# Costs and Benefits of Eliminating Child Labour in Kenya

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***KIPPRA Working Paper No. 10***
*January 2003*

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ISBN 9966 949 49 6

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KIPPRA acknowledges generous support by the European Union (EU), the African Capacity Building Foundation (ACBF), the United States Agency for International Development (USAID), the Department for International Development of the United Kingdom (DfID) and the Government of Kenya (GoK).

**ACKNOWLEDGEMENT**

This report was prepared for the International Labour Organization, Geneva, Switzerland. The data for the report were collected and processed by Cromwell Busolo, Clifford Lumbasi, Charles Murithi Riungu, Domisiano Kirii Mwabu, Milcah Njambi Mwangi, Mary Ndunge Nguli, James K. Ndwiga, Roline Njiru and Bernadette Wanjala. The report benefited from the inputs of many other individuals and organisations at various stages to whom we are most grateful. However, the responsibility for any errors in the report is the authors'.

## EXECUTIVE SUMMARY

The International Labour Organization approximates that about 250 million children worldwide are involved in child labour, with most children working under harmful conditions; that is in circumstances that are detrimental to their physical, moral, and intellectual development. In Kenya, it is estimated that 2.3 million children (29%) of the 7.9 million children aged 6-14 years in 1999 did not attend school (GoK, 2001b) while 1.2 million children in the same age group were involved in child labour. The working children are employed in the tourism and service sectors, plantations, manufacturing, domestic services and in urban informal sector occupations. They are at risk from commercial sex exploitation, hazardous chemicals, physical injuries and sexual and psycho-social abuse. The number of Nairobi's street children, for example, is more than 50,000 and these children are often involved in theft, drug trafficking, assault, trespass, and property damage (Globalmarch, 2001).

The Kenya Government is committed to eliminating child labour and such commitments are stated in various Government policy documents, national legislations, international conventions protecting children, and the UN charter on the rights of children which was adopted by the UN Assembly in 1989 and to which Kenya is a signatory. Despite these committments, child labour still persists and is prevalent in the country. Various policy measures have been developed to address the problem of child labour and these recognize child labour as being particularly harmful to Kenya's long-term development and to its industrialization prospects in terms of lowered long-term productivity. Currently, Kenya has about 65 statutes, that touch on various aspects of children.

No comprehensive research has yet been carried out on the economic costs and benefits of eliminating child labour in Kenya. We address this knowledge gap by estimating costs and benefits of eliminating child labour in Kenya, focussing mainly on children aged 6-14 years. Data that can be used for an in-depth analysis of costs and benefits of eliminating child labour in the country has been compiled for this purpose. The study uses data available at KIPPRA, the Central Bureau of Statistics (CBS), Government ministries, ILO/IPEC and NGOs.

The main causes of child labour in Kenya include family violence, HIV/AIDS pandemic, a declining economy, and rapid rural-to-urban migration.

Others are the declining gross primary school enrolment rate, intra-ethnic violence, cattle rustling, banditry and severe poverty in some regions of the country.

The country requires an additional public expenditure of Kshs 29.612 billion (US$ 1.189 billion) by the year 2015 to achieve universal primary education while the additional Government expenditure by the year 2020 will be Kshs 40.119 billion (US$ 1.611 billion) in the lower secondary level (Form 1). The above additional cost includes recurrent, non-wage and capital costs. The additional transfer income required to achieve universal enrolment is Kshs 34.413 billion (US$ 1.382 billion). The benefit of achieving universal enrolment is US$ 83.4 billion. The study established that the Disability Adjusted Life Years (DALYs) for children aged 6-14 years are 13,573, which could be substantially reduced by eliminating child labour.

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# 1. INTRODUCTION

## 1.1 Context

The International Labour Organization approximates that about 250 million children worldwide are involved in child labour. About half of the children in child labour are full time workers. Tens of millions of children work under harmful conditions and in circumstances that are detrimental to their physical, moral, and intellectual development. For instance, some male children work in mines, crawling underground through small unlit and unventilated passageways, do hard labour in rock quarries breaking and carrying heavy stones, while girls work for long hours as domestic servants and often suffer physical and emotional abuse–some girls are sold into prostitution. Children also toil on commercial plantations, often exposed to dangerous pesticides.

Child labour takes many forms, some with significantly greater costs to children than others. There are several International Labour Organization (ILO) conventions that prohibit employment of children. The conventions set a higher minimum age of 18 years for hazardous work but light work that does not hinder education is permitted at the age of 12 years.[1] The conventions also define the worst forms of child labour. These Conventions include Convention Nos. 77 and 78 requiring that children and young persons undergo medical examination before admission into employment; Convention No. 79 prohibiting night work for children for periods ranging between 12 and 14 hours; Convention No. 90 providing that a child under the age of 18 years may not be employed in an industrial undertaking at night between 10 p.m and 5 a.m; Convention No. 125 stating conditions for employing persons underground, that is in mines and quarries; Convention No. 138 concerning minimum age for admission into employment; Convention No. 182 on the worst forms of child labour; and Convention No. 190 which states that the minimum age for a child to be employed should not be less than 15 years and sets a minimum age for one to be employed in hazardous work to be 18 years.

[1] Work is defined as hazardous if it endangers the health, safety and morals of children (UNICEF, 2001).

Convention No. 182 defines the worst forms of child labour as:

(i) All forms of slavery or practices similar to slavery, such as the sale and trafficking of children, debt bondage and serfdom and forced or compulsory labour, including forced or compulsory recruitment of children for use in armed conflict;

(ii) The procuring or offering of a child for prostitution, for the production of pornography or for pornographic performances;

(iii) The use, procuring, or offering of a child for illicit activities, in particular for the production and trafficking of drugs as defined in the relevant international treaties;

(iv) Work which by its nature or circumstances in which it is carried out, is likely to harm the health, safety and morals of children.

An accompanying recommendation defines hazardous work as: work which exposes children to physical, psychological or sexual abuse; work underground, under water, at dangerous heights, or in confined spaces; work with dangerous machinery or tools, or which involves heavy loads; work in an unhealthy environment which may expose children to hazardous substances, temperatures, noise or vibrations; and work under particularly difficult conditions such as long working hours, work during the night, or work where a child is confined to the premises of the employer.

The Government and international organisations are committed to eliminating child labour. Such commitment is stated in various Government policy documents, national legislation and international conventions protecting children, and the UN charter on the rights of children which was adopted by the UN Assembly in 1989 and to which Kenya is a signatory. Despite these efforts, child labour still persists and is prevalent. According to the 1998/99 child labour survey (GoK, 2001b), about 29% of children in age group 6-14 years (that is 2.3 million out of 7.9 million children in the age group) do not attend school. Of the 2.3 million children, 1.2 million in the age group 6-14 years are involved in child labour, meaning that 15.2% of the total children in the age group 6-14 years are involved in child labour.[2]

[2] Other estimates find a higher figure for child labour in Kenya. For instance, ANPPCAN, a NGO focusing on child issues estimates that in 1999, about 3.5 million children aged between 6 -14 years were child labourers and a significant majority were in agriculture.

According to an ILO (1997) report, more than one million of the children in child labour in Kenya are employed in the most intolerable forms of child labour. Some of them are employed in the tourism and service sectors where they are at risk of commercial sex exploitation; in plantations where they are exposed to dangerous working conditions, hazardous chemicals and heavy physical toil; in domestic service where child workers–often extremely young–are prone to physical, sexual and psycho-social abuse; and in urban informal sector occupations as garbage collectors where they suffer degrading and often dangerous conditions. Evidence based on data on worst forms of child labour shows that about 60% of the workers in coffee and tea plantations in Central Province are children. The ILO (1997) reports that during the peak harvest season in the Kenya coffee plantations, as many as 30% of the coffee pickers are children aged less than 15 years. The main work-related hazards in the coffee and tea plantations include cuts and wounds from pruned coffee and tea bushes, long working hours, lifting of heavy loads, and exposure to farm chemicals (UNICEF, 2001a).

Further, bits of evidence on child labour in Kenya show that child prostitution is widely practiced in big towns such as Nairobi, and tourist spots like Mombasa, Kisumu, and Malindi (Globalmarch, 2001). According to a survey carried out in seven districts, some of the child victims (as young as eleven years) in Mombasa and Malindi formed the highest number of under-age children practising prostitution. In Nyanza Province, Kisumu town has more than 300 male and female child prostitutes, some as young as eight years old (Globalmarch, 1998). The number of Nairobi's street children is more than 50,000 and the Government estimates that their number grows at 10% per year. These children are often involved in theft, drug trafficking, assault, trespass, and property damage (Globalmarch, 2001). Economic displacement and population growth continues to fuel the problem of homeless street children who often turn to crime and drug trafficking (Globalmarch, 1998). Exploitation of child labour, especially domestic child workers, is also rampant in Kenya (Globalmarch, 2001). About 78% of domestic child workers were only paid 'in kind' . The Ministry of Labour and Human Resource Development has found some children working in hazardous situations characterised by harsh environments in sisal, coffee and tea estates, in fishing and in horticultural farms. They are often exposed to toxic substances and lack protective clothing.

Given the vastly increased commitment of the Kenya Government and its social partners in taking comprehensive action against child labour, there is need to understand the economic implications of action against child labour. This is of urgent importance especially to the ILO and its constituents now that there is a momentum that, for the first time, will allow for setting up of national time-bound programmes for elimination of child labour or specific forms of it. Elimination of child labour makes economic sense but is initially a costly endeavour. Strong incentives for its elimination or curtailment have to be provided, while addressing both the demand and supply side of the issue, and embracing preventive as well as rehabilitative measures.

In Kenya, as in other parts of the world, several studies have been done on child labour but most of the studies have examined the measures necessary to combat child labour. No comprehensive research has yet been carried out on the economic costs and benefits of effective elimination of child labour. In particular, there is little information on the resources required for such an undertaking and how these resources can be allocated effectively. This study addresses this knowledge gap by analysing the costs and benefits of eliminating child labour in Kenya, focussing mainly on children aged 6-14 years.

In particular, this study:

- estimates the number of child workers by age, gender, and type of labour;
- computes the economic value of market and non-market work performed by children;
- calculates the cost of providing universal quality education to all children at the primary and early-secondary school levels;
- assesses the cost and effectiveness of non-school interventions to prevent child labour or remove children from inappropriate work situations;
- computes economic benefits of expanded education to students' future households and to the economy as a whole; and
- assesses the health benefits of expanded education and the prevention of child labour, particularly in its worst forms.

The output from this study will be part of the results of ten studies that will be extrapolated to produce global estimates of costs and benefits of eliminating child labour in the world.

### 1.2 Objective of the Study

The main objective of the study is to compile comprehensive data for use in economic calculations of costs and benefits of eliminating child labour at the country level, according to the framework and guidelines provided by ILO/IPEC, and to perform computations of costs and benefits of eliminating child labour in Kenya.

## 2. CHILD LABOUR IN KENYA

Child labour may be defined as the participation of school-aged children in the labour force on a regular basis. Reasons for child labour range from poverty and inadequate school facilities to poor quality of schools. Child labour prevents children from participating in school and also possibly exposes them to health hazards. Child labour will probably exist as long as the threat of poverty lingers on within households.

### 2.1 Government Policy on Child Labour

In Kenya, various policy measures have been developed to address the problem of child labour. These measures recognize child labour as being particularly harmful to the country's long-term development, and to its industrialization prospects in terms of lowered long-term productivity. The Government recognizes that in order to improve educational participation rates, Government policies are expected to reduce teenage pregnancy and enhance labour productivity. The policy statements addressing children's issues emphasize the need to address the root causes of the problem of child labour, observe and operationalize the convention of the rights of the child, empower the families from which children participating in child labour come, and support non-governmental organizations (NGOs) and other development parties directly involved in children issues.

The draft Sessional Paper on Child Labour in Kenya (GoK, 2000) summarises the Government's commitment to fulfilment of its obligations under various international instruments towards the elimination of child labour and addresses the various perspectives of child labour. The Paper highlights the nature and magnitude of the child labour problem, the vulnerability of child workers, determinants and consequences of child labour, and the need to mainstream concrete intervention measures to fight child labour. It provides for a national framework in which stated policy objectives and strategies are given direction and purpose with a view to effectively mainstreaming child labour issues in national development. The policy framework aims to promote and strengthen preventive strategies towards the elimination of child labour; enhance the capacity of stakeholders and tap their potentials in resource mobilization to effectively participate in the elimination of child labour; review and harmonize laws relating to child labour; strengthen the collection, analysis, presentation and dissemination of information on child labour; and incorporate child labour issues into the national socio-economic programmes.

Legislation has been the single-most important response of Governments to the problem of child labour. Legislation is a powerful instrument in combating the child labour problem as it serves as a deterrent to the economic exploitation of children, and constitutes a basis for preventive measures and punitive action against violators, if fully implemented.

Currently, Kenya has about 65 statutes which have a bearing on children under various circumstances. They include: the Employment Act (Cap. 226) revised in 1984; the Employment of Women, Young Persons and Children's Act (Cap. 227); the Regulation of Wages and Conditions of Employment Act (Cap. 229); the Industrial Training Act (Cap. 234); the Trade Disputes Act (Cap. 234); the Workmen's Compensation Act (Cap. 236); the Education Act (Cap. 211); and the Children's Act.

The Employment Act, among other things, provides for matters concerning the employment of women and juveniles, matters relating to employment such as the requirement to keep records, and for penalty of failure to observe the law. The Act defines a "child" as an individual, male or female, who has not attained the age of 16 years. It refers to a "juvenile" as a child or young person who has attained the age of 16 years but not attained the age of 18 years. It prohibits the employment of a child, whether gainfully or otherwise, in an industrial undertaking. Children may however be

employed in family businesses, including in agriculture. Specific provision is made, however, to prohibit employment of a child in any open-cast workings that are entered by means of a shaft or a lift and therefore in a quarry or mine. The Act empowers enforcement officers to withdraw a child from employment if such employment is by an undesirable person (that is by an employer whose character is known to be unbecoming and unacceptable to society) or the employment is dangerous or immoral, or if the employment is likely to be injurious to the health of the child. It also requires an employer to maintain a register indicating the date of entry and exit from employment and to ensure regular medical examination of the children employed.

The Employment of Women, Young Persons and Children's Act provides for enforcement officers to ensure the protection of children while in employment; prohibits employment of women and young persons in certain economic sectors; sets the minimum age for employment; and provides for keeping of registers, issuance of permit, medical examination, and for necessary inspections to be carried out. The Regulation of Wages and Conditions of Employment Act sets the minimum wages payable to employed children at lower levels than those of adults, that is persons aged 18 years and above. The Industrial Training Act protects minors from engagement as apprentices, except with the consent of the parent or guardian, witnessed by a Government official at the district level. Likewise, the Workmen's Compensation Act covers working children in the event of injury out of or in the course of work. The Education Act stipulates that children of school age (6-13 years) should be in school, while the Children and Young Persons Act protects children from physical, sexual or mental abuse. In addition to these Acts of Parliament, children's fundamental rights and freedoms are protected by the constitution, which stipulates that "no person shall be held in slavery or servitude", be required to perform forced labour, or be subjected to torture or to inhuman or degrading punishment or treatment.

The Government has made efforts to consolidate the above laws together with others into a single legislation under the Children's Act. The Bill originated from the work of a Task Force operating under the Kenya Law Reform Commission. The Task Force, which was mandated to review the 65 statutes relating to children, proposed their systematic development and reform. Although the draft Bill was produced in 1994 and tabled in Parliament in 1995, it was rejected on the grounds of weaknesses in the

provisions it made on enforcement, gender and religious considerations and on the grounds of lack of a "children-friendly" judicial system, among others. Briefly, the Children's Act spells out the rights of the child (defined as a boy or girl under the age of 18 years) and defines parental responsibilities.

## 2.2 International Conventions

In addition to the national legislation, children are also protected by various international conventions to which Kenya is a signatory. As mentioned earlier, these conventions include those of the United Nations (UN) General Assembly, the International Labour Organization (ILO) and the Organization of African Unity (OAU). The ILO Conventions applicable to the employment of children and young persons mainly specify the standard minimum age, define conditions of night work, medical examination, and underground work. Since 1954, Kenya has ratified 47 ILO Conventions out of which 41 are in force. Some of the main conventions ratified by Kenya include: Convention No. 29 on Forced Labour, No. 98 on the Right to Organize Trade Unions and Collective Bargaining, No. 105 on Abolition of Forced Labour, and No. 138 on Minimum Age. The country has not, however, ratified three core conventions, namely No. 87 on Freedom of Association, No. 100 on Equal Remuneration, and No. 111 on Non-Discrimination in Employment and Occupations.

The UN General Assembly adopted the UN Convention on the rights of a child in November 1989. This is another important instrument for protecting children from exploitation and abuse. It reaffirms that children are vulnerable and therefore need special protection and emphasizes the primary care and responsibility of the family. The Kenya Government ratified this Convention in 1990. Article 1 of the Convention defines a child as a person under the age of 18, while Article 32 specifically prohibits child labour. The latter Article stipulates that the Government should recognize the right of the child to be protected from economic exploitation and from performing any work that is likely to be hazardous, interfere with the child's education, or be harmful to the child's health or physical, mental, spiritual, moral or social development. It further urges states to make legal or administrative provisions for regulating the minimum age for entry into employment, hours and conditions of employment, and to ensure effective enforcement of these regulations.

Article 18(3) of the African Charter on the Rights and Welfare of the Child states that "the state shall ensure the elimination of every discrimination against women and also ensure the protection of the rights of the woman and the child as stipulated in international declarations and conventions."

## 2.3 Enforcement Mechanisms

The existing institutional framework for implementing the legal protection of children comprises various Government agencies and institutions. These include the Children's Department under the Office of the Vice-President and Ministry of Home Affairs, the police and courts, the provincial administration including chiefs and sub-chiefs, the Probation Department, approved schools, remand houses, local authorities and the Ministry of Labour and Human Resource Development.

The Ministry of Labour and Human Resource Development is mandated to deal with employment policy, occupational health, safety at workplace and other labour matters. The Ministry is involved in issues relating to child labour, and is therefore responsible for implementation and administration of the Employment Act (Cap. 226), the Regulation of Wages and Conditions of Employment Act (Cap. 229) and the Factories and Other Places of Work Act (Cap. 514). The Ministry is also responsible for coordinating the implementation of various reports on ILO Conventions and for initiating legislation and practices on matters pertaining to conventions.

The Department of Children's Services under the Office of the Vice-President and the Ministry of Home Affairs is mandated to enforce the Children and Young Person's Act (Cap. 141). It is responsible for the administration of all the laws relating to children in Kenya. The department is also mandated to sensitise the civil society on the rights of the child and on re-establishment of the parent/child relationship. Finally, the Department is responsible for the operation and management of rehabilitation of institutions for children in need of care, and for protection and discipline of children in the country. These activities are meant to protect children from being engaged in undesirable activities, including child work.

The judiciary plays an important role in ensuring the observance and maintenance of the rights of the child. Under the Children and Young Person's Act, the Juvenile Court is empowered to hear matters concerning the welfare of children. The judiciary is responsible for undertaking law reform, including reforms in the law relating to children as evidenced by its role in the preparation of the Children's Act. The role of the judiciary is complemented by several Government agencies. The Probation Department complements the judiciary by reviewing cases of probationers, including the established probation committee for those aged below 18 years. Similarly, the police and officers in the provincial administration, such as chiefs, work towards the strengthening of implementation of intervention measures against child labour, particularly at the domestic and household levels.

The Ministry of Education, Science and Technology has the overall responsibility for education policy, enforcement of the provisions of the Education Act (Cap. 211) and implementation of educational programmes, including those concerned with child labour. Its role is prominent particularly in the areas of dropouts from primary schools and from non-formal educational institutions. The main aim is to develop educational opportunities for children who are out of school for one reason or another.

## 2.4 Schooling and Working Status of Children

In 1999, Kenya had a total population of about 28.7 million persons (GoK, 2001a). It is estimated that total population was 30.4 million in 2001 of which population aged 6-14 years constitute about 25%. Kenya's population is largely youthful with 51% of the population being less than 18 years old. The consequences of such a youthful population include a high dependency ratio and increased demand for jobs and social services, all of which pose a major development challenge. As mentioned earlier, focus in this study is on the school-going population aged between 6-14 years. Information is drawn from various sources including the Child Labour Survey (GoK, 2001b), supplemented with other secondary and primary data sources.

According to the Child Labour Survey (GoK, 2001b) carried out by the Central Bureau of Statistics (CBS) in 1998/99, the population of children aged between 6 and 14 years was 7.8 million, which was slightly higher than the 7.2 million reported in the population census for 1999. Estimates

based on population projections for 2001 show that 7.7 million of the total population are children aged 6-14 years (25% of the population). The population of children aged 6-14 years varies by region with Rift Valley having the highest number followed by Eastern and Central Provinces while North Eastern has the lowest number.

Of the total children in the age bracket 6-14 years, about 73% were in school, while 27% were out of school. Of the total number of children attending school, 7.3% (407,700) were working while 39% (788,107) of those not attending school were working. In total, about 1.2 million children aged between 6 and 14 years were working for pay, profit, or family gain (Table 2.1). This is about 15.7% of the children in the age group 6-14 years. However, some of the work undertaken by the children may not amount to child labour, which is defined in general as work undertaken by children aged 6-14 years and which prevents them from attending school, work that is exploitative and hazardous or inappropriate for their age. This definition includes the worst forms of child labour such as child slavery, and debt bondage, use of children in armed conflicts and in commercial immoral activities such as prostitution, production of pornography or pornographic performances, and hazardous work as defined by the 1999 ILO Convention. The 15.7% includes children who work and at the same time attend school. Therefore, some of the work they do may not constitute child labour.

A total of about 1.2 million (15.2%) of the working children aged 6-14 years are involved in child labour. Most (63%) of the working children are of age 10-14 years. A majority of the working children are boys.

**Table 2.1: Number of children (6-14 years) in school and not in school**

| Age group | Schooling ('000) | | Out of School ('000) | | Total ('000) |
|---|---|---|---|---|---|
| | Not working | Working | Not working | Working | |
| 6-9 | 2,140.6 | 115.2 | 641.3 | 255.6 | 3,152.7 |
| 10-14 | 3,007.3 | 292.5 | 612.7 | 532.5 | 4,445.2 |
| **Total** | **5,147.9** | **407.7** | **1,254.0** | **788.1** | **7,597.9** |

Source: Government of Kenya (2001b)

Table 2.3 shows the age-sex composition of working children. More children in the age group 10-14 are involved in child labour compared to those in the age group 6-9 years. In both age groups, more boys than girls are involved in child labour. About 34% of the children in the age group 6-14 years are schooling and at the same time working.

## 2.5 Education of Working Children

Table 2.4 shows the education achievement of children involved in child labour. As shown in the table, most (76.8%) of the children involved in child labour drop out of the school system at the primary school level of education. About 12.7% have never attended any formal education. Most of the children schooling and working at the same time are also in primary school.

**Table 2.2: Distribution of working children by sex and age**

| Child characteristics | | Number | % of the total |
|---|---|---|---|
| Sex | Boys | 639,648 | 53 |
| | Girls | 556,906 | 47 |
| Age | 6-9 | 450,789 | 38 |
| | 10-14 | 745,765 | 62 |

Source: Government of Kenya (2001b)

**Table 2.3: Age and sex composition of working children**

| Age group | Schooling | | | Out of school | | | Total |
|---|---|---|---|---|---|---|---|
| | Boys | Girls | Total | Boys | Girls | Total | |
| 6-9 | 66,454 | 49,510 | 115,245 | 152,321 | 103,307 | 255,628 | 371,592 |
| 10-14 | 150,962 | 141,560 | 292,522 | 269,911 | 262,528 | 532,439 | 824,961 |
| **Total** | **217,416** | **191,070** | **407,767** | **422,232** | **365,835** | **788,067** | **1,196,553** |

Source: Government of Kenya (2001b)

**Table 2.4: Highest education level attained by working children (%)**

| Highest level | At school | Out of school | Total |
|---|---|---|---|
| None | - | 18 | 12.71 |
| Nursery | 8 | 5 | 6.77 |
| Primary | 87 | 72 | 76.78 |
| Secondary | 4 | 3 | 3.17 |
| Post Secondary | - | 0.8 | 0.04 |
| Not stated | 1 | 1.2 | 0.53 |
| **Total** | **100** | **100** | **100** |

Source: Government of Kenya (2001b); (-) means data not available

**Table 2.5: Proportion of working children by sex and occupation (%)**

| Occupation | Boys | Girls | Total |
|---|---|---|---|
| Housekeeping and restaurant service workers | 0.5 | 1.5 | 1.0 |
| Personal care and related workers | 0.2 | 0.3 | 0.3 |
| Other personal service workers | 0.5 | 1.5 | 0.9 |
| Shop and salespersons and demonstrators | - | 0.3 | 0.1 |
| Stall and market sales persons | 0.5 | 0.5 | 0.5 |
| Market gardeners and crop growers | 3.2 | 3.4 | 3.3 |
| Market-oriented livestock keeping | 3.7 | 3.2 | 3.5 |
| Market-oriented crop grower | 9.3 | 11.1 | 10.1 |
| Forestry and related workers | - | 0.1 | 0.1 |
| Fishery workers, hunters and trappers | 0.1 | - | 0.1 |
| Subsistence agriculture and fishery workers | 27.7 | 17.8 | 23.1 |
| Handcraft workers in wood, textile, leather | 0.9 | - | 0.5 |
| Food processing and related workers | 0.1 | - | 0.1 |
| Wood treaters, cabinet makers etc | 0.4 | 0.3 | 0.4 |
| Mining plant operators | 0.2 | - | 0.1 |
| Street vendors and related workers | 0.1 | 0.8 | 0.4 |
| Shoe cleaning and other street services | 0.1 | - | 0.0 |
| Domestic and related cleaners and launderers | 12.4 | 22.4 | 17.0 |
| Building caretakers, window and related cleaners | 0.2 | - | 0.1 |
| Messengers, potters, doorkeepers, etc | 0.1 | - | 0.1 |
| Agriculture, fishery and related labourers | 37.9 | 36.6 | 37.3 |
| Mining and construction labourers | 0.2 | - | 0.1 |
| Manufacturing labourers | 1.4 | 0.3 | 0.9 |
| **Total** | **100.0** | **100.0** | **100.0** |

Source: Government of Kenya (2001b); (-) means data not available

## 2.6 Occupations of Working Children

Of the children aged 6-14 years who indicated their occupation, most were engaged in commercial and subsistence agriculture and as labourers in agriculture, fishery and related areas (Table 2.5). About 17% were engaged in domestic and related work as helpers, cleaners and launders.

**Table 2.6: Proportion of working children by sex and industry (%)**

| Economic Activity | Boys | Girls | Total |
|---|---|---|---|
| Growing of crops, market gardening and horticulture | 12.7 | 11.4 | 12.1 |
| Farming of animals | 5.7 | 5.3 | 5.5 |
| Mixed crop and animal farming | 66.7 | 59.3 | 63.3 |
| Agriculture and animal husbandry services excluding veterinary | 2.0 | 0.5 | 1.3 |
| Fishing and fishing services | 0.1 | - | 0.1 |
| Quarrying of stones and clay | 0.9 | - | 0.5 |
| Manufacture of other food products | 1.0 | - | 0.6 |
| Manufacture of other textiles | 0.2 | - | 0.1 |
| Manufacture of wood, cork etc | 0.8 | 0.3 | 0.5 |
| Manufacturing (other commodities) | 0.7 | - | 0.4 |
| Building completion | 0.4 | - | 0.2 |
| Retail of food beverages and in specialized stores | 0.1 | 0.5 | 0.3 |
| Other retail trade of new goods in stores | 0.1 | - | 0.1 |
| Retail trade not in stores | 1.0 | 1.4 | 1.2 |
| Hotels, camping sites and other provision of short-stay accommodation | 0.1 | 0.1 | 0.1 |
| Restaurants, bars and canteens | 0.3 | 0.4 | 0.3 |
| Other land transport – road transport | - | 0.3 | 0.2 |
| Activities of travel agents | 0.1 | - | 0.0 |
| Business activities not elsewhere stated | - | 0.9 | 0.4 |
| Motion picture, radio, TV and other entertainment activities | 0.1 | - | 0.0 |
| Other service activities | 3.6 | 8.9 | 6.0 |
| Private households with employed persons | 3.2 | 10.6 | 6.6 |
| **Total** | **100.0** | **100.0** | **100.0** |

Source: Government of Kenya (2001b); (-) means data not available

The least common occupation for working children aged 6-14 years was in specialised occupations such as finishing of buildings and related activities in mining, and as plant operators (Table 2.6). In terms of sex, no girls were working as fishermen, building finishers, metal moulders and welders, and shoe cleaners. On the other hand, more girls than boys work as domestic helpers and related work.

Table 2.6 presents the distribution of working children by industrial classification of economic activities. Most of the children were engaged in agricultural activities, where 63.3% are engaged in mixed crop and livestock farming and 12.1% in growing crops, market gardening and in horticulture.

The next popular activity is domestic services, where 6.6% of children are working in private households. Girls constitute over three-quarters of the

child workers in other service activities and private households. On the other hand, boys are the majority in the activities that are traditionally male-dominated, such as fishing and fishing services, manufacturing, quarrying of stones and clay, and in building activities.

## 2.7 Working Environment and Conditions for Working Children

About 293,881 children provided information about the problems they experience in their current job (Table 2.7). As noted earlier, some of the working children were engaged in fishing, mining and quarrying, building and road transport activities. These activities are usually risky for young persons. Working children reported two major complaints with their current jobs, namely, low pay and tiring or hard work. Therefore, children are exploited by being both overworked and underpaid, in addition to performing work that cannot be physically undertaken by young persons. The situation is detrimental to the health and normal growth of children.

Another indicator of the working conditions of children is the kind of injuries and illnesses the children suffer in places of work and the remedial actions. Many working children suffer from limb injury, breathing problems, skin infection and back problems.

**Table 2.7: Problems experienced by working children in current job (%)**

| Main type of problem | Percentage |
|---|---|
| Low pay | 79.3 |
| Low earnings | 0.01 |
| Delayed salaries | 0.01 |
| Poor working environment | 0.01 |
| Tiring /hard work | 14.6 |
| Long hours | 0.03 |
| Physical/verbal abuse | 0.01 |
| Too far | 0.01 |
| Other | 0.01 |
| **Total** | **100** |

Source: Government of Kenya (2001b)

## 2.8 Worst Forms of Child Labour

From the CBS survey (1998/99), we lumped together related worst forms of labour and obtained nine hazardous occupations in which children were engaged in and projected the same for the year 2001. These are shown in Table 2.8 on number of working children in worst forms of child labour by type of industry for 2001. Agriculture has the highest number of children working in worst form of child labour followed by the services industry. About 68% of the total children working in the mining, construction and manufacturing industry are working under hazardous conditions.

**Table 2.8: Children working in hazardous work by industry: 5-17 years**

| Type of industry | Total number of working children | Children Working in worst form | Proportion |
|---|---|---|---|
| Agriculture | 1,605,599 | 551,483 | 0.34 |
| Mining | 9,906 | 6,754 | 0.68 |
| Construction | 4,552 | 3,103 | 0.68 |
| Manufacturing | 30,386 | 20,719 | 0.68 |
| Services | 267,978 | 164,910 | 0.62 |
| Retail | 33,953 | 13,671 | 0.40 |
| **Total** | **1,952,374** | **760,641** | **0.39** |

Source: Projections based on CBS Child Labour Report (GoK, 2001b)

Table 2.9 shows the number of working children aged 6-14 years by type of illness/injury and occupation. Limb injuries contributed about 16.6% of all total injuries/disabilities while breathing problems contributed about 6.7%. It is evident that limb injuries and breathing problems are some of the major injuries/diseases affecting working children in Kenya. Many children are injured in hazardous work in agriculture, fisheries and hunting activities. This could be attributed to the fact that most children work in the agriculture sector and are exposed to highly hazardous work, which involves working with sharp tools and toxic chemicals, among others. Street trade, mining, stonecutting and handcraft also contributed to many injuries among working children. Hazardous domestic work also affected many children especially the girl child.

**Table 2.9: Number of working children by type of illness/injury and occupation (6-14), 2001**

| Occupation | Limb injury | Eye/ear infection | Skin infection | Back problem | Breathing problem | Other | Total |
|---|---|---|---|---|---|---|---|
| House keeping, restaurant and related activities | 0 | 0 | 805 | 0 | 353 | 1671 | 2652 |
| Total street trade | 0 | 0 | 0 | 0 | 508 | 896 | 1250 |
| Forestry and related workers | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total agriculture, fishery, hunters etc | 16,262 | 188 | 367 | 0 | 1043 | 56132 | 74323 |
| Miners and stone cutters | 0 | 0 | 0 | 0 | 0 | 676 | 676 |
| Handcraft workers in wood, textile, leather etc. | 0 | 0 | 0 | 0 | 0 | 2123 | 2123 |
| Domestic and related workers | 0 | 237 | 183 | 630 | 4670 | 9931 | 15651 |
| Building caretakers, window related cleaners | 0 | 0 | 0 | 0 | 0 | 604 | 604 |
| Total all other occupations | 0 | 0 | 0 | 0 | 0 | 520 | 520 |
| **Total** | **16262** | **425** | **1355** | **630** | **6574** | **72553** | **97799** |
| **Percentages** | **16.6** | **0.43** | **1.4** | **0.6** | **6.7** | **74.2** | **100** |

Source: Projections based on CBS Child Labour Report (GoK, 2001b)

## 2.9 Wages and other Benefits from Employment

A majority of the children who provided information about their pay received earnings that were less than Kshs 900 per month with more girls in the low wage groups (Table 2.10). Also, children in the urban areas were relatively underpaid with 70.4% of them receiving less than Kshs 900 per month compared with 57.8% of children in the rural areas who received less than this wage.

The facilities provided to the working children by their employers are shown in Table 2.11. The most frequently provided/subsidized facilities are meals, accommodation and medical facilities in that order. Training is the least provided for in all facilities.

**Table 2.10: Distribution of working children by monthly pay**

| Domain | Monthly pay (Kshs) | | | | Total |
|---|---|---|---|---|---|
| | 0-899 | 900-1499 | 1500-1999 | 2000+ | |
| Boys | 41,200 | 18,184 | 5,582 | 5,907 | 70,873 |
| Girls | 68,308 | 21,595 | 6,980 | 4,456 | 101,339 |
| **Total** | **109,508** | **39,779** | **12,562** | **10,363** | **172,212** |
| Rural | 53,745 | 22,209 | 9,443 | 7,610 | 93,007 |
| Urban | 55,763 | 17,570 | 3,119 | 2,753 | 79,205 |
| **Total** | **109,508** | **39,779** | **12,562** | **10,363** | **172,212** |

Source: Government of Kenya (2001b)

**Table 2.11: Proportion of working children provided with selected facilities**

| Facility | % of total responses |
|---|---|
| Medical | 22.3 |
| Transport | 7.0 |
| Accommodation | 24.2 |
| Meals | 31.0 |
| Protective clothing | 7.8 |
| Training | 2.6 |
| Other | 5.1 |

Source: Government of Kenya (2001b)

**Table 2.12: Contributions of children's earnings to household income**

| Contribution to household income (%) | % of total responses |
|---|---|
| Under 20 | 27.0 |
| 20-49 | 25.8 |
| 50-79 | 22.0 |
| 80+ | 25.3 |
| **Total** | **100** |

Source: Government of Kenya (2001b)

## 2.10 Children's Contributions to Household Income

About 185,565 of the children involved in child labour provided information about their contribution to household income. Nearly 73% of the working children contributed between 20 to 100% of the household income (Table 2.12). This shows that most of the children work to supplement household income.

# 3. CAUSES OF CHILD LABOUR AND POSSIBLE REMEDIES

## 3.1 Causes of Child Labour

The causes of child labour differ from country to country. In Kenya, one of the causes of child labour is family violence. Family violence manifests itself in the form of physical and verbal abuse, silence, constant threats of death and financial neglect. Where family violence leads to break-up of the marriage, children are forced to engage in child labour as a way of fending for themselves or assisting their mothers to finance household expenditure. Some girls are forced by their mothers to be employed as maids. Boys work as hawkers and car washers. In cases where physical violence leads to the death of a spouse, mostly the mother, the children are orphaned and their chances of continuing with schooling or having adequate food at home are limited. Therefore, some children take to the streets in search of greener pastures while others look for alternative ways to make ends meet like engaging in commercial sex, working as housemaids, begging, etc.

Intra-ethnic violence, cattle rustling and banditry have also created an exodus from rural areas into towns. Families which have been affected by this form of violence have been reduced to beggars and their children made vulnerable to malnutrition. In areas where ethnic clashes have occured, there has been a serious disruption of school programmes and destruction of the basic infrastructure of schools. In the agriculturally-productive areas of Kenya, crops such as maize and wheat have been set on fire, granaries burnt and livestock stolen or maimed during ethnic clashes. The clashes and the state of insecurity lead to under-utilization of farmland in high potential areas. These conflicts disrupt food supplies, therefore exposing many children to starvation. Some street children in some towns in Kenya are victims of ethnic clashes. Intra-ethnic clashes have led to many other forms of child labour including child prostitution, domestic house-helps, among others.

HIV/AIDS infection has been a major contributor to the vulnerability of children in Kenya. In particular, the AIDS epidemic has resulted in deaths of large numbers of adults and children. As a result, Kenya has in recent years witnessed a sharp rise in the number of AIDS orphans. Caring for

these orphans is usually difficult for those staying with relatives and other community members either because of inadequate resources or lack of will to be involved. Many orphaned children are left under the care of their grandparents, who are often old and without means of support, or are left homeless after the death of their grandparents. Some of them take to the streets in search of new homes, money and food for survival. Some orphans prefer to remain in their own households without adult care. In such cases, the eldest child assumes the role of household head regardless of gender. These children engage in child labour and girls engage in commercial sex at a very early age.

The overall performance of Kenya's economy has declined over time, falling from 4.6% in 1996 to –0.3% in 2000 (GoK, 2001c). This has impacted negatively on the incomes and the standard of living of the people, therefore resulting in high levels of poverty. The main factors that have led to economic decline over the years include macro-economic instability, rapid population growth, declining foreign and domestic investment, poor economic management and governance, and corruption. The implication of poor economic performance is that an increasing number of households have to cope with less incomes and higher expenditures. The income provided by children's work therefore becomes more valuable. The recent and on-going retrenchment in the public and private sector is worsening the situation.

Rapid rural-to-urban migration is another factor associated with the increasing rate of child labour in urban areas of Kenya. Families leave the severity of agricultural working conditions for cities in search of economic opportunities that often do not exist. This causes many families to settle in the slums under difficult living conditions, which also contributes to a growing rate of family disintegration. Most families are left under the headship of women who are economically marginalized. The difficult circumstances force women to engage in prostitution and also force their girl children to engage in the same. In an effort to assist their parents make ends meet, children usually find themselves in all sorts of child labour.

The gross primary enrolment rate in Kenya declined from 105.4% in 1989 to 86.9% in 1999 (Kimalu *et al*, 2001b). This decrease in enrolment could be attributed to the deepening poverty and adverse effects of structural adjustment programmes (SAPs) where introduction of cost sharing in primary school education has rendered access to education more difficult

for the poor (IEA/SID, 2001). Another cause of non-enrolment and drop out leading to child labour are long distances to school, especially in the nomadic pastoral communities. The parents' level of education also affects how much schooling their children receive. Illiterate and jobless parents are least able to meet education needs and often have the largest families (UNICEF, 2001b), and are therefore more prone to poverty. This family background causes many children to drop out of school and join the labour force.

The costs incurred by an individual child or family when a child goes to school include expenses for such things as tuition, books, school uniform, transportation and supplies, and income foregone because a child is in school rather than working.[3] To the extent that working leaves little or no room for schooling, the economic costs of child labour can in part be measured in terms of foregone economic benefits of education. The costs of many children's education are partly financed by society in form of public schooling, that is the total cost of their education includes the sum of the cost paid directly by the individual or family plus the cost borne by the rest of society in the form of public schooling or other subsidies to education (Psacharopoulos, 1999).

**Table 3.1: Main reason for allowing children to work (%)**

| Reason | % of households |
|---|---|
| Augment household income | 27.5 |
| Help in family business/farm | 30.1 |
| Child to be self-reliant | 4.8 |
| Education/training environment not suitable | 0.3 |
| Other | 35.9 |
| Not stated | 1.5 |
| **Total** | **100** |

Source: Government of Kenya (2001b)

Table 3.1 outlines the reasons why parents release their children to work based on data from the Child Labour Report of 1988/89 (GoK, 2001b). About 30% of the parents with working children allow their children to work in order to help in family business while 27.5% allow children to work so

[3] Income can be earned in cash or kind. It includes monetary payments, goods and services produced by the child for the direct use of the child or family, or for barter with other goods and services.

that earnings received by the children can augment the household income. A few parents release their children to work because they think that their education or training environment is not suitable, implying that the child's schooling is not considered relevant.

On the other hand, some children choose to work so as to help in housekeeping chores while others work to augment household income and for self-support (Table 3.2). Analysis of reasons for working by hours of work shows that most schooling children who work for less than 25 hours per week help in household chores, while children not schooling and who work for more than 41 hours per week do so to support themselves.

In rural areas, an equally important factor (as supplementing household income) is to help out in household enterprises, a factor that is marginally important in urban areas. Also, the most important factor determining the labour market entry of rural children is the family's wish. In order of decreasing importance, urban children cited taking up a trade or gain professional experience, supporting one-self and family's wish as factors leading them to work. The less frequently cited reasons by both the urban

**Table 3.2: Main reasons for working by actual hours worked per week**

| Main reason for working | Schooling (hours) | | | | Not schooling (hours) | | | | Overall total |
|---|---|---|---|---|---|---|---|---|---|
| | Percentage of children | | | | | | | | |
| | <25 | 25-41 | >than 41 | Total | <25 | 25-41 | >than 41 | Total | |
| Augment household income | 21.1 | 17.2 | 9.3 | 16.4 | 29.8 | 32.6 | 22.4 | 27.2 | 22.9 |
| Assist in family enterprises | 4.6 | 3.7 | 4.7 | 4.4 | 8.3 | 4.9 | 7.6 | 7.2 | 6.1 |
| Help in house-keeping chores | 33.8 | 24.7 | 41.9 | 33.7 | 19.7 | 22.3 | 15.5 | 18.5 | 24.7 |
| Suggestion from parents | 2.6 | 9.6 | 22.2 | 10.5 | 12.8 | 6.7 | 22.5 | 15.6 | 13.5 |
| Support self | 24.0 | 20.4 | 10.4 | 18.9 | 20.6 | 23.4 | 26.8 | 24.5 | 22.2 |
| Copying agemates | - | - | - | - | 1.4 | - | 0.3 | 0.6 | 0.3 |
| Other | 1.6 | 23.1 | 1.2 | 12.5 | 6.6 | 7.3 | 3.4 | 5.4 | 8.3 |
| Not stated | 0.4 | 1.2 | 10.2 | 3.6 | 0.5 | 0.8 | 1.5 | 1.0 | 2.1 |
| **Total** | **100** | **100** | **100** | **100** | **100** | **100** | **100** | **100** | **100** |

Source: Government of Kenya (2001b); (-) means data not available

and rural children are to help pay off household current debt and to earn money to establish own enterprise.

The reasons for working also differ between genders. In urban areas, female children cited family's wish as the second most important factor after the need to supplement income, while male children cited the need to first supplement household income; trade or gain professional experience; and to support one-self; family's wish, in that order of importance. In rural areas, more female than male children cited the desire to help out in the household enterprise (which was also the case in urban areas) and family's wish as reasons for engaging in market work.

Similarly, the reasons cited in rural areas are: lack of interest in schooling; participation in household economic activities; cannot afford schooling; could not get permission from the family; to attend to household chores; and "no suitable educational institution available". This last factor points to the fact that some rural settlements lack the appropriate educational institutions to enable children go to school. In rural areas, "not interested in school" emerges as the leading factor deterring male and female children from attending school.

Data collected by the Kenya Institute for Public Policy Research and Analysis (KIPPRA) in 2002 indicates that 64.7% of children leave school due to lack of school fees, with 9.2% not interested in school, 5.3% due to death of parents, among other reasons (Table 3.3).

**Table 3.3: Reasons for leaving school**

| Reason | No. of responses | % of responses |
|---|---|---|
| Lack of school fees | 233 | 64.7 |
| Not interested | 33 | 9.2 |
| Death of parents | 19 | 5.3 |
| Not yet of school-going age | 2 | 0.6 |
| Pulled out by parents | 24 | 6.7 |
| Domestic problems (conflict) | 7 | 1.9 |
| To train for a skill for future use | 3 | 0.8 |
| Lack of a school to attend | 11 | 3.1 |
| Peer pressure | 6 | 1.6 |
| Severe punishment | 15 | 4.2 |
| Others | 7 | 1.9 |
| **Total** | **360** | **100.0** |

Source: Based on data collected by KIPPRA

It was also established in this survey that 36.8% of children cited assisting parents/relatives/part of family labour as the main reason for working. Other reasons cited were: to get food and clothes (38.7%); to earn some income/money for fees/stationery (0.7%); forced to work by a neighbour/friend/guardian (13.2%); idleness/lack of something to do (8.4%), among other reasons.

**Table 3.4: Reasons for working**

| Reason | No. of responses | % of responses |
|---|---|---|
| To assist parents/guardians | 156 | 36.792 |
| To get money for food and clothes | 164 | 38.679 |
| Forced by parents/guardians | 56 | 13.208 |
| Abandoned by parents/guardians | 5 | 1.179 |
| Need for money for fees/stationary | 3 | 0.708 |
| Peer pressure | 4 | 0.943 |
| Had nothing else to do | 36 | 8.491 |
| Total | 424 | 100.00 |

Source: Based on data collected by KIPPRA in 2002

On whether the children who are already being cared for in institutional settings would prefer to go to school or work, the majority (69.7%) prefered remaining in the rehabilitation centre (where schooling is a priority) or going back to their former school (26%). Research has shown that financial constraints are the main reasons causing children to drop out of school and therefore engaging in child labour. Therefore, programmes that keep children in school and provide for their basic needs can successfully reduce child labour.

Canagarajah and Coulombe (1997) show that in Ghana, there is significant negative relationship between going to school and working. Increasing the demand for schooling is the effective way of reducing child labour and ensuring that Ghana's human capital is stabilized. The high cost of schooling and the low quality and perceived irrelevance of education have also pushed many children into work. The econometric strategy adopted in the Ghanaian study enabled the researchers to test the interdependence of schooling and labour force participation. They showed that schooling and labour force participation are negatively correlated. This indicates that there is a trade-off between schooling and working. However, Patrinos and Psacharopoulos (1997) argue that working makes it possible for children to go to school.

## 3.2 Interventions Against Child Labour

Notwithstanding the almost universal agreement that child labour is undesirable, there is wide disagreement on how to tackle the problem. Within the empirical literature on child labour, there has been a shift from mere quantification to econometric analysis of its determinants. The econometric analysis has coincided with a widespread realisation that simply banning child labour is unlikely to eradicate the problem and may even make it worse (Ranjan, 2000). The view that we need to understand the key determinants of child labour in order to formulate effective policies against it underlies the recent econometric work.

According to Grootaert and Kanbur (1995), banning child labour is only the second best solution to this problem. It is best to attack failures in the markets in which child labour occurs and it is always second best to intervene in the related markets. Market failure exists in education where social rates of return to education are higher than private rates of return. Therefore, on the social front, more children would be at school if the public supported their education than would be the case if their education were left in the hands of households alone. In a situation where child labour is widespread and includes disparities in nature, resource priorities need to be targeted to address conditions that foster and/or enable child labour rather than those which set out to redress specific instances of current working children. Such interventions can be located on the supply side, such as campaigns to dissuade children from working in hazardous occupations, or on demand side, such as investment in increased surveillance and enforcement capacity to deter those who exploit child labour.

A study by Vegard (2000) suggests that there is need for educational policies to accommodate household shortages of hiring labour during the agricultural peak season. Therefore, there is need to schedule school holidays to minimise opportunity costs of schooling and ensure that labour resources are available during harvesting and peak agricultural operations. Also, school is considered a key deterrent or preventive intervention to eliminate hazardous child work. Education as an intervention mechanism has the potential to equip and empower children not only with literacy, reasoning, and numerous skills, but also with critical social skills, a sense of responsibility, self respect and respect for others, knowledge of their rights and the capacity to actively resist exploitation (UNICEF, 1997).

Promoting awareness on the issue of child labour among the general public and among consumers is also important. Where children work for employers, there is need for governments to take action to bring to the employer's attention the detrimental impact of full time child work and the need to provide for schooling opportunities. Since full time schooling may entail a loss of income, incentives can be useful, in the short term, as inducements to bring and keep children in school. This may vary from a nutritious mid-day meal to health and childcare services, free books, uniforms, and transportation to school. However, sustainability of such programmes is an issue, especially as evidence shows that institutional or top down interventions are less lasting than programmes initiated at community level (UNICEF, 1997).

A survey by Siddiqi and Patrinos (1995) has shown that schooling intervention can only be achieved at a cost for a number of reasons. First, children will not attend these schools without an economic change in their condition. Schools must make it worthwhile for children to attend in order to make up for lost earnings. In their view, one necessary provision is that these schools be free. Another possibility is that these schools serve food supplements. Parents might view this nutrition as valuable and therefore keep their children in school. The quality of education can also be improved so that schooling is considered an important factor in the success of a child.

Other intervention activities include promoting and supporting action on child labour by all affiliates and where necessary providing them with educational assistance to undertake such action; encourage governments to develop economic and social programmes aimed at eradicating poverty; providing basic education for all girls and boys; and supporting international action on the economic and social causes of child labour.

To achieve policy objectives and legal frameworks in Kenya, the Government in collaboration with development partners has devised certain child labour intervention programmes. For instance, in liaison with ILO/IPEC, the Government has signed a memorandum of understanding to undertake various activities aimed at progressively eliminating child labour. These activities include:

(i) Strengthening the capacity of staff in the Ministry of Labour and Human Resource Development to enforce child labour inspection and the establishment of a Child Unit in the Ministry;

(ii) Supporting the Department of Children's Services in the Ministry of Home Affairs in undertaking campaigns
aimed at raising awareness on child labour and in maintaining a national directory of NGOs concerned with child labour;

(iii) Strengthening the capacity of the Federation of Kenya Employers (FKE) and the Central Organization of Trade Unions (COTU) in combating child labour;

(iv) Supporting the Kenya National Union of Teachers and the Ministry of Education in redirecting children from child labour activities back to school;

(v) Supporting the major NGOs with child labour reduction programmes.

# 4. EDUCATION AND CHILD LABOUR

## 4.1. Does Child Labour Displace Schooling?

Child labour cannot be approached separately from the issue of education. It would be difficult to effectively combat child labour without the support of an open, competent and attractive school system. For children, the most compelling potential alternative to full time work is education. Children engage in full time work either because they have no access to schools within a convenient distance, or the schools are of such low quality that parents do not see the advantage of enrolling their children in them. Therefore, the shortcoming of the education system is a significant factor in discouraging children from attending school.

When making a decision to send children to school, most parents weigh the opportunity cost of schooling; that is the direct cost of schooling against forgone earnings from child labour.

From a financial perspective, the decision is based on whether future rewards from schooling, discounted to the present, are high enough to justify current sacrifices. Jacoby and Skoufias (1997) have shown that child labour helps to smooth the consumption of rural Indian families due to the poorly developed credit and risk markets. As already noted, data from

the child labour survey carried out by the CBS in 1998/99 (GoK, 2001b) show that working children contribute substantially to household income in Kenya. This indicates that replacing the children's lost income would have an impact on their school attendance.

The benefits of going to school are mainly long-term and will flow mainly to the child rather than the parent. On the other hand, the cost of education has to be borne by the parent in the short-run. High costs of schooling can serve to push children into the labour market to enable them afford school.

School attendance and child labour are not always mutually exclusive as there are many children who attend school and also work. The two aspects are linked even though existing empirical evidence regarding the scope of this linkage is so far rather dispersed. The issue is whether schooling displaces child labour. Several observers have noted that schooling does not necessarily reduce child labour, especially part-time employment, as children are often found to be attending school as well as working. But schooling is likely to reduce the worst forms of child labour and is incompatible with full time work (Anker and Melkas, 1996). Children can also protect themselves better against exploitation if they have received education.

Ravallion and Wodon (1999) argue that even when schooling is made more attractive, it does not seem to reduce child labour. Research reveals that parents substitute other uses of their children's time so as to secure the current income gain from access to the educational programme with minimal impact on earnings from their children's work. Schooling typically raises future earnings, yet one often finds low school enrolment among the poor in developing countries. This is commonly due to the fact that schooling competes with various income-earning opportunities (wage labour or employment in family enterprises) that supplement the current incomes of poor families. This suggests the possibility of a poverty trap where the low current incomes of parents keep their poor children out of school, therefore perpetuating their poverty into the next generation. However, the poverty trap argument depends critically on the substitution possibility of children's leisure and schooling.

For child labour and schooling to be complementary, children must have enough time and energy to attend and succeed in school. There must therefore be a limit to the time children spend working. If working leaves children with insufficient time or energy to devote to studies, then child

labour has a negative effect on schooling because it perpetuates poverty by displacing schooling.

## 4.2 Education System in Kenya

Kenya's education system comprises early childhood education, primary school education (the most general of all educational skills provided in Kenya), secondary school education and university education. Secondary school education aims to prepare young people for responsibilities of adulthood, higher education and work while university education is the apex of the formal education system. Over the period since independence, the education system has expanded rapidly. Student enrolment in primary school increased from 891,553 in 1963 to 5,882,625 in 2000. Expansion in primary school streams reached 164,867 in 1990 and 195,457 by the end of 2000. The number of primary schools also increased considerably from 6,058 in 1963 to 18,617 in 2000**.** Private primary schools constitute a small proportion of the total number of primary schools in the country. In 1996, out of the 16,552 primary schools in the country, only 282 schools were private, representing 1.7% of the total. There are disparities across the regions with Rift Valley Province having the highest gross enrolment in the country followed by Eastern Province. North Eastern Province has the lowest gross enrolment.

The performance of the education system has been somewhat above average in sub-Saharan Africa as a whole. Growth in enrolment at all levels increased through the 1960s and 1970s, encouraged partly by the abolition of fees in public schools and the provision of free milk in primary schools. While there are several ways of measuring a country's success at providing education at the primary level, the most common are primary school enrolment and attendance ratios. Educational supply and demand is perhaps best reflected in current patterns of enrolment. Developing countries, Kenya included, have been quite successful in expanding enrolment in education, especially at the lower level. But for any given level of efficiency, increased enrolment requires increased resources in order to maintain quality. If these resources are not forthcoming, the increase in quantity may come at the expense of quality.

An important aspect of managing the growth of an education system is ensuring that it benefits all sections of the population and that disparities

between groups are reduced. Disparities are often based on gender, income levels, regions, and area of residence (rural or urban). As overall participation and attainment levels rise, it cannot always be assumed that all groups are benefiting equally. It is important to look beyond overall patterns of growth in order to examine conditions within the country that may result in disparities in participation and attainment. Participation in primary education in Kenya is characterised by regional and gender disparities. A rising number of urban slum children who are not attending formal schools may be an indicator that the enrolment rate is not keeping pace with the increase in the number of children in the relevant age group.

Gross Enrolment Rate (GER) is a measure of participation. It is the proportion of total pupils in a particular level of education, irrespective of age, to the total population of the corresponding school age. In Kenya, the gross primary school enrolment ratio is the number of pupils in primary school divided by total population of the primary school going-age (6-13 years). Kenya's policy on enrolment has been geared towards universal education. Over the 1990s, the primary school gross enrolment rate has been declining over time and across the regions. It declined from 101.8% in 1990 to 88.32% in 2001 (Table 3.2). The completion rate has been below 50% throughout the period 1989-1999. This implies that over 50% of the children enrolled in Standard 1 drop out before completing Standard 8. This indicates a fairly high dropout rate in between these levels.

**Table 4.1: Primary school gross enrolment rates by sex: 1989-2000**

| Year | Enrolment ('000) | | | Population aged 6-13 years ('000) | | | Gross enrolment rate (%) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Boys | Girls | Total | Boys | Girls | Total | Boys | Girls | Total |
| 1989 | 2,766.0 | 2,628.1 | 5,394.1 | 2,569.7 | 2,547.6 | 5,117.3 | 107.6 | 103.2 | 105.4 |
| 1990 | 2,766.4 | 2,625.9 | 5,392.3 | 2,659.1 | 2,637.3 | 5,296.4 | 104.0 | 99.6 | 101.8 |
| 1991 | 2,797.1 | 2,659.0 | 5,456.1 | 2,996.0 | 2,971.0 | 5,967.0 | 93.4 | 89.5 | 91.4 |
| 1992 | 2,806.8 | 2,723.4 | 5,530.2 | 3,052.0 | 3,025.0 | 6,077.0 | 92.0 | 90.0 | 91.1 |
| 1993 | 2,761.1 | 2,667.5 | 5,428.6 | 3,106.0 | 3,075.0 | 6,181.0 | 88.9 | 86.7 | 87.8 |
| 1994 | 2,814.8 | 2,742.2 | 5,557.0 | 3,158.0 | 3,123.0 | 6,281.0 | 89.1 | 87.8 | 88.5 |
| 1995 | 2,802.3 | 2,734.1 | 5,536.4 | 3,207.0 | 3,168.0 | 6,375.0 | 87.4 | 86.3 | 86.8 |
| 1996 | 2,843.4 | 2,754.3 | 5,597.7 | 3,258.0 | 3,220.0 | 6,478.0 | 87.3 | 85.5 | 86.4 |
| 1997 | 2,934.0 | 2,830.9 | 5,764.9 | 3,306.0 | 3,270.0 | 6,576.0 | 88.7 | 86.5 | 87.7 |
| 1998 | 2,994.6 | 2,925.2 | 5,919.7 | 3,352.0 | 3,316.0 | 6,668.0 | 89.3 | 88.2 | 88.8 |
| 1999 | 2,993.1 | 2,874.6 | 5,867.7 | 3,395.0 | 3,360.0 | 6,755.0 | 88.2 | 85.6 | 86.9 |
| 2000 | 2,978.1 | 2,904.6 | 5,882.7 | 3,364.0 | 3,317.4 | 6,681.4 | 88.6 | 87.6 | 88.1 |

Source: Economic Survey and Statistical Abstracts (various issues)

The decline in enrolment is due to the deepening poverty and adverse effects of structural adjustment programmes (SAPs) which led to the introduction of cost sharing in primary schools and therefore rendered access to education by the poor more difficult.

As to the gender issue, male pupils have higher gross enrolment rates than their female counterparts at the national level, but there are regional variations–some provinces have higher female gross enrolment rates than males. Between 1990 and 1998, the gross enrolment rate for girls in Central Province was consistently higher than that for boys.

The quality of additional school facilities (such as classrooms, teachers houses, resource centers) and the rate at which they are provided may be an indicator of the quality of education. The number of primary school classes increased throughout the 1990s with the annual increase ranging between 1 and 2%. Optimum class size is an important issue in the debate on the efficiency and expenditure of an education system. Such a class size, however, is difficult to establish. Some scholars have argued that no optimum class size exists.

Evidence shows that primary school class size over the 1990s is adequate for the primary school-going age population. For instance, if the whole primary school-going age population were enrolled in school, the national class size would have been 36 in 1999–far below the maximum recommended class size of 50 pupils (Deolalikar, 1998). There are variations across regions with North Eastern Province having the highest average potential class size of 137 pupils, followed by Nairobi with 67 pupils per class for the 1990-99 period. If the whole primary school-going age population were to be enrolled in school in the two provinces, more investment in primary school expansion would be required.

The manner in which a teacher manages a class is more important than the class size. Teachers play a crucial role in imparting knowledge to children. The quality of teachers and the pupil teacher ratios are some of the factors that influence education outcomes. For instance, inferior quality teaching may influence parents to remove their children from school. In a participatory poverty assessment in Ghana, parents were found not to willingly send their children to school due to inferior quality of teaching and teacher absenteeism. The ILO/IPEC considers a 40:1 pupil-teacher ratio reasonable in developing countries. According to Wolff (1984), if average

student-teacher ratios were increased to 40, unit cost would fall by 7-48% points. Other studies have shown that an appropriate supply of textbooks improves student achievement (Kremer, 1998), albeit marginally, but may still have a greater effect on achievement than lowering the student-teacher ratio.

In Kenya, the pupil-to-teacher ratio is highest in North Eastern Province, followed by Western Province (Kimalu *et al*, 2001b). In 1999, the national pupil-to-teacher ratio was 32.26 for both trained and untrained teachers and 33.56 for trained teachers only. Since any ratio below 40 indicates quality education, then education in Kenya can be considered to be of of good quality. A look at the provinces indicates that North Eastern Province has a pupil/teacher ratio exceeding 40, an indication that more investment is needed there to upgrade the quality of education.

**Table 4.2: Primary schools pupil/teacher ratios by province**

| Province | 1990 | 1991 | 1992 | 1993 | 1994 | 19951996 | | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|---|---|---|---|
| Central | 32.74 | 33.34 | 33.43 | 33.36 | 33.39 | 33.30 | 33.27 | 33.50 | 32.12 | 33.51 |
| Coast | 35.10 | 33.90 | 33.72 | 32.71 | 31.48 | 30.54 | 31.16 | 40.18 | 31.58 | 33.64 |
| Eastern | 29.91 | 29.92 | 30.69 | 29.23 | 27.82 | 27.19 | 28.47 | 28.03 | 28.60 | 30.50 |
| N/Eastern | 35.81 | 34.50 | 33.46 | 32.24 | 38.80 | 27.86 | 38.76 | 35.77 | 38.26 | 40.65 |
| Nairobi | 33.23 | 35.59 | 36.91 | 33.69 | 32.60 | 31.61 | 30.57 | 30.42 | 30.98 | 33.10 |
| Nyanza | 29.71 | 30.29 | 30.93 | 32.59 | 32.84 | 30.68 | 27.90 | 30.57 | 30.89 | 30.76 |
| Rift Valley | 30.16 | 30.26 | 29.83 | 29.19 | 30.05 | 29.59 | 29.15 | 27.93 | 28.78 | 30.72 |
| Western | 32.60 | 33.56 | 32.59 | 33.52 | 33.05 | 33.43 | 33.79 | 35.43 | 34.32 | 36.17 |
| National | 31.15 | 31.47 | 29.86 | 31.38 | 31.20 | 30.47 | 30.19 | 30.90 | 30.78 | 32.26 |

Source: Ministry of Education, Science and Technology, 2000

The number of teachers in a system has implications on the resources of the country. The higher the number of teachers, the higher the financial resources required and vice versa. Lower pupil/teacher ratios will lead to greater numbers of teachers and a significantly higher Government wage bill. The current allocation of resources within the education sector seems inappropriate and ineffective. More than 75% of the education budget goes to teachers' salaries. Within the primary and secondary school budgets, teachers' salaries account for 95–97% of recurrent expenditure. As a result, there are hardly any public resources left for other school requirements such as learning materials and textbooks.

The secondary education system in Kenya consists of four years, with the official school-going age lying between 14 and 21 years. The transition rates

from primary to secondary school education are very low (Table 4.3). Access to secondary school education is constrained by the limited number of secondary schools and the high cost of secondary school education against the background of deepening poverty. The overall gross enrolment rate declined from 30% in 1989 to 21.5% in 1999. The gross enrolment rate for boys in secondary schools declined from 35.5% in 1989 to 22.5% in 1999. Secondary school gross enrolment for girls was lower than for boys at 24.3% in 1989 and 20.5% in 1999.

**Table 4.3: Primary to secondary school progression rates: 1994-1999**

| | Primary Std. 8 ('000) | | | | Secondary Form 1 ('000) | | | Progression rate % | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | Boys | Girls | Total | Year | Boys | Girls | Total | Boys | Girls | Total |
| 1994 | 212.5 | 190.3 | 402.8 | 1995 | 96.4 | 83.6 | 180.0 | 45.3 | 43.9 | 44.7 |
| 1995 | 211.6 | 194.0 | 405.6 | 1996 | 97.4 | 85.9 | 183.3 | 46.0 | 44.3 | 45.2 |
| 1996 | 217.3 | 199.0 | 416.3 | 1997 | 98.5 | 88.6 | 187.1 | 45.3 | 44.5 | 44.9 |
| 1997 | 220.5 | 207.1 | 427.6 | 1998 | 102.4 | 92.8 | 195.2 | 46.4 | 44.8 | 45.7 |
| 1998 | 221.0 | 215.3 | 436.3 | 1999 | 89.6 | 84.3 | 173.9 | 40.5 | 39.1 | 39.9 |

Source: Ministry of Education, Science and Technology, 2000

## 4.3 Expenditure on Education

Since independence, education in Kenya has been given a very high social priority. As a result, the system has been developed at a cost which, in terms of its share in GDP, stood at 7.1% in 1994. This cost is considered one of the highest in the world. According to UNESCO (1999), Kenya's expenditure on education was 6.7% of GNP in 1995 compared to 5.1, 4.7, 4.0 and 2.6% for Burundi, Egypt, Ethiopia and Uganda respectively. The introduction of the 8-4-4 system of education in 1985 and the cost sharing measures implemented in 1988 led to escalation of private costs of schooling at all levels of the school system. At primary school level, parents meet part of schooling expenses–mainly development expenses–with Government meeting recurrent costs, particularly the salary of teachers. Due to increased cost of education, parents especially from poor communities cannot afford to educate their pupils and this may have partly contributed to high drop out rates in schools.

In many countries, public education systems have suffered in recent decades from severe fiscal constraints and loss of internal efficiency, creating

opportunities for the private sector to thrive. Education being an investment in human skills requires considerations of the attendant costs and returns. Education expenditure refers to the financial disbursements to educational institutions for the purchase of various resources or inputs of the schooling process such as administrators, teachers, materials, equipment, and facilities (OECD, 2000). Education expenditure per student, educational expenditure as a percentage of Gross Domestic Product (GDP), and educational expenditure as a percentage of total public expenditure, among other things, serve as indicators of a country's financial commitment to education. These indicators show the cost of schooling at different education levels.

Generally, educational expenditure is divided into recurrent and development expenditure. Recurrent expenditure comprises financial outlays on school resources used each year for the operation of schools. On the other hand, development expenditure consists of outlays on assets that last longer than a year, and includes spending on the construction, renovation, and major repair of buildings.

In Kenya, public expenditure on education (recurrent and development) has declined in real terms since 1989 even though education share as a percentage of Government outlays across all sectors has been increasing. Recurrent expenditure absorbs most of Government revenue leaving very few resources to invest in expanding public schools. School costs are met by a combination of fees charged to parents, subsidies provided by the Government to public schools, and by grants from benefactors. According to a Ministry of Education study (Karani, 1995), the mean per student costs in public secondary schools amount to US$ 300 per annum compared to a mean of only US$ 190 in private secondary schools.

The contribution of parents to their children's education ranges from 35% to 65%, depending on the location of the school (Abagi, 1997). Expenditure per student are largely related to instructional costs and include all expenditure dealing with activities involved in teaching process, such as salaries, fringe benefits, and instructional supplies. The Government spends Kshs 2,774 annually on a primary school child, while the per capita expenditures at secondary and university levels are Kshs 9,418 and Kshs 115,812 respectively (Abagi, 1997). According to Deolalikar (1998), Kenya appears to be spending significantly more on education than would be expected at its level of per capita GDP, given the observed relationship

between public expenditure on education and per capita income across selected African countries.

Results from the Welfare Monitoring Survey (WMS III) of 1997 shows that households spend about Kshs 712 (US$ 38.49)[4] and Kshs 1150 (US$ 62.16) in public primary and private primary schools respectively, and about Kshs 9643.30 (US$ 521.26) and Kshs 10,208 (US$ 551.78) per student yearly at the public and private secondary schools, respectively (Kimalu *et al*, 2001). Therefore, the parental contribution to education of a pupil in a public primary school constitutes about 26% of the total per pupil expenditure at the primary school level.

## 4.4 Gender Disparities in Education

Gender plays a major role in determining opportunities available to children within a household. Gender disparity in education tends to be greatest among the poor. A recent study in 41 countries for school enrolment of boys and girls indicates that within countries, gender disparities in school enrolment are more common among the poor than non-poor. Therefore, poverty compounds the disadvantages of girls to equal education with boys. Gender disparities exist in enrolment, retention and participation at all levels of education. To correct this worrying trend, the Government must put in place measures to close the gender gap in primary and secondary school education, increase the enrolment and retention rates and provide universal primary education by 2015.

The ILO estimates that about 27% of 5-14 year old boys are economically active compared to 22.3% of girls worldwide. One problem of child labour statistics is that not all forms of work are counted as economic activity. In most cases, domestic work that would be considered as child labour is usually excluded. Since girls are more likely to perform that type of work than boys, they may be undercounted in estimates of child labour. When working is defined to include economic activity and housekeeping or home-making services, child labour disproportionately affects boys than girls in most countries. Similarly, Knaul (1998) reports that in Mexico among all children and youth aged 8-17 years, 7.6% of young women as compared to

[4] Purchasing Power Parity (PPP) conversion factor in 1997 was Kshs 18.5 per 1 US$

16.8% of boys were employed in market-based work. On the basis of official statistics, child labour seems biased against boys.

The standard definition of employment leaves out the work undertaken in a child's own home that does not directly lead to production of commercial goods. Including housework in the definition of child labour would substantially increase the rates of work activity among female children and youth. In 1990, an average 6-year-old girl in low or middle-income country could expect 7.7 years of schooling, up from 6.7 years in 1980. The gap between boys and girls is widest in south Asia where in 1990 a girl could expect 6 years of school and a boy 8.9 years.

In Kenya, the national enrolment of girls at primary school has greatly improved but great variations between enrolment of girls and boys still exist regionally, with North Eastern Province showing the worst disparity (IEA/SID, 2001). Evidence has shown that boys have higher enrolment rates than their female counterparts though females have higher enrolment rates than males in some provinces.

**Table 4.4: Primary school gross enrolment rates by sex (%)**

| Year | Boys | Girls | Total |
|---|---|---|---|
| 1990 | 94.16 | 90.21 | 92.19 |
| 1991 | 93.30 | 89.40 | 91.40 |
| 1992 | 93.07 | 90.00 | 91.54 |
| 1993 | 88.83 | 86.84 | 87.84 |
| 1994 | 89.13 | 87.83 | 88.49 |
| 1995 | 87.35 | 86.25 | 86.80 |
| 1996 | 87.33 | 85.54 | 86.44 |
| 1997 | 88.61 | 86.60 | 87.61 |
| 1998 | 89.36 | 88.24 | 88.80 |
| 1999 | 88.11 | 85.71 | 86.91 |

Source: Ministry of Education, Science and Technology, 2000

In 1990, gross enrolment rate for girls in Central Province was 104.5% compared to 102.7% for boys. Between 1990 and 1998, the gross enrolment rate for girls in Central Province was considered higher than that for boys. Female gross enrolment rate was 97.9% in Eastern Province during the same year, while male gross enrolment was 95.8% (Kimalu *et al*, 2001b).

Analysis at provincial and district levels shows prevalent gender gaps in education. North Eastern Province has the greatest disparity with 25.9% of boys enrolled compared to only 12.7% of girls. In Mandera District, 19.4%

of the boys and 12% of girls are enrolled in primary schools. In Eastern Province, participation of girls is higher than that of boys except for Marsabit and Isiolo. In Embu, for example, 87.1% of girls and 84.1% of boys are enrolled. In Machakos, the proportion is 88.3% girls to 86.8% boys. In Coast Province, the biggest gender disparity is found in Kwale (53% girls and 67.8% boys), Mombasa (70.7% boys and 64.2% girls) and Tana River (43.3% boys and 36.3 % girls) (Abagi *et al*, 1997).

## 4.5 Benefits of Education

Education is a profitable investment for individual graduates who earn more than they would otherwise, and for the society which is enriched not only by the knowledge of the educated people but also by the higher taxes they pay. These benefits extend from the student's present household, future households and to the economy as a whole. Investment by governments may be most appropriate where public benefits are likely to be high, while individuals and enterprises need to take substantial responsibility for learning that which yields high private returns (OECD, 2000). Education benefits can be divided into micro and macro level benefits.

**Micro-level benefits**

Econometric evidence (Manda *et al*, 2002) shows that an increase in average human capital for both males and females has a positive impact on earnings of all workers.

Table 4.5 shows returns to education in Kenya at national, regional and gender levels. The private returns to education generally increase with the level of education. At the national level, the rate of returns to primary education is 7.9%, 17.2% for secondary education and 32.5% for university education (Manda *et al*, 2002). Further, Wobmann and Langhammer (2000), in their study on child labour and its impact on human capital, compare real interest rates to rates of return to education. Their results indicate that in 12 out of 15 cases, the returns to investment in human capital are beyond the alternative rate. They suggest that the returns to investment in education are far much likely to exceed those to alternative forms of investment.

Education has also been identified as one of the most powerful tools that can be used to fight poverty and therefore help in eliminating child labour. Nevertheless, some would argue that child labour is both a cause and a

**Table 4.5: Private returns to education**

| | Primary | Secondary | University |
|---|---|---|---|
| National | 7.9 | 17.2 | 32.5 |
| Urban | 4.4 | 21.3 | 48.5 |
| Rural | 8.3 | 16.3 | 23.0 |
| All males | 11.0 | 17.8 | 35.2 |
| Urban males | 7.4 | 21.8 | 43.7 |
| Rural males | 11.1 | 16.7 | 29.7 |
| All females | 5.7 | 15.8 | 32.2 |
| Urban females | 2.1 | 21.1 | 70.2 |
| Rural females | 6.9 | 15.1 | 15.9 |

Source: Manda *et al*, 2002

consequence of poverty. Their view is that children who have to work cannot go to school; they keep being dependent on low educated, poorly paid and unhealthy work once they are grown up. Work that ruins children's health or that denies them a chance to receive education certainly makes it more likely that they will stay poor in future. To break this circle, emphasis is put on education as the most effective way to combat child labour.

Women make up nearly half of the world's agricultural workforce and up to 80% in parts of Africa. Simply increasing women's primary education could increase agricultural output by a staggering 24% (World Bank, 1998). Education not only helps women achieve higher productivity but also enhances their social and professional status, and further enables them to implement measures to protect the environment. In addition to being productive in market work, educated women also choose to have fewer children and therefore smaller families. Econometric studies within individual countries looking at the effects of education on fertility find that an extra year of female schooling reduces female fertility by 5-10%. This is partly a consequence of effects of education on attitudes to contraception and also a consequence of education lowering poverty, as the latter is associated with high fertility rates. Education may change perceptions of the costs and benefits of having children and also influence the age of marriage and the age of first birth. Educated women are also better equipped to enter paid labour force which is critical to the survival of many female-headed households in developing countries.

Education also increases the willingness to seek medical care and improves sanitation practices. Better-educated mothers may generate higher incomes

and therefore improve the nutrition of the household. Educated parents, particularly mothers, have better nourished children who are less likely to die at infancy relative to children of uneducated parents. The best available estimates suggest that on average, one additional year of schooling for a mother results in a reduction of 9 per 1000 in child or infant mortality. By increasing knowledge about healthcare practices and reducing the average pregnancies of women, female education increases the use of maternal healthcare and significantly reduces the risk of maternal mortality.

**Macro-level benefits**

The fact that human capital is an important factor contributing to poverty reduction and therefore output implies that education has many effects that accrue to others, beyond the individual investor. At the national level, the use of child labour in great numbers slows down economic growth and social development. The continuous lack of adequate education and development perpetuates poverty and forms a barrier to socio-economic progress. An improvement of equal opportunity, in particular for poor population groups, can be reached on the one hand by safe access to social services such as basic education, vocational training, and health services, although it on the other hand requires easier access to complementary productive resources such as land, capital, and know-how, coupled with participation and a share in the political and economic decision-making processes.

Africa is a continent with the highest growth in poverty. A reversal of the negative trends in Africa's social development and a tangible reduction of poverty, in particular rural poverty, can only be expected if economic processes, including agricultural growth processes, get underway in such a way as to allow participation of the majority poor. Safe access to productive resources (credit, land, adapted technology) and affordable basic education and healthcare are as much prerequisites as are equal opportunity.

# 5. CHILD LABOUR AND CHILD HEALTH

This section analyses the hazardous working conditions in which children are involved. Further, it looks at the main injuries/illnesses affecting working children, medical care of children, and the impact of HIV/AIDS on child labour. Child labour is recognized as a global health problem, but research on the health impacts of child labour is still limited. Very few studies, if any, have been done to assess the impact of child labour on the health of working children. Graitcer and Lerer (1998) and Murray and Lopez (1996) have summarized the existing information on child labour and its impact on health by extrapolating data from the global burden of disease study. They estimated mortality, morbidity and disability associated with child labour. The study found that child labour impacted negatively on the health of children.

## 5.1 Child Labour in Hazardous Conditions

Child labour takes many forms, with some classified as worst forms. As mentioned earlier, Convention 182 defines the worst forms of child labour. Article 4 of the Convention calls for the national determination of hazardous work (ILO, 1999b). In determining hazardous work, consideration should be given to the various types of work which are hazardous to children: work which exposes children to physical, psychological or sexual abuse; work underground, under water, at dangerous heights or in confined spaces; work with dangerous machinery, equipment and tools or which involves manual handling or transport of heavy loads; work in unhealthy environments which may, for example, expose children to hazardous substances, agents or process, or temperatures, noise levels or vibrations damaging their health; and work under particularly difficult conditions such as working for long hours or during the night or work where the child is increasingly confined to the premises of the employer (ILO, 1999b, Anker, 2000). Some of the hazardous work among working children is identified in the following occupations.

**Agriculture**

Agriculture has high rates of occupational injury and a disproportionately high number of children are killed and severely injured on farms (Wilk 1993). The reasons for these injury and illness rates on farms include

exposure to hazardous materials such as pesticides (US Department of Labour, 1995). In addition Wilk (1993) notes that poor children working on farms are exposed to bad housing, limited access to water and sanitation, and often have unsafe transportation. In developing countries, children on farms as well as among migrant labourers in high-income countries are exposed to chemicals, pesticides and herbicides. In Kenya, working children in plantations have poor housing, lack adequate food and clean water and lack protective facilities in the work place, which affects their health.

**Manufacturing**

In some Asian countries, children work in dangerous industries such as mining, glass smelting and metal recycling. They are exposed to a variety of toxic agents such as mercury during gold washing (Harari, Forastiere and Axelson 1997). In industrialized countries, children of illegal immigrants in large metropolitan areas can be employed in sweatshops working in cramped and dangerous conditions (Postol, 1993). Very few children work in the manufacturing industry in Kenya. However, the few working in this sector are exposed to the worst forms of child labour.

**Household services**

The social status of the girl-child, especially on the Indian sub-continent and sub-Saharan Africa (SSA) condemns many children to life in domestic service (Spivak, 1998). Work in and around the house includes food preparation, cleaning and washing and smallscale agriculture. The World Bank estimates that between 400-700 million children are exposed to severe indoor air pollution, mostly from cooking fires. Domestic work may result not only in health hazards but may also account for lost educational opportunities and increased vulnerability to poor nutrition as well as sexual and domestic violence (UNICEF, 1997). Many children in Kenya are involved in domestic work, often for long hours without water and food, and are poorly remunerated. Above all, these children are not protected from hazardous work and suffer from breathing problems, chest pains, injuries and skin infections.

**Forced and bonded labour**

Children may be found in virtual slavery working under harsh, monotonous conditions. In the carpet weaving industry, ergonomic factors can result in permanent deformities (UNICEF, 1997).

**Sex trade**

This form of child labour is the subject of international interest (US Department of Labour, 1995; UNICEF, 1997). Poverty and lack of education coupled with demands of sexually repressive societies and sex tourism have resulted in increasing numbers of young children becoming involved in commercial sex-work. The health implications in light of the HIV epidemic, both from a medical and psychological aspect, are great. The Kenyan coastal region, Nairobi and other towns in Kenya have high incidences of commercial sex exploitation of children. A number of NGOs, the Children's Department in the Ministry of Home Affairs, and the International Programme for Elimination of Child Labour (IPEC) have reported incidences of sex trade among young girls in Kenya.

**Street work**

UNICEF (1997) argues that begging, selling, scavenging and criminal activity have a wide variety of health risks. Even seemingly safe occupations, such as shoe cleaning, can be dangerous for children due to exposure to toxic solvents (Harari, Forastiere and Axelson 1997). Many children work in hazardous conditions in cities and towns in Kenya. In these places, children survive by begging, scavenging, drug trafficking, among other things. These activities endanger their lives and majority of them die at a tender age.

## 5.2 Epidemiology of Child Labour in Kenya

The main work-related hazards described by the children in a UNICEF (2001a) study include cuts and wounds from pruned coffee and tea bushes, long working hours, lifting of heavy loads, exposure to farm chemicals, lack of drinking water, lack of toilets, and excessive noise in the workplace. Several children had broken a limb after falling off a fruit tree. Many had been bitten by spiders and stung by mosquitoes and wasps as they worked in the bushes. The absence of even the most basic medical care caused simple wounds to become infected. Eye and ear infections were common, as were skin allergies from exposure to pesticides and other chemicals. Moreover, most of the children worked without the bare minimum of protective gear, such as gumboots, gloves, raincoats and overcoats.

**Table 5.1: Number of working children by type of injury or illness**

| Type of injury/disease | Number | Percent |
|---|---|---|
| Limb injury | 29267 | 15.0 |
| Eye/ear infection | 764 | 0.4 |
| Skin infection | 2439 | 1.3 |
| Back problem | 1134 | 0.6 |
| Breathing problem | 11831 | 6.1 |
| Other injuries/diseases | 130578 | 67.2 |
| Not stated | 18315 | 9.4 |
| Total | 194329 | 100.0 |

Source: Government of Kenya (2001b)

Table 5.1 shows injuries and illnesses due to child labour in Kenya based on the child labour survey carried out by CBS in 1998/99 (GoK, 2001b). Limp injury accounts for the largest number (29,267)of identified ailments among working children, followed by cases of breathing problems (11,831). Most of the reported cases of limb injuries were in agriculture, fisheries and related activities. Other diseases which were not specifically identified in the survey accounted for a total of 130,578 cases.

## 5.3 Medical Care of Children Involved in Child Labour

Some of the children injured or who fall sick on duty do not seek medical treatment at all even when the injury/disease is severe. Employers often neglect many children injured at work. In some cases, children themselves take care of their own inpatient and outpatient treatment. In other cases, the parents take care of the treatment for injuries/illnesses arising from their working children. A study done in Egypt revealed that there were significant differences in how school children and working children paid for their medical care. Among the school-going children, the family paid 74.8% of children's medical care while school insurance cover paid for about 13.5%. Among the working children, own families paid 57.6% of medical bills while the child's employer paid 6.4%. About 12.8% of the children paid their own medicare bills.

In general therefore, employers may want to minimize costs and are reluctant to take child workers for treatment. However, in some instances, employers offered inpatient treatment for some children. Data from the child labour survey carried out by the Central Bureau of Statistics (GoK,

2001b) shows that about 1,266 children or their parents paid for their own inpatient treatment in limb injuries. Most employers do not take any children with limb injuries to hospital because these injuries bear higher costs than skin diseases and infections. This evidence is also supported by the global burden of disease study carried out by Murray and Lopez (1996b). In the case of outpatient treatment, employers paid treatment for 26,385 children, while parents only paid for 365 cases. Overall, employers took 80.6% of the sick or injured to a medical facility either for inpatient or outpatient treatment. However, there were some cases where parents took the injured and sick children to health facilities and few cases where no action was taken for the injured children (Table 5.2).

On the distribution of children responses on who paid for medical treatment before rehabilitation (Table 5.3), parents paid 43.5% of total treatment. However, employers who use the labour provided by children paid only 1.7% of the medical cost. Relatives of the children paid 22.4% of the cost while 12.4% was paid by good Samaritans. Other organisations who paid for children treatment include religious and non-governmental organizations. Children's homes and centres took care of 5.3% of the total medical cost.

**Table 5.2: Number of working children by type of injuries/illnesses and action taken**

| Type of injury | Action taken | | | | | | |
|---|---|---|---|---|---|---|---|
| | No action | Inpatient | | Outpatient | | Other actions | Total |
| | | Employer | Parents/ self | Employer | Parents/ self | | |
| Limb injury | 1,251 | - | 1,266 | 26,385 | 365 | - | 29,267 |
| Eye/ear infection | - | 426 | - | - | 338 | - | 764 |
| Skin infection | - | 1,448 | - | - | - | 991 | 2,439 |
| Back problem | - | 909 | - | 225 | - | - | 1,134 |
| Breathing problem | - | 267 | - | 1,222 | 9,148 | 1,194 | 11,831 |
| Other injuries diseases | 553 | 5,681 | 1,144 | 104,435 | 10,236 | 8,530 | 148,894 |
| Total | 1,804 | 8,731 | 2,410 | 132,267 | 20,087 | 10,715 | 194,329 |

Source: Government of Kenya (2001b); (-) means data not available

**Table 5.3: Payers of medical treatment before rehabilitation**

| Payment for treatment | Frequency | Proportion (%) |
|---|---|---|
| Parents and guardians | 74 | 43.5 |
| Brothers and sisters | 4 | 2.4 |
| Other relatives | 38 | 22.4 |
| Good Samaritans | 21 | 12.4 |
| Religious organizations/NGOs | 4 | 2.4 |
| Self | 10 | 5.8 |
| Free | 7 | 4.1 |
| Homes/Centres | 9 | 5.3 |
| Employer | 3 | 1.7 |
| Total | 170 | 100.0 |

Source: Based on data collected by KIPPRA in 2002

## 5.4 Health Benefits from Eliminating the Worst Forms of Child Labour

Child labour can negatively affect a country's long term growth by hurting the health of workers. The health problems caused to child labourers, especially those working in hazardous activities, and the poor hygiene associated with scarce education translates, in the long run, into a less healthy and less productive adult labour force. Removing children from the worst forms of child labour will lead to reduced injuries and illnesses/diseases, implying that the cost of treatment on diseases/illnesses by households will be reduced. This has the possibility of increased social investment by the household, and especially on education.

# 6. METHODOLOGY

This section details the methods used to compute various costs and benefits of eliminating child labour in Kenya and also describes the data used. Projections for various variables used were made to obtain data for future years. The methodology used is basically similar to the one provided by ILO/IPEC on costs and benefits of eliminating child labour. The analysis contained in this study is based on 6-14 year-aged school-going children. The 6-13 year-aged children are in primary school while the 14-year-old children are regarded as being in lower secondary school (Form 1). Costs and benefits are presented at the household level, government level and national level. These are the units of analysis for this study. To analyse intervention programmes against child labour in Kenya, we undertook a field survey of institutional and non-governmental organizations involved in elimination of child labour in Nairobi and its neighbouring provinces.

## 6.1 Education Costs of Eliminating Child Labour

This section considers the additional costs of achieving universal primary education by 2015 and secondary education (Form 1) by 2020. The costs are incurred both on the supply-side and on the demand-side of education. We are interested with the total additional costs that include supply-side costs and demand-side costs. The costs are estimated using the formula below.

> Total additional costs = additional expenditure on the supply of primary education *plus* additional expenditure on the supply of lower secondary education *plus* additional expenditure on demand-side of education.

In carrying out various estimates, future demographic trends are taken into account. To arrive at the cost of providing universal primary education and Form 1 secondary education to all children aged 6-14, projections are made for children aged 6-14 years from 2001 to 2015 based on the 1999 national population census. The general formula used for projections was:

$$P_t = P_0 e^{rt}$$

where t is time, $r$ is the population growth rate for 1999, and $P_0$ is the base year population (1999).

Note also that data on expenditures (from recurrent and development expenditures) is reported in financial years (starting in July to June the following year), while the academic years start in January and end in December. To harmonize the financial years with the academic years, we converted the data reported in financial years to correspond with academic years. We used the formula given below:

$$z_t = \frac{y_{t-1} + y_{t_t}}{2}$$

where $z_t$ is annual expenditure on education, $y_{t-1}$ = expenditure on education in financial year t-1, and $y_t$ = expenditure on education in financial year t.

**(a) Supply-side costs**

Enrolment rates for both primary and lower secondary are useful in estimating the additional cost of supplying quality schooling to all children. The additional cost includes the recurrent expenditure, quality improvement expenditure, and capital expenditure required to get children who are not in school and are of school-going age (6-14) into primary and lower secondary schools. Therefore, additional cost on the supply of both primary education and lower secondary has the following elements:

- Recurrent expenditure to achieve net enrolment rate (NER)of 100%;
- Expenditure on quality improvement; and
- Capital expenditure.

The unit cost of supplying education of satisfactory quality and the unit cost of upgrading existing schools to this quality standard are calculated, where necessary. Using effective discount rates, the future increases in costs due to price changes are taken into account. The unit costs are then calculated for the relevant number of students.

The following approach was used to determine the supply-side costs for both primary and lower secondary school (Form 1); that is the cost of providing education services and the costs of using these services. The procedure used with regard to primary education is fairly similar to that used for the lower secondary.

**Cost of primary education**

(i) *Recurrent expenditure*

Since the net enrolment rate in Kenya is less than 100%, the additional recurrent cost of providing universal primary education to accommodate all children in age group 6-13 in schools by 2015 can be obtained using the formula:

> Additional recurrent cost of achieving NER 100% = (total primary enrolment in 2015 x expenditure per pupil in 2001) *minus* (total primary enrolment in 2001 x expenditure per pupil in 2001)

Expenditure per student are largely related to instructional costs and include all expenditures involved in the teaching process, such as salaries, fringe benefits and instructional supplies.

*(ii) Quality improvement costs*

To calculate expenditure on quality, the additional cost of achieving pupil teacher ratio of 40, additional non-wage expenditure, and the cost associated with HIV/AIDS were considered.

The *non-wage* recurrent expenditure includes expenditure on textbooks, other purchases of instructional materials by the Kenya School Equipment Scheme, School Feeding Programme and the expenditure on teacher training. It is noted that the percentage of non-wage expenditure in the total recurrent expenditure in Kenya is quite small (less than 4% of the total recurrent expenditure).

It was impossible to calculate other educational personnel costs, due to difficulties in disaggregating the personnel data from the Ministry of Education, Science and Technology. Also, data on optimal pupil to non-teaching personnel ratio which is necessary for projecting the required non-teaching personnel in 2015 is not available. Therefore, the additional non-wage expenditure was calculated by using 15% of the recurrent cost rule. Additional non-wage expenditure includes the cost of teacher training. The formula used to obtain non-wage expenditure is:

> Additional non-wage expenditure = (total recurrent expenditure 2015) * 0.15/0.85 of non-wage expenditure 2001

*Teacher costs*: The pupil-teacher ratio in Kenya lies below 40, but with disparities across the regions. The additional cost of achieving a PTR of 40 is excluded from our analysis since the pupil-teacher ratio is below 40.

Though HIV/AIDS has a big impact on education, data on its impact on education in Kenya is not available. Therefore, the additional educational costs due to these diseases are difficult to compute. With the knowledge of the impact of HIV/AIDS on education expenditure in Mozambique, and using the estimates for HIV/AIDS prevalence rates in 2001 for Kenya and 1999 for Mozambique, we are able to arrive at an approximation of its impact on education expenditure. The expenditure impact of HIV/AIDS is taken to be constant across education levels.

Assuming **m** = HIV/AIDS prevalence rate in Mozambique (1999), **k** = HIV/AIDS prevalence rate in Kenya, and **y** = impact of HIV/AIDS on education expenditure in Mozambique, then **x**, the impact of HIV/AIDS in Kenya is estimated as follows:

$$x = \frac{y \times k}{m}$$

From the above expression, the additional expenditure required for primary education as a result of HIV/AIDS is **x** *times* the total recurrent costs in 2001. However, since data on future national HIV/AIDS prevalence rate is lacking, computations on the impact of HIV/AIDS on education is excluded from our analysis.

Adding up the costs of non-wage inputs and additional teachers, we obtain the total additional expenditure associated with quality improvement in the schooling of children.

*(iii) Capital expenditure cost*

Given the projected net enrolment for 2015, and taking into account the recommended maximum class size of 50, we determined the additional number of classrooms required, $\mathbf{X_t}$ using the formula:

$$X_t = \frac{E_{2015}}{50} - X_{2001}$$

where, **X**= additional number of classrooms by year 2015, $E_{2015}$ = primary school enrolment to achieve NER 100% in 2015 (for the age group 6-13),

$X_{2001}$ = Number of classrooms in 2001, and 50 is the recommended class size in Kenya.

The cost estimates for constructing a classroom was obtained from the Community Trust Development Fund (CDTF), which is a partnership between the Government of Kenya and the European Union Development. The Fund is involved in developing projects across the country and has cost estimates for constructing school facilities by region. The cost of building a class varies with the region. In addition to computing the cost of putting up a classroom, we also took into consideration the cost of desks and other facilities necessary for both secondary and primary school levels. The cost of improvement and upgrading of school facilities was estimated by calculating the additional expenditure for the extra facilities required using the expression:

> Additional capital expenditure = number of additional new buildings and facilities x capital unit cost

**Cost of secondary education**

For the lower secondary school costs, a similar methodology as for the primary school costs was used, though the data was different. The teacher costs and HIV/AIDS-related costs are omitted in the calculations. Therefore, costs were made with respect to recurrent expenditure and quality improvement for this particular part.

**(b) Demand-side costs**

Under the ILO/IPEC (2001) methodological framework, the demand-side costs include the income transfer programmes and other promotional programmes. The following procedure was used to calculate the unit costs and total costs of income transfer programmes for the target populations.

*The cost of income transfer programmes*

Data from the 1997 Welfare Monitoring Survey was used to determine the number of households below the poverty line in 2001. The poverty gap estimates for 2001 were used to calculate the average resources needed to lift poor households from poverty to income levels that enable them to just meet the cost of basic necessities of life (Mwabu *et al*, 2002); that is the average income transfer required for each household in order to eliminate poverty was computed.

Mwabu *et al* (2002) used the Foster, Greer and Thorbecke (FGT) poverty measure to quantify the level, depth and severity of poverty as follows:

$$P_\alpha = \frac{1}{N}\sum_{i=1}^{q}(1-\frac{Y_i}{z})^\alpha$$

where

$Y_i$ is the total expenditure of household $i$, expressed in per adult equivalent (i= 1…..N)

$P_\alpha$ is a measure of absolute poverty, including food poverty,

$z$ is the poverty line, expressed in per adult equivalent,

$q$ is the total number of poor households,

N is the total number of households, and

$\alpha$ is the FGT parameter, which may be interpreted as a measure of poverty, and has a value of 0, 1 and 2.

For α, we get the percentage poverty gap. This is a measure of average shortfall of the average incomes of the amount by which the incomes fall below the poverty line, with that amount being expressed as a percentage of the poverty line. We used the poverty gap to compute the amount of income transfer that can be used to bring the expenditure of every poor household to the poverty line. In this way, absolute poverty line can be eliminated.

To compute the size of subsidy associated with the income transfer programme, we followed the steps in the methodological framework provided by the ILO/IPEC (2001). This was obtained as follows:

- We used the official poverty line to determine the number of poor households. The national poverty line and poverty gap estimates (2001) are based on the 1997 Welfare Monitoring Survey III data.
- The number of poor households and the poverty gap were then projected for 2001 using the 1997 data. We used the proportion of poor households with children aged 6-14 to the total poor households to obtain the number of poor households with children aged 6-14 years in 2001.

- Using the average number of children per poor household (assuming this remains constant since 1997), we obtain the total number of children aged 6-14 years from poor households.
- The average opportunity cost is calculated using data from the CBS Child Labour Report (1998/99).
- The hypothetical income transfer is equal to 80% of the opportunity cost of children's work. This amount, multiplied by the average number of children per household, raises the household income above the poverty line. This creates a basis for us to use 60% of the opportunity cost as the unit transfer regardless of whether or not this leads to overfilling of the poverty gap.
- The gross transfer effected by this programme is the product of the estimated unit transfer, and the number of children from poor families (note that a poor household with say three children is counted as three households).
- The gross transfer was taken to be the transfer of interest because there was no reliable data on existing transfers and we arbitrarily set any such transfers equal to zero.

The unit administrative costs[5] are set at 5% of the unit transfer. We obtained gross administrative costs by multiplying the average administrative costs per child by the total number of children aged 6-14 years from poor households.

**Campaigns/promotional programme costs**

The unit cost of these programmes was calculated from data collected by KIPPRA in 2002. The dataset contains information on costs of campaigns and promotional programmes. Unit cost is simply total cost divided by the number of children reached by the programme.

We use the average cost for these programmes over the spectrum of institutional cost data. To arrive at the total cost of these programmes, we multiplied the number of children who needed exposure to such programmes by the unit cost.

[5] The administrative costs are the real economic resource costs. It is therefore instructive to keep this cost separate from the transfer costs.

**Waves**

Since elimination of child labour will take place over time, some of the computations are based on waves of numbers of children to be withdrawn from the labour market or rehabilitated over a given time period. Therefore, the study adopts the "waves methodology" to calculate the costs required to complete various targeted interventions in line with the overall goal of complete elimination of child labour.

Each wave represents a set of interventions that reduce the incidence of specific types of child labour. Each wave takes a five-year period and the first wave starts in 2001. The first wave envisages 50% prevention of the worst forms of child labour in its entirety, and the transfer of one–third of child labourers of primary school age to education. This may, however, require transfer of children from the worst forms of labour to other sorts of labour if the universal child education goal has not been achieved. There is an optional addition to wave 1: the withdrawal from and rehabilitation of half of all children in worst forms of child labour. Wave 2 completes prevention[6] of all the worst forms of child labour and the transfer of an additional third to full time child labourers of primary school age to education and the transfer of a third of lower secondary school age to education. This wave also includes an option of withdrawal of the remaining half of all children currently engaged in worst forms of child labour.

In wave 3, there will be transfer of children from work to education and the reduction (transfer of the last third of full time child labourers of primary school-going age to education and an additional third of the lower secondary school-going age to school) identical to wave 2. This will result in full primary school enrolment. Wave 4 achieves universal participation of children in education both in the primary school and also in the lower primary. Here no work interferes with successful school performance at any level.

To compute costs that are relevant for each wave, discounting is necessary. The study makes use of effective discount rates that are computed with the knowledge of the real discount rate and the average real growth rates.

[6] Prevention does not constitute withdrawal from child labour or rehabilitation.

This study adopts a "consumption rate of interest" discount rate of 5% as the real discount rate. The formula for the effective discount rates is:

> Effective discount rates = real discount rates – average real growth of factor prices.

Taking **g** as the growth rate of a variable we are measuring over time, and **r** the discount rate, we estimate the parameter **a** to be able to calculate values of relevant variables for various waves. Parameter **a** is defined as shown in the following expression:

$$a = \frac{1+g}{1+r}$$

Assuming **x** is the initial value of the variable being measured, the present value of **x** for the various periods or waves is computed using the following formula:

For the first wave the present value of **x** for the first five years is:

$$\frac{x(1-a^5)}{(1-a)}$$

For the second wave, the present value of **x** is:

$$\frac{x a^5 (1-a^5)}{(1-a)}$$

For the third wave the present value of **x** is:

$$\frac{x a^{10} a(1-a^5)}{(1-a)}$$

For the fourth wave, the present value of **x** is:

$$\frac{x a^{15}(1-a^5)}{(1-a)}$$

Though the discount rate is the same for each wave, the growth rate is different for different variables. The growth rate for the period envisaged in the study, 2001 to 2015, is computed using the formula:

$$Y_t = Y_0(1+g)^n$$

where **g** is the growth rate, $Y_o$ is a base year of variable of interest (for example education recurrent expenditure in 2001), $Y_t$ is the variable at time **t** and **n** is number of years over which an intervention is being undertaken.

For each primary and secondary level education, costs for each wave were computed using the formulae above.

The total additional cost of primary education computed for the waves is the sum of additional direct primary school supply-side costs and the demand-side costs. The demand side costs are the sum of total transfer payments for 6-13 year old. For primary education, additional costs for the first to third waves were computed.

Similarly, for lower secondary school, total additional costs were used to compute additional costs required for different waves. Again, the supply-side costs and the demand-side costs for lower secondary were assumed. Additional costs required to provide lower secondary education were computed for the second, third and fourth waves.

## 6.2 Non-Education Costs of Eliminating Child Labour

The non-education costs of eliminating child labour are the costs of programmes that aim at eliminating child labour in its worst forms. The total cost of an intervention is obtained by multiplying the unit cost of a standard intervention package with the number of children to be reached.

Data from a field survey by KIPPRA (2002) was used to calculate unit costs. Total start-up and recurrent costs were obtained for all the institutions involved in a given programme. To obtain the unit costs of a standard intervention, we divided the total intervention costs with the number of children rehabilitated. The CBS report on child labour was used to provide starting figures to make projections for the children aged 6-14. The number of working children was reported for age 5-14 years. Though the child

population in the CBS report is for age bracket 5-14 years, the data was scaled to cover ages 6-14 using data on population by single years, representing primary school age children and those of lower secondary education.

The recurrent costs and start-up costs for continuing and new interventions were calculated using the unit costs and the projected population for working children. The total cost of new interventions is the sum of start-up and recurrent costs. Recurrent costs constitute total costs for the continuing programmes. The unit cost was derived by dividing the total cost for start-up and recurrent cost by the number of children in each of the forms of intervention.

The elimination of the worst forms of child labour is to be done in two five-year waves. In the first wave, half of all children currently engaged in the worst forms of child labour will be rehabilitated. The other half will be rehabilitated in the next five years. Withdrawal and rehabilitation from child labour is assumed to take place sequentially and that the number to be eliminated every year for the ten year period is constant, such that there will be no children working in worst forms of child labour by end of 2010. We assume that it takes two years to rehabilitate children withdrawn, and that start-up costs are incurred once in the initial year of the programme for the whole intervention programme. On the other hand, recurrent costs are incurred every year including the first year of the programme. The growth rates are computed for the recurrent costs only.

## 6.3 Opportunity Cost of Child Labour

The opportunity cost of child labour is taken as the average wage paid to working children. The wage rate for paid and unpaid child work was obtained from the CBS Child Labour Report (GoK, 2001b). We assume that the mean wage of paid children also represents the opportunity cost of working children who are not paid. The mean wage further disregards gender differences in remuneration, rural-urban disparities and pay variations across industries.

## 6.4 Benefits of Eliminating the Worst Forms of Child Labour

**Education benefits**

Though there are direct and indirect returns to education, this study computes the present value of future wages attributable to increased education. Therefore, the spill-over effects or externalities to education are not considered. We used returns to education provided by IPEC/ILO (Psacharopoulos, 1999) to compute benefits from schooling in Kenya.

For a given year, the direct monetary benefits of increased education are given by:

> Current value = (number of affected individuals) x {(Mincerian coefficient)x(increase in average number of years of education)x(mean GDP/capita)x(discount factors x years of work affected)}

where:

> Current value = the value in the period in which education occurs;
>
> Number of affected individuals = number of children increasing their education during the period being measured;
>
> Mincerian coefficient (mc) = the estimated percentage effect of additional years of schooling on wages;
>
> Mean GDP/capita (mg) = reference income for the affected individuals;
>
> Discount factors x years of work affected = the present value of the future additional earnings' stream.

Discount factors x years of work affected was calculated from expected workforce participation with the stream of future earnings discounted to the present.

The discounted present value of future earnings for a child completing an extra year of education is given by:

$$\sum_{t=1}^{30} \frac{mc \times mg}{(1+r)^t}$$

where mc = Mincerian coefficient, and mg = mean GDP/capita, and 30 is the average number of years worked.

This formula assumes that a typical employee works for 30 years and enters the labour force a year after completing full-time schooling. However, in this study, we calculate average number of years of work using data from the Welfare Monitoring Survey III, 1997. The average expected number of years of participation in employment is total expected workforce participation (15-64), divided by total working age population (15-64) in Kenya for the year 2001. The total expected workforce participation is the sum of the product of single ages and corresponding population for all the years from 15 to 64 years.

The costs of education, whose computation procedure was outlined in section 6.1, are computed for 15 years. This therefore demands that we consider benefits as from 2015 to 2029. Benefits are accordingly computed for 15 years. Using a discount rate of r = 5% we discount the value of benefits as:

$$\sum_{t=15}^{29} \frac{w}{(1+r)^t}$$

**Health benefits**

We measure health benefits of eliminating child labour using disability adjusted life years (DALYs). To calculate the DALYs, we used the CBS Child Labour Survey data for 1998/99 (GoK, 2001b) and made projections for the 6-14 year old working children for the year 2001. We categorised the data to correspond to the industries as given in the WHO tables. That is, data in closely related activities was lumped into six broad categories of industries: agriculture, mining, manufacturing, retail, services, and other industries. We use this grouped data to compute DALYs for each industry using the weights, DALY/100 FTE worker per year, provided by ILO. The total DALYs is the sum of DALYs across the six industries for all children aged 6-17 years involved in child labour.

## 6.5 Data Sources

To obtain values for the various variables used in this report, we needed a large set of data from a wide range of sources. For most of the variables,

data was obtained either through projections, estimations from secondary and primary sources, from informed sources, or from the literature.

Projections were carried out for some variables that had known growth rates or trends based on data already available at KIPPRA or from the Welfare Monitoring Survey, Central Bureau of Statistics, ministries and other sources. The secondary sources include data available at KIPPRA; publications of the Central Bureau of Statistics; data from the Ministry of Health, Ministry of Public Works, Ministry of Labour and Human Resource Development, Ministry of Education; and data from UNICEF and the Kenya ILO/IPEC office. The 1998/99 Child Labour Report by the CBS was used extensively. Other secondary information especially regarding the NGOS dealing in child labour was obtained from the local NGO offices.

To fill gaps where secondary information was not available, we designed a questionnaire for institutions and for children, which we used to carry out an intensive study of promotional and intervention campaigns against child labour. The survey covered Nairobi Province and its neighbouring districts.

The districts in which the survey was undertaken are: Kajiado in Rift Valley Province, Kiambu and Thika in Central Province, and Machakos in Eastern Province. A total of 80 institutions and children's homes or centres directly or indirectly dealing in child labour issues were surveyed. A total of 575 children were interviewed in this survey. This survey was very useful in bridging the gaps in data obtained from published sources. The survey data was useful in computing intervention costs. Besides, the survey was used to draw the main characteristics of children in labour markets, and understanding the characteristics and spending patterns of institutions involved in elimination or mitigation of the suffering of children in hazardous labour.

# 7. FINDINGS I: COSTS OF ELIMINATING CHILD LABOUR

To facilitate interpretation of the results, we provide a quick background of the results, and especially the methods used to obtain them. In some cases, we repeat the method to make clear how the results were obtained and to facilitate the referencing of the method.

To estimate the cost of providing universal primary education and lower secondary education (Form 1) for all children aged 6-14 years, we projected the population aged 6-14 years from the 1999 National Population Census carried out by the Central Bureau of Statistics, Ministry of Finance and Planning. The population aged 6-14 years was estimated to be 7,669,255 in 2001 comprising of 3,864,648 males and 3,804,607 females. It is projected that by 2015, the population will have increased to 11,526,202. The 14-year age population (Form 1-going population) was estimated to be 790,548 in the year 2001 and is projected to increase to 1,188,123 and 1,374,205 in 2015 and 2020 respectively. Gross primary school enrolment was 6,074,987 in 2001 while Form 1 enrolment was estimated at 178,185 in the same year.

The additional supply cost for achieving universal education includes the recurrent expenditure (including quality improvements) and capital expenditure required to put all out-of-school children aged 6-14 into primary and lower secondary school levels.

## 7.1 Cost of Providing Primary Education

The additional expenditure to ensure supply of acceptable quality primary education has the following components:

- recurrent expenditure to achieve net enrolment rate (NER) of 100%;
- expenditure on quality;
- capital expenditure.

Recurrent expenditure comprises financial outlays on school resources used each year for the operation of schools. On the other hand, development expenditure consists of outlays on assets that last longer than a year, and includes spending on the construction, renovation, and major repair of buildings.

**Recurrent expenditure**

Expenditures per student are largely related to instructional costs and include all expenditures dealing with activities involved in teaching process, such as salaries, fringe benefits, and instructional supplies. According to Deolalikar (1999), public expenditure per student at primary level of education in 1994 was Kshs 2,433 compared with Kshs 900 household expenditure per student. The public and household expenditure per student at the secondary level of education was Kshs 8,182 and 10,000 respectively in 1994.

Results based on the 1997 WMS III survey data shows that households spend about Kshs 712 (US$ 28.6) and Kshs 1,150 (US$ 46.2) per year on public primary and private primary schools, and about Kshs 9,643.30 (US$ 387.3) and Kshs 10,208 (US$ 410) per year on public and private secondary schools (Kimalu *et al*, 2001b).[7] Therefore, the parental contribution to education of a pupil in a public primary school constitutes about 26% of the total per pupil expenditure at the primary level.

Given that the net enrolment rate in Kenya was 68.2% in 1999, we therefore estimate the additional recurrent cost of providing universal primary education to accommodate all population aged 6-13 years in schools by 2015. The variables for estimation are summarised below.

**Table 7.1: Primary school enrolment and expenditure**

| Variable | 2001 | 2015 (projected) |
|---|---|---|
| Primary school going pop. (6-13 years) | 6,878,707 | 10,338,079 |
| Primary school enrolment | 6,074,987 | 10,338,079 |
| Total recurrent cost (Kshs) | 27,336,490,592 | |
| Expenditure per pupil (Kshs) | 4,500 | |

Source: Ministry of Education, Science and Technology and own projections

Additional cost of achieving NER of 100% = (total primary enrolment in 2015 x expenditure per pupil in 2001) – (total primary enrolment in 2001 x expenditure per pupil in 2001).
Total additional recurrent cost = (10,338,079 x 4,500) – (6,074,987 x 4,500)
= Kshs 19.183 billion (US$ 770.412 million)

[7] US$ figures are calculated using 1999 purchasing power parity (PPP) conversion factor of Kshs 24.9 per 1 US$.

To accommodate all children in school by 2015, Kenya requires Kshs 19.183 billion (US$ 770.412 million) of additional recurrent costs.

**Quality improvement**

The quality of schools is as important as access to schooling in achieving a target level of enrolment. The quality of teaching can be affected by the method in which spending is apportioned between different categories of educational inputs. Teachers' salaries, condition and availability of teaching materials and other educational facilities, and the ability of the education system to adjust to changing demographic and enrolment trends are some of the factors that affect the quality of teaching. Literature on school effectiveness suggests that inputs such as curriculum, instructional materials and equipment, physical facilities, school management, and teacher development and motivation are important variables in promoting student learning and therefore enhancing the effectiveness of an education system (Deolalikar, 1999). A study in Kenya, Betts (1999), using two groups, with one group getting financial assistance to buy textbooks and school uniform found that expenditure for textbooks and uniform reduced dropout rates relative to the control group (students who did not participate in the programme).

The costs of improving education quality include non-wage expenditure, expenditure on teachers, and expenditure related to HIV/AIDS.

(a) *Non-wage recurrent expenditure*

The non-wage recurrent expenditure includes expenditure on textbooks, other purchases of instructional materials by the Kenya School Equipment Scheme, and School Feeding Programme, and expenditure on teacher training. Instructional materials are key ingredients in learning. In Kenya, teacher remuneration on average accounts for over 95% of the recurrent public allocation of funds to primary education, which limits the Government's ability to contribute to non-salary requirements such as provision of instructional materials. As a result, there are hardly any public resources left for other necessary school inputs such as learning materials and textbooks.

Non-wage expenditure accounts for less than 4% of the total recurrent expenditure in primary education. For improved education quality to be realised, there is need to adjust the non-wage expenditure based on the recommended minimum expenditure on non-salary items.

**Table 7.2: Percentage distribution of recurrent expenditure in education**

| Expenditure category | 1999 | 2000 | 2001 (projected) | 2002 (projected) |
|---|---|---|---|---|
| Teachers salaries and allowances | 97.78 | 97.18 | 96.93 | 97.31 |
| Non- Wage expenditure | 2.22 | 2.82 | 3.07 | 2.69 |
| Total | 100 | 100 | 100 | 100 |

Source: Own computations based on expenditure data from Economic Survey (various issues)

Personnel data from the Ministry of Education, Science and Technology is aggregated into primary and secondary levels and is therefore difficult to disaggregate and calculate other education personnel unit costs. Some personnel in the field and also at the headquarters perform jobs for the two levels of education. Also, data on optimal pupil to other education personnel ratio, which is necessary for the projections of the required other personnel in 2015, is not available. Due to data problems, estimation of the additional non-wage expenditure is calculated by taking 15% of 85% of the recurrent cost. In the analysis, total recurrent costs comprise both wage and non-wage cost. This expenditure is meant to cover a wide range of quality issues, including the cost of teacher training, which is often not included in primary education statistics.

Additional non-wage expenditure = (total recurrent expenditure 2015) x 0.15/0.85 – non-wage expenditure 2001.

= (46,519,738,234) x 0.15/0.85 – 821,723,146

= Kshs 7.388 billion (US$ 296.692 million

An additional Kshs 7.388 billion (US$ 296.692 million) would be required nationally for non-wage inputs to ensure quality education.

(b) *Pupil-teacher ratio*

To achieve a net enrolment rate of 100% by the year 2015, with an optimal pupil teacher ratio of 40, projections for primary school-going population for the year 2015 show that an additional 82,152 teachers would be required. The additional cost of extra teachers in 2015 is expected to be covered under improved unit cost because the current pupil-teacher ratio is below 40 (it is 34 pupils per teacher in primary schools and 17 pupils versus an optimal of 30 pupils for secondary schools).

**Table 7.3: Primary school enrolment and teachers**

| Variable | 1999 | 2000 | 2001(estimates) |
|---|---|---|---|
| Primary school enrolment (Number) | 5,867,608 | 5,882,625 | 6,074,987 |
| Number of teachers | 186,612 | 178,600 | 176,300 |
| Pupil teacher ratio | 31.46 | 32.88 | 34.46 |

Source: Ministry of Education, Science and Technology

(c) *The impact of HIV/AIDS*

Education is an essential building block in a country's development. In areas where HIV infection is common, HIV-related illnesses are taking toll on the supply of teachers, family budgets and orphaned children. HIV/AIDS is eroding the supply of teachers, which is likely to dent the quality of education. Secondly, HIV/AIDS is eating into family budgets, reducing the money available for school fees and increasing the pressure on children to drop out of school and marry or enter the workforce. Lastly, it is adding to the pool of children who are growing up without the support of their parents, which may affect their ability to stay in school. It is commonly assumed that children drop out of school when their parents die, whether of AIDS or other causes. While there has been little rigorous research, a few studies can point to AIDS in the family as a direct cause of decline in school attendance.

Skilled teachers are a precious commodity in all countries, but in some parts of the world, they are becoming too sick to work or are dying of HIV-related illness long before retirement. In Kenya, AIDS threatens the supply of an effective labour force because up to 80% of the infected people are in the age group 15-49 years.

Although HIV/AIDS has a great negative impact in all the social and economic sectors of the country, data on its impact on education is not available in the country. Therefore, to estimate the impact of HIV/AIDS on the education sector, we extrapolated from Mozambique which had an HIV/AIDS prevalence rate of 13.22 in 1999 and an estimated annual additional cost of 6.9% of the education cost due to HIV/AIDS. The national HIV/AIDS prevalence rate was 13.5% in 2000 and was estimated at around 13% in 2001. Using the 2001 national HIV/AIDS prevalence, we estimated the HIV/AIDS impact on education as 6.79% of the total recurrent education cost. This means that 6.79% of the education cost is required as an additional

annual cost due to HIV/AIDS. We made an assumption that the impact of HIV/AIDS is constant across education levels.

The estimated additional expenditure required for primary education due to HIV/AIDS impact in the year 2001:

= 0.0679 x total recurrent costs in 2001
= 0.0679 x 27,336,490,592
= Kshs 1.856 billion (US$ 74.544 million).

Although the national HIV/AIDS prevalence rate has been declining– from 13.9 in 1998 to 13.0 in 2001–data on future trends in prevalence rate is not available, therefore making it difficult to estimate the future HIV/AIDS impact on primary education. We therefore exclude the impact of HIV/AIDS on primary education in our analysis.

Excluding HIV/AIDS-related cost and additional expenditure on teachers, the total additional expenditure required for quality improvement of primary education is Kshs 7.388 billion (US$ 296.692 million).

**Capital spending**

Although the national average pupil per class was below 35 between 1999 and 2001, there are regional disparities in the provision and maintenance of essential physical facilities such as classrooms, library buildings, science laboratories and other special rooms. It should be noted that the condition of physical facilities and the distance to the nearest school affects the decision to enrol in school. A primary school census in 1995 indicated that on average, 27% of desks and 36% of chairs required were not available in primary school classrooms (Deolalikar, 1999). In our analysis, extra capital expenditure for the inadequate furniture is excluded due to non-availability of data on the current status on primary school furniture. The inadequacies in school facilities may partly be explained by the introduction of cost sharing which required communities and households to provide the facilities. Capital expenditure in our analysis includes spending on buildings and non-building expenditures, which consist of desks, tables, chairs, lockers, and chalkboards. Majority of primary school pupils use desks whereas students in secondary schools use chairs and lockers. We use an estimate of Kshs 300,000 (US$ 12,048) for construction of a primary school classroom and Kshs 100,000 (US$ 4,016) for other non-building expenditures, therefore making a capital expenditure total of Kshs 400,000 (US$ 16,064) per classroom.

**Table 7.4: Primary school facilities**

| Category of facility | 1999 | 2000 | 2001 (projected) |
|---|---|---|---|
| No. of primary schools | 17,623 | 18,617 | 19,044 |
| No. of classes | 188,113 | 195,457 | 199,160 |
| Pupils per class | 31 | 30 | 31 |

Source: Ministry of Education, Science and Technology

For Kenya to accommodate all primary school-going population in schools by the year 2015, 205,762 classrooms will be required–an addition of 7,602 classrooms. We are using 50 pupils per class–the maximum recommended number of pupils per class–in our projections.[8] We estimated the additional expenditure for the extra facilities required as follows:

Additional capital expenditure = number of additional new buildings and facilities x capital unit cost

= 7,602 x Kshs 400,000

= Kshs 3.041 billion (US$ 122.114 million)

Summing up the subtotals for recurrent expenditure, quality improvement and capital expenditures gives the national estimate for the required additional annual expenditure related to the supply of primary education.

TCP = Kshs 19.183 billion + Kshs 7.388 billion + 3.041 billion

= Kshs 29.612 billion (US$ 1.189 billion)

where TCP is the total annual additional cost of primary education in the year 2015 associated with elimination of child labour. The total additional cost for achieving universal primary education in the year 2015 is Kshs 29.612 billion (US$ 1.189 billion).

## 7.2 Cost of Providing Secondary Education

The Kenya schooling system comprises eight years of primary education and four years of secondary education. Secondary school-going age population lies between 14-17 years. Therefore, for this analysis, we covered the 14-year old population under lower secondary (Form 1-going population). We have estimated the 14-year old population from the 1999

[8] Note that pupil-teacher ratio is not the same as pupils per class.

population census. The Form-1 going age population is projected to increase from 790,548 in 2001 to 1,374,205 in the year 2020. Form 1 gross enrolment was 178,185 in 2001. The low enrolment for Form 1 may partly be explained by low transition rates from primary to secondary levels of education. A low transition rate signifies education wastage, as most of the pupils who complete one level of education do not proceed to the next. We examine below various components of the cost of secondary education.

**Recurrent expenditure**

**Table 7.5: Secondary school enrolment and expenditure**

| Variable | 2001 | 2020 (projected) |
|---|---|---|
| Secondary school going population, age 14-17 years (numbers) | 3,044,571 | 5,292,361 |
| Form one going population, aged 14 years (numbers) | 790,548 | 1,374,205 |
| Gross enrolment (numbers) | 672,865 | 5,292,361 |
| Form one enrolment (numbers) | 178,185 | 1,374,205 |
| Total recurrent cost (Kshs) | 12,010,223,492 | - |
| Total recurrent cost for Form 1 (Kshs) | 3,180,490,198 | - |
| Expenditure per pupil (Kshs) | 17,849 | - |

Source: Ministry of Education, Science and Technology and own projections

Recurrent costs constitute the bulk of the total secondary budget with the development public expenditure in secondary education taking less than 1% for the last three years or so. To calculate the additional recurrent cost of achieving NER of 100% in Form 1 in 2020, we used the estimated 14-year age population and the expenditure per student.

> Additional cost of achieving NER of 100% = (total secondary Form 1 enrolment in 2020 x expenditure per pupil in 2001) – (total secondary Form 1 enrolment in 2001 x expenditure per pupil in 2001)
>
> = 1,374,205 x 17,849 – 178,185 x 17,849
>
> = Kshs 21.348 billion (US$ 857.358 million)

For the country to achieve a Form 1 NER of 100% by the year 2020, an additional recurrent cost of Kshs 21.348 billion (US$ 857.358 million) will be required by 2020.

**Quality improvement**

(a) *Non-wage recurrent expenditure*

Table 7.6 shows that the non-wage expenditure in secondary education has been less than 6% of the total recurrent expenditure for the last three years. The share of non-wage expenditure to total recurrent expenditure increased from 5.26% in 1999 to 5.80% in 2000. This is very much below the envisaged non-wage share of 15%.

**Table 7.6: Percentage distribution of recurrent expenditure (secondary level)**

| Expenditure category | 1999 | 2000 | 2001 (projected) | 2002 (projected) |
|---|---|---|---|---|
| Teachers salaries and allowances | 94.74 | 94.46 | 94.53 | 94.86 |
| Non-wage expenditure | 5.26 | 5.54 | 5.47 | 5.14 |
| Total | 100 | 100 | 100 | 100 |

Source: Own computations based on data from Economic Survey (various issues)

Due to lack of disaggregated data for the other education personnel, we estimated the additional non-wage expenditure by using the 15% rule referred to earlier.

Additional non-wage expenditure = (total recurrent expenditure 2020) x 0.15/0.85 – non-wage expenditure 2001

= Kshs 24,528,695,075 x 0.15/0.85 – 175,841,404

= Kshs 4.155 billion (US$ 166.856 million)

(b) *Pupil-teacher ratio*

The student-teacher ratio in secondary education lies below 20 and the teachers wage bill constitutes more than 90% of the total secondary education recurrent expenditure. To cut down on teachers' expenditure, the Master Plan on Education and Training for 1997-2010 proposed an increase in student teacher ratio in the country to a national average of 25 to 30.

**Table 7.7: Secondary school enrolment and teachers**

| Variable | 1999 | 2000 | 2001 (projected) |
|---|---|---|---|
| Number of teachers | 40,782 | 40,090 | 39,767 |
| Student teacher ratio | 16 | 16 | 17 |

Source: Ministry of Education, Science and Technology

According to our Form 1-age population projections and using a student teacher ratio of 30, an additional 35,276 teachers will be required by 2020. We exclude the additional expenditure on teachers in our final analysis as the student teacher ratio is below 30. The additional costs are expected to be covered by savings from improved unit cost.

**Capital spending**

Although the average number of pupils per class has been below 40 for the last decade, more classrooms will be needed to accommodate the additional number of students in 2020. The national average student per class increased from 34 in 1999 to 35 in 2000.

**Table 7.8: Secondary school facilities**

| Facility category | 1999 | 2000 | 2001 (projected) |
|---|---|---|---|
| Number of secondary schools | 3,197 | 3,207 | 3,267 |
| Number of classes/streams | 18,911 | 18,582 | 19,342 |
| Pupil per class | 34 | 35 | 35 |

Source: Ministry of Education, Science and Technology

Using the recommended maximum number of student of 40, a total of 29,233 additional classrooms will be required by 2020. Using average cost of constructing and equipping a classroom of Kshs 500,000 (US$ 20,080), we estimate the cost of additional classrooms and facilities as:

Additional capital expenditure = number of additional new buildings and facilities x capital unit cost

= 29,233 x Kshs 500,000

= Kshs 14.617 billion (US$ 587.009 million)

Summing up the subtotals for recurrent expenditure and quality improvement, we get a national estimates of Kshs 40.119 billion (US$ 1.611 million) being the additional expenditure related to provision of Form 1 education in the year 2020.

In the preceding sections (7.1 and 7.2), we have reported costs of primary and secondary education that are borne by the Government. In the next section, we provide information on costs of education borne by households.

## 7.3 Costs of Income Transfer (Income Maintenance) Programmes

By providing cash grants to families and children, both the direct costs and the opportunity costs (cost earnings and cost economic contributions to the family) of schooling can be compensated. Cash grants can be paid to families to replace the child's earnings to be used, for instance, in income-generating projects. Cash grants enable families to use money freely according to their needs, and this flexibility is good as families know best how to use the funds. An apparently successful method used in Bangladesh to encourage girls into school was the provision of lumpsum payment at the end of a child's education (Anker and Melkas, 1996)

**Income transfers (age group 6-14)**

The cost of income transfer programmes has two parts: transfer and administrative costs. The transfers depend on the extent and depth of poverty and the productivity of child labour. To calculate the transfer costs, we first determined the poverty line. The overall absolute poverty line in 1997 was estimated as Kshs 1,239 (US$ 49.76) per month per adult in rural Kenya and Kshs 2,648 (US$ 106.35) in the urban areas (GoK, 2000). We made use of this poverty line under the assumption that consumption has remained constant over time and space.

For the projections of the number of households in 2001, we used the general formula used for projections as:

$$P_t = P_0 (1+g)^n$$

where $P_t$ is the number of households in the year 2001, g is the intercensal growth rate in number of households (which is 4%), n is the number of years between 1999 and 2001 (which in our case is 2 years), and $P_0$ is our

base year (1999) number of households (which is 6,371,370). Therefore, the total number of households in the year 2001 ($P_t$) is:

$$P_t = 6{,}371{,}370 \times (0.04 + 1)^2 = 6{,}891{,}274$$

The next step is to get the number of poor households. It was estimated that 49.76% of households in 2001 were living below the poverty line. Therefore, the estimated number of poor households in 2001 is given by:

Total number of poor households = 0.4976 x 6,891,274

= 3,429,098

In 1997, the total number of children aged 6-14 from poor households was 4,361,765 and the total number of poor households was 2,537,197**.** The total number of poor households with children aged 6-14 years was 1,963,401. The ratio of poor households with children aged 6-14 to the total number of poor households in 1997 is 0.7738464. Assuming that the same ratio holds for the year 2001, then the total number of poor households with children aged 6-14 is:

Poor households with children aged 6-14 years = 3,429,098 x 0.7738464

= 2,653,587

The ratio of children aged 6-14 from poor households to the number of poor households with children aged 6-14 was 2.22 in 1997. Assuming the same ratio in 2001, the total number of children aged 6-14 from poor households is given as follows:

Total number of children aged 6-14 from poor households = 2,653587 x 2.22

= 5,890,963

We used the CBS Child Labour Report (GoK, 2001b) to get the opportunity cost of labour as Kshs 811.3424 (US$ 32.58). The next step was to calculate the unit transfers. In Kenya, the replacement rate which results, on average, in closing the poverty gap is 22.53%, which is far less than 60%. Therefore, we used 60% of the opportunity cost to calculate the unit transfer even though it leads to an overflowing of the poverty gap.

Unit Transfer = 60/100 x 811.3424

= Kshs 486.8054 (US$ 19.55)

The gross transfer was obtained by multiplying the unit transfer by the total number of children from poor households. Therefore:

Monthly gross transfer = 486.8054 x 5,890,963
= Kshs 2.868 billion (US$ 115.171 million)

The total annual gross transfer income is estimated at Kshs 34.413 billion (US$ 1.382 billion).

Though there are a few NGOs dealing with income transfers in Kenya, they cover only a few areas and their effect and influence on the whole population is negligible. An assumption was therefore made that the value of existing transfers is zero. Net transfers, which are given as the gross transfer less existing transfers, are therefore equal to the gross transfers since existing transfers are equal to zero.

Unit administrative costs are set at 5% of unit transfers and this gives Kshs 24.34 (US$ 0.978). To get the gross administrative costs, we multiplied the unit administrative costs by the total number of children from poor households to get Kshs 143,387,630 (US$ 5.759 million) per month. The annual gross administrative costs is Kshs 1.72 billion (US$ 69.102 million).

We disaggregate total income transfers for the two levels of education– primary and lower secondary education. The total poor primary school children (6-13 years) were estimated at 5,186,569 in 2001 while poor secondary school children (14 years) were estimated at 704,394. Primary education level requires Kshs 30.298 billion (US$ 1.217 billion) as annual gross income transfers and Kshs 1.515 (US$ 60.840 million) as annual gross administrative costs. Lower secondary education level requires Kshs 4.115 billion (US$ 165.254 million) as annual gross income transfers and 205.74 million (US$ 8.263 million) as annual gross administrative costs.

**Wave analysis**

In this sub-section, we provide information on costs of eliminating child labour for various waves of children at different time periods. Total costs in the waves analysis include recurrent costs, quality improvement costs, capital expenditure, and administrative costs for income transfers. We first analyse waves for the supply costs and later include the administrative

cost of income transfers. To analyse the waves, we need to calculate the cost growth rates (g) and discounted growth (a) for the two levels of education. As noted earlier, the expression for the discount factor, a, is:

$$a = (1 + g)/(1+r).$$

Letting x be the initial expenditure, for each wave we have:

Expenditure during the first five years: $x^* (1-a^5)/(1-a)$;

Expenditure during the second five years: $x * a^5 * (1-a^5)/(1-a)$;

Expenditure during the third five years: $x * a^{10} * (1-a^5)/(1-a)$.

(a) *Primary education*

The annual nominal growth rate for the primary education expenditure for the period between 2001 and 2015 is estimated as:

$$g = (y_t/y_{t-1})^{1/14} - 1$$

$$= (57,141,674,479 / 27,530,150,747)^{1/14} - 1$$

$$= 0.0535$$

where $y_t$ is expenditure on primary education in 2015 and $y_{t-1}$ is expenditure on primary education in 2001.

Expenditures for 2015 are estimated using unit expenditures and population growth rate for the primary school going population and the expenditure.

Using a discount rate of 5%, we estimated **a** as:

$$a = (1 + 0.0535)/(1+ 0.05)$$

$$= 1.00338.$$

The percentage nominal growth rates for primary education recurrent, non-wage and capital expenditures are 3.87%, 17.876% and 22.28% respectively. The higher non-wage and capital nominal growth rates are attributed to the increased non-wage and capital expenditure per pupil between 2001 and 2015. Non-wage expenditure per pupil will increase from Kshs 135 (US$ 5.42) in 2001 to Kshs 794 (US$ 31.89) in 2015 while capital expenditure per pupil will increase from Kshs 32 (US$ 1.29) to 313 (US$ 12.56) over the same period.

**Table 7.9: Waves analysis for the supply costs of primary education (in billions)**

| Type of expenditure | Nominal growth rate (%) | Wave I | Wave II | Wave III |
|---|---|---|---|---|
| Recurrent | 3.87 | 133.77 | 126.73 | 120.06 |
| | | (5.372) | (5.090) | (4.822) |
| Non-wage | 17.876 | 5.247 | 9.353 | 16.672 |
| | | (0.121) | (0.376) | (0.670) |
| Capital | 22.28 | 1.34 | 2.88 | 6.16 |
| | | (0.0540) | (0.116) | (0.248) |
| Total expenditure | 5.35 | 138.583 | 140.939 | 143.334 |
| | | (5.566) | (5.660) | (5.756) |

Note: Present values in US$ are in parenthesis

(b) *Lower secondary education (Form 1)*

Using the formula provided, the nominal growth rate for the Form 1 expenditure was estimated as:

$$g = (y_t / y_{t=1})^{1/19} - 1$$

$$= (43,334,994,021 / 3,215,546,601)^{1/19} - 1$$

$$= 0.146705$$

where $y_t$ is expenditure on secondary education in 2020 and $y_{t-1}$ is expenditure on secondary education in 2001.

The recurrent, non-wage, and capital costs nominal growth rates for supply of Form 1 education are 11.35%, 18.43% and 63.36% respectively. The high growth rate of Form 1 costs is partly attributable to low gross enrolment rates at the lower secondary school level in the country. By the year 2001, only 178,185 students were enrolled in Form one compared to a Form one-going population of 790,548–a gross enrolment rate of 22.54%. The Form 1-going population is projected to increase to 1,374,205 by the year 2020. For the country to achieve a Form 1 net enrolment rate of 100%, a lot of resources are required given the current low enrolment rates–therefore a higher nominal expenditure growth rate of 11.96%. The high growth rate may also be explained by the higher increase in non-wage expenditure per student from Kshs 976 (US$ 39.19) in 2001 to Kshs 3,150 (US$ 126.50) in the year 2020. Another contributing factor may be the high growth of capital expenditure per student from Kshs 7.317 (US$ 0.294) in 2001 to Kshs 10,637 (US$ 427.20) in 2020. The value for the parameter **a** for the total cost was

estimated as follows:

$$\mathbf{a} = (1 + 0.1467)/(1 + 0.05)$$

$$= 1.0921.$$

Using the formulae provided, the present values of Form 1 expenditures for various waves are as shown in Table 7.10.

We include the administrative costs of income transfers in the wave analysis. The nominal expenditure growth rates for primary and Form 1 education are estimated at 5.70% and 12.29% respectively. The present values of these expenditures in different waves are shown in Table 7.11.

**Table 7.10: Wave analysis for the supply costs of Form I education (in billions)**

| Type of expenditure | Nominal growth rate (%) | Wave II | Wave III | Wave IV |
|---|---|---|---|---|
| Recurrent | 11.35 | 24.07 | 32.29 | 43.30 |
| | | (0.967) | (1.297) | (1.739) |
| Non-wage | 18.434 | 2.049 | 3.741 | 6.830 |
| | | (0.082) | (0.150) | (0.274) |
| Capital expenditure | 63.36 | 0.173 | 1.582 | 14.416 |
| | | (0.007) | (0.064) | (0.579) |
| Total expenditure | 12.214 | 30.021 | 46.638 | 72.452 |
| | | (1.206) | (1.873) | (2.910) |

Note: Present values in US$ are in parenthesis

**Table 7.11: Waves analysis for the supply and administrative costs (income transfers) of education (in billions)**

| Education level | Nominal growth rate | Waves | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| Primary | 5.55 | 139.49 | 142.797 | 146.588 | N/A |
| | | (5.587) | (5.735) | (5.887) | |
| Secondary (Form one) | 14.70 | N/A | 30.074 | 46.778 | 72.760 |
| | | | (1.208) | (1.879) | (2.922) |

Note: Present values in US$ are in parenthesis

**Intervention costs: non-education cost**

Eliminating all economic barriers to school attendance may not completely eliminate child labour. Some parents may be reluctant to enrol their children for social or cultural reasons. Also, immigrant children, or children who belong to socially excluded ethnic groups may avoid school either through fear or because of wrong perceptions. In such cases, other forms of interventions such as rehabilitation of children in worst forms of child labour and awareness-raising campaigns are useful to get them change their perceptions. Here, we consider the cost of withdrawing children from the worst forms of child labour and rehabilitating them and the cost of awareness or promotional campaigns aimed at all children aged 6-14 years out of school.

The first step in computing the total cost of the rehabilitation and promotion campaign programmes is to estimate their unit costs. The unit cost both for start-up cost and recurrent cost of withdrawing and rehabilitating children in worst forms is estimated by dividing total cost by the number of children withdrawn and rehabilitated in 2001. This is done using data collected by KIPPRA in 2002. Since the existing structure are not enough to accommodate all the children involved in the worst forms of child labour, we multiply the unit cost by the number of children to be reached for each form of child labour (Table 7.12) in order to estimate the cost of a standard package of interventions.

The unit start up cost of withdrawing and rehabilitating a child from the worst forms of child labour is Kshs 14,393 (US$ 578) (i.e. Kshs 382.5 million/ 26,279) and the recurrent cost of withdrawal and rehabilitating a child in from the worst forms of child labour is Kshs 6,372 (US$ 255.9) (i.e. Kshs 169.3 million/26,579) where 26,579 is total number of children rehabilitated. We multiply the number of children in each category with the corresponding unit costs to obtain totals in the third and fourth columns. The totals in the fifth column are obtained by summing up the third and fourth columns. The number of children in column two is obtained by projecting the estimates of the CBS Child Labour Survey (GoK, 2001b) to obtain the estimates for 2001.

The cost of new intervention (withdrawing and rehabilitating children in the worst forms of child labour) is computed by taking the sum of start-up and recurring costs and dividing by the number of children to be rehabilitated. The unit cost for new intervention therefore equals Kshs

**Table 7.12: Standard cost of withdrawing and rehabilitating children in worst forms of child labour (Kshs millions)**

| Type of child labour | Children in worst forms of labour 2001 | Total recurrent cost | Total Start-up costs | Overall total costs in the initial year |
|---|---|---|---|---|
| Housekeeping & restaurant service workers | 5,037 | 32.1 | 72.5 | 104.6 |
| Personal care & related workers | 1,328 | 8.5 | 19.1 | 27.6 |
| Other personal | 4,855 | 30.9 | 69.9 | 100.8 |
| Shops & salesperson & demonstrators | 647 | 4.1 | 9.3 | 13.4 |
| Stall &market sale person | 2,798 | 17.8 | 40.3 | 58.1 |
| Street vendors and related workers | 2,429 | 15.5 | 34.9 | 50.4 |
| Domestic & related cleaners/launderers | 1,809.9 | 87,158 | 555.4 | 1,254.5 |
| Agriculture, fishery & related labourers | 191,092 | 1,217.6 | 2,750.4 | 3,968.1 |
| **Total** | **295,344** | **1,881.9** | **4,250.9** | **6,132.8** |

Source: Projections using CBS Child Labour Survey data for 1998/1999 and KIPPRA Survey 2002

20,765 (US$ 833.9). For continuing interventions: unit cost is given by recurring costs divided by the number of children to be withdrawn and rehabilitated. This is equal to Kshs 6,372 (US$ 255.6).

The present value of intervention costs for each of the five-year waves is discounted at 5%) using the laid out formula in the methodology section. In the first wave, half of all children currently engaged in the worst forms of child labour will be withdrawn and rehabilitated. In the second wave, the remaining half of children currently engaged in the worst forms of child labour will be rehabilitated. Both waves are undertaken within a period of ten years. The assumption is that the unit cost and the number of children being withdrawn and rehabilitated every year is constant and that there will be no children working in the worst forms of labour by the end of 2010. Also, it takes two years to rehabilitate the children withdrawn every year from the worst forms of child labour. When calculating the start-up cost, we assume that it will be incurred once, that is in the first year

taking into account the maximum number of children to be rehabilitated at any particular year. This is equal to Kshs 850 million (US$ 34.1 million). However, the recurrent costs will be incurred every year starting from the initial year up to the last year (2010). Recurrent cost for year 2001 is equal to Kshs 188.2 millions and that for year 2010 is Kshs 376.4 millions. The value of **g** is therefore calculated for recurrent costs only, using the formula given in the methodology, and it is the growth rate between the first and second year. All the other years from the third year have a zero growth rate as the recurrent cost is constant at Kshs 376.4 million. The growth rate of the recurrent costs for the fist two years is 8%.

**Wave I**

The present value of recurrent costs of withdrawing and rehabilitating children in the worst forms of child labour in the first five years is Kshs 996.4 million (US$ 40 million). Adding the start up cost in the initial year (Kshs 850 million), the present value of the total intervention cost in wave I is Kshs 1.8 billion (US$ 72.3 million).

**Wave II**

In wave II, only recurrent costs are incurred. Recurrent costs for withdrawing and rehabilitating children in the second period (second five years) is Kshs 1.147 billion (US$ 46 million).

**Costs of other promotional programmes**

The unit cost of awareness campaigns/promotions targeting working children who are out of school is calculated using data collected by KIPPRA in 2002 on costs of campaigns/promotions and the estimated number of children reached. To determine the number of children who would require exposure to such programmes, we used estimates from the CBS survey (GoK, 2001b) to project the number of working children who were out of school in 2001. The assumption made on the start-up, recurrent costs and proportion of children to be reached is the same as that made when calculating withdrawal and rehabilitation costs. The number of working children in the age 6-14 years who are out of school is estimated to be 835,126.

The unit cost of awareness campaigns/promotional programmes calculated using data from the KIPPRA survey is as indicated below. We assume that the campaigns target working children in the age bracket 6-14 years old

who are out of school. The annual costs of awareness campaigns or promotion programmes are as follows:

The unit cost of new interventions (awareness campaigns and promotional programmes) is *the sum of start up and recurring costs divided by the number of children covered in campaigns/promotions.* The estimated unit cost for new interventions is Kshs 16,236 (US$ 652). The total cost is given as follows:

*Total annual start-up cost for new interventions = unit start-up cost* x *no. of children to be reached every two years.*

= (16,236 – 5521) x ( 835126 x 0.2)

= Kshs 1.8 billion (US$ 72.3 million)

*Total annual recurrent cost for new interventions = unit recurrent cost* x *no. of children to be reached.*

= 5521 x 835126

= Kshs 4.6 billion (US$ 184.7 million).

*Total annual cost for new interventions = Kshs 6.4 billion(US$ 257 million)*

The cost of a continuing interventions is given by taking the *recurring costs divided by the number of children covered in campaigns/promotions*. The unit cost for continuing interventions is Kshs 5,521 (US$ 221.7).

*Total annual cost for continuing interventions = unit cost* x *number of children to be reached*

= 5,521.20 x 835126

= Kshs 4.6 billion (US$ 184.7 million)

# 8. FINDINGS II: BENEFITS OF ELIMINATING CHILD LABOUR

The benefits presented are due to improved education and health. Education benefits are reflected in increas in gross domestic product and health benefits are reflected in disability adjusted life years (DALYs)–weighted sum of years lived with disability (YLD) and years of life lost (YLL) to disease or injury (World Bank, 1993). A DALY indicates a society's one year of healthy life that is lost due to disease or hazardous working conditions (Murray *et al*, 2001). Elimination of child labour reduces this loss by decreasing DALYs. DALYs that are attributed to child labour are an indication of benefits that would accrue from elimination of child labour.

## 8.1 Micro Benefits of Education

The micro level benefits of eliminating the worst forms of child labour are computed as follows:

> Current value = (number of affected individuals) x [(Mincerian coefficient) x (increase in average number of years of education) x (mean GDP/capita) x (discount factors x years of work affected)]

where:

- Current value = the value in the period in which education occurs;
- Number of affected individuals = number of children enrolled in school during the period being measured;
- Mincerian coefficient = the estimated percentage effect of additional years of schooling on wages;
- Mean GDP/capita = reference income for affected individuals;
- Discount factors x years of work affected = the present value of the future additional earnings stream.

This latter figure is calculated from the average expected workforce participation, with future years' earnings discounted to the current period. The average expected number of years workers participate in employment in Kenya is 30.1 years and is computed as earlier indicated in the methodology.

Assuming that the average worker begins working the year following full-time schooling, the benefit calculation for a single child completing an extra year of school would be the following discounted sum (DS):

$$DS = [(0.164) \times (22{,}690.19)/(1+0.05)] + [(0.164) \times (22{,}690.19)/(1+0.05)^2] + .... + [(0.164) \times (22{,}690.19)/(1+0.05)^{30}] = \text{Kshs } 57{,}203.83 \text{ (US\$ } 2297.3)$$

Noting that extra increase in schooling due to elimination of child labour is 3.51 years, and the number of children involved is 10,338,079, the present value of the benefit is:

$$(10{,}338{,}079) \times 3.51 \times [(57{,}203.83)]$$

$$= \text{Kshs } 2.077 \text{ trillion (US\$ } 83.4 \text{ billion)}$$

## 8.2 Education Benefits by Waves of Intervention

In sections 8.1 and 8.2 we have presented benefits from increased schooling for all waves of interventions against child labour. In the present sub-section, we present benefits for each of the three waves on the intervention envisioned. As noted in the methodological section, a 'wave' is a 5 year-period of interventions against child labour. The benefits for each wave, and for each year within a wave are computed in accordance with the formula given in section 6.4 of the methodology. Table 8.1 shows micro level benefits of additional schooling for each of the interventions.

**Table 8.1: Benefits due to education (billion Kshs): 2015-29**

| Waves | Years for each wave | | | | | Total Benefits | |
|---|---|---|---|---|---|---|---|
| | | | | | | Total (Kshs bns) | Total (US$ bns) |
| Wave 1 | 1 | 2 | 3 | 4 | 5 | | |
| Benefits due to primary education | 999.0 | 952.0 | 906.0 | 863.0 | 822.0 | 4,543.2 | 182.4 |
| Wave 2 | 6 | 7 | 8 | 9 | 10 | | |
| Benefits due to primary education | 783.0 | 746.0 | 710.0 | 676.0 | 644.0 | 3,559.7 | 142.9 |
| Wave 3 | 11 | 12 | 13 | 14 | 15 | | |
| Benefits due to primary education | 614.0 | 584.0 | 557.0 | 530.0 | 505.0 | 2,789.1 | 112.0 |

Source: Own computations

In calculating benefits for the different waves, we discounted the current value for a period of 15 years starting from the year 2015. The benefits of education are calculated for this period since it is equivalent to that for costs. However, the benefits are only realised immediately after school.

The waves have a length of fives years each. The first wave covers the 15th to the 19th year of benefit, second wave the 20th to 24th year, and the third wave 25th to 29th year of benefits.

## 8.3 Disability Adjusted Life Years (DALYs)

DALYs are the disability adjusted life years. The value of DALYs lost due to child labour can be viewed as the benefits of eliminating child labour because elimination of child labour would reduce DALYs. A DALY is the weighted sum of years of life lost (YLLs) and the years of life lived with disability (YLDs). The DALY is a health gap measure which combines information on the impact of premature death and of disability and other non-fatal health outcomes. According to Murray and Lopez (2000), one DALY can be thought of as one lost year of 'healthy' life and the burden of disease as a measurement of the gap between current health status and an ideal situation where everyone lives into old age free of disease and disability.

We calculate the proportion of working children aged 6-14 years from the CBS Child Labour survey. Since the survey was conducted in 1998/99, we projected the number of working children in this age group to the year 2001.

The survey done by the CBS collected data for children aged 6-14 years and found that 788,104 were engaged in full time work in 1999. Most of the working children were in agriculture and related activities. There were 835,168 children working full time in 2001. We use this number of children in calculating the DALYs.

The number of working children was categorized into six industries in which children are exposed to hazardous work (Table 8.2). Based on the CBS survey data 1998/1999 (GoK, 2001b), we found that about 97,799 children aged 6-14 years were injured or suffered certain ailments as a result of working in activities prone to certain predisposing factors detrimental

to their health. Limb injuries contributed about 16.6% of all total injuries/ disabilities while breathing problems contributed about 6.7% of the total illness and disabilities. It is evident that limb injuries and breathing problems are some of the major injuries/diseases affecting working children in Kenya. The service industry reported about 18,907 compared to 74,323 cases of injury that were recorded in the agricultural industry. Cases of injuries from retail, mining and manufacturing were quite minimal.

**Table 8.2: Number of working children 6-14 Years by type of illness/ injury and industry in 2001**

| Industry | Limb injury | Eye/ear infection | Skin infection | Back problem | Breathing problem | Other | **Total** |
|---|---|---|---|---|---|---|---|
| Services | 0 | 237 | 988 | 630 | 5023 | 12206 | **18907** |
| Retail | 0 | 0 | 0 | 0 | 508 | 896 | **1250** |
| Agriculture | 16262 | 188 | 367 | 0 | 1043 | 56132 | **74323** |
| Mining | 0 | 0 | 0 | 0 | 0 | 676 | **676** |
| Manufacturing | 0 | 0 | 0 | 0 | 0 | 2123 | **2123** |
| Total other industries | 0 | 0 | 0 | 0 | 0 | 520 | **520** |
| Total | 16262 | 425 | 1355 | 630 | 6574 | 72553 | **97799** |
| Percentages | 16.6 | 0.43 | 1.4 | 0.6 | 6.7 | 74.2 | **100** |

Source: Projections from CBS Child Labour survey data

## 8.4 DALYs by Type of Industry

Since data on mortality of working children is not available in the Child Labour Report, we obtained the number of children working in hazardous industry, and multiplied by DALY/100 corresponding to that specific industry. The DALY/100 were provided by ILO/IPEC. These hazardous industries include agriculture, mining, construction, manufacturing, services and retail. This was the alternative method provided by IPEC and is used when data on mortality is missing. This methodology avoids making of arbitrary assumptions about risk exposures of child work. We take the number of child workers per major industry N, divide it by 100 and multiply by the corresponding DALY per 100 for each industry. This forms the weighting for the various types of worst form industries as shown on Table 8.3. We obtained DALYs totaling to 13,572.98.

DALY per worker = 13,572.98/835,168

= 0.01625

This figure is 1.625 DALYs per hundred workers, and compares favourably with the global burden of disease estimates for children in this age group, which is 1.771 DALYs per hundred child workers.

**Table 8.3: DALYs by type of industry (6-14): 2001**

| Type of industry | Number of cases (N) | N/100 workers | DALY/100 FTE workers per year | Total DALYs in '000s |
|---|---|---|---|---|
| Agriculture | 686829 | 6868.3 | 1.6 | 11071.1 |
| Mining | 4237 | 42.4 | 5.0 | 212.4 |
| Construction | 1947 | 19.5 | 1.4 | 27.0 |
| Manufacturing | 12998 | 130.0 | 1.7 | 214.9 |
| Services | 114633 | 1146.3 | 1.4 | 1551.3 |
| Retail | 14524 | 145.2 | 3.4 | 496.3 |
| Total | 835168 | 8351.7 | | 13573.0 |

Source: ILO/IPEC and own computations

The DALYs for children aged 15-17 are 9450.6 and therefore DALY per 100 children is 1.564 which is lower than that obtained for the children aged 6-14 years. This indicates that those children aged 6-14 years are exposed to more hazardous work than those aged 15-17 years. The results are shown in Table 8.4.

Total DALYs for the working children aged 6-17 years is the sum of DALYs for those aged 6-14 and 15 –17 years which totals 23,023.6.

**Table 8.4: DALYs by industry (15-17 years): 2001**

| Type of industry | Number of cases (N) | N/100 workers | DALY/100 FTE workers per year | Total DALYs in '000s |
|---|---|---|---|---|
| Agriculture | 496875 | 4968.7 | 1.5 | 7657.0 |
| Mining | 3065 | 30.7 | 5.4 | 165.3 |
| Construction | 1408 | 14.1 | 1.4 | 19.2 |
| Manufacturing | 9403 | 94.0 | 1.6 | 152.9 |
| Services | 82929 | 829.3 | 1.3 | 1103.4 |
| Retail | 10507 | 105.1 | 3.4 | 352.7 |
| TOTAL | 604188 | 6041.9 | 1.9 | 9450.6 |

# 9. CONCLUSION

The Government of Kenya is committed to eliminating child labour and is a signatory to several international conventions protecting children. Despite this commitment, child labour is still prevalent in Kenya and the worst forms of child labour exist especially in coffee and tea plantations and in urban areas. About 30% of the children in the age bracket 6-14 years are out of school and 1.2 million (15%) are involved in child labour. The main challenge in eliminating child labour is financing the education of all children in the age group 6-14 years. Children in this age group are supposed to be at school fulltime. This challenge can benefit from information based on the analysis of economic costs and benefits of eliminating child labour. This study has analysed the child labour market in Kenya and estimated the costs and benefits of eliminating child labour in the country. Both secondary and primary data sets are used.

Our computations show that total annual additional supply cost of eliminating child labour would amount to about US$ 2.8 billion of which US$ 1.189 billion would be required to provide universal primary schooling and US$ 1.611 billion would be required to provide universal lower secondary education (Form 1) of at least minimum quality standards. In order to achieve universal school attendance, it is shown that there is a need for income transfers to households and non- educational investment of about US$ 1.382 billion and US$ 306.2 million respectively.

The benefits of universal education for the population aged 6-14 years in Kenya are substantial and exceed the cost. Even under conservative assumptions, such as the one made in this study, the additional annual benefit would amount to about US$ 83.4 billion when discounted to present value. The figure (which excludes health benefits) is very high compared to annual additional cost and will increase further once health benefits are included.

Therefore, the benefits of education are likely to outweigh the costs. Even though the link between school attendance and child labour is complex, universal primary and lower secondary education (Form 1) is a central pillar in the struggle to abolish child labour. It is therefore beneficial to eliminate child labour through provision of quality education and healthcare of acceptable standards.

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## Appendix Table 1: Opportunity cost of child Labour

| | Mean wage per day | | Hours worked per day | | Number of children | | Total value of wages per day | | Total | Average no. of days worked | | Mean wage per month | | Total value of wages per month | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Forms of child labour** | **Paid** | **Unpaid** | **Paid** | **Unpaid** | **Paid** | **Unpaid** | **Paid** | **Unpaid** | **Paid+unpaid** | **Paid** | **Unpaid** | **Paid** | **Unpaid** | **Paid** | **Unpaid** |
| Street life (begging, mugging, scavenging, prostitution, etc | 72.1 | 76.3 | 10.1 | 10.7 | 102 | 11 | 7349.1 | 839.6 | 8188.7 | 27 | 28 | 1945.35 | 2137.246 | 198425.7 | 23509.7 |
| Domestic work | 46.25 | 34.1 | 8.4 | 6.2 | 60 | 186 | 2775.0 | 6349.5 | 9124.5 | 28 | 28 | 1295 | 955.8333 | 77700 | 177785 |
| Vending of food | 275.0 | 226.0 | 7.3 | 6.0 | 4 | 1 | 1100.0 | 226.0 | 1326.0 | 28 | 30 | 7700 | 6780.822 | 30800 | 6780.822 |
| Farming | 65 | 53.9 | 7.6 | 6.3 | 8 | 9 | 520.0 | 484.9 | 1004.9 | 20 | 29 | 1300 | 1562.566 | 10400 | 14063.09 |
| Herding cattle/goats | 70.0 | 49.4 | 8.5 | 6.0 | 8 | 4 | 560.0 | 197.6 | 757.6 | 26 | 30 | 1820 | 1482.353 | 14560 | 5929.412 |
| Collecting/selling firewood | 35.0 | - | 8.0 | - | 4 | - | 140.0 | - | 140.0 | 30 | | 1050 | | 4200 | |
| Catching/selling fish | - | - | 3.0 | - | 1 | - | - | - | | 30 | | | | 0 | |
| Hotellier | 50.0 | - | 11.5 | - | 2 | - | 100.0 | - | 100.0 | 30 | | 1500 | | 3000 | |
| Selling water/illicit brew | 68.0 | 52.3 | 6.5 | 5.0 | 6 | 3 | 408.0 | 156.9 | 564.9 | 28 | 30 | 1904 | 1569.231 | 11424 | 4707.692 |
| Hand cart pushing (transportation) | 80.0 | - | 6.4 | - | 7 | - | 560.0 | - | 560.0 | 25 | | 2000 | | 14000 | |
| washing verandahs, cars and buildings and shoe polishing) | 26.7 | - | 5.4 | - | 5 | - | 133.4 | - | 133.4 | 27 | | 720.09 | | 3600.45 | |
| Tailoring | 15.0 | - | 9.0 | - | 1 | - | 15.0 | - | 15.0 | 30 | | 450 | | 450 | |
| Salonist | 50 | - | 1.0 | - | 1 | - | 50.0 | - | | | | 0 | | 0 | |
| Quarrying and Construction | 35.0 | - | 5.0 | - | 2 | - | 70.0 | - | 70.0 | 23 | | 805 | | 1610 | |
| In prison-juvenile | 40 | 20.0 | 6 | 3.0 | 1 | | 40.0 | - | 40.0 | 30 | | 1200 | 0 | 1200 | 0 |
| Total | | | | | 212 | 214 | 13820.5 | 8254.6 | 22075.1 | | | | | 371370.2 | 232775.7 |

Source: KIPPRA Survey, 2002

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