



## CLIMATE CHANGE AND EDUCATION

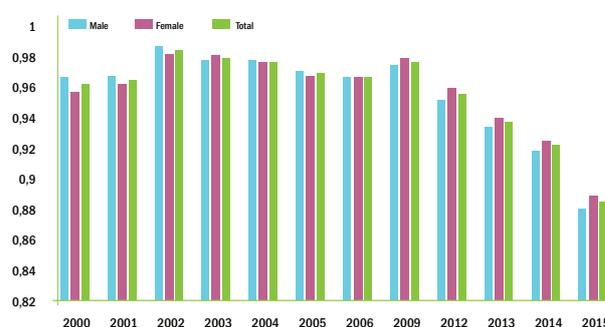
Climate change has a direct impact on education. The primary impacts of climate change on education arise from the effects of extreme weather events, such as heavy rains accompanied by flash floods, strong winds and hail storms with short and long-term consequences. Drought and increasing temperatures lead to poor harvests and food scarcity which have negative impacts upon educational attainment. Extreme weather events reduce the availability of safe drinking water, compromise sanitation and increase the incidence of weather related diseases such as malaria and diarrhoeal diseases, leading to absenteeism and possible withdrawal of children from school. Beside the primary impacts, climate change also has secondary impacts on education, arising from the ways in which households respond to, or choose to cope with and adapt to climate change as evidenced by income supplementing activities of household members, migration and child marriages.

### The state of education

#### Enrolment

Enrolment trends between primary and secondary schools have differed significantly from the years 2000 to 2015. Primary school net enrolment ratio (NER) has been generally high since 2000, but started to exhibit a declining trend from 2012 to 2015 (see Figure 1). Overall, between the years 2000 and 2015, the primary school NER declined from 96.20 percent to 88.46 percent.

Gender parity in primary school NER was retained throughout the period 2000 to 2015, i.e. there was no significant difference in access to education between males and females reflected in NERs.



**Figure 1** Primary school net enrolment ratio (percent) in Zimbabwe, 2000 to 2015 - Source: Ministry of Primary and Secondary Education (2015)

Meanwhile, secondary school NER are neither high nor as consistent as primary school NER with fluctuations by 2 to 4 percentage points below and

above 50 percent except for the year 2009 (see Figure 2). Beginning 2012, the secondary school NER shows trends of improving by roughly 1 percentage point each year.

Gender parity tilted towards girls from 2003, except for the year 2009, and was stable at 1.12 from 2012 to 2015.

Year	Form 1 to 4 Net Enrolment Rate			Gender Parity Index (GPI)
	Male	Female	Total	
2000	49.1	48.9	49.0	1.00
2001	50.1	50.4	50.2	1.01
2002	49.3	49.3	49.3	1.00
2003	48.4	49.6	49.0	1.02
2004	47.4	48.9	48.2	1.03
2005	46.5	49.1	47.8	1.06
2006	45.2	47.3	46.3	1.05
2009	58.5	58.2	58.3	0.99
2012	49.1	54.8	51.9	1.12
2013	49.8	55.9	52.8	1.12
2014	50.8	56.7	53.7	1.12
2015	51.1	57.3	54.1	1.12

**Table 1** Secondary school net enrolment rate, 2000 to 2015 - Source: Ministry of Primary and Secondary Education (2015)

### Years of schooling

The expected years of schooling increased by 3.8 years, from 6.5 years in 1980 to 10.3 years by 2015. Similarly, the mean years of schooling increased by 4.5 years, from 3.2 years to 7.7 years over the same period. These positive aggregate achievements contributed to an improvement in the country's HDI from 0.437 in 1980 to 0.522 in 2015. However, the noted improvements fail to reveal some dynamics that were occurring in the performance of the education sector of Zimbabwe, particularly those relating to completion and dropout rates.

### Climate Impacts on Education

Figure 2 provides an overview of the pathways through which climate change affects education and human development, as well as the linkages among the three issues, as will be elaborated further in this section

Climate change has had negative impacts on education in Zimbabwe. Adverse weather has been attributed to destroying infrastructure such as bridges, roads and schools. For example, the 2016/17 agricultural season recorded heavy downpours throughout the country, destroying approximately 18 percent of the country's schools, and affecting the education of approximately 500 000 children.



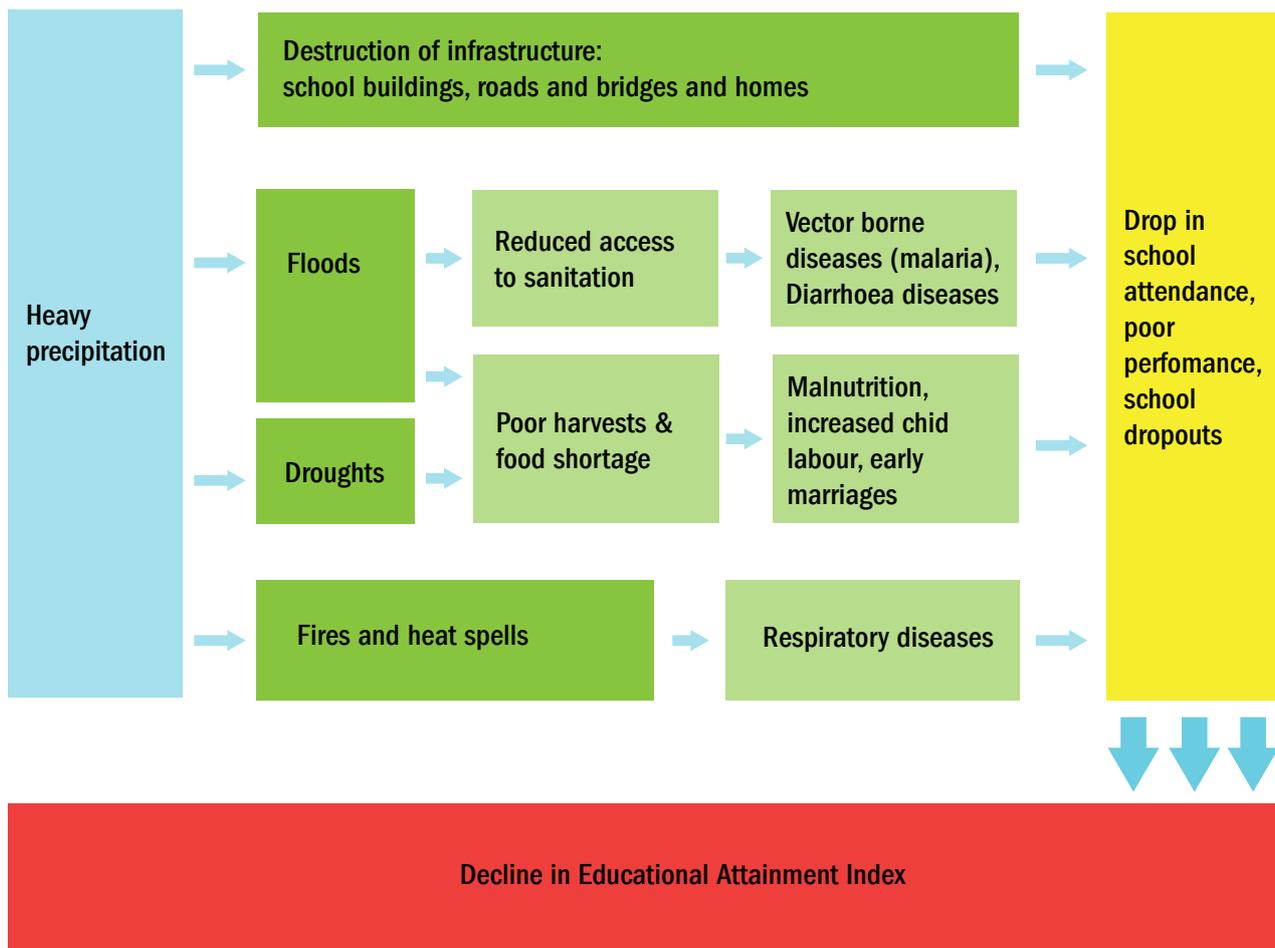
**Picture 1** Tokwana Primary, one of the schools destroyed by Cyclone Dineo-induced storms - Source:Chronicle, 9 March 2017

Classrooms destroyed by the extreme weather events become unusable during the rainy season, forcing classes to be abandoned. The incidence of dropouts increases in cases where dwellings are destroyed, students cannot cross bridges to attend school and people are moved to safer areas, leading to withdrawal of children from schools. Students are often regarded as having absconded from school because of these disruptions.

Adverse weather conditions affect teachers' incentives to work in areas known to be flood or drought prone and this compromises the quality of



**Picture 1** Tokwana Primary, one of the schools destroyed by Cyclone Dineo-induced storms - Source:Chronicle, 9 March 2017



**Figure 2** Pathways of climate change impact on education - Source: Adapted from UNICEF (2011)

education as evidenced by the high learner-teacher ratio which is above the recommended levels.

The shortage of qualified teachers means that schools receive new relief teachers every term and there is no continuity in the learning process. Furthermore, schools run without a full teacher complement most of the time as teachers avoid taking up posts in the flood prone areas. Those already in post leave for greener pastures as observed by participants at the consultative workshops. The overall result is disruption of the learning process which leads to poor educational outcomes, including higher incidences of repeats and school dropouts.

The disruptive weather patterns due to climate change set the Government back through rehabilitating destroyed infrastructure. For example, in February 2017, the cost of the rehabilitation was estimated at USD 4.7 million by the Ministry of Primary and Secondary Education.

Drought and increasing temperatures lead to poor harvests and food scarcity. This causes malnutrition among school going children, which impairs their retention and learning performance. Lack of food also increases absenteeism from school. Furthermore, children may be removed from school to support the household. These impacts are often highly gendered as, in most cases, boys are prioritised over girls to remain in school, particularly at the secondary school levels. Girls are pulled out of school more promptly than boys, either to provide additional productive work or for subjection to early marriage.

The occurrence of drought and low rainfall results in reduced availability of safe drinking water. Children, particularly girls, become involved in collecting water from longer distances. This affects their capacity to do other activities, such as going to school or doing homework. Inadequate water and sanitation can affect children negatively, especially

teenage girls, who often remain at home when they are menstruating.

The increased incidence of weather related diseases such as malaria and diarrhoea caused by climate change can render children too weak to attend school. Children miss classes because of ill health and, worse still, can be withdrawn from school altogether. The worst affected are those of primary school age. In 2014, 4.5 percent of all primary school children who dropped out of school did so, on grounds of illness. The equivalent figure for secondary school children was 1.4 percent. The year 2015 saw a slight improvement, with the percentage of primary school children dropping out of school because of illness dropping to 3.8 percent, and that for secondary school children being 1.3 percent.

A common strategy for reducing vulnerability to the challenges brought about by climate change by families depending on rain-fed agriculture is to supplement income generation by engaging in new or additional non-farm labour activities and reducing reliance on farming. When women engage in such activities, children, particularly girls, might need to increase the time they spend on household work and caring for siblings to compensate for the mother's changing roles. As a result, they may miss school and/or have less time to study. In some cases, the strategy of the household might require children to participate in income generating activities, either on the family land or outside the household in commercial activities. This interrupts children's education to a greater or lesser extent, depending on the time allocated to paid work. In the worst case, children are withdrawn from school altogether.

Early child marriages as one of the coping strategies commonly adopted in Muzarabani during times of food shortage. During climate crises, child marriage is used as a coping mechanism because (a) the bride price/dowry is welcome income, (b) it is one less

person for the family to feed, clothe, and educate, and (c) the family perceives the girl will be better off and have greater food security in the marriage. The major effect of child marriages is that, in the majority of cases, the married child is withdrawn from school.

In 2015, 4.4 percent of the female students who withdrew from primary school gave the reasons of marriage (3 per cent) or pregnancy (1.4 per cent). Only 0.1 percent of the boys who withdrew from school did so for purposes of getting married. At the secondary school level, the situation was worse. About 20.5 percent of girls who dropped out of school did so because of marriage and an additional 14.6 percent of the girls that dropped out of school did so because they were pregnant. In contrast, only 2.4 percent of boys who dropped out of school did so because of marriage, while only 0.6 percent dropped out because of pregnancy (of the partner).

### Responses to Climate Change Related Challenges to Education

Since Independence in 1980, Zimbabwe has created an environment for the attainment of education by all through introducing progressive policies, strategies, programmes and activities. However, there are no policies within the education sector that specifically address the challenges posed by climate change. Certain aspects of current policies have measures that, to an extent, address adaptation to climate change but that may need to be strengthened. These aspects of policy include social protection schemes such school feeding, Basic Education Assistance Module (BEAM) for orphaned and vulnerable children, Second Chance Educational Program for out-of-school learners to catch up with their peers, and the Education Transition and Education Development funds which provides teaching and learning materials in schools.