0.0%)	0 (0.0%)

Source: Tulane household survey 2008/09 & 2013/14, sample count, strata 1-3.

Table 7d. Place of Birth and Nationality of Survey Respondents: Children, 5-17 Years, Ghana

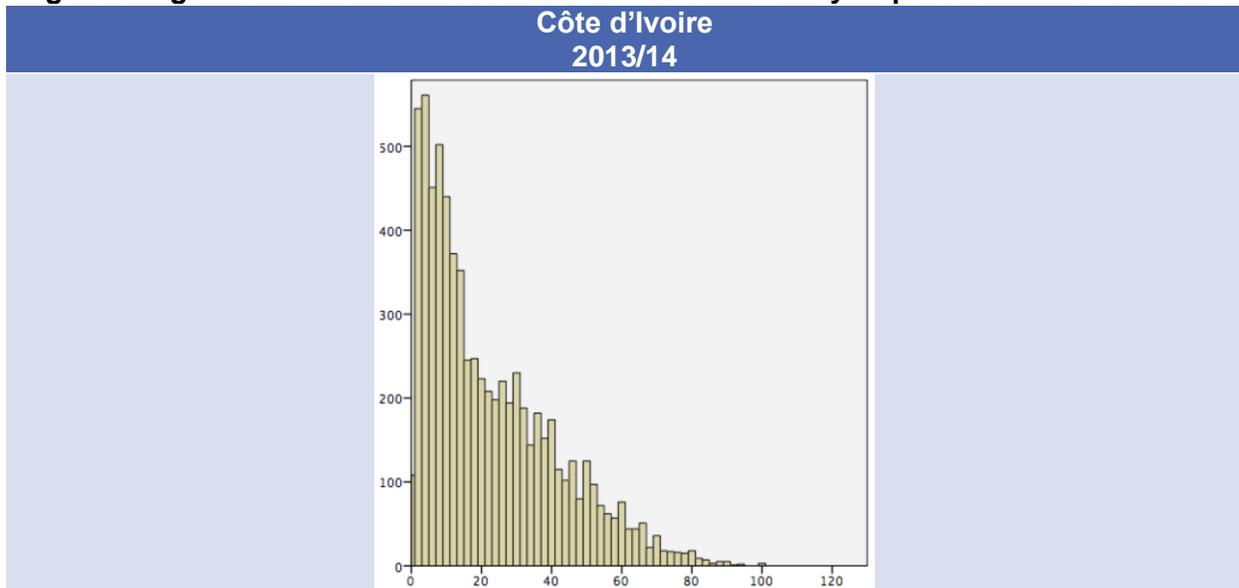
	2008/09	2013/14
Place of Birth		
Côte d'Ivoire	12 (0.5%)	12 (0.5%)
Ghana	2,251 (98.8%)	2,207 (99.1%)
Burkina Faso	0 (0.0%)	0 (0.0%)
Mali	0 (0.0%)	1 (0.04%)
Other	3 (0.1%)	7 (0.3%)
No response	12 (0.5%)	0 (0.0%)
Nationality		
Ivorian nationality	1 (0.0%)	0 (0.0%)
Ghanaian nationality	2,257 (99.1%)	2,218 (99.6%)
Burkinabe nationality	0 (0.0%)	1 (0.04%)
Malian nationality	0 (0.0%)	2 (0.1%)
Other	2 (0.1%)	6 (0.3%)
No response	18 (0.8%)	0 (0.0%)

Source: Tulane household survey 2008/09 & 2013/14, sample count, strata 1-3.

6.2. Household and Farm Characteristics

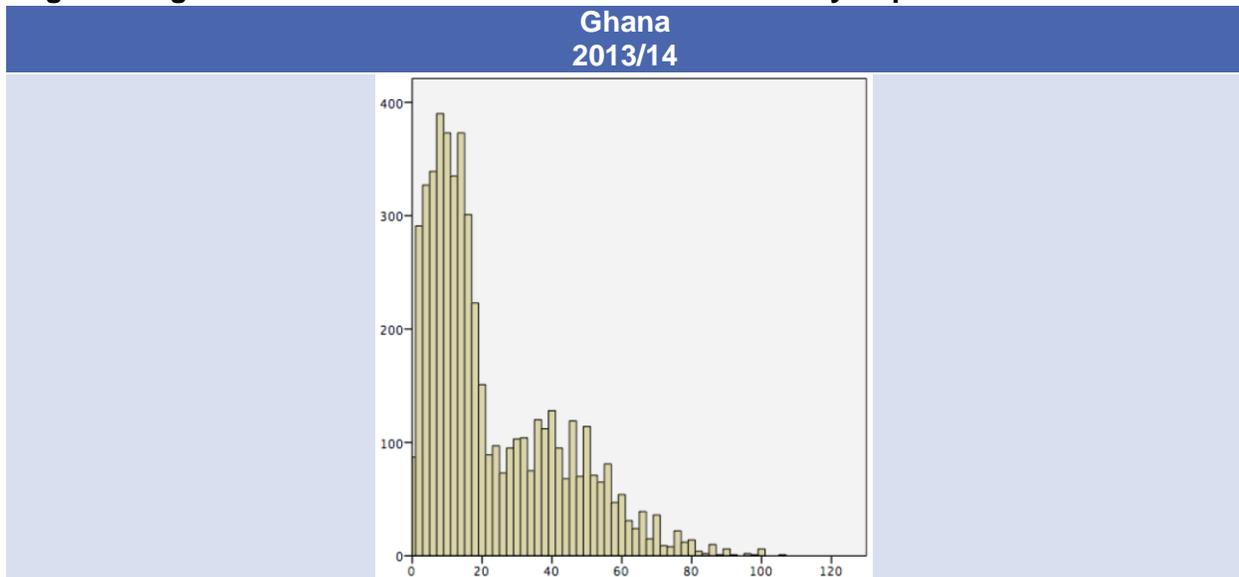
The households in the cocoa growing areas experienced changes between the 2008/09 and the 2013/14 cocoa harvest seasons. In terms of family size and composition, households had fewer children in both countries, but particularly in Côte d'Ivoire.

Figure 3. Age Distribution of Household Members in Survey Population in Côte d'Ivoire



Source: Tulane household survey 2013/14, sample count.

Figure 4. Age Distribution of Household Members in Survey Population in Ghana



Source: Tulane household survey 2013/14, sample count.

While the survey teams were able to interview an average number of 2.7 children within the age range of 5-17 years per household in Côte d'Ivoire in 2008/09, only an average number of 1.9 children could be interviewed per household in 2013/14 (see Table 5). Similarly, an average of 2.5 children was interviewed per household in Ghana in 2008/09, while only an average of 2.0 children could be interviewed in 2013/14. As indicated by Figures 3 and 4, young children are still numerous in the cocoa growing areas but older children and adults are leaving the cocoa growing areas in large (and increasing) numbers.

The cocoa growing areas continue to be dominated by small farms. During the 2013/14 cocoa harvest season, the average Ivorian household involved in agriculture reported owning

approximately 20 acres of land, while the average Ghanaian household owned 10 acres of land. Between the two survey years Côte d'Ivoire experienced growth in both the number of agricultural households in its cocoa growing areas and cocoa growing households, with the number of cocoa growing households more than doubling (see Table 8).³⁶ While the total amount of land under cultivation in the cocoa growing areas increased, and the total amount of land under cultivation by cocoa growing households increased, the average number of acres under cultivation by a cocoa growing household fell by almost 3 acres. In Ghana the number of agricultural households and cocoa growing households also increased between survey years. Total land holdings and cultivated land holdings grew, while the total number of acres under cultivation by cocoa growing households fell. The average number of acres under cultivation by an agricultural household fell by 0.2 acres and the average number of acres under cultivation by a cocoa growing household fell by just over 2.0 acres.

The number and percentage of households involved in cocoa farming has gone up considerably in Côte d'Ivoire in the past five years. While 50% of agricultural households in the cocoa growing areas in Côte d'Ivoire reported being involved in cocoa production in 2008/09, 76% of households reported farming cocoa in 2013/14. In Ghana the trend is reversed, with 57% of agricultural households in the cocoa growing areas involved in cocoa cultivation in 2008/09 and 48% involved in 2013/14. However, the total number of households involved in cocoa production grew moderately between survey years. At the same time, a large percentage of households involved in agriculture in the cocoa growing areas reported cocoa as a main source of income in 2013/14: 74% (1,391,618 households) of all agricultural households in the cocoa growing areas in Côte d'Ivoire and 56% (597,586 households) in Ghana.

Table 8. Land Owned, Under Cultivation and Under Cocoa Cultivation

		Côte d'Ivoire		Ghana	
		2008/09	2013/14	2008/09	2013/14
Total number of agricultural households		1,243,981	1,871,834	802,213	1,073,824
Total number of cocoa households		619,095	1,423,642	456,727	517,843
Land owned by households involved in agriculture (in acres)	Total	26,181,071	37,933,260	7,393,635	10,469,684
	Average	21.0	20.3	9.1	9.7
Land under cultivation by households involved in agriculture (in acres)	Total	14,071,542	24,701,262	6,358,032	8,313,926
	Average	11.3	13.2	7.9	7.7
Land under cocoa cultivation by cocoa-producing households (in acres)	Total	7,212,864	12,509,962	4,396,129	3,889,877
	Average	11.7	8.8	9.6	7.5

Source: Tulane head of household survey 2008/09 & 2013/14, weighted, strata 1-3.

6.3. Baseline and Follow-up Estimates on Child Labor and WFCL in the Cocoa Growing Areas

This section presents weighted estimates of the different categories of children outlined in the methodological framework (see Figure 1), including estimates of all children in agricultural households in the cocoa growing areas, working children, children working in agriculture, children working in cocoa as well as children in child labor and hazardous work.

³⁶ A household is considered a cocoa growing household if production of cocoa was reported by the head of household at the time of data collection. The typical cocoa growing household is involved in cocoa growing as well as the production of other crops.

6.3.1. Overview of Children in Agricultural Households in the Cocoa Growing Areas

A total of 5.71 million children 5-17 years were found in agricultural households in the in the cocoa growing areas of Côte d'Ivoire and Ghana in 2008/09. In 2013/14, this number had increased to 5.97 million. In the aggregate the numbers of children working in cocoa production, in child labor in cocoa production, and in hazardous work in the cocoa sector increased between 2008/09 and 2013/14 by 24% (from 1,817,278 to 2,260,407), 21% (from 1,757,612 to 2,122,016), and 18% (from 1,722,186 to 2,032,267) respectively (see Table 9).

Table 9. Estimates of Children in Agricultural Households in the Cocoa Growing Areas, 5-17 Years, Working, Not Working, in Child Labor, and in Hazardous Work in the last 12 Months, in Côte d'Ivoire and Ghana, 2008/09 and 2013/14

Population of children 5-17 years in cocoa growing areas	Total		Côte d'Ivoire		Ghana	
	2008/09	2013/14	2008/09	2013/14	2008/09	2013/14
All children 5-17 years (Fig.1:1)	5,710,938	5,969,385	3,550,060	3,733,261	2,160,878	2,236,124
Children working (Fig.1:2)	3,748,741	3,970,442	2,069,959	2,199,865	1,678,782	1,770,577
Children not working (Fig.1:3)	1,962,197	1,998,943	1,480,101	1,533,396	482,096	465,547
Children working in agriculture (Fig.1:4)	3,473,202	3,645,465	1,915,922	2,083,114	1,557,280	1,562,351
Children working in sectors other than agriculture (Fig.1:5)	275,539	324,978	154,037	116,752	121,502	208,226
Children working in cocoa production (Fig.1:6)	1,817,278	2,260,407	819,921	1,303,009	997,357	957,398
Children working in agriculture other than the cocoa sector (Fig.1:7)	1,655,924	1,385,059	1,096,001	780,105	559,923	604,953
Child laborers working in cocoa production (Fig.1:8)	1,757,612	2,122,016	809,835	1,203,473	947,777	918,543
Child laborers working in agriculture other than the cocoa sector (Fig.1:9)	1,548,708	1,236,170	1,037,796	661,149	510,912	575,021
Children working in the cocoa sector in hazardous work (Fig.1:10)	1,722,186	2,032,267	791,181	1,153,672	931,005	878,595
Children working in agriculture other than the cocoa sector in hazardous work (Fig.1:11)	1,479,062	1,103,520	1,003,262	556,688	475,800	546,832

Source: Tulane child survey 2008/09 and 2013/14, weighted, strata 1-3.

Côte d'Ivoire's population of children 5-17 years in the cocoa growing areas rose from 3,550,060 to 3,733,261 (an increase of about 5%). Increases occurred in the numbers of children in Côte d'Ivoire in all categories of cocoa work. The number of children working in cocoa production increased by over 480,000 (59%) and the number in hazardous work in the cocoa sector increased by almost 360,000 (46%). The numbers of Ivoirian children working in non-agricultural sectors, agricultural sectors other than cocoa, child labor in agriculture other than cocoa, and hazardous work in agriculture other than cocoa all declined. Ghana's population of children 5-17 years in the cocoa growing areas increased from 2,160,878 to 2,236,124 (approximately 3%). In Ghana small declines were seen in the numbers of children working in all categories of cocoa work and the number of non-working children. The number of children working in cocoa production decreased by almost 40,000 (4%) and the number in hazardous work in the cocoa sector fell by about 52,000 (6%). Increases occurred in the numbers of children in non-agricultural work and in all categories of work in agriculture other than cocoa.

6.3.2. Estimates of Children in the Cocoa Growing Areas Working, Working in Agriculture and in Child Labor in Agriculture

In the aggregate the number of children working in the last 12 months grew by about 6% (from 3,748,741 in 2008/09 to 3,970,442 in 2013/14), and the percentage of children working also increased slightly (1.4 %; see Table 10).

Table 10. Estimates of Children in Cocoa Growing Areas, 5-17 Years, Working, Working in Agriculture and in Child Labor in Agriculture in the last 12 Months, in Côte d'Ivoire and Ghana, 2008/09 and 2013/14

		All Children (Fig.1:1)	Children Working in Cocoa Growing Areas (Fig.1:2)			Children Working in Agriculture in Cocoa Growing Areas (Fig.1:4)			Child Laborers Working in Agriculture in Cocoa Growing Areas (Fig.1:8+9)		
		Number	Number	Percent	Percent change*	Number	Percent	Percent change*	Number	Percent	Percent change *
Total	2008/09	5,710,938	3,748,741	65.6%	+1.4%	3,473,202	60.8%	+0.5%	3,306,320	57.9%	-2.8%
	2013/14	5,969,385	3,970,442	66.5%		3,645,465	61.1%		3,358,186	56.3%	
Côte d'Ivoire	2008/09	3,550,060	2,069,959	58.3%	+1.0%	1,915,922	54.0%	+3.3%	1,847,631	52.0%	-4.0%
	2013/14	3,733,261	2,199,865	58.9%		2,083,114	55.8%		1,864,622	49.9%	
Ghana	2008/09	2,160,878	1,678,782	77.7%	+1.9%	1,557,280	72.1%	-3.1%	1,458,689	67.5%	-1.0%
	2013/14	2,236,124	1,770,577	79.2%		1,562,351	69.9%		1,493,564	66.8%	

Source: Tulane child survey 2008/09 and 2013/14, weighted, strata 1-3.

*Calculated by dividing the difference between the 2008/09 and 2013/14 percentages by the base (2008/09) percentage.

A majority of children in both countries were working in 2013/14. Things were similar for children's participation in work in agriculture, where in the aggregate the number of children increased by about 5% (from 3,473,202 to 3,645,465) and the percentage increased by less than 1%. Over half of Ivorian and more than two thirds of Ghanaian children work in agriculture. Close to 52,000 more children (in the aggregate) were involved in child labor in agriculture in 2013/14, which translated to an almost 3% decrease in the percentage of children involved. Half of children in Côte d'Ivoire and two thirds of children in Ghana are involved in child labor in agriculture.

The figures for children performing work in agriculture in the last seven days are lower than those for doing agricultural work within the last 12 months, indicating that not all children working in agriculture are continuously or regularly working in agriculture (see Table 11). While in the aggregate close to two thirds of all children in agricultural households in the cocoa growing areas performed work in agriculture in the last 12 months, less than 40% had done such work in the last 7 days in 2013/14. The percentage of children who had performed work in agriculture in the last 12 months remained fairly steady over the two survey years, but in the aggregate the percentage of children who had worked in agriculture in the last 7 days experienced a drop of about 15%. In Côte d'Ivoire the percentages of children working in agriculture in the last 12 months and in the last 7 days increased by about 3% and 12% respectively. In Ghana the percentages for both decreased, by about 3% and 31% respectively.

Table 11. Estimates of Children in Cocoa Growing Areas, 5-17 Years, Working in Agriculture in the last 12 Months and in the last 7 Days, in Côte d'Ivoire and Ghana, 2008/09 and 2013/14

	Children Working in Agriculture in Cocoa Growing Areas in the Last 12 Months (Fig.1:4)			Children Working in Agriculture in Cocoa Growing Areas in the Last 7 Days (Fig.1:4)		
	2008/09	2013/14	Percent Change*	2008/09	2013/14	Percent Change*
Total						
Number of children	3,473,202	3,645,465	+5.0%	2,562,242	2,284,190	-10.9%
% of all children	60.8%	61.1%	+0.5%	44.9%	38.3%	-14.7%
Côte d'Ivoire						
Number of children	1,915,922	2,083,114	+8.7%	1,264,446	1,360,792	+4.7%
% of all Ivorian children	54.0%	55.8%	+3.3%	32.7%	36.5%	+11.6%
Ghana						
Number of children	1,557,280	1,562,351	+0.3%	1,297,796	923,398	-28.8%
% of all Ghanaian children	72.1%	69.9%	-3.1%	60.1%	41.3%	-31.3%

Source: Tulane child survey 2008/09 and 2013/14, weighted, strata 1-3.

*Calculated by dividing the difference between the 2008/09 and 2013/14 figures by the base (2008/09) figure.

The population of boys in the cocoa growing areas increased by about 5% (from 3,073,201 in 2008/09 to 3,222,214 in 2013/14) and that of girls by around 4% (from 2,637,737 to 2,747,171). Although the increases were small, the percentages of boys and girls (in

the aggregate) working in 2013/14 were larger compared with those in 2008/09 (see Table 12a). While number of boys and girls working in agriculture increased between 2008/09 and 2013/14, the percentage of girls working in this sector actually decreased slightly. A higher percentage of boys worked in agriculture, but over half of both boys and girls performed agricultural work in the two survey years. The percentage of boys in child labor in agriculture rose by just under 1%, but the percentage of girls in this category decreased by almost 8%. In 2013/14 about 60% of boys and 50% of girls were involved in child labor in agriculture.

Table 12a. Estimates of Boys and Girls in Cocoa Growing Areas, 5-17 Years, Working, Working in Agriculture and in Child Labor in Agriculture in the last 12 Months, in Côte d'Ivoire and Ghana (Combined), 2008/09 and 2013/14

		All Children (Fig.1:1)	Children Working in Cocoa Growing Areas (Fig.1:2)			Children Working in Agriculture in Cocoa Growing Areas (Fig.1:4)			Child Laborers Working in Agriculture in Cocoa Growing Areas (Fig.1:8+9)		
		Number	Number	Percent	Percent change*	Number	Percent	Percent change*	Number	Percent	Percent change *
Total	2008/09	5,710,938	3,748,741	65.6%	+1.4%	3,473,202	60.8%	+0.5%	3,306,320	57.9%	-2.8%
	2013/14	5,969,385	3,970,442	66.5%		3,645,465	61.1%		3,358,186	56.3%	
Boys	2008/09	3,073,201	2,053,795	66.8%	+0.7%	1,947,490	63.4%	+2.8%	1,875,900	61.0%	+0.9%
	2013/14	3,222,214	2,168,340	67.3%		2,098,411	65.1%		1,985,256	61.6%	
Girls	2008/09	2,637,737	1,694,946	64.3%	+2.1%	1,525,712	57.8%	-2.6%	1,430,420	54.2%	-7.8%
	2013/14	2,747,171	1,802,103	65.6%		1,547,054	56.3%		1,372,930	50.0%	

Source: Tulane child survey 2008/09 and 2013/14, weighted, strata 1-3.

* Calculated by dividing the difference between the 2008/09 and 2013/14 percentages by the base (2008/09) percentage.

Côte d'Ivoire's population of girls in the cocoa growing areas grew by about 2% between the two survey years (from 1,649,688 to 1,683,635) while its population of boys increased by almost 8% (from 1,900,373 to 2,049,626: see Table 12b). The number of boys working grew by close to 130,000, or about 11%. The percentage of girls working decreased by 1.8% in 2013/14 and the percentage of boys working climbed 3.3%. Over 50% of both boys and girls worked in 2013/14. The percentage of boys performing work in agriculture rose by around 7% and the percentage of girls in this type of work fell by just over 2%. About 60% of Ivoirian boys and 50% of girls in the cocoa growing areas performed work in agriculture in 2013/14. The percentage of boys in child labor in agriculture increased around 3% while the percentage of girls fell by almost 14%. About 56% of boys and 42% of girls were involved in child labor in agriculture in 2013/14.

Table 12b. Estimates of Boys and Girls in Cocoa Growing Areas, 5-17 Years, Working, Working in Agriculture and in Child Labor in Agriculture in the last 12 Months, in Côte d'Ivoire, 2008/09 and 2013/14

		All Children (Fig.1:1)	Children Working in Cocoa Growing Areas (Fig.1:2)			Children Working in Agriculture in Cocoa Growing Areas (Fig.1:4)			Child Laborers Working in Agriculture in Cocoa Growing Areas (Fig.1:8+9)		
		Number	Number	Percent	Percent change*	Number	Percent	Percent change*	Number	Percent	Percent change*
Total	2008/09	3,550,060	2,069,959	58.3%	+1.0%	1,915,922	54.0%	+3.3%	1,847,631	52.0%	-4.0%
	2013/14	3,733,261	2,199,865	58.9%		2,083,114	55.8%		1,864,622	49.9%	
Boys	2008/09	1,900,373	1,120,994	59.0%	+3.3%	1,068,316	56.2%	+7.4%	1,040,852	54.8%	+2.7%
	2013/14	2,049,626	1,248,434	60.9%		1,237,639	60.4%		1,154,288	56.3%	
Girls	2008/09	1,649,688	948,965	57.5%	-1.8%	847,606	51.4%	-2.3%	806,779	48.9%	-13.7%
	2013/14	1,683,635	951,431	56.5%		845,475	50.2%		710,334	42.2%	

Source: Tulane child survey 2008/09 and 2013/14, weighted, strata 1-3.

*Calculated by dividing the difference between the 2008/09 and 2013/14 percentages by the base (2008/09) percentage.

Ghana's population of children in the cocoa growing regions grew from 2,160,878 to 2,236,124 (approximately 3.5%) between 2008/09 and 2013/14 (see Table 12c). The population of girls increased by over 75,000 while the population of boys fell by 240. Girls' participation in work increased in terms of number and percentage, while boys saw slight declines in both. In 2008/09 a slightly higher percentage of boys than girls were working, but this was reversed in 2013/14. Over three quarters of both boys and girls worked in 2013/14. The number of boys performing agricultural work decreased slightly while the number of girls increased modestly. Two thirds of girls and close to three quarters of boys worked in agriculture in 2013/14. The figures are similar, but slightly lower, for involvement in child labor in agriculture.

Table 12c. Estimates of Boys and Girls in Cocoa Growing Areas, 5-17 Years, Working, Working in Agriculture and in Child Labor in Agriculture in the last 12 Months, in Ghana, 2008/09 and 2013/14

		All Children (Fig.1:1)	Children Working in Cocoa Growing Areas (Fig.1:2)			Children Working in Agriculture in Cocoa Growing Areas (Fig.1:4)			Child Laborers Working in Agriculture in Cocoa Growing Areas (Fig.1:8+9)		
		Number	Number	Percent	Percent change*	Number	Percent	Percent change*	Number	Percent	Percent change*
Total	2008/09	2,160,878	1,678,782	77.7%	+1.9%	1,557,280	72.1%	-3.1%	1,458,689	67.5%	-1.0%
	2013/14	2,236,124	1,770,577	79.2%		1,562,351	69.9%		1,493,564	66.8%	
Boys	2008/09	1,172,828	932,801	79.5%	-1.3%	879,174	75.0%	-2.1%	835,048	71.2%	-0.4%
	2013/14	1,172,588	919,906	78.5%		860,772	73.4%		830,968	70.9%	
Girls	2008/09	988,049	745,981	75.5%	+6.0%	678,106	68.6%	-3.8%	623,641	63.1%	-1.3%
	2013/14	1,063,536	850,672	80.0%		701,579	66.0%		662,596	62.3%	

Source: Tulane child survey 2008/09 and 2013/14, weighted, strata 1-3.

*Calculated by dividing the difference between the 2008/09 and 2013/14 percentages by the base (2008/09) percentage.

In the aggregate the number of children in each age group (5-11 years, 12-14 years, and 15-17 years), with the exception of the oldest, increased (see Table 13a). The middle age group saw the largest growth with a 19% increase in its population (from 1,168,015 in 2008/09 to 1,389,792 in 2013/14) while the oldest group's population fell by 9% (from 1,024,339 to 928,798). The youngest group, which spans many more years than the other two age groups, continues to constitute just over 60% of the entire population of children (5-17 years) in the two countries' cocoa growing areas. Over 80% of children in the middle and oldest age groups worked in 2013/14, and about 53% of children in the youngest age group did. The percentages of each age group working in agriculture saw only limited changes between the two survey years. Less than half of children 5-11 years worked in agriculture in 2013/14 while over 80% of children in each of the oldest two groups performed such work. The percentages of children in child labor in agriculture fell by about 4% and 5% respectively for the 5-11 and 12-14 years age groups, but rose by around 3% for the oldest age group. In the middle and oldest age groups over three quarters of children remain involved in child labor in agriculture.

Table 13a. Estimates of Children in Cocoa Growing Areas, 5-17 Years, by Age Group, Working, Working in Agriculture and in Child Labor in Agriculture in the Last 12 Months, in Côte d'Ivoire and Ghana (Combined), 2008/09 and 2013/14

		All Children (Fig.1:1)	Children Working in Cocoa Growing Areas (Fig.1:2)			Children Working in Agriculture in Cocoa Growing Areas (Fig.1:4)			Child Laborers Working in Agriculture in Cocoa Growing Areas (Fig.1:8+9)		
		Number	Number	Percent	Percent change*	Number	Percent	Percent change*	Number	Percent	Percent change*
Total	2008/09	5,710,938	3,748,741	65.6%	+1.4%	3,473,202	60.8%	+0.5%	3,306,320	57.9%	-2.8%
	2013/14	5,969,385	3,970,442	66.5%		3,645,465	61.1%		3,358,186	56.3%	
5-11 years	2008/09	3,518,584	1,815,532	51.6%	+3.3%	1,648,738	46.9%	-2.8%	1,546,112	43.9%	-4.3%
	2013/14	3,650,795	1,947,674	53.3%		1,664,321	45.6%		1,533,521	42.0%	
12-14 years	2008/09	1,168,015	1,012,826	86.7%	-1.3%	961,553	82.3%	+1.6%	928,355	79.5%	-5.3%
	2013/14	1,389,792	1,189,109	85.6%		1,162,301	83.6%		1,047,094	75.3%	
15-17 years	2008/09	1,024,339	920,383	89.9%	-0.1%	862,912	84.2%	+4.8%	831,852	81.2%	+3.1%
	2013/14	928,798	833,660	89.8%		818,844	88.2%		777,571	83.7%	

Source: Tulane child survey 2008/09 and 2013/14, weighted, strata 1-3.

*Calculated by dividing the difference between the 2008/09 and 2013/14 percentages by the base (2008/09) percentage.

In Côte d'Ivoire the number of children 12-14 years grew by over 28% (from 642,986 to 826,155) between the two survey years (see Table 13b) while the number of children 15-17 years contracted by 14% (from 598,401 to 516,895). The number of children 5-11 years rose by about 4% (from 2,308,673 to 2,390,211). The number of 12-14 year olds working grew by over 30%, although the percentage of children in this age group working rose only slightly. The percentage of children working in the youngest age group held steady at 45% and rose by about 1% in the oldest group. The percentage of children in each age group working in agriculture rose by under 10%, with no increase occurring in the youngest age group and the largest increase (7%) in the oldest. The highest percentage of children working in agriculture (85%) is in the oldest age group and the lowest (41%) is in the youngest. The same is true for participation in child labor in agriculture, where the 2013/14 figures are 37% for 5-11 year olds and 80% for 15-17 year olds. The youngest and middle age groups saw single-digit decreases in their percentages in child labor in agriculture and the oldest group experienced an increase of about 3%.

Table 13b. Estimates of Children in Cocoa Growing Areas, 5-17 Years, by Age Group, Working, Working in Agriculture and in Child Labor in Agriculture in the Last 12 Months, in Côte d'Ivoire, 2008/09 and 2013/14

		All Children (Fig.1:1)	Children Working in Cocoa Growing Areas (Fig.1:2)			Children Working in Agriculture in Cocoa Growing Areas (Fig.1:4)			Child Laborers Working in Agriculture in Cocoa Growing Areas (Fig.1:8+9)		
		Number	Number	Percent	Percent change*	Number	Percent	Percent change*	Number	Percent	Percent change*
Total	2008/09	3,550,060	2,069,959	58.3%	+1.0%	1,915,922	54.0%	+3.3%	1,847,631	52.0%	-4.0%
	2013/14	3,733,261	2,199,865	58.9%		2,083,114	55.8%		1,864,622	49.9%	
5-11 years	2008/09	2,308,673	1,027,740	44.5%	0.0%	955,641	41.4%	0.0%	908,525	39.4%	-5.1%
	2013/14	2,390,211	1,064,200	44.5%		990,406	41.4%		892,640	37.4%	
12-14 years	2008/09	642,986	525,252	81.7%	+1.3%	486,679	75.7%	+4.2%	476,093	74.0%	-8.7%
	2013/14	826,155	683,374	82.7%		651,477	78.9%		558,743	67.6%	
15-17 years	2008/09	598,401	516,967	86.4%	+1.3%	473,603	79.1%	+7.9%	463,012	77.4%	+3.3%
	2013/14	516,895	452,292	87.5%		441,231	85.4%		413,239	80.0%	

Source: Tulane child survey 2008/09 and 2013/14, weighted, strata 1-3.

*Calculated by dividing the difference between the 2008/09 and 2013/14 percentages by the base (2008/09) percentage.

The youngest and middle age groups in Ghana saw limited growth in their populations while the oldest group's population fell by around 3% (from 425,938 in 2008/0 to 411,903 in 2013/14: see Table 13c). More 5-11 year olds and 12-14 year olds were working in 2013/14 than in 2008/09. The opposite was true for children 15-17 years. Over two thirds of children in each age group worked in 2013/14, although the percentages of children working in the middle and oldest groups fell slightly between 2008/09 and 2013/14. In these two groups only about 10% of children were not working in 2013/14. Over 90% of children in the middle and oldest age groups also performed work in agriculture in 2013/14. The number and percentage of children in the youngest age group working in agriculture fell, but a majority of these children still did agricultural work in 2013/14. The youngest group experienced a small decrease in its percentage involved in child labor in agriculture while the middle and oldest group sustained small increases. About half of children 5-11 years and over 85% of children in the other two age groups were involved in child labor in agriculture in 2013/14.

Table 13c. Estimates of Children in Cocoa Growing Areas, 5-17 Years, by Age Group, Working, Working in Agriculture and in Child Labor in Agriculture in the Last 12 Months, in Ghana, 2008/09 and 2013/14

		All Children (Fig.1:1)	Children Working in Cocoa Growing Areas (Fig.1:2)			Children Working in Agriculture in Cocoa Growing Areas (Fig.1:4)			Child Laborers Working in Agriculture in Cocoa Growing Areas (Fig.1:8+9)		
		Number	Number	Percent	Percent change*	Number	Percent	Percent change*	Number	Percent	Percent change*
Total	2008/09	2,160,878	1,678,782	77.7%	+1.9%	1,557,280	72.1%	-3.1%	1,458,689	67.5%	-1.0%
	2013/14	2,236,124	1,770,577	79.2%		1,562,351	69.9%		1,493,564	66.8%	
5-11 years	2008/09	1,209,911	787,792	65.1%	+7.7%	693,097	57.3%	-6.6%	637,587	52.7%	-3.6%
	2013/14	1,260,584	883,474	70.1%		673,915	53.5%		640,881	50.8%	
12-14 years	2008/09	525,029	487,574	92.9%	-3.4%	474,874	90.4%	+0.2	452,262	86.1%	+0.6%
	2013/14	563,637	505,735	89.7%		510,824	90.6%		488,351	86.6%	
15-17 years	2008/09	425,938	403,416	94.7%	-2.2%	389,309	91.4%	+0.3%	368,839	86.6%	+2.2%
	2013/14	411,903	381,368	92.6%		377,613	91.7%		364,332	88.5%	

Source: Tulane child survey 2008/09 and 2013/14, weighted, strata 1-3.

*Calculated by dividing the difference between the 2008/09 and 2013/14 percentages by the base (2008/09) percentage.

6.3.3. Estimates of Children Working in Cocoa Production, in Child Labor in Cocoa Production and in Hazardous Work in Cocoa Production

In the aggregate the numbers of children working in cocoa production, in child labor in cocoa production, and in hazardous work in cocoa production increased by about 440,000, 360,000, and 310,000 respectively (see Table 14 as well as Table 9). The percentages of children in agricultural households in each of these categories also rose between the two survey years: 19% for children working in cocoa, 16% for child laborers in cocoa, and 13% for children in hazardous work in cocoa. The number of children working in cocoa in Côte d'Ivoire in 2013/14 was over 58% higher than what it was in 2008/09 while the numbers participating in child labor and hazardous work in cocoa were over 45% higher. The percentages of children in each of these types of work also rose

by over 38%. In Ghana there were limited reductions in the numbers and single digit reductions in the percentages of children in all three of these work categories.

Table 14. Estimates of Children in Cocoa Growing Areas, 5-17 Years, Working in Cocoa Production, in Child Labor in Cocoa Production and in Hazardous Work in the Cocoa Sector in the last 12 Months, in Côte d'Ivoire and Ghana, 2008/09 and 2013/14

		All Children (Fig.1:1)	Children Working in Cocoa Production (Fig.1:6)			Child Laborers Working in Cocoa Production (Fig.1:8)			Children Working in the Cocoa Sector in Hazardous Work* (Fig.1:10)		
		Number	Number	Percent	Percent change**	Number	Percent	Percent change**	Number	Percent	Percent change **
Total	2008/09	5,710,938	1,817,278	31.8%	+19.0%	1,757,612	30.8%	+15.5%	1,722,186	30.2%	+12.9%
	2013/14	5,969,385	2,260,407	37.9%		2,122,016	35.6%		2,032,267	34.0%	
Côte d'Ivoire	2008/09	3,550,060	819,921	23.1%	+51.1%	809,835	22.8%	+41.3%	791,181	22.3%	+38.7%
	2013/14	3,733,261	1,303,009	34.9%		1,203,473	32.2%		1,153,672	30.9%	
Ghana	2008/09	2,160,878	997,357	46.2%	-7.4%	947,777	43.9%	-6.4%	931,005	43.1%	-8.8%
	2013/14	2,236,124	957,398	42.8%		918,543	41.1%		878,595	39.3%	

Source: Tulane child survey 2008/09 and 2013/14, weighted, strata 1-3.

* Measured based on Variables 1-6, as described in Chapter 5 of this report.

** Calculated by dividing the difference between the 2008/09 and 2013/14 percentages by the base (2008/09) percentage.

The number of children working in cocoa in the last 7 days increased by over 230,000 (from 1,172,851 in 2008/09 to 1,410,594 in 2013/14) in the aggregate, or approximately 20% (see Table 15). About 850,000 more children in 2013/14 reported working in the cocoa sector in the last 12 months than in the last 7 days. Côte d'Ivoire saw large increases (over 100%) in both the number and percentage of children who worked in cocoa in the last 7 days. Ghana experienced much larger decreases in the number and percentage of children working in cocoa in the last 7 days than those seen in work in cocoa in the last 12 months. In both countries, the number and percentage of children reporting work in cocoa in the last 7 days is lower than the number and percentage of children reporting work in cocoa in the last 12 months indicating that many children may not regularly or continuously work in cocoa.

Table 15. Estimates of Children in Cocoa Growing Areas, 5-17 Years, Working in Cocoa in the last 12 Months and in the last 7 Days, in Côte d'Ivoire and Ghana, 2008/09 and 2013/14

	Children Working in Cocoa Production in last 12 Months (Fig.1:6)			Children Working in Cocoa Production in last 7 Days (Fig.1:6)		
	2008/09	2013/14	Percent change*	2008/09	2013/14	Percent change*
Total						
Number	1,817,278	2,260,407	+24.4%	1,172,851	1,410,594	+20.3%
% of all children	31.8%	37.9%	+19.0%	20.5%	23.6%	+15.1%
Côte d'Ivoire						
Number	819,921	1,303,009	+58.9%	479,802	1,119,496	+133.3%
% of all Ivoirian children	23.1%	34.9%	+51.1%	13.5%	30.0%	+122.2%
Ghana						
Number	997,357	957,398	-4.0%	693,049	291,098	-58.0%
% of all Ghanaian children	46.2%	42.8%	-7.4%	32.1%	13.0%	-59.5%

Source: Tulane child survey 2008/09 and 2013/14, weighted, strata 1-3.

*Calculated by dividing the difference between the 2008/09 and 2013/14 figures by the base (2008/09) figure.

In the aggregate boys' and girls' increased participation in cocoa production, child labor in cocoa production, and hazardous work in cocoa production contributed to the overall increase in children's participation in these activities (see Table 16a). However, boys' participation increased more and from a higher base. About 45% of boys in the cocoa growing areas performed work in cocoa in 2013/14 while about 30% of girls did. Slightly over 40% of boys were involved in child labor and hazardous work in cocoa in 2013/14 compared with less than 30% of girls.

Table 16a. Estimates of Boys and Girls in Cocoa Growing Areas, 5-17 Years, Working in Cocoa Production, in Child Labor in Cocoa Production and in Hazardous Work in the Cocoa Sector in the last 12 Months, in Côte d'Ivoire and Ghana (Combined), 2008/09 and 2013/14

		All Children (Fig.1:1)	Children Working in Cocoa Production (Fig.1:6)			Child Laborers Working in Cocoa Production (Fig.1:8)			Children Working in the Cocoa Sector in Hazardous Work* (Fig.1:10)		
		Number	Number	Percent	Percent change**	Number	Percent	Percent change**	Number	Percent	Percent change **
Total	2008/09	5,710,938	1,817,278	31.8%	+19.0%	1,757,612	30.8%	+15.5%	1,722,186	30.2%	+12.9%
	2013/14	5,969,385	2,260,407	37.9%		2,122,016	35.6%		2,032,267	34.0%	
Boys	2008/09	3,073,201	1,095,431	35.6%	+25.1%	1,068,808	34.8%	+21.6%	1,046,229	34.0%	+19.6%
	2013/14	3,222,214	1,436,594	44.6%		1,363,232	42.3%		1,312,392	40.7%	
Girls	2008/09	2,637,737	721,847	27.4%	+9.6%	688,804	26.1%	+5.8%	675,958	25.6%	+2.3%
	2013/14	2,747,171	823,813	30.0%		758,784	27.6%		719,875	26.2%	

Source: Tulane child survey 2008/09 and 2013/14, weighted, strata 1-3.

* Measured based on Variables 1-6, as described in Chapter 5 of this report.

** Calculated by dividing the difference between the 2008/09 and 2013/14 percentages by the base (2008/09) percentage.

Boys' and girls' participation in cocoa production in Côte d'Ivoire was higher in 2013/14 than in 2008/09, in terms of both numbers and percentages (see Table 16b). In 2008/09 just over one quarter of boys worked in cocoa, but in 2013/14 over 40% of boys participated in such work. The percentage of girls working in cocoa increased by about 27%, meaning that one quarter of girls were involved in cocoa production in 2013/14. Boys' involvement in child labor in cocoa rose considerably, with the number involved growing by over 335,000 and the percentage growing by almost 56%. The percentage of girls in child labor in cocoa increased by 16%, meaning that over one fifth of girls were involved in child labor in this sector in 2013/14. The number of boys and girls doing hazardous work in cocoa increased, with boys experiencing much larger gains in both number and percentage. In 2013/14 about 40% of boys and 20% of girls did hazardous work in the cocoa sector.

Table 16b. Estimates of Boys and Girls in Cocoa Growing Areas, 5-17 Years, Working in Cocoa Production, in Child Labor in Cocoa Production and in Hazardous Work in the Cocoa Sector in the last 12 Months, in Côte d'Ivoire, 2008/09 and 2013/14

		All Children (Fig.1:1)	Children Working in Cocoa Production (Fig.1:6)			Child Laborers Working in Cocoa Production (Fig.1:8)			Children Working in the Cocoa Sector in Hazardous Work* (Fig.1:10)		
		Number	Number	Percent	Percent change**	Number	Percent	Percent change**	Number	Percent	Percent change **
Total	2008/09	3,550,060	819,921	23.1%	+51.1%	809,835	22.8%	+41.3%	791,181	22.3%	+38.7%
	2013/14	3,733,261	1,303,009	34.9%		1,203,473	32.2%		1,153,672	30.9%	
Boys	2008/09	1,900,373	499,958	26.3%	+65.0%	497,941	26.2%	+55.7%	485,338	25.5%	+53.7%
	2013/14	2,049,626	889,802	43.4%		835,925	40.8%		804,572	39.3%	
Girls	2008/09	1,649,688	319,963	19.4%	+26.5%	311,894	18.9%	+15.5%	305,843	18.5%	+11.8%
	2013/14	1,683,635	413,207	24.5%		367,548	21.8%		349,100	20.7%	

Source: Tulane child survey 2008/09 and 2013/14, weighted, strata 1-3.

* Measured based on Variables 1-6, as described in Chapter 5 of this report.

** Calculated by dividing the difference between the 2008/09 and 2013/14 percentages by the base (2008/09) percentage.

In Ghana the number of boys participating in cocoa production fell slightly and the number of girls increased marginally (see Table 16c). These changes translated to single digit reductions in the percentages of boys and girls working in cocoa. In 2008/09 a slim majority of boys worked in cocoa, but in 2013/14 under 46% were involved in this type of work. The percentage of girls working in cocoa fell from 40.7% to 38.6%. The percentages of boys and girls in child labor and hazardous work in cocoa also fell, with boys seeing slightly larger declines than girls. However, higher percentages of boys, as compared with girls, were still involved in these two categories of work in 2013/14.

Table 16c. Estimates of Boys and Girls in Cocoa Growing Areas, 5-17 Years, Working in Cocoa Production, in Child Labor in Cocoa Production and in Hazardous Work in the Cocoa Sector in the last 12 Months, in Ghana, 2008/09 and 2013/14

		All Children (Fig.1:1)	Children Working in Cocoa Production (Fig.1:6)			Child Laborers Working in Cocoa Production (Fig.1:8)			Children Working in the Cocoa Sector in Hazardous Work* (Fig.1:10)		
		Number	Number	Percent	Percent change**	Number	Percent	Percent change**	Number	Percent	Percent change **
Total	2008/09	2,160,878	997,357	46.2%	-7.4%	947,777	43.9%	-6.4%	931,005	43.1%	-8.8%
	2013/14	2,236,124	957,398	42.8%		918,543	41.1%		878,595	39.3%	
Boys	2008/09	1,172,828	595,473	50.8%	-8.3%	570,867	48.7%	-7.6%	560,891	47.8%	-9.4%
	2013/14	1,172,588	546,792	46.6%		527,307	45.0%		507,820	43.3%	
Girls	2008/09	988,049	401,884	40.7%	-5.5%	376,910	38.1%	-3.4%	370,115	37.5%	-6.9%
	2013/14	1,063,536	410,606	38.6%		391,236	36.8%		370,774	34.9%	

Source: Tulane child survey 2008/09 and 2013/14, weighted, strata 1-3.

* Measured based on Variables 1-6, as described in Chapter 5 of this report.

** Calculated by dividing the difference between the 2008/09 and 2013/14 percentages by the base (2008/09) percentage.

In 2008/09 less than 50% all age groups (5-11 years, 12-14 years, and 15-17 years) worked in cocoa (see Table 17a). In 2013/14 this was only true for the youngest age group, as about 52% of 12-14 year olds and 62% of 15-17 year olds were participating in cocoa production. The numbers and percentages of children in each age group in child labor and in hazardous work in cocoa increased. In 2013/14 close to half of children in the middle age group and about 60% of children in the oldest age group were involved in child labor and hazardous work in this sector. The oldest age group experienced the greatest increases in percentages involved in these categories of work.

Table 17a. Estimates of Children in Cocoa Growing Areas, 5-17 Years, By Age Group, Working in Cocoa Production, in Child Labor in Cocoa Production and in Hazardous Work in the Cocoa Sector in the last 12 Months, in Côte d'Ivoire and Ghana (Combined), 2008/09 and 2013/14

		All Children (Fig.1:1)	Children Working in Cocoa Production (Fig.1:6)			Child Laborers Working in Cocoa Production (Fig.1:8)			Children Working in the Cocoa Sector in Hazardous Work* (Fig.1:10)		
		Number	Number	Percent	Percent change**	Number	Percent	Percent change**	Number	Percent	Percent change **
Total	2008/09	5,710,938	1,817,278	31.8%	+19.0%	1,757,612	30.8%	+15.5%	1,722,186	30.2%	+12.9%
	2013/14	5,969,385	2,260,407	37.9%		2,122,016	35.6%		2,032,267	34.0%	
5-11 years	2008/09	3,518,584	824,613	23.4%	+12.8%	789,272	22.4%	+9.4%	755,621	21.5%	+3.3%
	2013/14	3,650,795	964,125	26.4%		895,180	24.5%		811,631	22.2%	
12-14 years	2008/09	1,168,015	538,470	46.1%	+12.8%	521,949	44.7%	+7.8%	520,174	44.5%	+7.2%
	2013/14	1,389,792	722,708	52.0%		669,642	48.2%		663,443	47.7%	
15-17 years	2008/09	1,024,339	454,195	44.3%	+39.5%	446,391	43.6%	+37.6%	446,391	43.6%	+37.6%
	2013/14	928,798	573,574	61.8%		557,193	60.0%		557,193	60.0%	

Source: Tulane child survey 2008/09 and 2013/14, weighted, strata 1-3.

* Measured based on Variables 1-6, as described in Chapter 5 of this report.

** Calculated by dividing the difference between the 2008/09 and 2013/14 percentages by the base (2008/09) percentage.

All age groups in Côte d'Ivoire saw their numbers and percentages of children participating in cocoa production, child labor in cocoa, and hazardous work in this sector increase between 2008/09 and 2013/14 (see Table 17b). Increases in the percentages of children in these three categories were largest for the oldest age group and smallest for the youngest. In the oldest age group a majority of children (about 60%) was involved in each of the three categories of cocoa work in 2013/14. Half of children 12-14 years worked in cocoa production in 2013/14, with close to 50% also involved in child labor and hazardous work in the sector. Less than one quarter of children in the youngest age group participated in any of the three categories of cocoa work in 2013/14.

Table 17b. Estimates of Children in Cocoa Growing Areas, 5-17 Years, By Age Group, Working in Cocoa Production, in Child Labor in Cocoa Production and in Hazardous Work in the Cocoa Sector in the last 12 Months, in Côte d'Ivoire, 2008/09 and 2013/14

		All Children (Fig.1:1)	Children Working in Cocoa Production (Fig.1:6)			Child Laborers Working in Cocoa Production (Fig.1:8)			Children Working in the Cocoa Sector in Hazardous Work* (Fig.1:10)		
		Number	Number	Percent	Percent change**	Number	Percent	Percent change**	Number	Percent	Percent change **
Total	2008/09	3,550,060	819,921	23.1%	+51.1%	809,835	22.8%	+41.3%	791,181	22.3%	+38.7%
	2013/14	3,733,261	1,303,009	34.9%		1,203,473	32.2%		1,153,672	30.9%	
5-11 years	2008/09	2,308,673	383,732	16.6%	+40.9%	378,689	16.4%	+30.0%	360,035	15.6%	+24.6%
	2013/14	2,390,211	559,839	23.4%		509,636	21.3%		464,547	19.4%	
12-14 years	2008/09	642,986	226,158	35.2%	+45.2%	222,124	34.5%	+34.2%	222,124	34.5%	+32.6%
	2013/14	826,155	421,808	51.1%		383,023	46.4%		378,311	45.8%	
15-17 years	2008/09	598,401	210,031	35.1%	+77.1%	209,022	34.9%	+72.1%	209,022	34.9%	+72.1%
	2013/14	516,895	321,362	62.2%		310,814	60.1%		310,814	60.1%	

Source: Tulane child survey 2008/09 and 2013/14, weighted, strata 1-3.

* Measured based on Variables 1-6, as described in Chapter 5 of this report.

** Calculated by dividing the difference between the 2008/09 and 2013/14 percentages by the base (2008/09) percentage.

Participation in cocoa production, child labor in cocoa, and hazardous work in this sector in Ghana fell for all but the oldest age group (see Table 17c). However, the increases for this group were not large. The youngest age group remained the only one with less than 50% involved in each of the three categories of cocoa work. Among 12-14 year olds, 53.4% worked in cocoa and just above 50% did child labor and hazardous work in this sector in 2013/14. These figures are slightly higher for 15-17 year olds, where 61.2% worked in cocoa production and almost 60% were involved in the latter two categories in the second survey year. In 2013/14 the percentages of 5-11 year olds in each of the three categories hovered around 30%.

Table 17c. Estimates of Children in Cocoa Growing Areas, 5-17 Years, By Age Group, Working in Cocoa Production, in Child Labor in Cocoa Production and in Hazardous Work in the Cocoa Sector in the last 12 Months, in Ghana, 2008/09 and 2013/14

		All Children (Fig.1:1)	Children Working in Cocoa Production (Fig.1:6)			Child Laborers Working in Cocoa Production (Fig.1:8)			Children Working in the Cocoa Sector in Hazardous Work* (Fig.1:10)		
		Number	Number	Percent	Percent change**	Number	Percent	Percent change**	Number	Percent	Percent change **
Total	2008/09	2,160,878	997,357	46.2%	-7.4%	947,777	43.9%	-6.4%	931,005	43.1%	-8.8%
	2013/14	2,236,124	957,398	42.8%		918,543	41.1%		878,595	39.3%	
5-11 years	2008/09	1,209,911	440,881	36.4%	-11.8%	410,583	33.9%	-9.7%	395,586	32.7%	-15.9%
	2013/14	1,260,584	404,286	32.1%		385,544	30.6%		347,084	27.5%	
12-14 years	2008/09	525,029	312,312	59.5%	-10.3%	299,825	57.1%	-10.9%	298,050	56.8%	-10.9%
	2013/14	563,637	300,900	53.4%		286,619	50.9%		285,132	50.6%	
15-17 years	2008/09	425,938	244,164	57.3%	+6.8%	237,369	55.7%	+7.4%	237,369	55.7%	+7.4%
	2013/14	411,903	252,212	61.2%		246,379	59.8%		246,379	59.8%	

Source: Tulane child survey 2008/09 and 2013/14, weighted, strata 1-3.

* Measured based on Variables 1-6, as described in Chapter 5 of this report.

** Calculated by dividing the difference between the 2008/09 and 2013/14 percentages by the base (2008/09) percentage.

In the aggregate the percentage of children working in cocoa production involved in at least one of the six hazardous activities discussed in Section 5 of this report decreased from 95% in 2008/09 to 90% in 2013/14 (see Table 18b). Although the percentages have decreased, well over half of these children carried heavy loads and used sharp tools in their cocoa work in 2013/14. (Table 18a shows the percentages of all children in agricultural households who were exposed to hazardous work activities in the cocoa sector, Table 18b shows the percentages of children working in cocoa production who were exposed to these activities, and Table 18c shows the percentages of children in hazardous work in the cocoa sector who were exposed. The figures referenced in this section refer to the figures presented in Table 18b, unless otherwise stated.)

While the number of children working in cocoa production in Côte d'Ivoire in 2013/14 was almost 60% larger than in 2008/09, the percentages of children working in cocoa involved in each of the six hazardous cocoa activities fell (see Table 18b). Land clearing, carrying heavy loads, and using sharp tools remained the most commonly performed hazardous activities in cocoa work, but there were large drops in the percentages of cocoa working children involved in these tasks. The percentage in Côte d'Ivoire doing land clearing fell from 64% to 44% and the percentage carrying heavy loads dropped from 80% to 57%. Overall, the percentage of Ivoirian children working in cocoa production involved in at least one of the six hazardous activities decreased from over 97% to 89%.

In Ghana, where the number of children working in cocoa production decreased between the two survey years, there was also a small drop in the percentage of children working in cocoa who had performed at least one of the six hazardous activities: from 93.3% to 91.8% (see Table 18b). The percentage involved in land clearing experienced the greatest reduction: from 15.9% to just 2.4%. There was a large increase in the percentage of Ghanaian children working in cocoa who were exposed to agro-chemicals as part of their work: from 14.6% to 33.1%. Although the percentages of children in Ghana working at night and for long hours in cocoa increased, both affected only very small percentages of children working in cocoa production.

Table 18a. Estimates of Percentages of all Children in Agricultural Households in Cocoa Growing Areas, 5-17 Years, Exposed to Hazardous Work Activities in the Cocoa Sector, in Côte d'Ivoire and Ghana, 2008/09 and 2013/14

Percentage of children in agricultural households exposed to:	Total			Côte d'Ivoire			Ghana		
	2008/09	2013/14	Percent Change*	2008/09	2013/14	Percent Change*	2008/09	2013/14	Percent Change*
Number of children in agricultural households	5,710,938	5,969,385	+4.5%	3,550,060	3,733,261	+5.2%	2,160,878	2,236,124	+3.5%
Land clearing in cocoa (V1)	12.0%	10.1%	-15.8%	14.8%	15.5%	+4.7%	7.3%	1.0%	-86.3%
Heavy loads in cocoa (V2)	23.5%	24.4%	+3.8%	18.4%	20.0%	+8.7%	31.7%	31.9%	+0.6%
Agro-chemicals in cocoa (V3)	4.7%	8.2%	+74.5%	3.5%	4.5%	+28.6%	6.7%	14.2%	+111.9%
Sharp tools in cocoa (V4)	26.1%	26.9%	+3.1%	18.3%	24.9%	+36.1%	38.9%	30.4%	-21.9%
Long working hours in cocoa (V5)	0.9%	0.8%	-11.1%	1.2%	1.1%	-8.3%	0.4%	0.4%	0.0%
Night work in cocoa (V6)	0.4%	0.6%	+50.0%	0.6%	0.8%	+33.3%	0.2%	0.3%	+50.0%
Exposed to one or more Variables in cocoa work	30.2%	34.4%	+13.9%	22.3%	30.9%	+38.6%	43.1%	39.3%	-8.8%

Source: Tulane child survey 2008/09 & 2013/14, weighted, strata 1-3.

*Calculated by dividing the difference between the 2008/09 and 2013/14 figures by the base (2008/09) figure.

Table 18b. Estimates of Percentages of Children Working in Cocoa Production, 5-17 Years, Exposed to Hazardous Work Activities in the Cocoa Sector, in Côte d'Ivoire and Ghana, 2008/09 and 2013/14

Percentage of children working in cocoa exposed to:	Total			Côte d'Ivoire			Ghana		
	2008/09	2013/14	Percent Change*	2008/09	2013/14	Percent Change*	2008/09	2013/14	Percent Change*
Number of children working in cocoa production	1,817,278	2,260,407	+24.4%	819,921	1,303,009	+58.9%	997,357	957,398	-4.0%
Land clearing (V1)	37.7%	26.6%	-29.4%	64.3%	44.4%	-30.9%	15.9%	2.4%	-84.9%
Heavy loads (V2)	73.7%	64.6%	-12.3%	79.8%	57.2%	-28.3%	68.7%	74.6%	+8.6%
Agro-chemicals (V3)	14.9%	21.5%	44.3%	15.2%	13.0%	-14.5%	14.6%	33.1%	+126.7%
Sharp tools (V4)	82.1%	71.1%	-13.4%	79.4%	71.2%	-10.3%	84.3%	71.0%	-15.8%
Long working hours (V5)	2.8%	2.2%	-21.4%	5.2%	3.1%	-40.4%	0.9%	1.0%	+11.1%
Night work (V6)	1.3%	1.6%	23.1%	2.4%	2.3%	-4.2%	0.4%	0.7%	+75.0%
Exposed to one or more variables	94.8%	89.9%	-5.2%	96.5%	88.5%	-8.3%	93.3%	91.8%	-1.6%

Source: Tulane child survey 2008/09 & 2013/14, weighted, strata 1-3.

*Calculated by dividing the difference between the 2008/09 and 2013/14 figures by the base (2008/09) figure.

Table 18c. Estimates of Percentages of Children in Hazardous Work in Cocoa Production, 5-17 Years, Exposed to Hazardous Work Activities in the Cocoa Sector, in Côte d'Ivoire and Ghana, 2008/09 and 2013/14

Percentage of children in hazardous work in cocoa exposed to:	Total			Côte d'Ivoire			Ghana		
	2008/09	2013/14	Percent Change*	2008/09	2013/14	Percent Change*	2008/09	2013/14	Percent Change*
Number of children in hazardous work in the cocoa sector	1,722,186	2,032,267	+18.0%	791,181	1,153,672	+45.8%	931,005	878,595	-5.6%
Land clearing (V1)	39.8%	29.6%	-25.6%	66.6%	50.1%	-24.8%	17.1%	2.5%	-85.4%
Heavy loads (V2)	77.8%	71.8%	-7.7%	82.7%	64.6%	-21.9%	73.6%	81.2%	+10.3%
Agro-chemicals (V3)	15.7%	23.9%	52.2%	15.7%	14.7%	-6.4%	15.6%	36.1%	+131.4%
Sharp tools (V4)	86.5%	79.1%	-8.6%	82.3%	80.5%	-2.2%	90.3%	77.4%	-14.3%
Long working (V5)	3.0%	2.4%	-20.0%	5.4%	3.5%	-35.2%	0.9%	1.1%	+22.2%
Night work (V6)	1.4%	1.8%	28.6%	2.5%	2.6%	4.0%	0.4%	0.7%	+75.0%

Source: Tulane child survey 2008/09 & 2013/14, weighted, strata 1-3.

*Calculated by dividing the difference between the 2008/09 and 2013/14 figures by the base (2008/09) figure.

The data also show that in both survey years children working in cocoa production were at a high risk of being exposed to multiple types of hazardous work (see Tables 19a and 19b). This is relevant from a measurement as well as a programming perspective. As long as multiple exposures are a reality for a majority of the children working in cocoa, focusing on the total number of children in hazardous work will provide an incomplete picture and might not accurately reflect gradual progress made on the ground. Between 2008/09 and 2013/14, there were major reductions seen in the number of children exposed to multiple variables. While over 80% of surveyed children performing work in cocoa production in Côte d'Ivoire were exposed to two or more variables in 2008/09, this figure fell to just over 60% in 2013/14. In Ghana almost 70% were exposed to multiple variables in 2008/09 and about 56% in 2013/14.

Table 19a. Exposure of Children Working in Cocoa Production, 5-17 Years, to Multiple Types of Hazardous Work, in Côte d'Ivoire, 2008/09 and 2013/14

Children exposed to one or more variables measuring hazardous work in sample (V1-V6)	2008/09*	2013/14*
6 Variables	0.3%	0.0%
5 Variables	1.8%	1.3%
4 Variables	11.2%	5.5%
3 Variables	38.0%	22.8%
2 Variables	29.5%	32.2%
1 Variable	15.2%	25.0%
0 Variables	4.0%	13.2%

Source: Tulane child survey 2008/09, survey count, strata 1-3.

* Percentage of children working in cocoa production.

Table 19b. Exposure of Children Working in Cocoa Production, 5-17 Years, to Multiple Types of Hazardous Work, in Ghana, 2008/09 and 2013/14

Children exposed to one or more variables measuring hazardous work in sample (V1-V6)	2008/09*	2013/14*
6 Variables	0.0%	0.0%
5 Variables	0.1%	0.3%
4 Variables	2.6%	1.6%
3 Variables	22.4%	18.7%
2 Variables	42.8%	35.1%
1 Variable	26.3%	31.7%
0 Variables	5.8%	12.6%

Source: Tulane child survey 2008/09, survey count, strata 1-3.

* Percentage of children working in cocoa production.

6.4. Additional Detail on Working Hours, Work Activities, Hazardous Work, Household Work and Workforce Changes in the Cocoa Growing Areas

This chapter provides additional detail on a number of areas critical to understanding child labor and WFCL in the cocoa growing areas and any progress made towards their reduction or elimination. This includes the discussion of (1) children's working hours as they relate to minimum age categories used in the measurement of child labor; (2) specific work activities performed by children in cocoa agriculture; (3) hazardous child labor in cocoa agriculture based on the National Frameworks of Côte d'Ivoire and Ghana; (4) further information on work with agro-chemicals in the cocoa growing areas as well as (5) injuries and health consequences experienced by children from work in the cocoa growing area. Basis statistics on (6) household work performed by children are also provided. The last section (7) discusses the observed relationship between increases in cocoa production, population growth and changes in the workforce in agricultural households in the cocoa growing areas.

6.4.1. Working Hours and Minimum Age in Cocoa Agriculture

Based on ILO standards, all work carried out by children younger than 12 years is considered child labor. Similarly, local laws in Ghana and Côte d'Ivoire disallow work performed by these children. According to ILO, older children may only work in non-hazardous activities for a specified number of working hours depending on age. Based on these definitions, children performing "child labor" include "all children under 15 years of age who are economically active, excluding (i) those under 5 years of age and (ii) those aged 12-14 years who spend fewer than 14 hours a week on their jobs, unless their activities or occupations are hazardous by nature or circumstance. Added to this are children aged 15-17 years, who are involved in hazardous work".³⁷ Working hours do not include household chores, which are performed in addition.

Children 5-11 Years of Age

ILO standards suggest that children under the age of twelve should not be engaged in any work. In 2008/09 close to 37% of children 5-11 years in agricultural households in Côte d'Ivoire performed an hour or more of work in the 7 days prior to reporting. In 2013/14 this percentage had fallen slightly to about 34% (see Table 20a). The percentage of children 5-11 years working in cocoa who perform at least one hour of work is much higher (see Table 20b). About 83% of children in this age group working in cocoa had done at least one hour of work in the last 7 days in 2008/09. In 2013/14 this figure had decreased to about 76%. In Ghana the percentage of children 5-11 years in agricultural households performing at least one hour of work in the last week rose from almost 40% in 2008/09 to about 60% in 2013/14 (see Table 20a). The percentage of 5-11 year old cocoa working children who performed at least one hour of work rose from 62.4% to 85.0% (see Table 20b).

Children 12-14 Years of Age

ILO standards allow children in the 12-14 years age group to work up to 13 hours of non-hazardous activities weekly. In Côte d'Ivoire the percentage of children 12-14 years in agricultural households in the cocoa growing areas who exceeded the ILO's recommended maximum number of working hours increased marginally from just under 30% in 2008/09 to

³⁷ International Labour Organization (ILO), Global Child Labour Trends 2000 to 2004, (Geneva, ILO, 2006).

34% in 2013/14 (see Table 20a). There was a more pronounced fall in the percentage of children 12-14 years working in cocoa production who topped this ILO recommendation: from about 40% to 34% (see Table 20b). Slightly higher percentages of Ghanaian children 12-14 years living in agricultural households and 12-14 years working in cocoa production worked more than 13 hours in the previous week in 2013/14 than in 2008/09: 21.3% versus 17.8% for all children in agricultural households and 23.9% versus 18.3% for children working in cocoa (see Tables 20a and b).

Children 15-17 Years of Age

Children between 15 and 17 years of age are permitted by ILO standards to work up to 42 hours of non-hazardous work weekly. The percentage of Ivoirian children 15-17 years in agricultural households exceeding this limit rose from about 12% in 2008/09 to about 21% in 2013/14 (see Table 20a). The percentage of Ivoirian children 15-17 years working in cocoa who worked in excess of 42 hours decreased from about 11% to about 8% (see Table 20b). In Ghana only small percentages (less than 4%) of children 15-17 years in agricultural households and children 15-17 working in cocoa performed more than 42 hours of work a week in 2013/14, however the percentages increased between the two survey years (see Tables 20a and b).

Table 20a. Working Hours and Minimum Age, all Children in Agricultural Households in Cocoa Growing Areas, in Côte d'Ivoire and Ghana, 2008/09 and 2013/14

Number and percentage of children in agricultural households	Côte d'Ivoire		Ghana	
	2008/09	2013/14	2008/09	2013/14
5-11 years, working 1 hour or more per week*	846,041 36.6%	801,767 33.5%	476,398 39.4%	734,612 60.4%
12-14 years, working 14 hours or more per week*	188,520 29.3%	277,760 33.6%	93,504 17.8%	125,314 21.3%
15-17 years, working 43 hours or more per week*	70,987 11.9%	106,385** 20.6%	10,964 2.6%	13,201 3.1%
Total	1,105,548 31.1%	1,185,912 31.8%	580,866 26.9%	873,127 39.1%

Source: Tulane child survey 2008/09 & 2013/14, weighted data, strata 1-3.

* Based on reported working hours in all types of work in the last 7 days. Hours of household chores are not included. Children were often unable to report precise numbers of working hours. Weights were recalculated to adjust for non-response.

** Based on a very small number of children reporting in sub-strata.

Table 20b. Working Hours and Minimum Age, Children Working in Cocoa Production, in Côte d'Ivoire and Ghana, 2008/09 and 2013/14

Number and percentage of children working in cocoa production**	Côte d'Ivoire		Ghana	
	2008/09	2013/14	2008/09	2013/14
5-11 years, working 1 hour or more per week*	320,121 83.4%	427,162 76.3%	274,908 62.4%	332,524 85.0%
12-14 years, working 14 hours or more per week*	91,007 40.2%	142,713 33.8%	57,112 18.3%	75,289 23.9%
15-17 years, working 43 hours or more per week*	22,168 10.6%	25,270 7.9%	4,752 1.9%	6,545 2.5%
Total	433,296 52.8%	595,144 45.7%	336,772 33.8%	414,358 42.7%

Source: Tulane child survey 2008/09 & 2013/14, weighted data, strata 1-3.

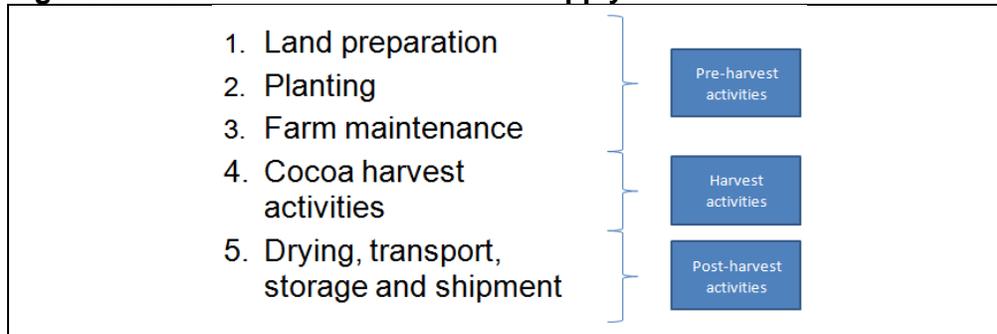
* Based on reported working hours in all types of work in the last 7 days. Hours of household chores are not included. Children were often unable to report precise numbers of working hours. Weights were recalculated to adjust for non-response.

** Children reporting working in cocoa production in the last 12 months.

6.4.2. Work Activities Performed by Children in Cocoa Agriculture

The questionnaire administered to the children examined different types of work activities performed in the West African cocoa sector. The listing of work activities was originally based on a draft instrument developed by the Government of Ghana for the country's first certification survey. Work activities in the cocoa supply chain are divided into pre-harvest, harvest and post-harvest activities covering land preparation, planting, farm maintenance, and cocoa harvest activities, and the drying and transport of cocoa beans.

Figure 5. Work activities in the cocoa supply chain



Source: Tulane University, Third Annual Report, Oversight of Public and Private Initiatives to Eliminate the Worst Forms of Child Labor in the Cocoa Sector in Côte d'Ivoire and Ghana, (30 September 2009).

Pre-Harvest Activities Performed by Children

Land preparation activities in cocoa agriculture in West Africa include land clearing, felling and chopping, burning, stumping, stakes cutting, and lining and pegging. Involvement of children in land clearing was found to be considerable in Côte d'Ivoire, although the percentage of children working in cocoa production who did this activity actually fell from about 64% in 2008/09 to 44% in 2013/14 (see Table 21b). In Ghana the percentage of children working in cocoa involved in land clearing fell from about 14% to less than 2% (see Table 21b). Other activities related to land preparation on cocoa farms covered by the survey were carried out by a much smaller percentage of children. (Table 20a shows the percentages of all children in agricultural households performing various work activities in cocoa production while table 21b shows the percentage of children working in cocoa production performing these activities. The figures referenced in Section 6.4.2 refer to the figures presented in Table 21b, unless otherwise stated.)

The interviewed children were also asked about involvement in planting activities on a cocoa farm such as the planting of suckers, preparation of seedlings, planting of seedlings, and sowing at stake. The percentages of children in working in cocoa production performing such activities was low in both countries, generally below 5%, and fell between 2008/09 and 2013/14 (see Table 21b). In Côte d'Ivoire the percentage of children working in cocoa sowing at the stake dropped from about 18% to 3%.

With regard to farm maintenance activities, the child questionnaire covered involvement in weeding, spraying insecticides, applying fertilizer, applying fungicide/herbicides/other chemicals, carrying water for spraying, sanitation and pruning, and mistletoe control. Weeding was by far the most commonly reported of these activities. The percentage of Ivoirian children working in cocoa involved in weeding fell from about 45% in 2008/09 to 36% in 2013/14 (see Table 21b). In Ghana the percentage of children weeding fell slightly, but still over half of children working in

cocoa participate in weeding. Carrying water for spraying is the second most prevalent farm maintenance activity reported by children working in cocoa. The percentage of children working in cocoa carrying water for spraying fell from about 13% to 7% in Côte d'Ivoire and rose from just over 10% in Ghana to almost 25%. Only small percentages of children working in cocoa spray insecticides or apply fertilizer/other chemicals, but in both countries the percentage of children doing this activity more than doubled between the two survey years. Sanitation, pruning, and mistletoe control are also only done by a small percentage of children working in cocoa production. The percentages of children working in cocoa doing these activities fell in Côte d'Ivoire but increased in Ghana.

Table 21a. Child Work Involved in Cocoa Production in Cocoa Growing Areas, All Children 5-17 Years in Agricultural Households, in Côte d'Ivoire and Ghana, 2008/09 and 2013/14

Percentage of children in agricultural households	Côte d'Ivoire		Ghana	
	2008/09	2013/14	2008/09	2013/14
Population of all children	3,550,060	3,733,261	2,160,878	2,236,124
Land preparation activities in cocoa production				
Land clearing	14.7%	16.1%	6.6%	0.7%
Felling and chopping	0.9%	1.6%	1.9%	0.4%
Burning	1.2%	1.1%	1.5%	0.5%
Stumping	0.7%	0.9%	0.0%	0.3%
Cutting Stakes	1.2%	0.9%	0.2%	0.1%
Planting activities in cocoa production				
Planting suckers	0.9%	0.8%	1.8%	0.5%
Preparing seedlings	2.9%	2.1%	1.6%	1.0%
Planting seedlings	2.0%	1.0%	2.6%	1.2%
Sowing at stake	4.1%	0.9%	1.4%	2.0%
Farm maintenance activities in cocoa production				
Weeding	10.3%	13.1%	26.1%	22.4%
Spraying insecticides	0.4%	1.1%	0.3%	0.6%
Applying fertilizer	0.0%	0.5%	0.1%	0.5%
Applying fungicides/ herbicides/other chemicals	0.0%	0.7%	0.1%	0.6%
Carrying water for spraying	2.9%	2.6%	4.7%	10.5%
Doing sanitation and pruning	1.4%	1.4%	0.2%	1.6%
Doing mistletoe control	1.8%	1.3%	1.1%	1.4%
Harvest activities in cocoa production				
Plucking cocoa pods	9.1%	10.4%	13.6%	7.0%
Gathering and heaping cocoa pods	16.1%	28.8%	32.0%	33.4%
Breaking cocoa pods and fermentation	12.8%	17.4%	19.9%	18.0%
Post-harvest activities in cocoa production				
Carting fermented cocoa beans	8.6%	9.4%	13.4%	16.8%
Drying cocoa beans	8.6%	11.3%	12.9%	9.2%
Carting dry cocoa beans to shed	5.1%	4.7%	7.5%	6.5%

Source: Tulane child survey 2008/09 and 2013/14, weighted data, strata 1-3.

Table 21b. Child Work Involved in Cocoa Production in Cocoa Growing Areas, Children 5-17 Years Working in Cocoa Production, in Côte d'Ivoire and Ghana, 2008/09 and 2013/14

Percentage of children working in cocoa production	Côte d'Ivoire		Ghana	
	2008/09	2013/14	2008/09	2013/14
Population of children working in cocoa production	819,921	1,303,009	997,357	957,398
Land preparation activities in cocoa production				
Land clearing	63.6%	44.2%	14.3%	1.6%
Felling and chopping	4.0%	4.0%	4.2%	1.0%
Burning	5.0%	2.9%	3.3%	1.1%
Stumping	3.1%	2.6%	0.2%	0.6%
Cutting Stakes	5.0%	2.6%	0.4%	0.2%
Planting activities in cocoa production				
Planting suckers	3.9%	2.3%	4.0%	1.1%
Preparing seedlings	12.7%	6.1%	3.4%	2.4%
Planting seedlings	8.6%	2.8%	5.5%	2.8%
Sowing at stake	17.7%	2.5%	2.9%	4.7%
Farm maintenance activities in cocoa production				
Weeding	44.6%	36.3%	56.5%	52.2%
Spraying insecticides	1.8%	3.2%	0.6%	1.4%
Applying fertilizer	0.4%	1.4%	0.3%	1.1%
Applying fungicides/ herbicides/other chemicals	0.0%	1.9%	0.3%	1.5%
Carrying water for spraying	12.6%	6.7%	10.1%	24.5%
Doing sanitation and pruning	6.0%	4.0%	0.4%	3.8%
Doing mistletoe control	7.8%	3.7%	2.3%	3.2%
Harvest activities in cocoa production				
Plucking cocoa pods	39.4%	39.6%	29.5%	16.3%
Gathering and heaping cocoa pods	69.9%	81.2%	69.4%	78.0%
Breaking cocoa pods and fermentation	55.5%	49.8%	43.2%	42.0%
Post-harvest activities in cocoa production				
Carting fermented cocoa beans	37.3%	26.8%	28.9%	39.3%
Drying cocoa beans	37.3%	32.2%	28.0%	21.6%
Carting dry cocoa beans to shed	22.1%	13.6%	16.3%	15.2%

Source: Tulane child survey 2008/09 and 2013/14, weighted data, strata 1-3.

Harvest Activities Performed by Children

Children working in cocoa agriculture in Côte d'Ivoire and Ghana are frequently involved in harvest activities such as the plucking of cocoa pods, gathering and heaping cocoa pods, and cocoa pod breaking and fermentation (see Table 21b). Around 81% of children working in cocoa production in Côte d'Ivoire participated in the gathering and heaping of cocoa pods in 2013/14, up from close to 70% in 2008/09. In Ghana this figure rose from about 70% to 78%. Breaking cocoa pods and assisting in their fermentation process continues to be done by more than half of Ivoirian children working in cocoa, although the percentage fell slightly between the two

survey years. In Ghana this percentage also fell modestly to 42% in 2013/14. The percentages of children in cocoa production plucking cocoa pods experienced greater declines in both countries.

Post-Harvest Activities Performed by Children

Similar to the cocoa harvest activities, a relatively large percentage of children working in cocoa production in both countries report involvement in post-harvest activities such as carting fermented cocoa beans, drying cocoa beans, and transporting dry cocoa beans to the storage area (see Table 21b). The percentages of children in both Côte d'Ivoire and Ghana working in cocoa production and participating in drying cocoa beans and carting them to cocoa sheds fell. There was also a decline in the percentage of Ivoirian children working in cocoa who cart fermented beans. However, in Ghana the percentage of children working in cocoa who participate in this activity rose from close to 30% to almost 40%.

6.4.3. Hazardous Child Labor in Cocoa Agriculture Based on National Frameworks

In June 2008, Ghana's Ministry of Manpower, Youth and Employment released a Hazardous Child Labor Activity Framework specifying activities considered hazardous for children working in cocoa in Ghana. Development of this list is obligatory under ILO Convention on the Worst Forms of Child Labor (C182). Similarly, the Ministry of Civil Service and Labor in Côte d'Ivoire released a list of dangerous child work in March 2005. In 2012 this list was updated and expanded (see Box 6 for the complete list).

Hazardous Child Labor Based on National Framework in Côte d'Ivoire

According to Côte d'Ivoire's list of hazardous work for children, children under 18 years who are working in agriculture and forestry should not participate in: cutting of trees, burning of fields; the sale, transport, or handling of agro-pharmaceutical products (insecticides, herbicides, fungicides, chemical fertilizers, etc.); hunting; charcoal production or work as a lumber-jack; working with animal-drawn tools, machinery, or vehicles. Specific regulations regarding children's age and the weights they may carry were also spelled out in the updated 2012 list (see Box 6). In addition, employment of children under 18 in any sector in dangerous work is prohibited. Work that prevents or limits children's participation in school and/or their ability to benefit from education is included in the Ivoirian list of dangerous work. (For a complete list of dangerous work, see Box 6.)

1. Cutting of trees

The percentage of Ivoirian children working in cocoa and reporting involvement in land clearing in the last 12 months fell from about 64% in 2008/09 to 44% in 2013/14 (see Table 21b). However, because a much larger percentage of children in Côte d'Ivoire's cocoa growing areas worked in cocoa production in 2013/14, about 50,000 more children were involved in land clearing in 2013/14 than in 2008/09. The percentage of children involved in felling and chopping remained constant at 4% between the two rounds of data collection but the total number increased by about 20,000 children (see Table 21b).

2. Burning of fields

The number of Ivorian children working in cocoa production participating in burning of fields decreased by about 3,200 from 2013/14 and 2008/09. This reflects a decrease in the percentage of cocoa working children participating in this activity: from 5% in 2008/09 to almost 3% in 2013/14 (see Table 21b).

3. Handling of agro-pharmaceutical products (insecticides, herbicides, fungicides, chemical fertilizers, etc.)

Only small percentages (less than 2%) of children who work in cocoa in Côte d'Ivoire are involved in the application of fertilizer, insecticides, fungicides, herbicides, or other chemicals. The percentages increased between 2008/09 and 2013/14, but remain below 4% (see Table 21b). Over 12% of children working in cocoa carried water for spraying in 2008/09. In 2013/14 this figure had fallen to just below 7%.

4. Carrying of heavy loads

80% of the children working in cocoa reported carrying heavy loads as part of work in agriculture in Côte d'Ivoire in 2008/09. In 2013/14 this percentage dropped to 57% (or 745,321 children). However, while a majority of children reports carrying heavy loads, exposure to the specific indicators included in the Ivorian hazardous activities framework is not as frequently reported by the children working in cocoa:

- Loads in excess of 8 kg (for children 14 to 16 years of age): 98,658 children (8%)
- Loads in excess of 10 kg (for children 16 to 17 years of age): 133,355 children (10%)
- Loads by wheelbarrow in excess of 40 kg, vehicle included (for children 14 to 17 years of age): 21,368 children (2%)
- Loads by vehicle with 3 or 4 wheels in excess of 35 kg, vehicle included (for children 14 to 17 years of age): 11,386 children (2%)
- Loads by handcart in excess of 130 kg, vehicle included (for children 14 to 17 years of age): 0 children (0%)
- Loads by tricycle-carrier in excess of 50 kg, vehicle included (for children 14 to 17 years of age): 3,199 children (0%)

5. Working with animal-drawn tools, machinery, or vehicles

It is extremely rare for children working in cocoa to operate animal-drawn tools, machinery, or vehicles. 0% of children working in cocoa reported exposure to this hazard in 2013/14. This indicator was not included in the questionnaire in 2008/09.

6. Deprivation of schooling or the opportunity to go to school

In 2008/09 59% of children (5-17 years) working in cocoa in the cocoa growing areas reported having attended school or preschool in the past 12 months, thus 41%, or 338,811 children, did not attend school in the last 12 months in 2008/09. In 2013/14 71% of children reported having attended school or preschool in the past 12 months. This translates to 29%, or 377,873 children, not attending school in 2013/14.

7. Prevention from scholarly diligence or the aptitude to benefit from instruction

Reports of cocoa work interfering with schooling are relatively rare. In 2013/14 5% of children (5-17 years) working in cocoa (67,684 children) reported interference with schooling (measured as “having been withdrawn from school during cocoa season to do farm work” and/or the child reporting that “schooling has been affected by his/her work”). In 2008/09 3% of children working in cocoa (24,207 children) reported the same exposure.

Hazardous Child Labor Based on National Framework in Ghana

Ghana’s detailed list of work activities hazardous for children under 18 years in cocoa agriculture covers a large number of hazards: clearing of forest and/or felling of trees; bush burning; working with agrochemicals; and/or being present or working in the vicinity of farm during pesticide spraying, or reentering a sprayed farm within less than 12 hours of spraying. In addition, children should not be using machetes/long cutlasses for weeding; climbing trees higher than 3 meters (9 feet) to cut mistletoe with cutlass; working with motorized mist blower, knapsack sprayer and/or chainsaw; harvesting overhead cocoa pods with harvesting hook; breaking cocoa pods with breaking knife; and/or carrying heavy load beyond permissible carrying weight (see Box 7). Finally, hazardous work for children activities include working on the farm for more than 3 hours per day or more than 18 hours per week; for children in school, working more than 2 hours/day on a school day; working without adequate basic foot and body protective clothing; a child working alone on the farm in isolation; going to or returning from the farm alone or working on farm between 6.00 p.m. and 6.00 a.m.; a child withdrawn from school during cocoa season to do farm work; and/or working full time on farm and not attending formal/non-formal school.

1. Clearing of forest and/or felling of trees

The number of Ghanaian children working in cocoa who reported clearing land in the past 12 months dropped from over 140,000 in 2008/09 to just over 15,000 in 2014/15 (see Table 21b). Less than 2% of children working in cocoa cleared land in 2013/14. Only a very small percentage of children working in cocoa participate in felling and chopping, and by 2013/14 this figure had fallen to 1%.

2. Bush burning

A very small percentage of children in Ghana working in cocoa are involved in bush burning, and the percentage fell from 3% in 2008/09 to 1% in 2013/14 (see Table 21b).

3. Working with agrochemicals, i.e. purchasing, transport, storage, use (mixing, loading and spraying/applying), washing of containers and spraying machine, and disposal

In 2008/09 less than 1% of Ghanaian children working in cocoa were involved in the application of fertilizers, insecticides, herbicides, fungicides or other chemicals (see Table 21b). The percentages of children working in cocoa applying each of these chemicals increased in 2013/14 but remained below 2%. However, the number of children working in cocoa who carried water for spraying more than doubled between the two survey years. In 2013/14 almost one quarter of children working in cocoa carried water for spraying.

4. Being present or working in the vicinity of farm during pesticide spraying, or reentering a sprayed farm within less than 12 hours of spraying

6% of children working in cocoa, an estimated total number of 63,016 children in the cocoa sector, reported being present or working in the vicinity of a farm during pesticide spraying at some time in the previous 12 months in 2008/09, and about 4% reported re-entering a sprayed farm within less than 12 hours of spraying in the same year. In 2013/14 11% of children working in cocoa reported “being present or working in the vicinity of farm during pesticide spraying” (106,166 children) and 2% (15,268 children) reported “reentering a sprayed farm within less than 12 hours of spraying.”

5. Using machetes/long cutlasses for weeding

Over half of children working in cocoa in Ghana are involved in weeding, although this figure fell slightly between the two survey years: from 57% in 2008/09 to 52% in 2013/14 (see Table 21b). 69% of children (661,454 children) reported “using machetes/long cutlasses for weeding” in 2013/14.

6. Climbing trees higher than 3 meters (9 feet) to cut mistletoe with cutlass

Approximately 2% of children working in cocoa are estimated to have climbed trees higher than 3 meters (9 feet) to cut mistletoe with cutlass in 2008/09. In 2013/14 the same percentage of children (2%), an estimated 15,280 children in total, reported this exposure.

7. Working with motorized mist blower, knapsack sprayer and/or chainsaw

A very small percentage of children, 1% of children working in cocoa and about 2% of all children in agricultural households, reported operating a sprayer in the past 12 months in 2008/09. When asked in 2013/14 whether or not they had been “working with motorized mist blower, knapsack sprayer and/or chainsaw” in the past 12 months, 1% of the children working in cocoa (14,024 children) answered with “yes.”

8. Harvesting overhead cocoa pods with harvesting hook

The percentage of children working in cocoa in Ghana who reported plucking cocoa pods in the last 12 months fell from 26% in 2008/09 to 16% in 2013/14 (see Table 21b). 13% of children working in cocoa (126,616 children) reported “harvesting overhead cocoa pods with harvesting hook” in 2013/14.

9. Breaking cocoa pods with breaking knife

The percentage of Ghanaian children working in cocoa who participated in breaking cocoa pods and fermenting them fell slightly: from 43% in 2008/09 to 42% in 2013/14. When asked during the survey if they had participated in “breaking cocoa pods with a breaking knife”, 29% (273,877 children) reported this exposure.

10. Carrying heavy load beyond permissible carrying weight, i.e. above 30% of body weight for more than 2 miles (3 km)

The carrying of heavy loads as part of work in agriculture was reported by 69% of children working in cocoa in 2008/09. In 2013/14 75% of children working in cocoa reported having

carried heavy loads during the 12 months previous to reporting. However, the interviewed children had great difficulty estimating the weight of a load, other than stating whether or not they perceived it as heavy. When asked directly whether or not they had carried, to the best of their knowledge, “loads above 30% of your body weight for more than 2 miles (3km) as part of your work in agriculture in the last 12 months”, 16 % (155,004 children) answered with “yes.”

11. Working on the farm for more than 3 hours per day or more than 18 hours per week (for children on weekends, holidays and/or children who have completed school)

In 2008/09 the average number of working hours in agriculture performed by children, 5-17 years, in the last 7 days prior to reporting was 6.6 hours for children working in cocoa. In 2013/14 this number has dropped to 3.5 hours per week on average for children working in cocoa. Individual children continue to work more than three hours per day or more than 18 hours per week.

12. For children in school, working more than 2 hours/day on a school day

While school attendance is nearly universal, a percentage of children on any given day reports working hours that exceed the limit of 2 hours per day on a school day. In 2013/14 for example, about 5% of the children working in cocoa indicated having worked for 2 or more hours on the last Monday prior to reporting.

13. Working without adequate basic foot and body protective clothing

The interviewed children were asked whether or not they had used any protective clothing or equipment while performing work in agriculture in the past year. 21% of the children working in cocoa in the cocoa growing areas indicated wearing protective shoes and/or clothing in 2008/09. In 2013/14 this percentage had increased to 58% (558,592 children).

14. A child working alone on the farm in isolation (i.e. beyond visible or audible range of nearest adult)

In 2008/09 2% of children working in cocoa reported working alone on a farm in isolation (i.e. beyond visible or audible range of nearest adult) at some point in the 12 months prior to data collection. In 2013/14 this percentage increased to 6% (53, 683 children).

15. Going to or returning from the farm alone or working on farm between 6.00 p.m. and 6.00 a.m.

Approximately 0.4% of children working in cocoa reported going to or returning from the farm alone or working on farm between 6.00 p.m. and 6.00 a.m. in the 12 months prior to reporting in 2008/09. This percentage remained low with 0.7% (6,332 children) reporting this exposure.

16. A child withdrawn from school during cocoa season to do farm work

In 2008/09 less than 2% of the children working in cocoa indicated having been withdrawn from school during cocoa season to do farm work at some point in the previous 12 months. This exposure was not reported by any child in 2013/14.

17. Working full time on farm and not attending formal/non-formal school (applicable to children under 15 years)

The ILO's definition of working "full time" is 43 hours or more of work per week. However, based on ILO standards, children under 15 years are not allowed to work full time regardless of whether or not they are in school. In Ghana 0.5% of the children under 15 years indicated having worked full time in the previous week in 2008/09. In 2013/14 a similar percentage reported the same exposure.

6.4.4. Work with Agro-Chemicals in Cocoa Agriculture

Higher percentages of Ivoirian and Ghanaian households involved in both cocoa and non-cocoa agriculture applied fertilizers, pesticides, and herbicides to their crops in 2013/14 (as compared with 2008/09, see Table 22). In both countries usage of these inputs is higher in cocoa growing households than in agricultural households that do not produce cocoa. Among Ivoirian cocoa growing households usage of fertilizer and herbicides increased by 7 and 25 percentage points respectively. Among Ghanaian cocoa growing households large increases (ranging from 12 to 33 percentage points) were seen in the usage of all three inputs.

Table 22. Household Use of Agro-Chemicals in the Last 12 Months, in Côte d'Ivoire and Ghana, 2008/09 and 2013/14

Percentage of households using	Households in Cocoa Agriculture				Households in Agriculture Other Than Cocoa			
	Côte d'Ivoire		Ghana		Côte d'Ivoire		Ghana	
	2008/09	2013/14	2008/09	2013/14	2008/09	2013/14	2008/09	2013/14
Number of households	619,095	1,423,642	345,487	517,843	624,886	448,193	456,727	555,982
Fertilizer(s)	14.6%	21.8%	17.2%	29.0%	5.1%	11.6%	21.7%	24.2%
Pesticide(s)	47.0%	48.5%	31.3%	49.7%	5.3%	18.8%	38.6%	47.0%
Herbicide(s)	19.1%	43.6%	20.5%	53.8%	10.0%	37.3%	35.4%	51.2%

Source: Tulane head of household survey 2008/09 & 2013/14, weighted data, strata 1-3.

While the number of children working in cocoa production exposed to V3 (agro-chemicals) in Côte d'Ivoire increased between 2008/09 and 2013/14, the percentage of children exposed decreased slightly (see Table 23). By disaggregating V3, we see that the percentages of children exposed to four out of five agro-chemical related activities increased, but the percentage of children carrying water for spraying – the most common agro-chemical related activity – was cut in half, and there was actually a decrease in the number of children involved in this activity as well. In Ghana there were large increases (over 100%) in both the number and percentage of children working in cocoa production exposed to V3. The percentage of children carrying water for spraying more than doubled and the percentage present or working in the vicinity of a farm during pesticide spraying rose by almost 5 percentage points.

Table 23. Disaggregation of V3 – Exposure to Agro-Chemicals, Children Working in Cocoa Production in the Last 12 Months, in Côte d'Ivoire and Ghana, 2008/09 and 2013/14

Number and percentage of children working in cocoa exposed to V3 (agro-chemicals)	Côte d'Ivoire		Ghana	
	2008/09	2013/14	2008/09	2013/14
Number exposed to V3	124,537 (15.2%)	169,605 (13.0%)	145,402 (14.6%)	316,940 (33.1%)
Spraying pesticides or insecticides	11,851 (1.4%)	51,320 (3.9%)	16,249 (1.6%)	30,907 (3.2%)
Being present or working in the vicinity of farm during pesticide spraying	5,043 (0.6%)	59,447 (4.6%)	63,016 (6.3%)	106,166 (11.1%)
Reentering a sprayed farm within less than 12 hours of spraying	2,017 (0.2%)	42,789 (3.3%)	37,764 (3.8%)	15,268 (1.6%)
Carrying water for spraying	103,356 (12.6%)	87,361 (6.7%)	100,680 (10.1%)	234,617 (24.5%)
Having been involved in working with agrochemicals*	7,564 (0.9%)	37,772 (2.9%)	15,037 (1.5%)	13,049 (1.4%)

Source: Tulane child survey 2008/09 & 2013/14, weighted data, strata 1-3.

*Such as purchasing, transport, storage, mixing, loading, spraying/applying, washing of containers and spraying machine, and/or disposal.

6.4.5. Injuries and Health Consequences Experienced by Children from Work in the Cocoa Growing Areas

Certain injuries were common among children in agricultural households and children working in cocoa production (see Tables 24a and 24b).

Table 24a. Injuries Experienced by Children While Working in Agriculture, All Children 5-17 Years Working in Agriculture, in Côte d'Ivoire and Ghana, 2013/14

Percentage of children in agricultural households	Côte d'Ivoire	Ghana
	2013/14	2013/14
Population of all children	3,733,261	2,236,124
Type of injury		
Wounds/cuts	18.8%	20.5%
Broken bones	0.1%	0.3%
Snake bites	0.6%	0.3%
Insect bites	8.0%	13.1%
Back pains	0.9%	8.6%
Muscle pains	4.8%	5.4%
Other pains	0.3%	2.5%
Burns	1.2%	1.6%
Skin itchiness or scratches	2.0%	19.7%
Other	0.8%	0.1%

Source: Tulane child survey 2013/14, weighted data, strata 1-3.

Table 24b. Injuries Experienced by Children While Working in Agriculture, Children 5-17 Years Working in Cocoa Production, in Côte d'Ivoire and Ghana, 2013/14

Percentage of children working in cocoa production	Côte d'Ivoire	Ghana
	2013/14	2013/14
Population of children working in cocoa production	1,303,009	957,398
Type of injury		
Wounds/cuts	36.7%	26.2%
Broken bones	0.3%	0.3%
Snake bites	1.1%	0.5%
Insect bites	18.5%	18.9%
Back pains	1.5%	11.2%
Muscle pains	11.0%	6.7%
Other pains	0.5%	2.2%
Burns	3.2%	1.6%
Skin itchiness or scratches	5.3%	25.9%
Other	0.7%	0.2%

Source: Tulane child survey 2013/14, weighted data, strata 1-3.

In Côte d'Ivoire about 19% of children in agricultural households and 37% of children working in cocoa production experienced wounds/cuts while performing agricultural work. Insect bites were also experienced by almost 19% of Ivoirian children working in cocoa production, and muscle pains were experienced by 11% of these children. In Ghana around 20% of children in agricultural households experienced wounds/cuts and skin itchiness or scratches while doing agricultural work. Amongst children working in cocoa the percentages were higher, with about 26% of children experiencing each of these injuries. Insect bites were also experienced by 13% of Ghanaian children in agricultural households and 20% of children working in cocoa production.

The most common health consequence from children's agricultural work-related injuries was very bad pain (see Tables 25 a and b). In Côte d'Ivoire 16% of children in agricultural households and 31% of children working in cocoa production reported experiencing such pain when injured while working in agriculture. Amongst children working in cocoa production 11% could not continue working after experiencing an injury. In Ghana 19% of children in agricultural households and 24% of children working in cocoa production reported experiencing very bad pain after sustaining an injury while working in agriculture. Almost 12% of children working in cocoa production also felt very sick or tired as a result of an injury, and close to 8% could not continue working.

Table 25a. Health Consequences from Injuries Experienced While Working in Agriculture, All Children 5-17 Years Working in Agriculture, in Côte d'Ivoire and Ghana, 2013/14

Percentage of children in agricultural households	Côte d'Ivoire	Ghana
	2013/14	2013/14
Population of all children	3,733,261	2,236,124
Type of injury		
Was in very bad pain	16.1%	19.0%
Felt very sick or tired	4.2%	9.0%
Did not feel well for a long time	3.6%	0.6%
Had to receive treatment at a health center	2.2%	1.6%
Had to receive treatment at a hospital	0.7%	0.7%
Could not continue working	4.7%	6.0%
Could not go to school	1.0%	2.3%
Other	0.8%	2.8%

Source: Tulane child survey 2013/14, weighted data, strata 1-3.

Table 25b. Health Consequences from Injuries Experienced While Working in Agriculture, Children 5-17 Years Working in Cocoa Production, in Côte d'Ivoire and Ghana, 2013/14

Percentage of children working in cocoa production	Côte d'Ivoire	Ghana
	2013/14	2013/14
Population of children working in cocoa production	1,303,009	957,398
Type of injury		
Was in very bad pain	30.8%	24.3%
Felt very sick or tired	6.8%	11.8%
Did not feel well for a long time	7.4%	0.6%
Had to receive treatment at a health center	5.8%	2.6%
Had to receive treatment at a hospital	1.3%	0.8%
Could not continue working	11.1%	7.9%
Could not go to school	1.9%	3.9%
Other	1.2%	2.3%

Source: Tulane child survey 2013/14, weighted data, strata 1-3.

6.4.6. Household Work Performed by Children in the Cocoa Growing Areas

The vast majority of children in agricultural households and children working in cocoa perform household work in Côte d'Ivoire and Ghana (see Tables 26a and 26b). In Côte d'Ivoire, compared with children in agricultural households, a higher percentage of children working in cocoa had done household chores in the last 12 months: 89% versus 73% in 2013/14. Over 90% of girls working in cocoa in both survey years performed household work, with the percentage growing in 2013/14. Close to 80% of boys working in cocoa did household work in both years, again with the percentage growing in 2013/14.

In Ghana almost 100% of children working in cocoa had also done household work in the last 12 months in 2013/14 (see Table 26b). This was true among boys and girls and across all age groups. For children in agricultural households the figure was closer to 90%, although over 99% of these children in the middle and oldest age groups did household work (see Table 26a). A slightly higher percentage of girls than boys were involved in household work in both years. This was true among boys and girls in agricultural households and boys and girls working in cocoa production.

Table 26a. Estimates of Household Work for All Children 5-17 Years in Agricultural Households, in Côte d'Ivoire and Ghana, 2008/09 and 2013/14

Number and percentage of all children	Côte d'Ivoire		Ghana	
	2008/09	2013/14	2008/09	2013/14
Children 5-17 years				
Doing household work in last 12 months	2,557,650 72.0%	2,726,717 73.0%	1,892,500 87.6%	2,027,099 90.7%
Doing household work in last 7 days	2,450,497 69.0%	2,593,169 69.5%	1,914,803 88.6%	1,934,190 86.5%
Sex				
Boys doing household work in last 12 months	1,275,967 67.1%	1,371,059 66.9%	1,014,963 86.5%	1,041,694 88.8%
Girls doing household work in last 12 months	1,281,683 77.7%	1,355,657 80.5%	877,537 88.8%	985,406 92.7%
Age group				
Children 5-11 years doing household work in last 12 months	1,466,514 63.5%	1,530,061 64.0%	985,035 81.4%	1,058,264 84.0%
Children 12-14 years doing household work in last 12 months	570,130 88.7%	729,049 88.2%	502,417 95.7%	558,920 99.2%
Children 15-17 years doing household work in last 12 months	521,007 87.1%	467,607 90.5%	405,048 95.1%	409,916 99.5%

Source: Tulane child survey 2008/09 & 2013/14, weighted data, strata 1-3.

Table 26b. Estimates of Household Work for Children 5-17 Years Working in Cocoa Production, in Côte d'Ivoire and Ghana, 2008/09 and 2013/14

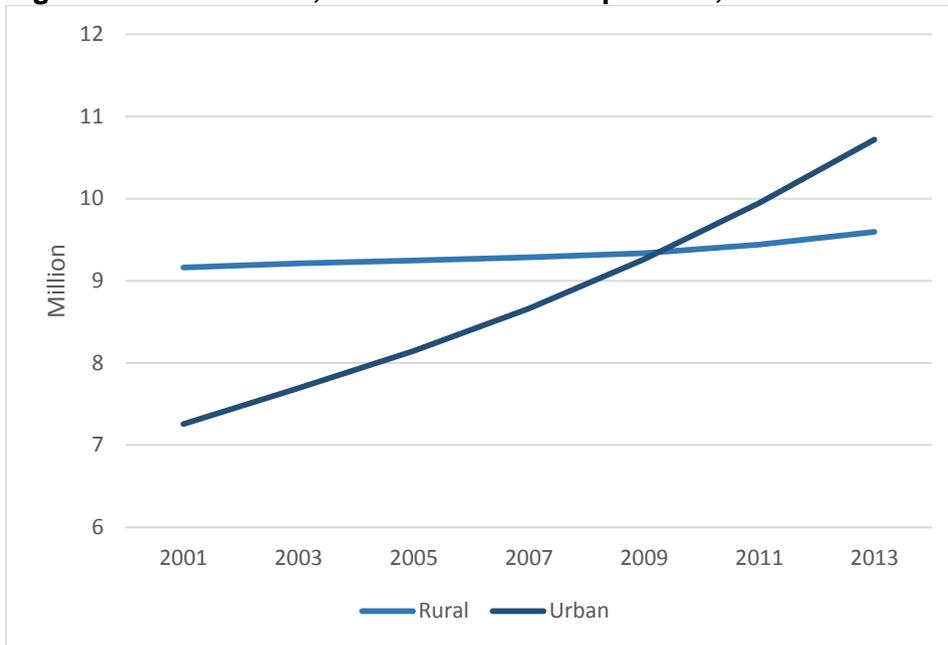
Number and percentage of children working in cocoa production	Côte d'Ivoire		Ghana	
	2008/09	2013/14	2008/09	2013/14
Children 5-17 years				
Doing household work in last 12 months	696,624 85.0%	1,153,054 88.5%	950,015 95.3%	941,631 98.4%
Doing household work in last 7 days	672,418 82.0%	1,090,041 83.7%	970,479 97.3%	910,968 95.2%
Sex				
Boys doing household work in last 12 months	395,825 79.2%	751,516 84.5%	565,633 95.0%	537,357 98.3%
Girls doing household work in last 12 months	300,800 94.0%	401,538 97.2%	384,382 95.6%	404,274 98.5%
Age group				
Children 5-11 years doing household work in last 12 months	322,465 84.0%	483,980 86.4%	416,881 94.6%	392,493 97.1%
Children 12-14 years doing household work in last 12 months	204,725 90.5%	381,790 90.5%	295,759 94.7%	296,926 98.7%
Children 15-17 years doing household work in last 12 months	169,434 80.7%	287,284 89.4%	237,375 97.2%	252,212 100.0%

Source: Tulane child survey 2008/09 & 2013/14, weighted data, strata 1-3.

6.4.7. Population Growth, Production Increase and Other Factors Potentially Impacting the Number of Children Working in Cocoa Production

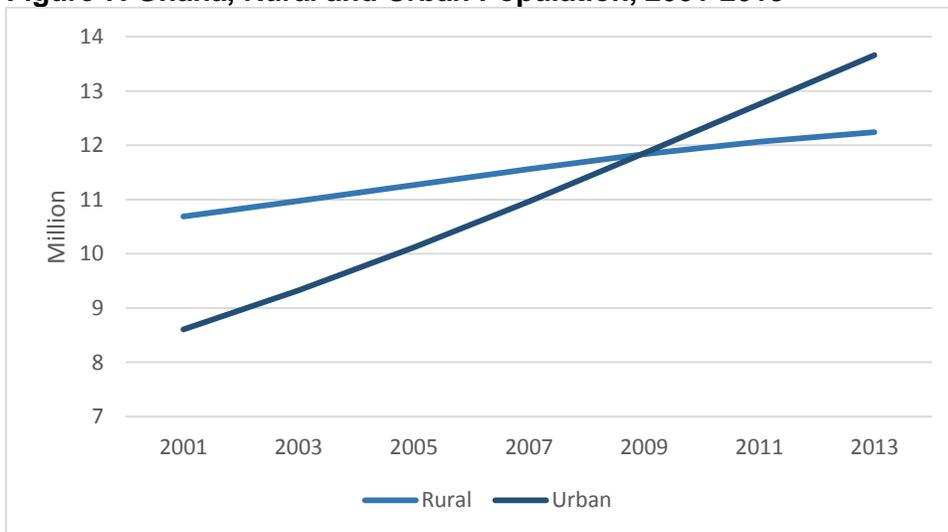
In considering the problem of child labor in the cocoa sector, contextual factors are important and may explain parts of the observed changes between the rounds of survey data collection. Relevant factors include population growth, cocoa production increases as well as fluctuations in labor needs based on the strength of the harvest season.

Figure 6. Côte d'Ivoire, Rural and Urban Population, 2001-2013



Source: World Bank, World Development Indicators (online).

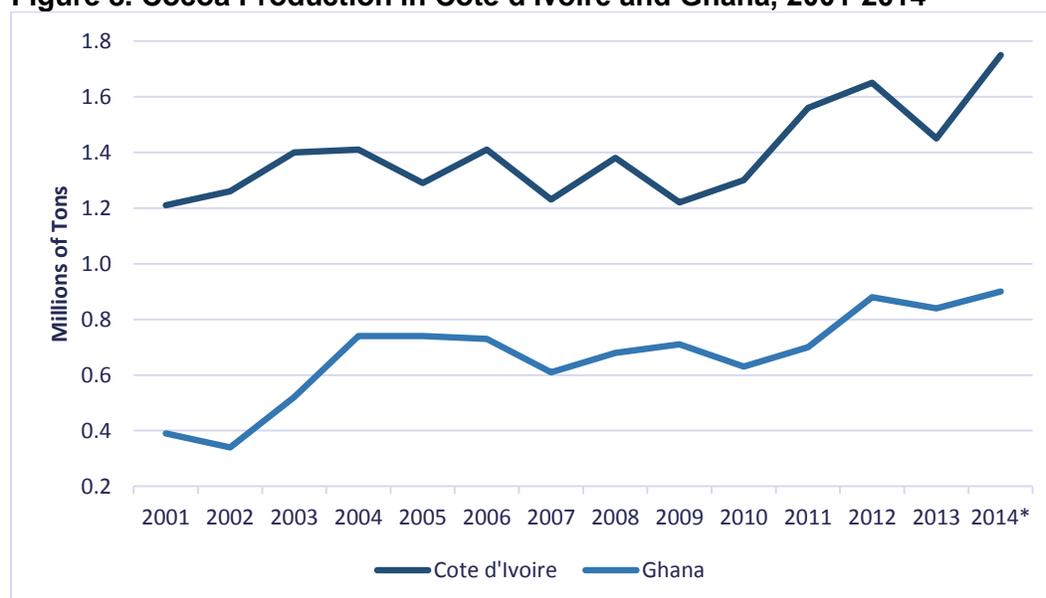
Figure 7. Ghana, Rural and Urban Population, 2001-2013



Source: World Bank, World Development Indicators (online).

Both countries experienced population growth since 2001. Based on World Bank statistics, Côte d'Ivoire's total population grew from 16.4 million in 2001 to 20.3 million in 2013. As Figure 6 shows, the country's urban population grew much more rapidly than its rural population, with the country becoming majority urban in 2009. While the urban population increased by close to 4 million between 2001 and 2013, the rural population only rose by less than 1 million (see Figure 6). Ghana's total population rose from 19.3 million in 2001 to 25.9 million in 2013. Again, urban growth was much stronger than rural growth, and the country became majority urban in around 2009. Between 2001 and 2014 the urban population increased by over 5 million while the rural population added just over 1.5 million (see Figure 7). Based on the data, the lower population growth rates in rural areas appear to be caused primarily by outmigration of older children and adults of working age (see Figures 1 and 2 for comparison).

Figure 8. Cocoa Production in Côte d'Ivoire and Ghana, 2001-2014



Sources: FAO and ICCO.

* ICCO estimates for 2013/14 season.

In addition to population growth, cocoa production has also increased in both countries. According to FAO and ICCO data, cocoa production in Côte d'Ivoire has risen by almost 50% since 2001 (from 1.21 million tons to an estimated 1.75 million tons), and in Ghana it has more than doubled (from 0.39 million tons to an estimated 0.90 million tons; see Figure 8). However, production did not increase consistently throughout this period, but instead saw several “up” years followed by years during which production contracted. Côte d'Ivoire saw growth take off after 2009, while Ghana's biggest growth periods were from 2002 to 2004 and from 2010 to 2012. West African cocoa production dropped in 2008/09 largely because of poor weather conditions and widespread outbreaks of cocoa pests and diseases. The 2013/14 harvest broke records thanks to generally favorable weather and, in the case of Côte d'Ivoire, positive impacts from cocoa sector reforms.³⁸

³⁸ International Cocoa Association (ICCO), The Cocoa Market Situation, ICCO Economics Committee Meeting, London (16-18 September 2014).

Growth in cocoa production is likely to increase the demand for labor. Outmigration of adults of working age will shift the tasks associated with cocoa production to the remaining population including children. Comparing the tons of cocoa produced per child worker – even without controlling for other inputs – can shed some light on the relative burden on children over time. Output per unit labor (worker or worker hour) has long been used as a partial factor productivity measure of labor.³⁹ For example, the implied labor hours required to produce one unit of output for various US crops has been calculated previously by adding all dollars spent on paid labor in the crop's production with the value of all unpaid labor used, dividing this by the average farm wage rate, and then dividing by total crop output. A five-year moving average to account for year-to-year yield volatility is preferred when performing these calculations.⁴⁰ As another example of this type of calculation, the US Bureau of Labor Statistics calculates labor productivity indices for different industries by dividing the index of output in the current year (ratio of output in current year to base year) by the index of labor input in the current year (ratio of labor hours in current year to base year). These calculations are much more complex for industries that do not produce a single uniform product or service.⁴¹

Table 27. Children Working in Cocoa Production and Tons of Cocoa Produced, Côte d'Ivoire and Ghana, 2008/09 and 2013/14

		All Children	Children Working in Cocoa Production		Tons of Cocoa Produced		Ratio of Tons Produced to Working Children
		Number	Number	Percent of All Children	Percent Change	Number	
Côte d'Ivoire	2008/09	3,550,060	819,921	23.1%	+51.1%	1,223,200	1.5 tons/child
	2013/14	3,733,261 (+5.2%)	1,303,009 (+58.9%)	34.9%		1,746,000*	
Ghana	2008/09	2,160,878	997,357	46.2%	-7.4%	662,400	0.7 tons/child
	2013/14	2,236,124 (+3.5%)	957,398 (-4.0%)	42.8%		897,000*	+35.4%

Sources: Tulane child survey 2008/09 and 2013/14, weighted, strata 1-3 and ICCO (cocoa production figures).

* ICCO estimates.

Comparing the Tulane survey data with the ICCO production statistics, both the number of children working in the cocoa sector and the total amount of cocoa produced were much higher in 2013/14 than in 2008/09 in Côte d'Ivoire: the number of children increased by almost 60% and cocoa production increased by 43% (see Table 27). In Ghana, the number of children working in cocoa production fell slightly between 2008/09 and 2013/14, while cocoa production increased by 35%. At the same time, the data suggest differences in the level of involvement between the two countries with one working child per 1.3 tons of cocoa produced in Côte d'Ivoire in 2013/14 compared to 0.9 tons per working child in Ghana. However, this analysis is partial and does not consider the other inputs involved in the production of cocoa, including the contribution by working adults, nor does it reflect differences in the average number of hours of work performed in cocoa agriculture by children in the two countries.

³⁹ Odhiambo, Walter and Hezron O. Nyangito, Measuring and Analysing Agricultural Productivity in Kenya: a Review of Approaches, (Kenya Institute for Public Policy Research and Analysis 2003).

⁴⁰ Field to Market, Environmental and Socioeconomic Indicators for Measuring Outcomes of On-Farm Agricultural Production in the United States: Second Report, (Version 2), (December 2012).

⁴¹ Bureau of Labor Statistics (BLS), BLS Handbook of Methods, Chapter 11, (BLS, 2011).

Table 28. Estimates of Children in Agricultural Households in the Cocoa Growing Areas, 5-17 Years, Working and Not Working, in the last 12 Months, in Côte d'Ivoire and Ghana, 2007/08, 2008/09 and 2013/14

Population of children 5-17 years in cocoa growing areas	Côte d'Ivoire			Ghana		
	2007/08	2008/09	2013/14	2007/08	2008/09	2013/14
Cocoa production per year						
Tons of cocoa produced	1,382,400	1,223,200	1,746,000*	729,000	662,400	897,000*
Population of children, 5-17 years, in agricultural households in cocoa growing areas						
All children 5-17 years (Fig.1:1)	3,571,448	3,550,060	3,733,261	2,300,304	2,160,878	2,236,124
Children working (Fig.1:2)	2,492,549	2,069,959	2,199,865	1,930,868	1,678,782	1,770,577
Children not working (Fig.1:3)	1,078,899	1,480,101	1,533,396	369,436	482,096	465,547
Children working in agriculture (Fig.1:4)	2,365,286	1,915,922	2,083,114	1,880,115	1,557,280	1,562,351
Children working in sectors other than agriculture (Fig.1:5)	127,263	154,037	116,752	50,753	121,502	208,226
Children working in cocoa production (Fig.1:6)	1,468,528	819,921	1,303,009	1,254,764	997,357	957,398
Children working in agriculture other than the cocoa sector (Fig.1:7)	896,758	1,096,001	780,105	625,351	559,923	604,953

Source: Tulane child survey 2007/08, 2008/09 and 2013/14, weighted, strata 1-3 and ICCO (cocoa production figures).

* ICCO estimates.

When looking at the data from the different rounds of survey data collection, fluctuations in labor needs based on the strength of the harvest season are also evident. Table 28 compares the 2008/09 baseline data and 2013/14 follow-up data discussed in this report with the data from the first Tulane harvest season surveys in Côte d'Ivoire and Ghana, which were carried out in 2007/08. Adding the 2007/08 round of data collection shows fluctuations in cocoa production between the years as well as fluctuations in the number of working children. While cocoa continues to be a very labor-intensive crop, particularly during the harvest, the level of cocoa production can vary year-to-year based on the strength of a harvest, thus impacting the demand for labor. The data show that cocoa production dropped from 2007/08 to 2008/09 in Côte d'Ivoire but strongly increased since. This decrease corresponded with a drop in the number of children working in the sector. The number of children working in cocoa production was highest in 2007/08 in Côte d'Ivoire, fell by almost 650,000 in 2008/09, and then grew by over 480,000 in 2013/14. While the number of children working in cocoa decreased in Ghana through all rounds of data collection, in Côte d'Ivoire a decrease is also evident if the 2007/08 and the 2013/14 data are compared. Since 2008/09, cocoa production has not only intensified in Côte d'Ivoire but also expanded to a larger geographic area involving a larger number of households. In Ghana, continuous trends can be seen from 2007/08 to 2013/14 in children working in cocoa production decreasing and children working in sectors other than agriculture increasing. While this provides strong evidence of progress towards reducing child involvement in the cocoa sector in Ghana, it would be worrisome if children withdrawn from cocoa agriculture enter other sectors instead.

6.4.8. Characteristics of Children in Cocoa Growing Households

Cocoa growing households include children working in cocoa, children performing productive activities other than cocoa agriculture and non-working children. This section compares children in cocoa growing households⁴² with children in agricultural households that do not grow cocoa and assesses changes in the number and percentage of children involved in cocoa agriculture in cocoa growing households between the survey years. Children working in cocoa are found in both cocoa and non-cocoa growing households, but the vast majority of them live in cocoa growing households. Improvements on household level indicate a positive trend, with cocoa growing households moving away from child labor.

In the aggregate the number of agricultural households in the cocoa growing areas increased by almost 900,000 between 2008/09 and 2013/14 (see Table 29). Cocoa growing households accounted for most of this growth, with an increase of over 865,000 households. The number of non-cocoa growing agricultural households grew by slightly under 34,000. Côte d'Ivoire's number of cocoa growing households more than doubled during this period, while its number of non-cocoa growing agricultural households fell by almost 177,000. Non-cocoa growing agricultural households accounted for a slim majority of all agricultural households in Côte d'Ivoire's cocoa growing areas in 2008/09, but by 2013/14 cocoa growing households accounted for over three quarters of all agricultural households in these areas. In Ghana there was growth in the number of both cocoa growing and non-cocoa growing agricultural households, although growth in non-cocoa growing households was much greater.

Table 29. Estimates of Agricultural Households, Cocoa Growing Households and Non-Cocoa Growing Agricultural Households, in Côte d'Ivoire and Ghana, 2008/09 and 2013/14

	Total		Côte d'Ivoire		Ghana	
	2008/09	2013/14	2008/09	2013/14	2008/09	2013/14
All agricultural households	2,046,194	2,945,658	1,243,981	1,871,834	802,213	1,073,824
Cocoa growing households	1,075,822	1,941,485	619,095	1,423,642	456,727	517,843
Non-cocoa growing agricultural households	970,372	1,004,173	624,886	448,192	345,486	555,981

Source: Tulane head of household survey 2008/09 & 2013/14, weighted, strata 1-3.

In the aggregate the total number of children living in cocoa growing households increased by close to 1.4 million between 2008/09 and 2013/14 (see Table 30). While the numbers of children in cocoa growing households working in cocoa production, in child labor in cocoa production, and in hazardous work in cocoa production also increased, the percentages of children in cocoa growing households falling into these three categories all fell: by around 11%, 14%, and 16%, respectively. In 2013/14 almost half of children in cocoa growing households worked in cocoa production and about 42% were involved in hazardous work in cocoa production. (It

⁴² A household is considered a cocoa growing household if production of cocoa was reported by the head of household at the time of data collection. The typical cocoa growing household is involved in cocoa growing as well as the production of other crops.

should also be noted that the vast majority of children working in cocoa production also work in other types of agriculture.) In Côte d'Ivoire there was a large increase in the number of children in cocoa growing households and large increases also in the numbers involved in the three categories of work. However, the percentages of children in cocoa growing households involved in each of the three categories fell, ranging from a drop of 6% for children working in cocoa production to a drop of just over 14% for children in hazardous work in cocoa production. In 2013/14 almost 41% of children in Ivoirian cocoa growing households worked in cocoa production and about 36% were involved in hazardous work in cocoa production. In Ghana there was a slight increase in the number of children in cocoa growing households as well as in the numbers of children in these households working in cocoa production and in child labor in cocoa production. The number of children in cocoa growing households involved in hazardous work in cocoa actually fell slightly. The percentages of children in cocoa growing households in each work category fell by between 8 and 11 percent.

Table 30. Estimates of Children in Cocoa Growing Households, 5-17 Years, Working in Cocoa Production, in Child Labor in Cocoa Production and in Hazardous Work in the Cocoa Sector in the last 12 Months, in Côte d'Ivoire and Ghana, 2008/09 and 2013/14

		Children in Cocoa Growing Households	Children in Cocoa Growing Households Working in Cocoa Production			Child Laborers in Cocoa Production in Cocoa Growing Households			Children in Cocoa Growing Households in Hazardous Work in Cocoa Production*		
		Number	Number	Percent	Percent change**	Number	Percent	Percent change**	Number	Percent	Percent change**
Total	2008/09	3,163,319	1,657,993	52.4%	-10.7%	1,609,646	50.9%	-13.8%	1,576,795	49.9%	-16.0%
	2013/14	4,517,583	2,116,361	46.8%		1,982,675	43.9%		1,893,286	41.9%	
Côte d'Ivoire	2008/09	1,835,756	792,941	43.2%	-6.0%	782,855	42.6%	-12.2%	764,201	41.6%	-14.2%
	2013/14	3,037,914	1,233,984	40.6%		1,134,808	37.4%		1,085,367	35.7%	
Ghana	2008/09	1,327,563	865,052	65.2%	-8.6%	826,791	62.3%	-8.0%	812,594	61.2%	-10.8%
	2013/14	1,479,669	882,377	59.6%		847,867	57.3%		807,919	54.6%	

Source: Tulane child survey 2008/09 and 2013/14, weighted, strata 1-3.

*Measured based on Variables 1-6, as described in Chapter 5 of this report.

**Calculated by dividing the difference between the 2008/09 and 2013/14 percentages by the base (2008/09) percentage.

Looking at both countries combined the percentages of children in cocoa growing households exposed to four of the six specified cocoa production hazards fell by double digits between the two survey years and the percentage exposed to at least one of these hazards fell by almost 16% (see Table 31). However, over 40% of children in cocoa growing households were still exposed to at least one hazard in 2013/14. In Côte d'Ivoire decreases in percentages were seen for all six hazards, with percentage falls for the common hazards of land clearing, carrying heavy loads, and using sharp tools of 37%, 31%, and 33% respectively. Almost 36% of

children in cocoa growing households in Côte d'Ivoire were exposed to at least one hazard in 2013/14. In Ghana the percentages of children in cocoa growing households exposed to three of the cocoa production hazards decreased. There was an 87% drop in the percentage of these children exposed to land clearing and a 25% drop in the percentage exposed to sharp tools. However, the percentage of these children exposed to agro-chemicals more than doubled, and about 55% were still exposed to at least one hazard in the most recent survey year.

Table 31. Estimates of Children in Cocoa Growing Households, 5-17 Years, Exposed to Hazardous Work Activities in the Cocoa Sector, in Côte d'Ivoire and Ghana, 2008/09 and 2013/14

Percentage of children in cocoa growing households exposed to:	Total			Côte d'Ivoire			Ghana		
	2008/09	2013/14	Percent Change*	2008/09	2013/14	Percent Change*	2008/09	2013/14	Percent Change*
Number of children 5-17 years in cocoa growing households	3,163,319	4,517,583	+42.8%	1,835,756	3,037,914	+65.5%	1,327,563	1,479,669	+11.5%
Land clearing (V1)	20.4%	12.2%	-40.2%	27.7%	17.5%	-36.8%	10.3%	1.3%	-87.4%
Heavy loads (V2)	39.2%	30.6%	-21.9%	34.8%	24.1%	-30.7%	45.3%	44.0%	-2.9%
Agro-chemicals (V3)	7.9%	10.3%	+30.4%	6.7%	5.4%	-19.4%	9.5%	20.3%	+113.7%
Sharp tools (V4)	42.9%	32.9%	-23.3%	43.1%	28.7%	-33.4%	55.2%	41.6%	-24.6%
Long working hours (V5)	1.6%	1.1%	-31.3%	2.3%	1.3%	-43.5%	0.6%	0.6%	0.0%
Night work (V6)	0.7%	0.8%	+14.3%	1.1%	1.0%	-9.1%	0.2%	0.3%	+50.0%
Exposed to one or more variables	49.8%	41.9%	-15.9%	41.6%	35.7%	-14.2%	61.2%	54.6%	-10.8%

Source: Tulane child survey 2008/09 & 2013/14, weighted, strata 1-3.

*Calculated by dividing the difference between the 2008/09 and 2013/14 figures by the base (2008/09) figure.

In the aggregate the number of children in non-cocoa producing agricultural households decreased by over one million between 2008/09 and 2013/14 (see Table 32). While the number of these children working in agriculture also fell, the percentage of children in such households working in any type of agriculture increased by about 7%. In Côte d'Ivoire the number of children in non-cocoa producing agricultural households was more than halved, as was the number of such children working in agriculture. This translated to an 8% increase in the percentage working in agriculture. In Ghana there were slight decreases in both the number of children in non-cocoa producing agricultural households and the number in such households working in agriculture. The percentage of Ghanaian children in non-cocoa producing agricultural households working in agriculture fell by about 4%.

Table 32. Estimates of Children in Non-Cocoa Producing Agricultural Households in the Cocoa Growing Areas, 5-17 Years, Working in Agriculture in the last 12 Months, in Côte d'Ivoire and Ghana, 2008/09 and 2013/14

		Children in Non-Cocoa Producing Agricultural Households	Children in Non-Cocoa Producing Agricultural Households Working in Agriculture		
		Number	Number	Percent	Percent change*
Total	2008/09	2,547,619	1,527,632	60.0%	+6.5%
	2013/14	1,451,802	929,020	63.9%	
Côte d'Ivoire	2008/09	1,714,304	938,939	54.8%	+8.0%
	2013/14	695,347	411,739	59.2%	
Ghana	2008/09	833,315	588,693	70.6%	-3.5%
	2013/14	756,455	515,281	68.1%	

Source: Tulane child survey 2008/09 and 2013/14, weighted, strata 1-3.

*Calculated by dividing the difference between the 2008/09 and 2013/14 percentages by the base (2008/09) percentage.

In summary, the data indicate that the increases in the number of children working, in child labor, and in hazardous work in cocoa production documented in this report can be primarily explained by the growth of the sector involving a larger number of households in 2013/14 compared to 2008/09. As the number of households growing cocoa increased, so did the number of children living in these households and the numbers of children in these households working in cocoa production, in child labor in cocoa production, and in hazardous work in cocoa production. However, while the absolute numbers of these children increased, labor force participation in the cocoa sector of children within cocoa producing households fell in both countries and children in these households were less likely to be exposed to child labor and most types of hazardous work.

6.5. Additional Detail on Access to Education in the Cocoa Growing Areas

Education is critical to the children in the cocoa growing areas. The governments of Côte d'Ivoire and Ghana have prioritized making education available to all children. As mentioned in Section 5.1.2, both governments are especially concerned with children's work affecting their school attendance and ability to learn, and the countries' hazardous activities frameworks reflect this concern (see Boxes 6 and 7).

The percentage of children working in cocoa production and not attending school (as measured by the number of children 6-14 not attending school in the last 12 months) fell in both countries (see Table 33). In Côte d'Ivoire about 23% of children working in cocoa were not attending school in 2008/09 and in 2013/14 about 15% were not attending. However, there was an increase in the percentage of Ivorian children whose work in cocoa was interfering with their schooling: from about 2% to 4%. In Ghana the percentage of children working in cocoa production and not attending school fell from about 6% to 0.7% (as measured by the number of children 6-14 not attending school in the last 12 months), while the percentage whose work in cocoa was interfering with their schooling rose from about 5% to 7%.

Table 33. Estimates of Access to Education, Children in Cocoa Growing Areas, 6-14 Years, Working in Cocoa Production, in Côte d'Ivoire and Ghana, 2008/09 and 2013/14

Children 6-14 years working in cocoa production	Côte d'Ivoire			Ghana			Total		
	2008/09	2013/14	Percent Change**	2008/09	2013/14	Percent Change**	2008/09	2013/14	Percent Change**
Not attending school* (V7)	189,108	193,381	+2.3%	56,338	6,589	-88.3%	245,446	199,970	-18.5%
Percentage of all children working in cocoa production	23.1%	14.8%	-35.9%	5.6%	0.7%	-87.5%	13.5%	8.9%	-34.5%
Work interfering with schooling* (V8)	17,146	45,188	+163.6%	48,000	63,197	+31.7%	65,146	108,385	+66.4%
Percentage of all children working in cocoa production	2.1%	3.5%	+66.7%	4.8%	6.6%	+37.5%	3.6%	4.8%	+33.2%
Exposed to either V7 or V8*	206,255	238,569	+15.7%	101,827	67,799	-33.4%	308,082	308,355	+0.1%
Percentage of all children working in cocoa production	25.2%	18.3%	-27.4%	10.2%	7.1%	-30.4%	17.0%	13.6%	-19.8%

Source: Tulane child survey 2008/09 & 2013/14, weighted, strata 1-3.

*Measured based in Variables 7-8, as described in Chapter 5 of this report.

**Calculated by dividing the difference between the 2008/09 and 2013/14 figures by the base (2008/09) figure.

In Côte d'Ivoire the percentages of both children 5-17 years in agricultural households and children 5-17 years working in cocoa production who attended school in the last 12 months increased by about ten percentage points (see Tables 34a and 34b). In 2013/14 over two thirds of children in agricultural households and close to three quarters of children working in cocoa attended school in the last 12 months. It should be noted that in both countries the population of children working in cocoa tends to be older than the population of all children living in agricultural households. While gains in attendance were seen across the board, a higher percentage of boys attended school in both years. Less than half of children 15-17 years attended school in the last 12 months.

Table 34a. School Attendance for All Children in Agricultural Households in Cocoa Growing Areas in the Last 12 Months, Côte d'Ivoire and Ghana, 2008/09 and 2013/14

Number and percentage of all children attending school in the last 12 months	Côte d'Ivoire		Ghana	
	2008/09	2013/14	2008/09	2013/14
Children 5-17 years	2,043,761 57.6%	2,514,671 67.4%	1,930,676 89.3%	2,111,513 94.4%
Sex				
Boys 5-17 years	1,166,505 61.4%	1,429,176 69.7%	1,049,842 89.5%	1,118,556 95.4%
Girls 5-17 years	877,256 53.2%	1,085,494 64.5%	880,834 89.1%	992,958 93.4%
Age Group				
Children 5-11 years	1,373,996 59.5%	1,606,094 67.2%	1,079,987 89.3%	1,199,427 95.1%
Children 12-14 years	439,337 68.3%	667,570 80.8%	487,135 92.8%	551,459 97.8%
Children 15-17 years	230,428 38.5%	241,007 46.6%	363,553 85.4%	360,627 87.6%

Source: Tulane child survey 2008/09 & 2013/14, weighted data, strata 1-3.

Table 34b. School Attendance for Children Working in Cocoa Production in the Last 12 Months, Côte d'Ivoire and Ghana, 2008/09 and 2013/14

Number and percentage of children working in cocoa production attending school in the last 12 months	Côte d'Ivoire		Ghana	
	2008/09	2013/14	2008/09	2013/14
Children 5-17 years	481,555 58.7%	923,081 70.8%	906,635 90.9%	917,939 95.9%
Sex				
Boys 5-17 years	324,219 64.8%	644,895 72.5%	541,278 90.9%	531,908 97.3%
Girls 5-17 years	157,337 49.2%	278,186 67.3%	365,357 90.9%	386,031 94.0%
Age Group				
Children 5-11 years	258,418 67.3%	446,131 79.7%	402,412 91.3%	396,594 98.1%
Children 12-14 years	150,770 66.7%	339,206 80.4%	289,422 92.7%	294,695 97.9%
Children 15-17 years	72,367 34.5%	137,743 42.9%	214,801 88.0%	226,650 89.9%

Source: Tulane child survey 2008/09 & 2013/14, weighted data, strata 1-3.

The percentages of children 5-17 years in agricultural households and children 5-17 years working in cocoa production who attended school in the last 12 months in Ghana increased by about five percentage points between 2008/09 and 2013/14 (see Tables 34a and 34b). In 2013/14 only about 5% of children in both groups did not attend school. The percentage of boys attending school in 2013/14 was higher than the percentage of girls attending. The oldest age group has the lowest percentage of children attending school in the last 12 months. This is the only group whose attendance is below 90%.

Table 35a. Self-Reported Basic Literacy and Numeracy for All Children in Agricultural Households in Cocoa Growing Areas, 5-17 Years, Côte d'Ivoire and Ghana, 2008/09 and 2013/14

Number and percentage of all children, 5-17 years	Côte d'Ivoire		Ghana	
	2008/09	2013/14	2008/09	2013/14
Who can read a short simple statement	1,836,098 51.7%	1,649,348 44.2%	1,189,995 55.1%	1,223,106 54.7%
Who can write a short simple statement	1,806,365 50.9%	1,682,875 45.1%	1,197,558 55.4%	1,402,884 62.7%
Who can perform simple calculations	1,961,936 55.3%	2,055,237 55.1%	1,475,983 68.3%	1,590,533 71.1%

Source: Tulane child survey 2008/09 & 2012/14, weighted data, strata 1-3.

In Côte d'Ivoire the percentages of children 5-17 years in agricultural households that reported being able to read and write simple statements fell over five percentage points between the two survey years (see Table 35a). In 2013/14 less than half of children were able to do basic reading and writing. The percentage of Ivoirian children reporting being able to perform simple calculations held steady at around 55%. The percentages of Ivoirian children working in cocoa production reporting being able to do basic reading and writing were almost unchanged at about 60%. The percentage reporting being able to perform simple calculations increased by over eight percentage points to almost 73% (see Table 35b). A majority of children working in cocoa, who tend to be older than the group of all children in agricultural households, report basic numeracy and literacy.

Table 35b. Self-Reported Basic Literacy and Numeracy for Children Working in Cocoa Production, 5-17 Years, Côte d'Ivoire and Ghana, 2008/09 and 2013/14

Number and percentage of children working in cocoa production, 5-17 years	Côte d'Ivoire		Ghana	
	2008/09	2013/14	2008/09	2013/14
Who can read a short simple statement	488,883 59.6%	757,670 58.1%	670,840 67.3%	632,313 66.0%
Who can write a short simple statement	492,660 60.1%	783,357 60.1%	670,627 67.2%	686,380 71.7%
Who can perform simple calculations	529,727 64.6%	949,658 72.9%	779,830 78.2%	780,155 81.5%

Source: Tulane child survey 2008/09 & 2013/14, weighted data, strata 1-3.

The percentages of Ghanaian children 5-17 years in agricultural households who reported being able to write simple statements and perform simple calculations increased between 2008/09 and 2013/14, while the percentage reporting being able to read simple statements decreased slightly (see Table 35a). Over 50% of these children can read a simple statement, over 60% can write a simple statement, and over 70% can do simple calculations. There was also an upward trend in the percentages of children working in cocoa production who reported being able to write a simple statement and perform simple calculations, and a slight decrease in the percentage reporting being able to read a simple statement (see Table 35b). In 2013/14 two thirds of children working in cocoa could do simple reading, over 70% could do simple writing, and over 80% could perform simple calculations.

7. Limitations

As with any research, this study faced several challenges and potential limitations:

- **Complexity of measuring hazardous work:** The baseline and follow-up estimates do not fully cover all of the activities listed as hazardous in the country frameworks of Côte d'Ivoire and Ghana and additional variables could be added. Our focus is on activities that are included in both country frameworks while following the ILO guidance on formulating relevant indicators. As such, the variables, even though placing the vast majority of the children working in cocoa in hazardous work and requiring the removal of over one million children from the WFCL (in order to meet the goal of 70% reduction by 2020 specified in the 2010 Framework for Action), are more likely to underestimate than to overestimate the total number of children exposed to hazardous work in cocoa agriculture. Therefore, the estimates being presented are conservative at best.
- **WFCL other than hazardous work:** The baseline and follow-up estimates presented in this report also do not address the WFCL other than hazardous work, which are not easily identified through representative surveys but were assessed and discussed in earlier Tulane University reports.⁴³ This report only estimates the number of children in hazardous work in cocoa, not the full number of children in WFCL, which would include children in the “unconditional WFCL” including trafficking and forced labor. While less common in the West African cocoa sector than children’s exposure to hazardous work, the WFCL other than hazardous work cannot be ignored and also need to be addressed with interventions.

8. Discussion

The survey data point to changes on several key hazardous work variables. The percentages of children doing some hazardous activities in cocoa agriculture have decreased considerably between the two rounds of survey data collection. Children exposed to hazardous work are reporting fewer hazards. More children and higher percentages of children are attending school. However, the total number of children in hazardous work in the cocoa sector has increased. In the aggregate more than 2 million children between 5-17 years are estimated to be in hazardous work in cocoa in 2013/14, an 18% increase compared to 2008/09. The goal of the Harkin-Engel Protocol – removing large numbers of children from the WFCL in West African cocoa agriculture – has yet to be reached.

8.1. Country Considerations for Côte d'Ivoire

Côte d'Ivoire has experienced major challenges that have affected the country’s efforts to combat child labor. After nearly one decade of conflict prior to the 2008/09 survey, political violence erupted again in 2010/11, following the country’s presidential elections. The conflict has caused human suffering in all parts of the country and resulted in internal and cross-border migration. It also had a negative impact on the country’s infrastructure, including schools and

⁴³ For the most comprehensive discussion see: Tulane University, Fourth Annual Report, Oversight of Public and Private Initiatives to Eliminate the Worst Forms of Child Labor in the Cocoa Sector in Côte d'Ivoire and Ghana, (30 September 2010).

the availability of teachers, particularly in rural areas of the country. While this situation has improved since the cessation of the internal conflict, the country is still in the process of rebuilding its infrastructure. The positive impact of these efforts is reflected in improvements in the number and percentage of children with access to education in 2013/14, as compared to in 2008/09. In addition, the new government has made combating child labor a priority, as evidenced in particular by a new and expanded hazardous activities framework and the active involvement of the Office of the First Lady in the country's fight against child labor.

The survey data reveal a number of major achievements as well as a list of remaining challenges for Côte d'Ivoire. Among the important achievements are:

- **Percentage decreases in child labor in cocoa agriculture based on working hours:** A smaller percentage of children were found in child labor based on working hours, even though the total numbers of children in child labor based on working hours increased. Most impacted is the 5-11 years age group, with 76% of children working in cocoa exposed to child labor in 2013/14 (down from 83% in 2008/09). In the 12-14 years age group, 34% of children were exposed in 2013/14 (down from 40% in 2008/09) and in the 15-17 years age group 8% were exposed (down from 11% in 2008/09).
- **Percentage decreases in exposure to many types of hazardous work in cocoa agriculture:** A smaller percentage (-8%) of children working in cocoa reported exposure to individual variables measuring hazardous work. Exposure to V1 to V6 decreased between 40% and 4% from 2008/09 to 2013/14. However, while percentage exposure decreased, the total number of children reporting exposure increased.
- **Percentage decreases in exposure to multiple types of hazardous work in cocoa agriculture:** While over 80% of surveyed children performing work in cocoa production in Côte d'Ivoire were exposed to two or more variables measuring hazardous work in 2008/09, this figure fell to just over 60% in 2013/14. While not completely removed from hazardous work, the quality of life of children experiencing fewer hazards may be considerably improved.
- **Higher percentage of children with access to basic education:** The percentage of children in agricultural households who attended school in the last 12 months increased by 10 percentage points between the two rounds of survey data collection. Among children working in cocoa, the increase in the last five years was about 12 percentage points. In 2013/14 over two thirds of children 5-17 years in agricultural households and close to three quarters of children 5-17 years working in cocoa attended school in the last 12 months.

Among Côte d'Ivoire's most important challenges are:

- **Increases in the total number of children in child labor in cocoa agriculture based on working hours:** The total number of children in child labor in the cocoa sector based on working hours increased between 2008/09 and 2013/14 by approximately 107,000 children for the 5-11 years age group, 52,000 children for the 12-14 years age group, and 3,000 children for the 15-17 years age group.
- **Increases in the total number and percentage of children working in child labor and in hazardous work in cocoa agriculture:** Côte d'Ivoire saw a sharp increase in

both the total numbers as well as the percentages of children reporting work in cocoa (+51%), in child labor in cocoa (+41%), and in hazardous work in cocoa (+39%) between the 2008/09 and the 2013/14 harvest periods. Markedly, while more children worked in cocoa, fewer children worked strictly in non-cocoa agriculture as well as in other economic sectors.

- **Access to education still limited for many children:** While major gains in school attendance are evident based on the data, a higher percentage of boys attended school in both years, and access to secondary school remains quite limited. Less than half of children 15-17 years attended school in the last 12 months. Frequently, access to secondary school is limited in rural areas if any access is available at all.

8.2. Country Considerations for Ghana

Ghana has experienced five years of steady progress in a peaceful environment and with a government committed to improvements in the economic and social sectors, which includes addressing the problem of child labor. Between the two rounds of survey data collection, Ghana managed not only to reduce the percentage of children exposed to hazardous work in the cocoa sector, but also the total numbers. In Ghana today, more children are attending school and fewer children are working. This success is especially impressive against a backdrop of population growth and increases in cocoa production over the period.

Among the many achievements that Ghana's cocoa growing areas have seen in the last five years are:

- **Reductions of the total number and percentage of children working, in child labor and in hazardous work in cocoa agriculture:** Ghana achieved major reductions in the total number and percentage of children reporting work in cocoa (-7%), in child labor in cocoa (-6%) and in hazardous work in cocoa (-9%) between the 2008/09 and the 2013/14 harvest periods.
- **Percentage decreases in exposure to some types of hazardous work in cocoa agriculture:** Overall, children in Ghana were less likely to be exposed to individual hazards (-2%). However, while fewer children reporting exposure to V1 ("land clearing") and V3 ("dangerous tools"), percentage exposure to the other variables went up.
- **Fewer children exposed to multiple types of hazardous work in cocoa agriculture:** Among the children involved in hazardous work in cocoa agriculture, fewer children reported exposure to multiple hazards. In Ghana almost 70% of children working in cocoa were exposed to two or more variables measuring hazardous work in 2008/09. In 2013/14 the percentage had dropped to 56%.
- **Higher percentage of children with access to basic education:** The percentages of children in agricultural households and children working in cocoa who attended school in the last 12 months in Ghana increased by about five points between 2008/09 and 2013/14. In 2013/14 only about 5% of children 5-17 years in both groups did not attend school.

Some of Ghana's major challenges include:

- **Increases in the total number and percentage of children in child labor in cocoa agriculture based on working hours:** The total number of children in child labor in the cocoa sector based on working hours increased between 2008/09 and 2013/14 by approximately 58,000 children for the 5-11 years age group, 18,000 children for the 12-14 years age group, and 1,800 children for the 15-17 years age group. The percentages of children in each age group exceeding recommended working hours also increased.
- **Increase in the number and percentage of children reporting work with agro-chemicals in cocoa agriculture:** The percentage of children working in cocoa agriculture indicating exposure to agro-chemicals increased from 14.6% to 33.1% between 2008/09 and 2013/14, a more than 100% increase.
- **Access to education still limited for some children:** While Ghana is approaching universal primary education, the percentage of boys attending school in 2013/14 was higher than the percentage of girls attending. The oldest age group has the lowest percentage of children attending school in the last 12 months. This is the only group whose attendance is below 90%. While junior secondary schools (JSS) are found in many villages, attending senior secondary school (SSS) often requires moving into larger towns.

8.3. Recommendations

While progress has been made in both Côte d'Ivoire and Ghana in the fight against child labor and the WFCL in the past five years, measurable improvements remain limited compared to the targets set by the Harkin-Engel Protocol and the 2010 Declaration and Framework of Action to Support Implementation of the Harkin-Engel Protocol. In an environment in which factors such as cocoa production growth can have an impact on the ability to achieve the goal of removing large numbers of children from the WFCL in the cocoa sector, any effective strategy will require major investments targeted at addressing the root causes of child labor.

Based on the research presented in this report, we offer the following recommendations:

1. **Renewed emphasis on achieving 2020 target in light of challenges:** The Harkin-Engel Protocol and the 2010 Declaration and Framework of Action express the shared commitment of stakeholders towards the reduction of the WFCL in the cocoa sectors of Côte d'Ivoire and Ghana. While the growth in cocoa production is a positive development for the countries as well as the cocoa growing communities, production increases also may complicate the international efforts to eliminate child labor. At the same time, both countries have shown that much can be done. Côte d'Ivoire weathered major challenges in the last five years, while still showing progress in addressing child labor. Ghana proved that the total number of children exposed to hazardous work in the cocoa sector can be reduced even with increases in cocoa production and a growing population. However, the governments cannot be expected to complete the task alone. Without a continuing commitment of financial and other resources by all stakeholders, the 2020 target is highly unlikely to be reached.
2. **Funding for effective and sustainable interventions:** Effective interventions need to cover a large number of children. They also need to be financially sustainable and

involve the national governments and local authorities. To achieve maximum effectiveness, child labor needs to be targeted both directly (interventions that remove children from the WFCL, stepped-up law enforcement, etc.) and indirectly (heightened focus on education, development of public infrastructure, interventions targeted at reducing poverty, etc.). Among the available options, stakeholders need to prioritize interventions that have proven to be most cost effective. Oftentimes, the cost per child is too high to scale activities up to large numbers of children and most programs are not rigorously evaluated. At the same time, funding for interventions has not materialized in the quantities needed. Future activities need to reach more of the two million children estimated to still be in hazardous work in the cocoa sector in the two countries.

- 3. Focus on education:** Education can play a critical role in the fight against the WFCL in cocoa agriculture. We know that children who work long hours are less likely to be enrolled or participate successfully in school. We also know that in order to attend school, relocation is often necessary, which effectively removes children from child labor in cocoa agriculture in many cases. Children may also turn to work because there is no school within reasonable distance for them to attend. In this sense, continuing emphasis on increasing access to education will come with the added benefit of helping the fight against child labor. The national governments and the international stakeholders should work towards providing all children with access to education, including secondary education. This should involve the construction of additional schools in rural areas and the proper maintenance of school infrastructure, as well as an ongoing effort to improve the quality of the available instruction. When education quality is poor and fails to provide pathways to greater opportunities for the next generation, families are more likely to prioritize the immediate gains of child labor.
- 4. Making children's work safer:** Removing large numbers of children from hazardous work remains challenging, especially since most of the children working in cocoa are exposed to multiple types of hazardous work. For any child working in cocoa there was a 90% chance in 2013/14 (down from a 95% chance in 2008/09) that the child was exposed to hazardous activities and therefore to the WFCL. In this context, there must be an emphasis on improving working conditions to make them less hazardous. The data show that older children are unlikely to exceed the allowable number of working hours for their age group and most would be working legally if hazardous activities could be removed from the work that they perform. Better access to protective clothing and basic safety equipment is a relatively small investment. Farmer field schools and other training activities that teach which activities are safe for children of different ages and how to make activities safer are another beneficial strategy. As children, their caregivers, and the broader community gain greater knowledge about dangers, such as exposure to chemicals as part of spraying, they are much more likely to be addressed from within the community. The data also point to the fact that injuries are encountered by children working in agriculture in high frequencies. Both children and adults would benefit from greater information about occupational safety and health prevention measures, as well as from increased access to health care in rural areas.
- 5. Long-term strategy for the cocoa sector:** The fight against the WFCL in the cocoa growing areas cannot ignore the future prospects of the sector. We know that the cocoa sector in West Africa will have to undergo major structural changes to remain competitive in the long term. The cocoa sector of the future will have to mechanize in order for living standards to improve and it will support fewer workers at a higher wage. While the cocoa sector is already changing, strategic planning that prepares for and

manages this transformation is critical and likely to benefit children and their families, their communities, as well as the sector and the country as a whole.

6. **Reconsidering the units of analysis:** The 2010 Framework of Action target, which asks for combined estimates from both countries, ignores the major differences that the research documents between the two producing nations. By setting a target that hides or confuses improvements in one area or country with data from the other, problems in interpretation and solutions are introduced. We suggest that Côte d'Ivoire and Ghana be treated separately for setting reduction targets as the data in this report suggest.
7. **Emphasis on monitoring and evaluation:** As long as large numbers of children are working in cocoa production, monitoring and evaluation – including countrywide representative surveys at least every 5 years – remain a necessity in order to properly design policies and programs. While tracking progress over time, multiple methods of systematic data collection need to be applied. In addition to regular independent surveys, new methodologies exist that can be used to provide monitoring data in the periods between survey research. Further, independent impact evaluations targeted at comparing and assessing the impact of interventions need to be prioritized.
8. **Using data for evidence-based change:** The available data and research findings, including those from this survey, need to be utilized to inform policies and interventions targeted at implementing the Harkin-Engel Protocol and combatting the WFCL in the cocoa sectors of Côte d'Ivoire and Ghana. While the 2020 Framework target is ambitious, it is the role of the stakeholders to translate knowledge into action and address the problem of child labor increases in a context of cocoa production increases with an expanded and evidence-based strategy that will result in a major change.

9. Conclusions

The 2010 Framework of Action to Support Implementation of the Harkin-Engel Protocol specifies that “[b]y 2020, the worst forms of child labor as defined by ILO Convention 182 in the cocoa sectors of Côte d'Ivoire and Ghana will be reduced by 70 percent in aggregate through joint efforts by key stakeholders to provide and support remediation services for children removed from the worst forms of child labor.”⁴⁴ Based on today's numbers, roughly 1.5 million children will have to be removed from hazardous work to reach the 2010 Framework of Action target by 2020.

The research presented in this report shows that while some progress has been made, the Harkin-Engel Protocol's goal of a major reduction of the number of children in hazardous child labor in the cocoa sector has not come within reach. In fact, there is evidence that the challenge is increased by trends outside of the direct control of the stakeholders involved in the fight against child labor. With both countries on track towards further growth in production, efforts against the WFCL in the cocoa sector need to intensify. While there are no fast or easy solutions, there are many actions that can be taken to combat the problem. Successful programming will involve considerable costs that need to be shared between the governments and private sector stakeholders as well as other international stakeholders.

⁴⁴ US Department of Labor (USDOL), Framework of Action to Support Implementation of the Harkin-Engel Protocol.

With production growing along with the global demand for cocoa, the call for child labor free chocolate will only become louder. The Harkin-Engel Protocol remains relevant and major investments into fighting the WFCL in the cocoa sectors of Côte d'Ivoire and Ghana will remain a necessity for years to come.

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Appendices

Appendix 1. Population Comparisons on Selected Characteristics

Appendix 1. Additional Population Comparisons on Selected Characteristics

In both Côte d'Ivoire and Ghana, in each of the survey years, the population of working children in the cocoa growing areas was larger than that of non-working children (see Table 36).

Table 36. Selected Characteristics of Working and Non-Working Children in Cocoa growing Areas, 5-17 Years, in Côte d'Ivoire and Ghana, 2008/09 and 2013/14

	Children Working in Cocoa Growing Areas (Fig.1:2)						Non-Working Children in Cocoa Growing Areas (Fig.1:3)					
	Total		Côte d'Ivoire		Ghana		Total		Côte d'Ivoire		Ghana	
	2008/09	2013/14	2008/09	2013/14	2008/09	2013/14	2008/09	2013/14	2008/09	2013/14	2008/09	2013/14
Population	3,748,741	3,970,442	2,069,959	2,199,865	1,678,782	1,770,577	1,962,197	1,998,943	1,480,101	1,533,396	482,096	465,547
Percentage												
Sex												
Male	54.8%	54.6%	54.2%	56.8%	55.6%	52.0%	52.0%	52.7%	52.7%	52.2%	49.8%	54.3%
Female	45.2%	45.4%	45.8%	43.2%	44.4%	48.0%	48.0%	47.3%	47.3%	47.8%	50.2%	45.7%
Age group												
5-11 Years	48.4%	49.1%	49.7%	48.4%	46.9%	49.9%	86.8%	85.2%	86.5%	86.5%	87.6%	81.0%
12-14 Years	27.0%	29.9%	25.4%	33.1%	29.0%	28.6%	7.9%	10.0%	8.0%	9.3%	7.8%	12.4%
15-17 Years	24.6%	21.0%	25.0%	20.6%	24.0%	21.5%	5.3%	4.8%	5.5%	4.2%	4.7%	6.6%
School attendance												
Attended school in last 12 months	72.2%	82.5%	57.8%	72.1%	89.8%	95.3%	64.7%	67.6%	57.2%	60.5%	87.6%	91.0%
Residence – Lives with												
Biological father	64.2%	63.2%	61.0%	71.3%	67.0%	53.1%	65.3%	67.5%	67.5%	71.3%	58.3%	55.1%
Biological mother	75.4%	74.2%	70.7%	73.3%	81.1%	75.4%	79.2%	75.7%	78.8%	76.0%	80.3%	74.7%
Biological father and mother	58.6%	57.4%	56.1%	63.9%	61.7%	49.2%	59.8%	61.1%	61.5%	64.1%	54.6%	51.3%
Neither biological parent	19.1%	20.0%	23.5%	19.4%	13.5%	20.7%	15.4%	17.6%	15.2%	16.4%	16.0%	21.5%

Source: Tulane child survey 2008/09 & 2013/14, weighted data, strata 1-3.

Over 50% of working and non-working children were male in both survey years in both countries, with the exception 2008/09 in Ghana when male children accounted for slightly less than half of non-working children. Over 80% of non-working children in both countries are in the youngest (5-11 years) age group, while slightly less than half of working children belong to this age group. Children in the oldest (15-17 years) age group account for only a very small percentage of non-working children. School attendance increased for both groups and is higher among working children, who tend to be older. In 2008/09 and 2013/14 working children in Côte d'Ivoire were more likely than non-working children to live without either of their biological parents. In Ghana the percentages of both working and non-working children living without either biological parent rose between 2008/09 and 2013/14.

Agricultural work (doing any work on one's own or the household's plot, farm, food garden, or helped in growing farm produce or in looking after animals for the household) and fetching water or firewood tend to be the most commonly performed work among children 5-17 years in the cocoa growing areas of Côte d'Ivoire and Ghana (see Table 37). Few children in either country work as paid domestics or do any type of construction, although the numbers of children doing these types of work increased in the aggregate between the two survey years. Wage work is also not commonly done by children living in these areas. In Côte d'Ivoire the numbers of children fetching water/firewood and producing other goods for household use more than doubled. Ghana saw a large increase of the number of children reporting fetching of water/firewood.

In the aggregate in 2013/14 approximately 62% of children working in agriculture spent some of their hours working in agriculture working in cocoa production. In 2008/09 this figure was a bit above 50%. In Côte d'Ivoire's cocoa growing areas the number of children working in cocoa rose by almost 60% between the two survey years while the number of children working in agriculture other than the cocoa sector shrank by close to 30% (see Table 38). In Ghana the population of children working in cocoa decreased slightly and the population working in agricultural sectors other than cocoa increased by about 8%. Cocoa production tends to be more male than the other agriculture sectors in which children work: over 60% of children working in cocoa are boys while in other agricultural sectors this figure is usually closer to 50%. In the aggregate in 2013/14 a slim majority children working in agriculture other than cocoa were female. School attendance increased across the board between the two survey years. In 2013/14 school attendance in Côte d'Ivoire was almost 6 percentage points higher among children working in agriculture other than the cocoa sector, while in Ghana attendance among children working in cocoa was slightly higher than attendance among children working in non-cocoa agriculture. The percentage of children working in cocoa who were injured at work during the last 12 months fell in both countries, and was below 50% by 2013/14. In Côte d'Ivoire in 2013/14 a much higher percentage of children working in cocoa, as compared with children working in non-cocoa agriculture, was injured while working: 44% versus 30%. In Ghana the percentage of children in non-cocoa agriculture injured on the job rose to just over 50% in 2013/14 making the percentage of children injured working in non-cocoa agriculture higher than that of children working in cocoa.

Table 37. Participation of Children in Work in Agriculture and Sectors other than Agriculture in Cocoa Growing Areas in the Last 12 Months, 5-17 Years, in Côte d'Ivoire and Ghana, 2008/09 and 2013/14

	Total		Côte d'Ivoire		Ghana	
	2008/09	2013/14	2008/09	2013/14	2008/09	2013/14
Population 5-17 years	5,710,938	5,969,385	3,550,060	3,733,261	2,160,878	2,236,124
Types of agricultural and non-agricultural work *						
Doing any kind of business, big or small, for himself/herself or with one or more partners	164,595	121,345	102,306	68,740	62,289	52,605
Doing any work for a wage, salary, commission or any payment in kind (excl. domestic work)	115,744	95,275	47,862	52,245	67,882	43,030
Doing any work as a domestic worker for a wage, salary or any payment in kind	28,545	30,262	22,421	20,827	6,124	9,435
Helping unpaid in a household business of any kind (not counting normal housework)	536,096	629,475	324,134	311,271	211,962	318,204
Doing any work on his/her own or the household's plot, farm, food garden, or helped in growing farm produce or in looking after animals for the household	3,4732,02	2,635,491	1,915,922	1,228,478	1,557,280	1,407,013
Doing any construction or major repair work on his/her own home, plot, or business or those of the household	24,053	61,356	21,175	44,473	2,878	16,883
Catching any fish, prawns, shells, wild animals or other food for sale or household food	127,533	188,602	94,221	145,530	33,312	43,072
Fetching water or collected firewood for household use	1,657,811	3,361,931	516,081	1,426,245	1,141,730	1,935,686
Producing any other good for his/her household's use	251,716	594,285	151,505	515,599	100,211	78,686

Source: *Tulane child survey 2008/09 & 2013/14, weighted data, strata 1-3.*

*Based on ILO classifications (model questionnaires).

Table 38. Selected Characteristics of Children Working in Cocoa Production and Agriculture other than the Cocoa Sector in Cocoa Growing Areas, 5-17 Years, in Côte d'Ivoire and Ghana, 2008/09 and 2013/14

	Children Working in Cocoa Production* (Fig.1:6)						Children Working in Agriculture other than the Cocoa Sector** (Fig.1:7)					
	Total		Côte d'Ivoire		Ghana		Total		Côte d'Ivoire		Ghana	
	2008/09	2013/14	2008/09	2013/14	2008/09	2013/14	2008/09	2013/14	2008/09	2013/14	2008/09	2013/14
Population	1,817,278	2,260,407	819,921	1,303,009	997,357	957,398	1,655,924	1,385,059	1,096,001	780,105	559,923	604,953
Percentage												
Sex												
Male	60.3%	63.6%	61.0%	68.3%	59.7%	57.1%	51.5%	47.8%	51.9%	44.6%	50.7%	51.9%
Female	39.7%	36.4%	39.0%	31.7%	40.3%	42.9%	48.5%	52.2%	48.1%	55.4%	49.3%	48.1%
Age group												
5-11 Years	45.4%	42.7%	46.8%	43.0%	44.2%	42.2%	49.8%	50.6%	52.2%	55.2%	45.0%	44.6%
12-14 Years	29.6%	32.0%	27.6%	32.4%	31.3%	31.4%	25.5%	31.7%	23.8%	29.4%	29.0%	34.7%
15-17 Years	25.0%	25.4%	25.6%	24.7%	24.5%	26.4%	24.7%	17.7%	24.0%	15.4%	25.9%	20.7%
School attendance												
Attended school in last 12 months	76.4%	81.4%	58.7%	70.8%	90.9%	95.9%	66.8%	83.9%	55.4%	76.3%	89.1%	93.6%
Residence – Lives with												
Biological father	71.0%	63.2%	71.5%	72.4%	70.6%	50.6%	57.4%	62.9%	56.0%	68.9%	60.2%	55.3%
Biological mother	78.1%	73.0%	74.4%	72.8%	81.0%	73.2%	72.4%	72.9%	68.9%	71.6%	79.4%	74.6%
Biological father and mother	63.6%	56.4%	64.0%	63.7%	63.4%	46.5%	53.5%	57.9%	51.4%	63.5%	57.6%	50.5%
Neither biological parent	14.6%	20.3%	18.0%	18.5%	11.8%	22.6%	23.6%	22.0%	26.5%	23.0%	18.0%	20.6%
Injuries while working (in last 12 months)												
Injured while working	52.4%	44.4%	50.6%	43.5%	54.0%	45.5%	43.7%	39.2%	43.5%	30.1%	43.9%	50.8%

Source: Tulane child survey 2008/09 & 2013/14, weighted data, strata 1-3.

*Includes children who worked in both cocoa production and other agricultural and non-agricultural economic sectors.

**Does not include children who worked in both cocoa production and agriculture other than the cocoa sector.

Table 39. Selected Characteristics of Child Laborers Working in Cocoa Production and Agriculture other than the Cocoa Sector in Cocoa Growing Areas, 5-17 Years, in Côte d'Ivoire and Ghana, 2008/09 and 2013/14

	Child Laborers Working in Cocoa Production* (Fig.1:8)						Child Laborers Working in Agriculture other than the Cocoa Sector** (Fig.1:9)					
	Total		Côte d'Ivoire		Ghana		Total		Côte d'Ivoire		Ghana	
	2008/09	2013/14	2008/09	2013/14	2008/09	2013/14	2008/09	2013/14	2008/09	2013/14	2008/09	2013/14
Population	1,757,612	2,122,016	809,835	1,203,473	947,777	918,543	1,548,708	1,236,170	1,037,796	661,149	510,912	575,021
Percentage												
Sex												
Male	60.8%	64.2%	61.5%	69.5%	60.2%	57.4%	52.1%	50.3%	52.3%	48.2%	51.7%	52.8%
Female	39.2%	35.8%	38.5%	30.5%	39.8%	42.6%	47.9%	49.7%	47.7%	51.8%	48.3%	47.2%
Age group												
5-11 Years	44.9%	42.2%	46.8%	42.3%	43.3%	42.0%	48.9%	51.6%	51.0%	57.9%	44.4%	44.4%
12-14 Years	29.7%	31.6%	27.4%	31.8%	31.6%	31.2%	26.2%	30.5%	24.5%	26.6%	29.8%	35.1%
15-17 Years	25.4%	26.3%	25.8%	25.8%	25.1%	26.8%	24.9%	17.8%	24.5%	15.5%	25.7%	20.5%
School attendance												
Attended school in last 12 months	75.9%	81.0%	58.7%	69.7%	90.6%	95.7%	67.1%	84.8%	56.1%	77.0%	89.5%	93.7%
Residence – Lives with												
Biological father	71.0%	62.6%	72.0%	72.3%	70.1%	49.9%	56.7%	63.0%	54.7%	69.8%	60.7%	55.3%
Biological mother	78.1%	72.8%	74.8%	72.4%	81.0%	73.4%	72.2%	73.9%	68.4%	73.5%	80.0%	74.5%
Biological father and mother	63.6%	55.7%	64.4%	63.0%	62.9%	46.0%	52.7%	58.0%	50.3%	64.5%	57.6%	50.6%
Neither biological parent	14.3%	20.3%	17.6%	18.4%	11.5%	22.7%	24.0%	21.1%	27.3%	21.2%	17.3%	20.9%
Injuries while working (in last 12 months)												
Injured while working	53.7%	46.6%	51.1%	46.2%	55.9%	47.1%	45.5%	42.7%	44.7%	34.3%	47.1%	52.3%

Source: Tulane child survey 2008/09 & 2013/14, weighted data, strata 1-3.

*Includes child laborers who worked in both cocoa production and other agricultural and non-agricultural economic sectors.

**Does not include child laborers who worked in both cocoa production and agriculture other than the cocoa sector.

Table 40. Selected Characteristics of Children Working in the Cocoa Sector and Agriculture other than the Cocoa Sector in Hazardous Work in Cocoa Growing Areas, 5-17 Years, in Côte d'Ivoire and Ghana, 2008/09 and 2013/14

	Children Working in the Cocoa Sector in Hazardous Work* (Fig.1:10)						Children Working in Agriculture other than the Cocoa Sector in Hazardous Work** (Fig.1:11)					
	Total		Côte d'Ivoire		Ghana		Total		Côte d'Ivoire		Ghana	
	2008/09	2013/14	2008/09	2013/14	2008/09	2013/14	2008/09	2013/14	2008/09	2013/14	2008/09	2013/14
Population	1,722,186	2,032,267	791,181	1,153,672	931,005	878,595	1,479,062	1,103,520	1,003,262	556,688	475,800	546,832
Percentage												
Sex												
Male	60.8%	64.6%	61.3%	69.7%	60.2%	57.8%	52.7%	51.3%	52.9%	50.2%	52.2%	52.4%
Female	39.2%	35.4%	38.7%	30.3%	39.8%	42.2%	47.3%	48.7%	47.1%	49.8%	47.8%	47.6%
Age group												
5-11 Years	43.9%	39.9%	45.5%	40.3%	42.5%	39.5%	46.6%	46.3%	49.5%	50.9%	40.7%	41.5%
12-14 Years	30.2%	32.6%	28.1%	32.8%	32.0%	32.5%	27.3%	33.8%	25.2%	30.8%	31.7%	36.9%
15-17 Years	25.9%	27.4%	26.4%	26.9%	25.5%	28.0%	26.1%	19.9%	25.3%	18.3%	27.6%	21.6%
School attendance												
Attended school in last 12 months	75.8%	80.6%	58.4%	69.1%	90.7%	95.8%	66.6%	85.4%	55.6%	77.5%	89.8%	93.4%
Residence – Lives with												
Biological father	70.6%	62.0%	71.5%	72.0%	69.8%	48.8%	56.0%	63.8%	54.8%	71.7%	58.6%	55.9%
Biological mother	78.0%	72.4%	74.4%	72.0%	81.0%	72.9%	72.1%	74.1%	68.7%	73.6%	79.1%	74.7%
Biological father and mother	63.1%	55.0%	63.8%	62.6%	62.5%	45.1%	52.2%	58.8%	50.5%	66.1%	55.6%	51.4%
Neither biological parent	14.6%	20.6%	19.9%	18.6%	11.7%	23.4%	24.0%	20.8%	27.0%	20.8%	17.9%	20.9%
Injuries while working (in last 12 months)												
Injured while working	54.5%	47.8%	52.0%	47.3%	56.7%	48.5%	46.4%	45.3%	44.8%	36.6%	49.6%	54.2%

Source: Tulane child survey 2008/09 & 2013/14, weighted data, strata 1-3.

*Includes children in hazardous work who worked in both cocoa production and other agricultural and non-agricultural economic sectors.

**Does not include children in hazardous work who worked in both cocoa production and agriculture other than the cocoa sector.

In the aggregate child laborers working in cocoa tend to be older and more male than child laborers in agriculture other than cocoa sector (see Table 39). In 2013/14 about 64% of child laborers in cocoa were male while only 50% of child laborers in non-cocoa agriculture were male. This discrepancy is most pronounced in Côte d'Ivoire where the 2013/14 figures are 70% and 48% respectively. Comparing child laborers in cocoa with those in non-cocoa agriculture in Côte d'Ivoire in 2013/14, a much higher percentage of the former were injured while working: 46% versus 34%. In Ghana the percentage of child laborers working in cocoa production that live with neither biological parent almost doubled between the two survey years.

Differences among the populations of children involved in hazardous work in cocoa and in hazardous work in agriculture other than the cocoa sector are similar to those observed in child laborers in cocoa and child laborers in non-cocoa agriculture. Children in hazardous work in cocoa tend to be older and more male, with the male-female difference greatest in Côte d'Ivoire (see Table 40). Also Ivoirian children in hazardous work in cocoa are much more likely to have been injured while working than Ivoirian children in hazardous work in agriculture other than cocoa.