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THE HEAT IS ON!

Towards a Climate Resilient Education System in Sri Lanka

Cover: Students clap during a class activity in Namahal Vidyalaya Government Tamil Mixed School in Navalady Tsunami Resettlement Village, Batticaloa District, in Eastern Province. The school serves 434 students (grades 1-11) in the village which has also been affected by conflict.

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Executive Summary

This Sri Lanka country study forms part of a UNICEF Regional Office for South Asia (ROSA) study on the Impacts of and Responses to Climate Change across Education Systems in South Asia. The overall aims of the regional study are:

- To generate evidence on how education systems in South Asia are monitoring, assessing and responding to the impacts of climate change
- To identify the main educational tools and mechanisms being employed in planning for and addressing climate risks
- To showcase the perceptions of key education sector stakeholders regarding further embedding climate change considerations and concerns into education tools and mechanisms.

The research methodology employed includes desk-based documentary review, national level key stakeholder surveys, school-level focus group discussions and a U-Report process targeting youth from 14 to 24 years old.

The small island nation of Sri Lanka is highly vulnerable to adverse effects of climate change. The dry zone in the northern, eastern and north-central parts of the country is susceptible to drought, while the wet zone in the south west quadrant including the central hills is more vulnerable to flooding and landslides. It is projected that the wet zone is becoming wetter and the dry zone dryer. 50% of the total population live in the low-lying coastal plains that are vulnerable to sea level rise, storm surges and coastal flood. Poor land use, rapid urbanisation and deforestation are some of the factors driving up disaster risk. Heavy dependency on a climate sensitive agricultural sector, the high malnutrition rate and limited access to piped water supplies in the households further aggravate Sri Lanka's vulnerabilities to climate change. Lower socio-economic populations living in the rural and estate sectors and in informal urban settlements are particularly vulnerable to climate-related shocks.

The study has examined direct and indirect impacts of climate change on education system in Sri Lanka. In terms of learning facilities, the devastating 2016 and 2017 floods and landslides damaged school infrastructure to varying degrees across the country. Lack of clean water at schools is a significant challenge facing many schools in dry zone and hilly areas during the dry season.

Concerning education access, in the aftermath of the 2016 and 2017 floods and landslides normal schooling was significantly disrupted due to school closures, schools being used as temporary shelters, loss of school materials among other factors. Girls from lower income families were at higher risk of dropping out of school. Not only major disasters but also small-scale recurrent hazards make student access to school challenging especially during the rainy season. Students in the Central Province face life threatening landslides and rock fall incidents following the increasingly frequent heavy rains. In the Eastern Province, some girls with family duties to fetch water encounter difficulties in attending school regularly in search for increasingly scarce water.

As to student physical health and wellbeing, vector-borne diseases such as dengue, water-borne diseases, skin diseases are increasing concerns, as is the incidence of students fainting. Economic hardship faced by rural farming communities is leading to malnutrition among children. Those who are not fed properly struggle to concentrate on their lessons, often feeling faint. In terms of student emotional health and wellbeing, the above-mentioned 2016 and 2017 disasters clearly took a heavy emotional tall on children. Increasing outdoor temperatures combined with the COVID-19 pandemic mean that many students nowadays spend a longer time indoors. Students are likely to become more irritable when staying in a hot and uncomfortable room that lacks effective cooling and ventilation facilities.

With regard to climate change impacts on education provision and learning quality, there are no mechanisms in the education


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sector to systematically monitor lesson time lost and student academic performance in relation to climate-induced hazards and events. A very hot and crowded classroom without proper cooling and ventilation facilities presents a significant challenge in quality teaching and learning. Due to high outdoor temperatures and other safety concerns, science lessons take place indoors without the nature immersion experience that was once very common in Sri Lanka. There is a worrying sign that lack of nature-based learning has led to the creation of a generation of Sri Lankan students who do not display any sense of caring for the natural environment.

This study has also examined education sector responses to climate change exploring the seven key education systems components (i.e. policies, plans and strategies; finance; curriculum, teaching and learning; teacher capacity development; communication, coordination and partnership; school/community student participation platforms; monitoring, evaluation and accountability). Main research findings include the following:

- In existing education policies and plans considerations of climate change mitigation and adaptation are lacking and education policy alignment with key national climate change policy and strategy documents is lacking.
- The Ministry of Education currently does not have resource allocations earmarked for climate change risk reduction and resilience building.
- Although there exist various climate change-relevant curriculum opportunities especially at the secondary level, heavily exam-focused teaching and learning means that students lack relevant knowledge, skill and attitudinal development opportunities. In the face of the increasing recurrence of fast- and slow-onset of hazards compounded by the on-going COVID-19 pandemic, there is an urgent need for systematic psychosocial support for students.
- Climate change-focused teacher training opportunities are short-term and ad hoc. Teacher-centred and exam-oriented pedagogical practices existing in Sri Lankan classroom are a huge obstacle in the way of implementing action-oriented and practical climate change teaching and learning.
- There is no coordination mechanism focused on education sector climate change risk mitigation and resilience building. Inter-ministerial collaboration and coordination between the Ministry of Education and the Ministry of Mahaweli Development and Environment is currently very limited and rather thin.
- Student climate change engagement opportunities outside of the classroom depend on the enthusiasm of individual teachers and schools. The provision is, thus, very hit-and-miss. Existing school platforms (i.e. school environment committees/societies, the school health clubs, the student Parliament Programs) carry great potential for enhancing student change agent capacities in general but also for developing climate change mindfulness and action.
- There exist no mechanisms and tools in place to systematically monitor climate change impacts on school infrastructure, student and teacher health and wellbeing, education provision and learning quality.

Recommendations to make the education system in Sri Lanka more resilient in the face of increasing climate change risk are as follows:

Climate Change Impact Monitoring and Assessment

- Consult with relevant stakeholders, develop climate change impact and vulnerability indicators and subsequently integrate them into the existing school self-assessment tool, NEMIS and/or Desinvintar (i.e. Disaster Management Centre's database) as appropriate
- Develop inter-ministerial collaborative and partnership mechanisms between the Ministry of Education and relevant government Ministries/Departments (e.g. Department of Census and Statistics; Ministry of Disaster Management; Ministry of Mahaweli Development and Environment; Ministry of Health; Ministry of Women & Child Affairs and Social Security) in gathering, sharing and analysing climate change impact data as it concerns children and schools

Policies, Plans and Strategies

- Incorporate climate change risk reduction and resilience building into the *Nati*onal *Guidelines for School Disaster Safety*, the next *Education Policy* and the on-going Education Reform Programme. In such process ensure that the needs of children who are most vulnerable are met (e.g. children with disabilities)
- Develop a comprehensive and system-wide 'climate smart school' concept/framework for Sri Lanka through a wide consultation with stakeholders from multiple sectors and different levels including teachers and students, followed by practical guidelines development and subsequent systematic implementation
- Integrate the program and strategy for learning continuity and remedial education developed during the COVID-19 school closure period in national and provincial education systems as standard operating procedures for education in emergencies

Finance

- Raise awareness among national government officials (especially in the Ministry of Education and Ministry of National Policies and Economic Affairs) regarding the benefits of financing climate change mitigation and

adaptation activities (or 'climate smart' schooling) in the education sector and cultivating a shared understanding of what constitute a climate smart schooling budget and how to utilize it effectively
- Ensure equitable allocation of a 'climate smart schooling' budget (once it is set up) across the country. This could be linked to the existing equity funding mechanisms
- Consider creating a financial tracking system for climate change mitigation and adaptation related activities in the education sector to better monitor budget allocation and utilization
- Explore ways to better mobilize and share resources among relevant government Ministries and Agencies and other MoE partners, including the private sector, for climate change mitigation and adaptation activities in the education sector
- Plan to mobilise necessary resources for relocating schools in high risk areas to a safe location
- Explore external climate change funding opportunities (e.g. Green Climate Fund) with a view to filling the current resource gap so enhancing climate resilience in the education system

Curriculum, Teaching and Learning

- Identify contextually appropriate green skills for a low carbon economy and integrate them into the secondary curriculum and into assessable learning outcomes. Green skills should be an integral part of the emerging 21st century skills agenda in Sri Lanka.
- Conduct a thorough curriculum audit at both primary and secondary levels to identify existing opportunities and gaps for climate change risk reduction and resilience building learning and action. Build on the opportunities and close the gaps.
- Ensure clear curriculum progression in terms of knowledge, skills and dispositional learning outcomes concerning climate change mitigation and adaptation; also forge cross-curricular and interdisciplinary links between treatment of climate change mitigation and adaptation in different subjects at the same grade level
- Provide students with opportunities, arenas and platforms to take concrete actions and play change agent roles in mitigating climate change impacts at school, in their local community and beyond
- Give students safe and supportive spaces to express and share fears and concerns about changing climate and help them develop self-management skills to better cope with difficult emotions. Such support could be integral part of the existing School Health Program. Existing counselling services at schools could also be strengthened with the remit to pay close attention to children's emotional wellbeing during drought and other natural hazards

Teacher Capacity Development

- Conduct a thorough teacher education curriculum audit for both pre-service and in-service training programs to identify existing opportunities and gaps for climate change risk reduction and resilience building. Build on the opportunities and close the gaps.
- Build teacher capacities in employing a wide range of active/participatory and child-centred pedagogies, such learning modes being vital for action-oriented climate change education; in this regard, create synergies with the on-going 'child-centred Multi-Level Pedagogical Approach' initiative
- Build teacher capacity in promoting environmentally sustainable practices at school that are most relevant to the locality (e.g. water conservation; developing school gardens; tree and mangrove planting, solid waste management; using and maintaining renewable energy technology; awareness raising and advocacy techniques)

Communication, Coordination and Partnership

- Incorporate climate change risk reduction and resilience building components in the existing coordination mechanisms/platforms at the national level (e.g. the National Disaster Management Coordination Committee Meeting, the Comprehensive School Safety Working Group)
- Ensure a multi-sector partnership approach to embedding climate change components in the next Education Plan, the Education Reform Program, teacher capacity building programs as well as to developing a climate smart school concept/program

School/Community Student Participation Platforms

- Create a sustainable support mechanism for School Environment Committees/Societies, School Health Clubs and the Student Parliament Programme by identifying and integrating climate change specific terms of reference and stipulating minimum levels of action; ensure effective coordination among these three platforms so as to create synergies between them; also create a 'green star' recognition scheme for individuals and schools making a unique contribution to mitigating and adapting to climate change
- Plan ahead to ensure sustainability of village-level Children's Clubs beyond the current funded CC-DRR programme period
- Develop an online platform, a 'clearing house', for sharing climate change-related experiences and actions among students in Sri Lanka
- Expose Sri Lankan students to regional and global climate change movements/networks through online platforms or face-to-face gatherings as appropriate.

Section 1
Introduction

1.1. Aims and Scope of the Study

This Sri Lanka country study is one of the eight country studies undertaken as part of a UNICEF Regional Office for South Asia (ROSA) Study on the Impacts of and Responses to Climate Change across Education Systems in South Asia.

The overall aims of the regional study are threefold:

- To generate evidence on how education systems in South Asia are monitoring, assessing and responding to the impacts of climate change
- To identify the main educational tools and mechanisms being employed in planning for and addressing climate risks
- To showcase the perceptions of key education sector stakeholders regarding further embedding climate change considerations and concerns into education tools and mechanisms

In examining the interface between climate change and education, this study focuses on three areas:

- Direct and indirect climate change impacts on education systems, in terms of learning facilities, access to education, student health and wellbeing, education provision (including teacher health and wellbeing) and learning quality, each having significant implications for the quality of education
- Education system responses to climate change, exploring seven key education system components (i.e. policies, plans and strategies; finance; curriculum, teaching and learning; teacher capacity development; communication, cooperation and partnership; student participation platforms; monitoring, evaluation and accountability)
- Key education sector stakeholder experiences, perceptions and needs concerning climate change education.

1.2. A Brief Note on Methodology

The methodology employed is a desk-based documentary review, combined with consultations with, and information gathered from, key stakeholders in Sri Lanka through national-level stakeholder surveys, school-level focus group discussions (FGDs) and a U-Report[1] targeting youth from 14 to 24 years old.

7 national-level stakeholders from the Government, UN organizations, national NGOs and academic institutions were identified by the UNICEF Sri Lanka Country Office according to the criteria set for the study and each was invited to participate in national-level stakeholder surveys conducted via email or Zoom. 5 survey contributions followed (including one group contribution) between 11 August 2020 and 27 January 2021. Email follow-up communications with selected survey respondents took place for further information gathering and clarification. The SWOT (strengths, weaknesses, opportunities and threats) analysis discussion on page 26 was one element of the national stakeholder survey.

Six school-level FGDs were conducted between 27 January and 5 February 2021 using the Zoom facility. In the Eastern Province (Ampara district), 2 teacher FGDs and 2 students FGDs were implemented. The first teacher FGD involved 8 secondary school teachers (5 female; 3 male) from two Tamil medium[2] schools. 12 secondary students (6 female, 6 male) from the same two Tamil medium schools participated in the first student FGD. The second teacher FGD in the Eastern Province involved 6 secondary school teachers (3 female, 3 male) from a Sinhala medium school. 6 secondary students (3 female, 3 male) from the same school participated in the second student FGD. In the Central Province (Nuwara Eliya district), a third teacher FGD was organized with 7 teachers (6 female, 1 male) from a Sinhala medium school. A third student FGD with 10 students (5 female, 5 male) from the same school also took place. UNICEF Sri Lanka Country Office personnel provided all necessary interpretation support. Before the FGD, student participants were asked to draw two images, i.e. one on 'climate change in my village/locality' and another on 'climate change impacts on my education'. Each drawing prepared by the student was presented and discussed at the FGD.

Analysis of the data gathered is woven into the relevant sections of this report. The U-Report process was implemented and analysed by a UNICEF ROSA team leading to the completion of their publication, *Rising to the Challenge: Youth Perspectives on Climate Change and Education in Sri Lanka (Lopez Rello & Ackers 2021)*[3] upon which this report draws.

[1] U-Report, run by UNICEF and its partners, is a messaging tool that empowers young people around the world to engage with and speak out on issues that matter to them.
[2] Sinhala and Tamil constitute the two national languages of Sri Lanka, so the medium of instruction in any school can be Sinhala and/or Tamil. A small percentage (1.4%) of schools use English as the medium of instruction (Ministry of Disaster Management & Ministry of National Policy and Economic Affairs 2017).
[3] For a full report, go to: https://www.unicef.org/rosa/reports/rising-challenge-3

Section 2
Climate Vulnerabilities in Sri Lanka

The small island nation of Sri Lanka is highly vulnerable to the adverse impacts of climate change. According to the 2017 *Global Climate Change Index*, Sri Lanka was the second most climate-affected country in the world (Germanwatch 2018).

Cyclones, flooding and landslides are the most common hazards. The 'dry zone' covering the northern, eastern and north-central parts of the country is susceptible to drought. The frequency, duration and intensity of droughts are on the rise. In 2016-17 the country experienced one of the worst droughts in four decades affecting 1.8 million people across 20 districts (UNDRR 2019). The 'wet zone' in the south west quadrant including the central hills is more vulnerable to flooding. There is a strong correlation between areas of high rainfall intensity and the landslide locations. Poor land-use planning and utilization, rapid deforestation and resultant soil erosion and biodiversity loss are some of the factors driving up flooding and landslide risk (Climate Change Secretariat 2016; UNDRR 2019; USAID 2018). According to the Department of Meteorology's recent projection for up to the year 2080, the wet zone is becoming wetter and the dry zone dryer (Ministry of Sustainable Development, Wildlife and Regional Development 2018).

Except for the hilly south-central region, most of the country consists of low-lying coastal plains. About 50% of the total population live in the coastal areas, with 25% living within 1km of the coast being regarded as particularly vulnerable to sea level rise, storm surges and coastal flood. Many coastal communities depending on fisheries are already in a precarious condition. Coastal erosion, which is already causing damage, is expected to become more severe in the future due to sea level rise and storm surges. Mangroves and other forms of coastal vegetation offering protection from coastal hazards are under significant pressure because of development with only less than a third of the island being protected by such vegetation (Ministry of Mahaweli Development and Environment 2016; USAID 2018).

Sri Lanka's vulnerability to climate change is further aggravated on account of its heavy dependency on a climate sensitive agriculture sector. Nearly 30% of the population engage in agriculture-related livelihoods. Extreme weather events, temperature rise and erratic rainfall patterns affect agricultural yields, including the country's key staples such as rice. Both farmer livelihoods and the food security of entire population are under significant risk (Ministry of Mahaweli Development and Environment 2016). Malnutrition is already a serious concern in Sri Lanka.[4] The rate of acute malnutrition (wasting) amongst children under 5 years old (15.1 % in 2018) is the second highest in the region (FAO *et al.* 2019). It is estimated that only 36% of the households have piped water supplies (Ministry of Environment 2011).

In spite of recent significant progress made in reducing poverty, pockets of severe deprivation remain. The lower socioeconomic groups living in the rural and estate sectors (such as tea plantations) and those living in informal urban settlements are particularly vulnerable to climate-related shocks. Those who are just above the poverty line easily fall below the line, potentially reversing the country's achievements in poverty alleviation (UNDRR 2019).


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[4] According to FAO *et al.* (2019), in 2016-2018, 9% of the total population in Sri Lanka was undernourished.

Climate Change in My Locality

Teacher and student FGD participants were asked about climate change impacts they have noticed and experienced in their locality.

Teacher FGD participants in the Eastern Province report that both dry and rainy seasons have become more extreme. Nowadays they experience more frequent flash floods and a prolonged dry period that used to last for 2 to 3 months but now continues for 6 to 8 months each year. Ampara district is one of the main rice producing areas in the country and a majority of people are either farmers or depend on the agriculture-based industries. As their habitats have been intruded upon and degraded by human activity and by less rainfall, elephants now venture into areas of human settlement. 'Human and elephant conflicts are rising all around the Ampara district,' a male teacher highlights in response to being asked about significant challenges due to climate change.



My village used to be so green and everywhere was very beautiful. But the green areas that existed before have almost gone. The place has become dry and drought is a problem. I observed these changes during my lifetime. My life, my education, my village are all badly affected by climate change. There isn't enough food for villagers as crops are damaged.

J. Anuja, Grade 13, Eastern Province



In search of water we have to go far away. I have to be absent from school when there is no water even in the far distance. When I collect water - only for drinking, not enough water to fulfil basic needs such as washing and bathing, I save a very small amount of water to wash my face before going to school. At school, we face the same water scarcity problem. We lack safe drinking water. Children faint and suffer from headaches due to high heat and dehydration. This situation affects our regular school attendance especially from May to July when we suffer from water shortages….

Because of high temperatures and water shortages, plants, trees and our vegetables don't grow. They are dying. We don't have proper harvesting, which is badly affecting us.

M. Pirathisa, Grade 12, Eastern Province



The dark colours in my drawing symbolize all the difficulties faced by children and their families – most of them are farmers – in my area. When it rains it rains too much. Flooding occurs and harvests are lost. When there is no rain at all, harvests are dried out and lost.

The girl in the drawing has four arms; two hands holding a book representing the importance of education, a third hand with water symbolizes the importance of meeting basic needs, a fourth hand holding an umbrella symbolizes the importance of protecting children from too much heat and rain. The depiction of the girl tied with a chain symbolizes all the difficulties which children face in moving forward and getting education in a changing climate and environment.

I used unorganized colours to depict the unorganized lives of the children due to climate change and other issues.

H.M. Chamodi Kaveesha Nethmini, Grade 11, Eastern Province

Teacher FGD participants in the Central Province, all born and brought up in the same locality, share that they now experience a much more prolonged and heavy rain period (9 months per year) and face more frequent flooding and landslides. 'We previously did not have such problems, but now even with small rainfalls, landslides occur,' a female teacher reports. They point out that unauthorized constructions, poor drainage management and deforestation have made them more susceptible to landslides.



Because of soil erosion and heavy rains in the hilly areas, we have rock falls and landslides every year. Last September, when I was travelling to my school, I encountered rock falls. I was worried about my education and examination, as I could not go to school for several days until the rocks were removed.

U.G. Gihan Seneviratne, Grade 11, Central Province



When crops were destroyed by heavy rainfall during the rainy season, my family's main income was lost. I always worry about what might happen next to our family. I am very much worried about my education. I face so many difficulties in going to school. My family cannot afford an umbrella so I use local banana leaves as an umbrella.

G.K. Rashmi Chamathsara Sewwandi, Grade 9, Central Province



Due to very heavy rain, roads are damaged. I go to school with great difficulty. My uniform and belongings get very wet. It is very difficult to be in class with wet clothing. Despite of all the difficulties, I am determined to stay in the class as education is very important!

A.L. Dinuk Lolitha, Grade 11, Central Province

Section 3
Climate Change Impacts on Education System

The increasing prevalence and intensity of climate change-induced fast onset natural disasters, as well as slow onset events, have been negatively affecting various aspects of education system in Sri Lanka. According to the U-Report survey conducted for this study, overall 62% of the Sri Lankan youth respondents (n= 617) claim that their education/studies have been affected by climate change (Lopez Rello & Ackers 2021).

While the impacts of climate change in the education sector have not been researched systematically in Sri Lanka, the national-level stakeholders participating in the survey (n=5) consider climate change impacts to be 'serious' or 'extremely serious' in the following areas: student access to school (3 responses), lesson time (3 response) and clean water availability (3 responses).

3.1. Learning Facilities



Our school is located in a low-lying area and is frequently flooded. Floodwaters come into the school and lie stagnant in the school premises. A very uncomfortable situation for learning. My uniform got wet and dirty.

Rafatha, Grade 10, Eastern Province

In May 2016 and May 2017 Sri Lanka was severely affected by two of the heaviest rainfalls on record. Both were brought about by southwest monsoons and caused devastating floods and landslides across the country. According to Post Disaster Needs Assessments (PDNA) conducted for both years, 173 schools in 2016 and 336 in 2017 suffered damage. The damage varied in extent from substantial to less extensive damage to physical infrastructure including damage to assets and equipment including flooring, roofing, walls, fencing, water and sanitation facilities, classroom furniture, computer, science lab and sports equipment. The damage to the infrastructure and physical assets to the education sector was estimated at SLR 507 million[5] in 2016 and SLR 1,418 million[6] in 2017. Prior to these disasters, the National Building Research Organization (NBRO) had pointed out that many schools in the Ratnapura and Kagalle districts in the Sabaragamuwa Province and the Kalutara district in the Western Province were in need of urgent relocation being in high landslide risk areas. However, many children continue to attend these schools while a relocation site is agreed and resources mobilized (Ministry of Disaster Management & Ministry of National Policies and Economic Affairs 2016, 2017).

According to a 2014 survey on school water, sanitation and hygiene (WASH) involving 400 schools across the country, a majority of students participating in the study report that their schools have a water supply system for drinking or handwashing and about two-thirds of grade 7 to 13 students feel that the drinking water is good quality (UNICEF 2015). In contrast to this positive picture, a national stakeholder points out that lack of clean water at schools is a significant challenge facing many schools in dry zone and hilly areas especially during the dry season (National Stakeholder 5). Some teacher and student FGD participants in the Eastern Province highlight difficulties they face due to lack of safe drinking water at school. For instance, a female student reports that it is very difficult for both boys and girls to attend school, as there is neither enough safe drinking water nor water to meet other basic needs. She believes the water at school to be polluted but realizes it is the only water available for drinking. A female teacher explains that during high times of water scarcity, the local authority and military supply water to the schools.

[5] Approximately US$ 3,496,551
[6] Approximately US$ 9,450,000

3.2. Education Access



Every year around September, we encounter heavy rainfalls. It is very difficult for us to go to school. Roads are blocked. An umbrella does not work. My uniform, school bag and books all get completely soaked. By the time I get to the school I am very late. It is difficult to go back home, too.

Maleesha Dahami Nimnadi, Grade 9, Central Province

According to the above-mentioned PDNA reports, the majority of affected schools were not able to function for one week after the natural disaster took place. For the schools used as a temporary shelter for displaced local people, normal schooling was disrupted for almost one month, leaving students to attend a nearby school that resumed earlier. Those who lost their school materials, uniforms and shoes were not in a position to go back to school even when the school resumed. Overall, low attendance rates were clearly observed in the post-disaster period in both 2016 and 2017 (Ministry of Disaster Management & Ministry of National Policies and Economic Affairs 2016, 2017).

Both PDNA reports highlight that boys and girls in the estate sector (e.g. tea plantations) are already more at-risk of dropping out of school compared to their counterparts living in other parts of the country due to lower socioeconomic conditions of their families. Following on from disasters, children, especially girls from lower income families are at higher risk of dropping out of school in order to support the family livelihood (*ibid.*).

Small-scale recurrent hazards also disturb student access to school. Student FGD participants in both provinces express that they face a lot of difficulties in commuting to their school during the rainy season. Blocked and flooded roads, interrupted bus services and longer walking times in bad weather conditions are common challenges faced by the students. Arriving late and soaked to the skin, students find it very difficult to focus on lessons. Frequent landslide and rockfall incidents following heavy rains are life threatening according to student FGD participants in the Central Province. Teacher FGD participants in both provinces are concerned about poorer student attendance during the rainy season. A male teacher in the Central Province has noticed that both boys and girls living in remote areas tend to be more often absent during the rainy season. He explains that a high level of poverty in the area means that students don't have replacement school uniforms, bags and shoes so 'if they got wet, they cannot come to school next day.'

Some of the student FGD participants in the Eastern Province also highlight that water scarcity during the prolonged dry period prevents girls from attending school regularly. In areas not connected to piped water, collecting water (traditionally using a clay pot) is a job for women and girls. One female student explains that girls are expected to help their family by fetching water before going to school. She says: 'in search for water, nowadays I have to go much further. I am sometimes late for school. I have to be absent from school if I cannot get enough water for my family.'

In the U-Report survey conducted for this study, 16% of Sri Lankan youth respondents (n=617) report that climate change has affected their journey to school and 8% state that their family's ability to afford schooling has been affected (Lopez Rello & Ackers 2021).



3.3. Student Health and Wellbeing



Due to global warming, deforestation and lack of rainfalls, elephants are coming to human habits, damaging houses and cultivation. Farmers don't have money to repair the damaged houses. We are sad and emotional because of all the issues. On top of these, due to the coronavirus children now stay inside house damaged by elephants. Too hot and too uncomfortable to study. Children cannot play outside, either, as it is too hot. An empty pond depicts the emptiness we sometimes feel. All of these cause mental agitation and anger. When it is too hot, I get angry much faster. We can't focus on the lesson after 12 noon in school.

K.A Ohasi Buddhima, Grade 11, Eastern Province

A combination of heavy rainfalls, temperature rise and poor water management are conducive to spreading vector-borne illnesses. Dengue fever is a major public health problem in Sri Lanka. Although there are regular incidents throughout the year, two dengue fever peaks have a strong correlation with monsoon rains. In general, the first peak occurs in June and July, coinciding with the southwest monsoon season and the second peak at the end of the year, coinciding with the northeast monsoon season (Sirisena & Noordeen 2014; USAID 2018). Students from one of the Eastern Province FGD schools are concerned about dengue outbreak as their school is frequently flooded and stagnant flood water stays for a while, creating an ideal environment for mosquito breeding. Water-borne diseases, skin diseases and fainting are other climate change-induced health problems that student FGD participants experience themselves and/or witness among their peers.

School FGD participants in both provinces commonly share their concerns about economic hardship in rural communities leading to malnutrition among children. Some teachers report that many students coming from rural farming communities have only one or two meals per day and/or come to school not having had breakfast. Not being fed properly, students struggle to concentrate on the lessons and there are frequent incidents of students falling down in a faint while at school. A male principal in the Eastern Province explains that to tackle this issue his school voluntarily implemented a breakfast program by mobilizing local communities. Offering a breakfast to all the students every morning has yielded noticeable changes. Students who previously attended the school irregularly began to attend regularly. The number of students successfully entering the university has also increased.

Climate change not only affects student physical health and wellbeing but also their emotional health and wellbeing. Asked about how worried they were about climate change and what it means for the future, overall 83% of Sri Lankan youth U-Report respondents (n=497) indicated that they are 'very/extremely worried' (59%) or 'a little worried' (24%) (Lopez Rello & Ackers 2021, 16). The above-mentioned devastating floods and landslides in 2016 and 2017 took a heavy emotional toll on children due to the many losses, displacements and future uncertainties they faced (Ministry of Disaster Management & Ministry of National Policies and Economic Affairs 2016, 2017). According to FGD participants, rapidly deteriorating environmental conditions and changing climate are also sources of emotional distress for the students. Increasing outdoor temperatures combined with the current COVID-19 pandemic restrictions means that many students spend a longer time indoors. They are likely to be more irritable when staying in a hot and uncomfortable room that lacks effective cooling and ventilation facilities. A female student states that 'when we feel distress, a good environment comforts us but now we don't have it. Teachers cannot teach properly as children are often agitated and even angry.'



3.4. Education Provision and Learning Quality



Nowadays children have lost touch with the natural environment. They are always inside as it is too hot outside. They are always attached to smart phones or other gadgets, rather than spending their time in the nature.

Children learn about the nature only by looking at pictures without any real experience. When a teacher teaches about 'waterfalls' or 'rainforests', each student wonders if it is just a word or a real thing….

P.G.R. Kavindhu Dilshan, Grade 11, Eastern Province

There are no mechanisms in the education sector to systematically monitor lesson time lost and student academic performance in relation to climate change-induced hazards and events. Coupled with the issue of school closures and learning loss due to the COVID-19 pandemic this becomes an even more critical concern.

When lesson time is lost, it is normally up to school principals to determine whether there should be catch-up lessons (National Stakeholders 1, 5). This could be problematic in terms of logistical and teacher management challenges.

Teacher FGD participants report that during the rainy season, teachers especially those who have to travel a long distance face commuting difficulties. The late arrival of teachers impacts the timely delivery of the lessons.

A very hot and crowded classroom without proper cooling and ventilation facilities presents an additional challenge for both teachers and students. A male teacher in the Eastern Province notices that student academic performance is becoming degraded, students being unable to concentrate in a very hot and uncomfortable classroom. In order to better maintain student attention some teachers come up with their own methods. For instance, *Geography* and *Science* teachers have used drawing, singing and games in their lessons to 'divert negative feelings and draw student attentions to the lesson'. In a word of a *Geography* teacher, 'keeping students happy is the main trick to retain student attention.'

A female *Science* teacher in the Eastern Province FGD raises concerns about maintaining the quality of science lessons given that immersion opportunities in the natural environment have been lost. For her generation it was common to have 'nature-based' science, meaning the learning of science by going out, exploring and experimenting in the natural environment. Nowadays teachers cannot take their students out into the environment, as there are a number of safety concerns such as high temperatures, elephants and snakes. She observes the negative impacts of lack of nature-based learning among her students:

> Today's children don't love nature as much as previous generations [who grew up with the nature] do.
> A majority of the students do not display any caring, accountability or respect for the natural environment.

In nurturing a generation of young people ready to care for and take action to protect the natural environment, schools need to consider creative ways to tackle 'nature deficit' becoming increasingly common among Sri Lankan students.


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Section 4
Education Sector Responses to Climate Change

4.1. Policies, Plans and Strategies

The Government of Sri Lanka has taken a number of positive steps to address the impacts of climate change by formulating national level policies, plans and strategies and by creating a dedicated government institution, the Climate Change Secretariat within the Ministry of Mahaweli Development and Environment in 2008.

The *National Climate Change Policy (NCCP) of Sri Lanka* adopted in 2012 expresses overall national mitigation and adaptation ambitions and delineates 25 policy statements, including two relating to the education sector:

- Education, awareness creation and capacity building: Adopt multiple approaches to enhance knowledge, skills and positive attitudes of different stakeholders at all levels to address multifaceted, current and emerging issues of climate change;
- Creation of a climate change sensitive generation: Promote nationally appropriate climate change sensitive behavioural changes through school education by promoting proactive and responsible participation

(Ministry of Environment 2012, 6).

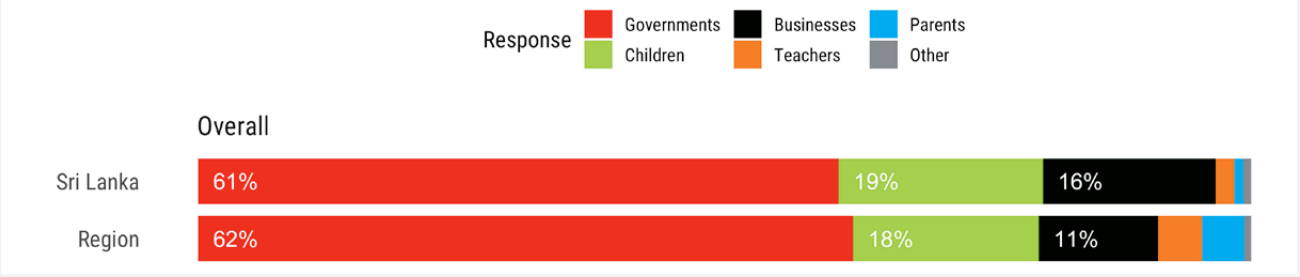
Sri Lanka's *Nationally Determined Contributions* (NDCs) covering 2021 to 2030 express a national commitment to climate change mitigation and adaptation. It identifies 5 priority sectors for mitigation[7] and 7 priority sectors for adaptation[8] with a strong emphasis on creating synergies between mitigation and adaptation actions. The education sector is not included in the NDCs. The document suggests taking an inclusive approach by ensuring that youth, together with women and vulnerable communities engage in and benefit from the ambitious NDC targets (Ministry of Mahaweli Development and Environment 2016).

In the case of the *National Adaptation Plan for Climate Change Impacts on Sri Lanka: 2016-2025*, the education sector is not one of the priority sectors, either, but 'education, training and awareness' is one of the crosscutting areas. To 'incorporate and further strengthen climate change knowledge in formal education - school and university curricula' is highlighted as one of the adaptation actions (Climate Change Secretariat 2016, 99).

There are other sector policy documents with no primary remit for education suggesting the integration of climate change-related topics into the school curriculum. Embedding disaster management and risk awareness education in school curricula are broadly mentioned in the *National Policy on Disaster Management* (Ministry of Disaster Management 2013) and the *National Disaster Management Plan 2013-2017* (Ministry of Disaster Management 2014). The *National Biodiversity Strategic Action Plan 2016-2022* includes 'integrating biodiversity and ecosystem service values' into the curriculum as one of the actions (Biodiversity Secretariat 2016, 143).

Further to the 2004 tsunami, the Ministry of Education developed the *National Guidelines for School Disaster Safety* (Ministry of Education 2008). This is primarily focused on fast-onset natural and human-made hazards (i.e. fires, lightning, thunderstorm, cyclone, flooding, tsunami, earthquakes, bomb threats). Consideration of slow-onset events is largely lacking. Consideration of gender and inclusivity constitute another gap. At the time of this research, the Ministry of Education is at the final stage of updating the 2008 guidelines as the *National*

BOX 1. UNICEF ROSA U-Report: Who should be taking the most action to address climate change? (n=566 in Sri Lanka; n=13,532 in the region)
(Lopez Rello & Ackers 2021, 21)



[7] Priority mitigation sectors are: energy, transportation, industry, waste, and forestry
[8] Priority adaptation sectors are: health, food security, water, irrigation, coastal and marine environment, biodiversity, and urban, city planning and human settlement

Comprehensive School Safety Guidelines with a view to rolling out the document to all schools once completed. The new *Guidelines* acknowledge the impacts of climate change including prolonged drought seasons in the country. The *Guidelines* provide practical guidance on establishing school safety groups that include children, conducting risk assessments, developing a school risk reduction plan, implementing and monitoring the plan, enhancing school community's preparedness for sudden-onset disasters and providing psychosocial support after a traumatic event.

In 2019, in line with the global framework on Comprehensive School Safety, the Ministry of Education developed a five year plan (2019 to 2023) for developing a comprehensive programme on school safety and education in emergencies. An overall objective is to establish an enabling mechanism to ensure the resilience of school communities. Climate change mitigation and adaptation specific components as well as gender and inclusivity perspectives and considerations are so far not evident in the plan (UNICEF Sri Lanka 2019a).

According to the U-Report survey conducted for this study, 61% of the Sri Lankan youth respondents consider that the government should be taking most action to address climate change, followed by children (19%) and business (16%) (see *Box 1*). 81 % of Sri Lankan youth respondents also think that it is at least 'likely' that the government will take action to address climate change in the wake of the COVID-19 pandemic (Lopez Rello & Ackers 2021).

4.2. Finance

In general, resource mobilization is one of the key challenges in lessening climate change risks in Sri Lanka as the government lacks budgets for climate adaptation interventions (UNDRR 2019).

Public expenditure on primary and secondary education has increased since the civil war ended but the investment as a proportion of GDP remains very small (2.1 % in 2018[9]) (Dundar *et al.* 2017; World Bank Group 2021). The education allocations are mainly for recurrent expenditures (75%) such as salaries (Ministry of Disaster Management & Ministry of National Policies and Economic Affairs 2016). There is no specific budget line dedicated to reducing climate change risks in the education sector (National Stakeholders 2, 5).

Considering climate change impacts are felt disproportionally among those who are socioeconomically disadvantaged, equity-funding mechanisms employed in the education system are noteworthy. For instance, through the Education Quality Input (EQI) Scheme, about 2% of recurrent education expenditures are to be allocated according to a formula that provides greater weight to smaller schools that are more likely to be poorly resourced and located in rural and remote locations. While the evidence regarding EQI has been mixed, some evidence indicates its contribution to improved student attendance and learning in smaller schools (Dundar *et al.* 2017).

4.3. Curriculum, Teaching and Learning

National-level stakeholders participating in the survey conducted for this study indicate that the main curriculum subjects that include climate change-related topics at secondary school level are *Science*, *Geography*, *Agriculture*, *Civic Education* and *Health Education*. Teacher FGD participants in the Central Province add *Arts* and *Religion (Buddhism)* to the list. For instance, an *Arts* teacher reports that she has her students draw pictures depicting geographical or environmental themes (e.g. landslides), while a *Religion* teacher explains that topics on 'causes and effects' and 'facing changes' in the curriculum provides an opportunity for the class to discuss climate change induced environmental changes.

In the U-Report, 66% of Sri Lanka youth respondents (n=1,022) are unable to explain what climate change and global warming are about. 67% of the youth respondents (n=690) state that they have learned about climate change through *Geography* and 18% through the *Science* lessons (Lopez Rello & Ackers 2021).

See *Box 2* below for an indicative list of climate change-related topics within *Geography*, *Science* (including *Biology*, *Chemistry* and *Physics*) and *Agriculture* subject areas in the secondary curriculum (*Agriculture* is only taught at senior secondary grade).[10]

[9] Comparative figures for 2018 are available for two other ROSA countries: Bhutan 6.9%; Nepal 5.1 % (World Bank Group 2021)

[10] This is solely based on an unpublished preliminary climate change curriculum review conducted by Plan International in 2018. The review focuses on a limited number of subjects. *Civic Education, Health Education, Religion (Buddhism)* and *Arts* and other secondary subjects are not covered. It should be noted that some of the information in the review document is not necessarily in line with the climate change curriculum opportunities reported by the teacher FGD participants. This research has not examined the reasons for such discrepancies.

BOX 2. Climate Change-related Topics: Indicative List

Subjects	Topics
Junior Secondary (Grades 6-9)	
Geography	*Grade 6* • Flora and fauna around home; geographical environment around the school • Waste disposal and utilization • Sustainable water and energy use • Air pollution prevention *Grade 9* • Climatic zones in Sri Lanka • Climate and vegetation in Asia • Development planning for sustainability • Environmental balance and ethics
Science	*Grade 6* • Climate and weather • Natural disaster related to climate change • Sustainable use of energy • Importance of water *Grade 7* • Heat and temperature • Soil erosion • Renewable and non-renewable energy sources; sustainable use of electricity sources *Grade 8* • Drought, flood, landslide, lightning *Grade 9* • Sustainable resource use
Senior Secondary (Grades 10-11)	
Agriculture	*Grade 10* • Weather and climate • Soil (degradation, conservation, restoration) • Food security • Impacts of climate factors on crops
Geography	*Grade 10* • Climatic types of the Earth *Grade 11* • Natural resources • Sustainable development
Science	*Grade 10* • Properties of carbon dioxide *Grade 11* • Global warming, greenhouse effect • Environmental (soil, water and air) pollutions • Biodiversity loss

BOX 2. Climate Change-related Topics: Indicative List

Subjects	Topics
Advanced Secondary (Grades 12-13)	
Agriculture	*Grade 12* • Impacts of climatic factors on crop production *Grade 13* • Climate change (causes; impacts on agriculture; mitigating impacts on agriculture) • Sustainable agriculture/resource management
Biology	*Grade 13* • Global warming and climate change • Depletion of ozone layer • Desertification • Biodiversity loss and conservation • Vector-borne disease control
Chemistry	Grade *12* • *Chemistry and properties of environment-related substances* *Grade 13* • *Water pollution*
Geography	*Grade 12* • Weather and climate • Climate of Sri Lanka • Nature and urbanization problems in Sri Lanka *Grade 13* • Climate change (mechanism; anthropogenic causes; impacts) • Natural hazards • Disaster Management • Overconsumption • Environmental ethics in Sri Lanka • Sustainable resource use
Physics	*Grade 12* • Temperature, heat exchange, transfer of heat

It should be noted that *Geography* (grades 6 to 9) and *Science* (grades 6 to 11) are compulsory for all students, but other subjects indicated in *Box 2* are optional subjects. In addition, with more than a quarter of student dropping out after the public exams in Grade 11[11], in reality a significant number of students miss the curriculum opportunities indicated above.

There are some enthusiastic teachers who use curricular and co-curricular opportunities to raise student awareness regarding particular climate-related challenges in their locality. For instance, some teacher FGD participants have discussed dengue prevention during the rainy season using their own subject lesson time and/or using special school days/events (e.g. Environment Day). Linking to the soil degradation topic of the *Agriculture* curriculum, some teachers have had students participate in compost making and in developing a school vegetable garden.[12] However, there are other teachers who are very reluctant to take on additional activities at school as they are under a huge pressure to cover all syllabus content to time.

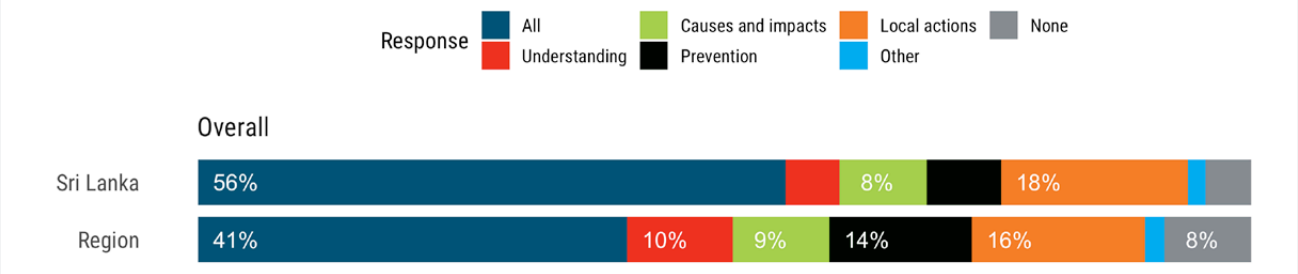
When asked about what they most wanted to learn about climate change in the U-Report, 56% of Sri Lankan youth participants (n=738) report that they would like to learn about all aspects of climate change, the highest percentage among the eight countries surveyed. 18% of Sri Lankan

[11] Education up to Grade 11 is compulsory in Sri Lanka. Students in Grade 11 take the General Certificate of Education (G.C.E.) Ordinary Level exams and have to be qualified to follow the G.C.E. Advanced Level. In 2019 the pass rate of G.C.E. Ordinary Level was 73.3% (Ministry of Education 2020).
[12] Vegetables grown by the students were sold to teachers and the school used the profits to support children's education.

respondents report that they would like to learn about local actions, a slightly higher percentage than the regional average. Only 4% of the respondents report that they have no interest in learning anything about climate change, a lower percentage than the regional average (see *Box 3*). These points indicate that Sri Lankan respondents are more interested in learning about climate change than their peers across the region.

another national stakeholder points out that simply including climate change-related contents in the curriculum and having students answer exam questions are not sufficient and that students should be immersed to the natural environment through projects and research in order to make them more environmentally sensitive (National Stakeholder 5).

BOX 3. UNICEF ROSA U-Report: What do you most want to learn about climate change? (n=736 in Sri Lanka; n=18,266 in the region)
(Lopez Rello & Ackers 2021, 18)



For the primary curriculum, *Environment Related Activities (ERA)* is the most relevant subject for climate change education (National Stakeholders 1, 5). This is a unique integrated subject aimed at developing student competencies related to the social, biological and physical environment (Chathurika 2017). In terms of the social environment, student awareness, sensitivities and skills linked to justice, rights, responsibilities and duties in a plural society are developed. For the biological environment, developing student awareness, sensitivities and skills concerning the ecosystems is the main focus. For the physical environment, students are expected to develop awareness, sensitivities and skills linked to the matters concerning energy and human living (e.g. food, clothing, shelter, health, waste) (Ministry of Education 2013).

Although the Ministry of Education recognises the importance of employing child-centred pedagogical approaches to better address the diverse learning needs of students, due to the strong exam competitions and pressures, reluctant teacher attitudes and practice in fostering child-centred pedagogies remains a challenge (UNICEF Sri Lanka 2019b; UNICEF ROSA 2018).

All the national stakeholders participating in the survey agree that children should be engaged in practice that enhances their knowledge, skills and attitudes around climate change mitigation and adaptation and environmental protection. Lecture-based and exam-driven learning has prevented children from 'critical climate change learning' (National Stakeholder 1). By the same token,

Similarly, student FGD participants express the view that they would like to gain knowledge of climate change, develop life skills and engage in positive climate actions in their locality. Asked about if they were the Minister of Education in Sri Lanka what they would like to do to help children and young people to contribute to positive actions tackling climate change challenges, students in the Eastern Province FGD suggest providing more climate change education and psychosocial support to disaster affected children. A female student in the Eastern Province FGD articulates her vision as follows:

> I would make sure that students have a more practical curriculum to learn about climate change. The current curriculum is not sufficient. Learning only theories is not sufficient. I would like to help students, teachers, parents and the entire society to take effective climate actions. Our world could be better safeguarded if we take collective action right now.

In terms of climate change learning assessment, most of the national stakeholders surveyed suggest employing formative assessment modalities such as self-monitoring, group work and project-based assessment.

4.4. Teacher Capacity Development

Although there have been short-term and ad-hoc teacher training opportunities focused on climate change, national stakeholders commonly report that there is no systemic and comprehensive climate change-focused in-service and pre-service teacher training provision in Sri Lanka.

Some of the teacher FGD participants call for face-to-face training to develop climate literacy focused on practical local action on climate change mitigation and adaptation, environmental protection and disaster risk reduction.

4.5. Communication, Coordination and Partnership

At the national level, there is no coordination mechanism focused on mitigating climate risks in the education sector. As the education sector is not one of the priority sectors in the Sri Lanka's *Nationally Determined Contributions*, coordination between the Ministry of Education and the Ministry of Mahaweli Development and Environment (Climate Change Secretariat) is currently lacking. However, there is a program-based coordination between the Ministry of Education and the Ministry of Mahaweli Development and Environment (Education Training and Research Division), which includes collaboration on a scout environmental education program (National Stakeholder 1).

4.6. School/Community Student Participation Platforms

There are a few school platforms that could be galvanised behind climate change learning and action.

First, each school in Sri Lanka is requested to establish a school environment committee/society involving students. These bodies aim at raising environmental awareness across the school community and making the school more environmentally friendly. Tree planting and cleaning up the school and local environment are common activities conducted by such groups. In reality only well-resourced schools are capable of establishing and running a school environment committee/society (National Stakeholder 1).

Second, each school is also requested to establish the Student Parliament Programme involving grade 6 to 13 students. It aims at giving students practical experience of democracy and opportunities to engage with social, economic and cultural issues relevant to the country. The Student Parliament should have ten Ministries[13], such as the Ministry of Health, Nutrition and Sports, the Ministry of Agriculture and Environment Development and the Ministry of Development of Physical Resources and Disaster Management. All the students are allocated to one of the ten Ministries and implement the duties entrusted to each Ministry by the Student Parliament (Ministry of Education 2016). See *Box 4* for some of the duties under the Ministry of Agriculture and Environment Development that are relevant to climate change mitigation and adaptation.

The School Health Program jointly run by the Ministry of Education and the Ministry of Health presents a further opportunity for student climate change learning and action using health-related issues as an entry point. The significance of the program has recently increased due to rising cases of non-communicable and communicable diseases that are linked to human behaviours and the environment. This program recognizes children as change agents in health promoting efforts. Through a school health club – which any student can join – students plan and implement school health activities working with adult members within a wider school community. They may organize special events and programs using role-plays, dramas, exhibitions and displays (e.g. wall newspaper) and assist in controlling vector-borne diseases (e.g. Dengue) and provision of safe drinking water (Office of the Secretary Health, Nutrition and Indigenous Medicine 2015).

According to the U-Report survey conducted for this survey, 96% of the Sri Lankan youth respondents express that they would like to do something to address climate change with necessary support. 'Joining an organization that addresses climate change' is the most dominant with expressed (37%) followed by 'teaching own community the impact of climate change' (19%) (See *Box 5*).

BOX 4. Student Parliament Programme: Ministry of Agriculture and Environment Development

- Implement recycling programmes
- Make and use compost
- Implement programmes which develop sensitivity to the environment
- Gather information of environmental destruction and take necessary steps to minimize them
- Build relationships with state institutions and voluntary organizations which are connected to various environmental activities
- Implement national agricultural and environmental policies at school
- Implement programmes which encourage the consumption of local products
- Create school farms, home gardens, herbal medical parks and forest gardens
- Pay attention to regional farming problems and search for solutions

(Ministry of Education 2016, 37)

[13] Small schools with less than 45 students should combine the Ministries as appropriate.

BOX 5. UNICEF ROSA U-Report: If you had the necessary support, what would you like to do to address climate change in the future?
(n=508 in Sri Lanka; n=11,670 in the region)
(Lopez Rello & Ackers 2021, 26)



Child and Youth Engagement and Action

The Climate Change Awareness Raising Project, 2012-2014

The Ministry of Education and the National Institute of Education together with GIZ (German Agency for International Cooperation) implemented a climate change awareness raising and behaviour change project in over 200 schools across Sri Lanka. As part of the initiative, school-level competitions, debates, exhibitions and student-led projects were implemented. A number of innovative student-led projects were conducted during this initiative. For instance, students from a school in the Vanuniya District of the Northern Province implemented a project to tackle severe water scarcity in the dry zone by promoting water conservation at school and producing environmentally friendly fertilizers using tree leaves for their school garden. This student-led initiative helped the school community understand the importance of using an environmentally friendly approach to agriculture (National Stakeholder 5).

The Child-Centred Disaster Risk Reduction (CC-DRR) Programme, 2015 onwards

One of the key objectives of the ongoing CC-DRR programme implemented by the Ministry of Women and Child Affairs supported by UNICEF is to 'enhance the skills and knowledge of children, adolescents and relevant sub-national level authorities on disaster preparedness to promote their resilience and meaningful engagement in disaster preparedness and response.' Between May 2019 and March 2020, 1,932 children's club members were trained on how to conduct child-centred risk assessment and how to develop CC-DRR action plans for their village. In Rathnapura district, 17 Children's Clubs developed DRR action plans and presented them to the District Secretariat requesting appropriate action, including technical and financial support for implementation. 5 out of the 17 plans developed by the Children's Clubs were agreed by the local authority and will be incorporated into the overall Divisional Disaster Management and Divisional Development Plans. During the COVID-19 pandemic, Children's Club members in the Puttalam District led a poster campaign to raise community awareness of disease prevention and good hygiene practices, a sign of enhanced children's capacity as a change agent (UNICEF Sri Lanka 2020a).

4.7. Monitoring, Evaluation and Accountability

The Sri Lankan Education Management and Information System does not seek to specifically capture data concerning climate change impacts on the education sector in Sri Lanka.

A desk-based analysis of multi-hazard exposure covering all Sri Lankan schools has been conducted by the National Building Research Organization (NBRO). The analysis solely based on the school locations without considering other variables (e.g. strength of school buildings) leaves large margins of error and further enquiry and analysis is required for greater accuracy and reliability. Despite NBRO recommendations concerning urgent relocation of the schools based on their location in high landslide risk zones, these schools continue to operate in the same location without any measures for relocation (National Stakeholder 1).

In order to strengthen school evaluation processes, the Ministry of Education has developed a school-based self-assessment guidebook with the title *Process of Evaluation for Assuring the Quality in Education*. It includes 8 main fields of evaluation (i.e. student achievement; teaching, learning and assessment; formal curriculum management; co-curricular activities; student welfare; leadership and management; physical resource management; school community leadership) accompanied by 60 criteria and 210 indicators. Climate change mitigation and adaptation related components do not form part of the guidelines, except for a very small number of criteria and accompanying indicators (see *Box 6*).

Through this compulsory annual self-assessment, each school is required to identify and prioritise five key focuses for improvement for next year's action plan (Ministry of Education 2014). There is an ideal opportunity here for embedding climate change action into schools.



BOX 6. Climate Change Mitigation and Adaptation related Criteria and Indicators

Criteria	Indicators
5.6 Ensuring students' sanitation	• 5.6.1 Availability of adequate fresh water and toilet facilities for students and staff, and implementation of a systematic procedure for daily cleaning of toilets • 5.6.2 Maintaining a systematic procedure for garbage disposal and recycling • 5.6.3 Taking steps to prevent epidemics, breeding of flies and mosquitoes and making students aware of these matters
5.9 Systematic implementation of disaster management	• 5.9.1 Establishment of Disaster Management Committees and active implementation of these and identification of possible disasters and the institutions which can assist in a disaster • 5.9.2 Identifying strategies to minimize disasters and making the school community aware of these and availability of a signal system to inform others of a disaster and conducting rehearsals on behaving in the event of a disaster
7.2 Proper use of buildings and infrastructure	• 7.2.3 Electricity and water are used very carefully and use is monitored

(Taken from Ministry of Education 2014, 27,35)

Section 5
Discussion and Recommendations



Box 7 below synthesises the perspectives of the national stakeholders participating in the survey for this study. It indicates the overall strengths and weaknesses of the education system's response to climate change in Sri Lanka as well as opportunities presented and threats/obstacles to be faced.[14]

BOX 7. Education System Response to Climate Change in Sri Lanka: National Stakeholders' Perspectives

Strengths

- Existing institutions established to mitigate climate change risks
- Government policies and plans on climate change
- Student parliament programme
- School safety plan guidelines
- Comprehensive School Safety Program

Weaknesses

- Lack of a well-developed online mechanism for emergency coordination
- Lack of coordination, monitoring and early warning mechanisms to school communities
- Lack of due attention by relevant authorities to minimizing the impact of climate change on the education sector
- Lack of practical climate change knowledge and weak action readiness among students
- Lack of climate change awareness and sense of urgency in society (amongst both adults and children) as it is perceived as a distant issue
- Lack of government leadership in creating climate change awareness, mitigating climate change impacts and developing resilience skills among children
- Lack of resource allocations for climate change and resilience building in the education sector
- Lack of coordination

Opportunities

- Applying expertise of the Disaster Management Centre to climate change impact mitigation efforts in the education sector
- Providing grades for extracurricular activities on climate change as part of university entrance and job applications
- International attention to climate change
- International policies and concordats (e.g. Sustainable Development Goals; Sendai Framework for DRR)
- Including climate change adaptation comprehensively in curriculum
- Developing resilience skills among students, creating a generation who are more environmentally sensitive
- Taking action through students to make the whole society more environmentally friendly

Threats/Obstacles

- Poverty
- The increase in natural hazards (e.g. heat waves, flooding, landslides, lightning, strong winds)
- High vulnerability of school children and female teachers
- Negative climate change impacts on school infrastructure and children's attendance and learning

[14] Note: SWOT entries indicate participants' own placement of ideas but some entries are open to different interpretation as to where they should be placed.

Climate Change Impact Monitoring and Assessment in the Education System

Overall, there are no mechanisms and tools in place to systematically monitor climate change impacts on school infrastructure, student and teacher health and wellbeing, education provision and learning quality. The Ministry of Education National Education Management Information System (NEMIS) does not capture climate change impact data.

The detailed school self-assessment tool, *The Process of Evaluation for Assuring the Quality in Education* provides a unique, but so far unexploited avenue for addressing mainstream climate change concerns in Sri Lanka.

Recommendations

- Consult with relevant stakeholders, develop climate change impact and vulnerability indicators and subsequently integrate them into the existing school self-assessment tool, NEMIS and/or Desinvintar (i.e. Disaster Management Centre's database) as appropriate
- Develop inter-ministerial collaborative and partnership mechanisms between the Ministry of Education and relevant government Ministries/ Departments (e.g. Department of Census and Statistics; Ministry of Disaster Management; Ministry of Mahaweli Development and Environment; Ministry of Health; Ministry of Women & Child Affairs and Social Security) in gathering, sharing and analysing climate change impact data as it concerns children and schools

Policies, Plans and Strategies

Considerations of climate change risk are overall lacking in existing education policies, plans and roadmaps. The next *Education Policy* should be aligned closely with key national climate change policies and strategies such as the *National Climate Change Policy* and the *Sri Lanka's Intended Nationally Determined Contributions*. However, it should be noted that gender and inclusivity perspectives have not been taken on board in these climate change policies and strategies.[15]

At the time of research there is an initial discussion to develop the 'climate smart school' concept at the national level (National Stakeholder 1). What 'climate smart' schooling in Sri Lanka should look like in the short-, mid- and long-term within different climate zones should be addressed and necessary policies and guidelines developed. Such work should be predicated on the achievements and lessons learned from comprehensive school safety and child-centred disaster risk reduction efforts as well as the longstanding School Health Programme. Key components of climate smart schooling might include: ensuring functional WASH facilities; maintaining classroom air and temperature conditions that are conducive to quality learning; installing and maintaining renewable energy facilities/technologies; relocating schools especially at risk from landslides and sea level rise to safer locations; and promoting physical and mental health and wellbeing of both students and teachers.

When education access is likely to be disrupted by recurring extreme weather events and often times gradual but sometimes rapid environmental degradation, alternative learning pathways become vital in efforts to ensure education access, retention and quality of learning. Considering the significant access gaps in online distance learning among Sri Lankan students[16], the Learning Recovery Program in response to the COVID-19 school closure period is noteworthy. Being developed and implemented by the Provincial Department of Education in the Uva, Central and Eastern Provinces with support from UNICEF, this program aims at minimising learning gaps among two groups of primary level children, i.e. children from upper- and middle-class families with more access to online and distance learning and children from low-income families living in the rural areas and tea estates with very limited opportunities for such learning. The Program includes the following: diagnostic learning assessment of grades 1 to 4 students in relation to essential learning competencies for the specific school term; reorganization of the curriculum by prioritising weak competencies identified among the majority of students; remedial learning activities both at school (guided by teachers) and at home (guided by parents or guardians); formative and summative assessment of school- and home-based remedial learning; teacher training on implementation of the program activities. Based on the implementation experience in these three provinces, the Ministry of Education supported by UNICEF is in the process of nationwide implementation of the program as well as national strategy development (UNICEF Sri Lanka 2020b; UNICEF ROSA 2021). This program help develop standard operating procedures for education which can be implemented in other emergencies.

[15] At the time of research, the *Intended National Determined Contributions* revision is on-going and gender is one of the crosscutting areas which has been considered.
[16] For instance, during the COVID-19 pandemic school closure in 2020 in the Uva and Central Provinces 67% of Grades 1 to 5 students had no access to online learning (UNICEF Sri Lanka undated).

Recommendations

- Incorporate climate change risk reduction and resilience building into the *National Guidelines for School Disaster Safety*, the next *Education Policy* and the on-going Education Reform Programme. In such process ensure that the needs of children who are most vulnerable are met (e.g. children with disabilities)
- Develop a comprehensive and system-wide 'climate smart school' concept/framework for Sri Lanka through a wide consultation with stakeholders from multiple sectors and different levels including teachers and students, followed by practical guidelines development and subsequent systematic implementation
- Integrate the program and strategy for learning continuity and remedial education developed during the COVID-19 school closure period in national and provincial education systems as standard operating procedures for education in emergencies

Finance

The Ministry of Education currently does not have resource allocations specifically earmarked for climate change risk reduction and resilience building. Policy makers often have a narrow understanding of climate change risk reduction and resilience building as being primarily about emergency/disaster response. Insufficient climate change impact data in the education sector, as well as overall limited education budget available, might in part explain why the education sector lacks climate change and resilience resource allocations. Lack of financial resources is one of the main reasons why the schools recommended for urgent relocation due to high landslide risks cannot take the necessary actions. Investment strategies and plans for relocating these schools to a safer location should be urgently developed.

Equitable funding mechanisms (e.g. the Education Quality Inputs Scheme) in the Sri Lankan education system is highly relevant to supporting students and school communities disproportionately affected by climate change. Detailed analysis of equitable funding mechanisms in the education system lies outside this study and the potential benefits in relation to climate change risk mitigation and resilience building require further exploration.

The Disaster Management Centre (DMC) updates the *National Disaster Management Plan* every five years and could add a climate-induced disaster risk reduction budget proposal (National Stakeholder 3). Working closely with the DMC, the Ministry of Education could put forward a budget proposal to mitigate natural disaster impacts on the education sector. In addition, working with the Climate Change Secretariat, the Ministry of Education could mobilize funds for climate change mitigation and adaptation activities in the education sector.

Recommendations

- Raise awareness among national government officials (especially in the Ministry of Education and Ministry of National Policies and Economic Affairs) regarding the benefits of financing climate change mitigation and adaptation activities (or 'climate smart' schooling) in the education sector and cultivating a shared understanding of what constitute a climate smart schooling budget and how to utilize it effectively
- Ensure equitable allocation of a 'climate smart schooling' budget (once it is set up) across the country. This could be linked to the existing equity funding mechanisms
- Consider creating a financial tracking system for climate change mitigation and adaptation related activities in the education sector to better monitor budget allocation and utilization
- Explore ways to better mobilize and share resources among relevant government Ministries and Agencies and other MoE partners, including the private sector, for climate change mitigation and adaptation activities in the education sector
- Plan to mobilise necessary resources for relocating schools in high risk areas to a safe location
- Explore external climate change funding opportunities (e.g. Green Climate Fund) with a view to filling the current resource gap so enhancing climate resilience in the education system

Curriculum, Teaching and Learning

There are various climate change-relevant curriculum opportunities in Sri Lanka. Further efforts should include conducing a comprehensive curriculum audit from climate change risk reduction and resilience building perspectives. Such efforts should be followed by strengthening more systematic vertical and horizontal (i.e. cross-curricular) integration of climate change-related themes and topics from primary to secondary levels, placing a greater emphasis on skills and attitudinal development within a broader life skills context and employing learner-centred active pedagogies.

The ways students learn are being impacted by changing climate. Due to excessive heat outdoor experiential learning has become less viable and practicable and teachers struggle to maintain student attention in an increasingly unbearable classroom environment. Student emotional distress caused by both fast- and slow-onset of hazards compounded by the ongoing COVID-19 pandemic calls for urgent psychosocial support. Such work could be predicated on the longstanding Sri Lanka's School Health Programme.

In line with the Sri Lankan government's vision towards 'a low carbon pathway through sustainable development' (Ministry of Mahaweli Development and Environment 2016, unpaginated), students should develop new skills and competencies necessary for contributing to a greener and more sustainable economy. This may involve competencies concerning sustainable agriculture and fisheries, environmental protection and conservation, renewable energy, sustainable waste and water management, among others. The skills for a new and emerging low-carbon economy can also be purposefully linked to the 21st century skills[17] as broadly referenced by recent government documents (e.g. Ministry of Education 2020; Presidential Task Force on Sri Lanka's Education Affairs 2020). The government's intention to ensure access to education 'that is reflective of current and evolving industry needs' (Presidential Task Force on Sri Lanka's Education Affairs 2020, 2) indicates the importance of working with industry and private sectors to raise their awareness and create demands for green and sustainable jobs.

Recommendations

- Identify contextually appropriate green skills for a low carbon economy and integrate them into the secondary curriculum and into assessable learning outcomes. Green skills should be an integral part of the emerging 21st century skills agenda in Sri Lanka.
- Conduct a thorough curriculum audit at both primary and secondary levels to identify existing opportunities and gaps for climate change risk reduction and resilience building learning and action. Build on the opportunities and close the gaps.
- Ensure clear curriculum progression in terms of knowledge, skills and dispositional learning outcomes concerning climate change mitigation and adaptation; also forge cross-curricular and interdisciplinary links between treatment of climate change mitigation and adaptation in different subjects at the same grade level
- Provide students with opportunities, arenas and platforms to take concrete actions and play change agent roles in mitigating climate change impacts at school, in their local community and beyond
- Give students safe and supportive spaces to express and share fears and concerns about changing climate and help them develop self-management skills to better cope with difficult emotions. Such support could be integral part of the existing School Health Program. Existing counselling services at schools could also be strengthened with the remit to pay close attention to children's emotional wellbeing during drought and other natural hazards

Teacher Capacity Development

According to the participants in this study, climate change-focused teacher training opportunities are short-term and *ad hoc*. Further research to analyse existing and potential windows of opportunity for integration of climate change-related knowledge, skills, attitudes and behaviours in teacher training programs will be beneficial for the efforts to mainstream climate change considerations in both pre- and in-service teacher training programs.

Teacher-centred and exam-oriented teaching and learning practices in the Sri Lankan classroom are a huge obstacle standing in the way of implementing action-oriented and practical climate change teaching and learning. Teacher capacity development for climate change should go hand in hand with the ongoing government/UNICEF initiative on the 'child-centred Multi-Level Pedagogical Approach' which

[17] At the time of research, there exist no government documents articulating what constitutes 21st century skills for Sri Lanka and how they can be promoted in the general education system.

aims at replacing traditional teaching and learning practices with more 'inclusive, equitable and effective learning' (UNICEF Sri Lanka 2019b).

Recommendations

- Conduct a thorough teacher education curriculum audit for both pre-service and in-service training programs to identify existing opportunities and gaps for climate change risk reduction and resilience building. Build on the opportunities and close the gaps.
- Build teacher capacities in employing a wide range of active/participatory and child-centred pedagogies, such learning modes being vital for action-oriented climate change education; in this regard, create synergies with the on-going 'child-centred Multi-Level Pedagogical Approach' initiative
- Build teacher capacity in promoting environmentally sustainable practices at school that are most relevant to the locality (e.g. water conservation; developing school gardens; tree and mangrove planting, solid waste management; using and maintaining renewable energy technology; awareness raising and advocacy techniques)

Communication, Coordination and Partnership

There is no systematic coordination mechanism focused on education sector climate change risk mitigation and resilience building. Inter-ministerial collaboration and coordination between the Ministry of Education and the Ministry of Mahaweli Development and Environment are currently very limited.

Recommendations

- Incorporate climate change risk reduction and resilience building components in the existing coordination mechanisms/platforms at the national level (e.g. the National Disaster Management Coordination Committee Meeting, the Comprehensive School Safety Working Group)
- Ensure a multi-sector partnership approach to embedding climate change components in the next Education Plan, the Education Reform Program, teacher capacity building programs as well as to developing a climate smart school concept/program

School/Community Student Participation Platforms

Student climate change engagement opportunities outside of the classroom very much depend on the enthusiasm of individual schools and teachers or are limited to special short-term projects.

The School Environment Committees/Societies, the School Health Clubs and the Student Parliament Programme all carry great potential for enhancing student change agent and advocacy capacities in general but also for fostering climate change mindfulness, and action. At the community level, village-based Children's Clubs currently active for the CC-DRR programme provide another avenue for student-led climate action and advocacy. Its sustainability, however, should be ensured beyond the current programme period.

Recommendations

- Create a sustainable support mechanism for School Environment Committees/Societies, School Health Clubs and the Student Parliament Programme by identifying and integrating climate change specific terms of reference and stipulating minimum levels of action; ensure effective coordination among these three platforms so as to create synergies between them; also create a 'green star' recognition scheme for individuals and schools making a unique contribution to mitigating and adapting to climate change
- Plan ahead to ensure sustainability of village-level Children's Clubs beyond the current funded CC-DRR programme period
- Develop an online platform, a 'clearing house', for sharing climate change-related experiences and actions among students in Sri Lanka
- Expose Sri Lankan students to regional and global climate change movements/networks through online platforms or face-to-face gatherings as appropriate.

Section 6
Conclusion

While the mechanisms and tools to systematically monitor and assess climate change impacts on the different aspects of education system are currently lacking in Sri Lanka, this research has highlighted some examples of climate change impacts experienced in the country: school infrastructure destruction and damage caused by climate change-induced disasters; lack of clean water at school; interrupted education access due to natural disasters and recurring small-scale climate change-induced hazards; increasing incidents of disease including dengue; psychosocial distress of students due to disasters and changing climate conditions; difficulty in teaching and learning in unbearably hot classrooms; loss of nature-based learning opportunities.

Key gaps in education system responses to climate change include: insufficient climate change considerations in the existing education policy and planning documents; absence of a Ministry of Education resource allocation for climate change risk reduction and resilience building; lack of coordination mechanisms focused on education sector climate change risk mitigation and resilience building; insufficient student climate change engagement platforms outside of the classroom. School curriculum and teacher capacity building programs leave plenty of space of further development.

Key recommendations included are: developing climate change impact and vulnerability indicators for the education sector; integrating climate change considerations in key education sector policy and planning documents; allocating resources for climate change risk reduction and resilience building activities in the education sector; developing climate change education curriculum more systematically; developing teacher capacity development programs that incorporate both climate change-related content and active/participatory pedagogies; ensuring a multi-sector partnership and collaboration approach in mainstreaming climate change considerations in education policies, curriculum, capacity building programs; developing functional student participation platforms for climate change learning and action.

It is hoped that this report helps stimulate discussions and actions to make the Sri Lankan education system more climate change resilient and to empower Sri Lankan students to become agents of change who can actively contribute to building a greener and safer future for their communities and country, and beyond.



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THE HEAT IS ON!
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