

Climate Change and Environmental Education

A companion to the
Child Friendly Schools Manual



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PREFACE

Over the past decade, the child-friendly schools (CFS) approach has emerged as UNICEF's signature means to advocate for and promote quality education for every girl and boy. Child-friendly schools enable all children to achieve their full potential. As a part of a Global Capacity Development Programme on CFS, UNICEF has developed the *Child Friendly Schools Manual*, a reference document and practical guidebook to help countries implement CFS models appropriate to their specific circumstances.

The purpose of this module is to provide in-depth information on how Climate Change and Environmental Education (CCEE) can be integrated into the design, implementation and practice of child-friendly schools.¹ Many schools are incorporating CCEE in their curricula. While it is impossible to present a complete account of these efforts, this module includes the most relevant examples and illustrates the diversity of approaches.

This module should be used as a companion to the *Child Friendly Schools Manual*. Together with the policy-level resource pack 'Scaling Up and Mainstreaming Climate Change Adaptation and Disaster Risk Reduction in the Education Sector: Promoting child rights and equity', it will help countries plan, design and implement CFS in their own contexts.² It is intended as general guidance adaptable to particular contexts and settings.

1

PURPOSE, SCOPE AND CONCEPT

How our changing climate affects children

On any given day, more than a billion children are in primary or secondary school.³ However, many fail to complete their education, deterred by poor school quality and persistent challenges caused by deepening poverty, gender inequities, location, emergency and conflict situations, HIV and AIDS, disabilities, chronic environmental degradation and climate-related hazards.

Recent scientific findings indicate that a changing climate has a significant impact on our planet. In 2007, the Intergovernmental Panel on Climate Change (IPCC) issued its Fourth Assessment Report, so far the most convincing assessment on the science and implications of climate change. This report concluded that only immediate and sustained action will stop climate change from causing irreversible and potentially catastrophic damage to our environment.⁴

The IPCC noted that climate change will manifest itself in various ways, including:

- a. Rising temperatures, droughts and desertification;
- b. Heavy precipitation, flooding and rising sea levels;
- c. Extreme weather events such as cyclones, floods and droughts.

Such conditions can impact diminishing water resources, causing increased malnutrition, waterborne diseases such as diarrhoea, and vector-borne diseases such as malaria. Floods and

rising sea levels can cause drowning, injuries, and severe mental and physical trauma, particularly for communities living in small island developing states, settlements alongside major river deltas and low-lying coastal areas.

Evidence suggests that developing countries, already struggling with social, economic and environmental issues, will suffer most from greater weather extremes and the increasing incidence of droughts and floods. These areas include the Arctic region, Asia (major deltas, Bangladesh, China, India, Pakistan) and the Pacific, the Caribbean, Central Asia, Gulf of Mexico, Latin America (especially the Andean region and Amazonia), the Middle East and North Africa, the Sahel zone and Southern Africa.⁵

A number of statistics indicate the magnitude of the impact of climate change: in the next decade, 175 million children will be affected;⁶ the elderly, homeless, disabled, persons with respiratory diseases, girls and women are among the most vulnerable;⁷ 88 per cent of adolescents (10–19 years old) live in developing countries; children and women represent 65 per cent of those who will be affected by climate-related disasters every year in the next decade.⁸ Research has not fully established the effects of climate change and natural disasters on children, but existing evidence shows that their relative physical, cognitive and physiological immaturity leaves them more susceptible to the adverse effects of environmental degradation. They are more vulnerable to poor air quality, contaminated water and extreme heat.⁹ Girls are among the most vulnerable due to existing gender inequalities that, for example, can limit their access to education and nutrition.

Climate change threatens the broader sustainable development agenda to reduce poverty and child mortality, ensure universal primary education for all children and enhance gender equality. It jeopardizes efforts to meet the Millennium Development Goals (MDGs), especially those related to child welfare.

Existing frameworks for environmental education and sustainable development

Several existing frameworks suggest parameters for environmental education and sustainable development. The Convention on the Rights of the Child outlines the necessity of a safe and healthy environment for children to thrive.¹⁰ Every child should enjoy a standard of living that promotes his or her physical, mental, spiritual, moral and social development. Education must equip children with the necessary skills to participate in a free society and enable them to realize their potential. It is important to note the diversity in children's backgrounds and capacities to cope with climate change.

The United Nations Educational, Scientific and Cultural Organization's Convention against Discrimination in Education (1960) acknowledges the crucial role of education in ensuring equality of opportunity for all children. The Convention on the Elimination of All Forms of Discrimination against Women (1979) highlights the need to empower women and to enhance gender equality. The Beijing Declaration and Platform for Action (1995) strives to improve the position of the girl child. The Millennium Declaration (2000) addresses the relationship between children and sustainable development, and the United Nations Declaration on the Rights of Indigenous Peoples (2007) makes mention

of environmental conservation and protection as well.

In the last two decades, Climate Change and Environmental Education (CCEE) and Education for Sustainable Development (ESD) have become major tools for protecting the environment and ensuring sustainable development. The Rio Declaration on Environment and Development of 1992 confirmed the indispensability of children in achieving sustainable development. The United Nations Framework Convention on Climate Change (Article 6) and the Kyoto Protocol (Article 10) both encourage governments to educate, empower and engage all stakeholders and major groups on climate change policies. In 2002, the United Nations General Assembly proclaimed the United Nations Decade of Education for Sustainable Development (2005–2014), underscoring the indispensable role of education in achieving sustainable development. Facilitating access to information on climate change is critical to winning public support for climate-related policies.

There is currently no strong global institutional framework to address children's unique vulnerabilities to climate change. National Adaptation Programmes of Action and other plans, for example, rarely address the specific needs, knowledge and skills that educated children can offer in mitigating and adapting to climate change and other disaster risks.

Incorporating key concepts such as human rights, child rights, poverty reduction, sustainable livelihoods, disaster risk reduction, climate change, gender equality, corporate social responsibility and protection of indigenous peoples, ESD teaches children to think critically about sustainability and their society.

The challenge is to integrate ESD concepts into all aspects of quality education by considering three domains: the environment, economics and society. Students will need basic knowledge from the natural sciences, social sciences and humanities to understand the principles of sustainable development. Reorienting the existing curriculum of child-friendly schools towards ESD is the next innovative and relevant step towards enhanced quality education.

Preparing for a changing climate through quality education

To respond to the needs of children most at-risk and marginalized by climate change, quality education aims to make all girls and boys more resilient to the impacts of climate change. Quality education is a key component of adaptive capacity, the knowledge and skills needed to adapt lives and livelihoods to the ecological, social and economic realities of a changing environment. The child-friendly schools approach is most effective when it starts before school, continues throughout the child's life cycle and leads to lifelong learning in adulthood. For education to be transformative, however, it must be based on:

- a. Active, inclusive and participatory learning and teaching processes;
- b. Supportive and qualified teachers;
- c. Safe, supportive learning environments;
- d. Inherent links to local communities and local issues.

While children are among the most vulnerable to climate change, they need not be considered passive or helpless victims. Through education, projects and action, children can contribute to every aspect of climate change policymaking, mitigation

and adaptation. Children are powerful agents of change. When empowered and educated on climate change by child-friendly schools, children can reduce the vulnerability of themselves and their communities to risk and contribute to sustainable development. According to the research, educating girls and women is one of the best ways of strengthening community adaptation to climate change. Children can be extraordinarily adaptable in the face of significant challenges and their knowledge and capacities are invaluable to the development of realistic and practicable adaptation plans.

Existing tools to mainstream CCEE

Children in a Changing Climate, a promising coalition of partners, aims to secure a voice for children and young people as agents of change in preventing and adapting to climate change.¹¹ Supported by the Institute of Development Studies and its partners, the project demonstrates how children's views and climate change-related experiences can make their communities more sustainable and resilient.¹²

The *Child Friendly Schools Manual* uses the Convention on the Rights of the Child as the organizing framework of all arguments. At the same time, the manual clearly states that the key principles of child-friendly schools "need to be reviewed against the reality of available resources over a given time frame to arrive at a set of feasible standards for the design and implementation of child-friendly schools in a given country."¹³

UNICEF also works on scaling up and mainstreaming climate change adaptation and disaster risk reduction into the education sector. Based on child-friendly schools principles, the work integrates climate change,

disaster risk and environmental issues across the education system: within policies and legislation, education sector plans and budgets, curricula and examinations, teacher education, school infrastructure and facilities, learning environments, and school governance and management. It also calls for cross-sectoral involvement to strengthen education outcomes while contributing to each sector's own climate change goals.

Incorporating CCEE (including education on disaster risk reduction) into a child-friendly school curriculum ensures the realization of children's environmental rights according to the Convention on the Rights of the Child. It also encourages educators and other professionals to recognize the explicit relationship between the environment and children's rights.

KEY LINKS BETWEEN THE MDGS, CLIMATE CHANGE AND DISASTERS, AND EDUCATION¹⁴

Millennium Development Goals	Link to climate change and disasters	Examples of adaptation and risk reduction solutions through education
Goal 1: Eradicate extreme poverty and hunger	<ul style="list-style-type: none"> Climate change and disasters are projected to reduce poor people's livelihood assets, including health, access to water, homes and infrastructure. Climate change, including chronic disasters, will likely alter the path and rate of economic growth due to changes in natural systems and resources, infrastructure and labour productivity. A reduction in economic growth directly impacts poverty through reduced income opportunities. Particularly in Africa, food security is expected to worsen. 	<ul style="list-style-type: none"> Out-of-school youth and women benefit from vocational education on alternative livelihoods, small-scale entrepreneurship and other 'green' job skills related to the environment and disaster risks. This training increases resilience and sustainability and ensures future employability. Access and completion of quality education have a direct impact on development and poverty reduction. School gardening programmes support nutrition.
Goal 2: Achieve universal primary education	<ul style="list-style-type: none"> Natural disasters can cause the loss of livelihood assets (social, natural, physical, human and financial capital), including the destruction of school infrastructures. These losses can reduce opportunities for full-time education in numerous ways. Natural disasters often reduce children's time for schooling and studies, while displacement and migration can reduce access to education. 	<ul style="list-style-type: none"> Schools are constructed to withstand hazards. Environmental education is introduced. Led by youth, communities map risks and disaster preparedness. Schools install early warning systems. Activities increase awareness of climate change and advocacy for response.
Goal 3: Promote gender equality and empower women	<ul style="list-style-type: none"> Climate change, including chronic disasters, can exacerbate current gender inequalities. Depletion of natural resources and decreasing agricultural productivity may place additional burdens on women's and girls' health and reduce time available to participate in decision-making processes and income-generating activities. Research shows that natural disasters affect female-headed households more harshly and result in increased gender-based violence. 	<ul style="list-style-type: none"> Gender-sensitive curricula and pedagogy on climate change, disaster preparedness and risk reduction include girls and women. Safe school environments meet girls' needs with segregated latrines and other adaptations.

continued...

Millennium Development Goals	Link to climate change and disasters	Examples of adaptation and risk reduction solutions through education
<p>Goal 4: Reduce child mortality</p>	<ul style="list-style-type: none"> • Children are especially vulnerable to physical injury and trauma during natural disasters. • Direct effects of climate change include increased heat-related mortality and illnesses. • Climate change will likely result in declining quantity and quality of drinking water, a prerequisite for good health. It will exacerbate undernutrition by reducing natural resources and productivity and threatening food security. 	<ul style="list-style-type: none"> • Preschool children learn about emergency preparedness, evacuation drills and first aid. • Evacuation shelters and hazard-resilient schools are constructed. • Schools, particularly preschools, offer access to health services, safe water, improved sanitation and adequate nutrition. • Schools impart sanitation and hygiene education. • Schools raise awareness about mosquito breeding sites, eliminating standing water and other practices of deterrence. • School gardens and school feeding programmes benefit the young.
<p>Goal 5: Improve maternal health</p>	<ul style="list-style-type: none"> • Children and pregnant women are particularly susceptible to vector-borne and waterborne diseases. Pregnant mothers also need nutritional food, which will become scarcer as a result of climate change and disasters. 	<ul style="list-style-type: none"> • Schools strengthen health services and distribute malaria pills. • Young mothers receive access to education and nutrition through their schools.
<p>Goal 6: Combat HIV/AIDS, malaria and other diseases</p>	<ul style="list-style-type: none"> • Climate change and related disasters may increase the prevalence of some vector-borne diseases and vulnerability to water- or food-borne diseases, or diseases transmitted from person to person. 	<ul style="list-style-type: none"> • Schools provide health services, safe water, improved sanitation and adequate nutrition. • Schools impart sanitation and hygiene education. • Schools raise awareness about mosquito breeding sites, eliminating standing water and other practices of deterrence.
<p>Goal 7: Ensure environmental sustainability</p>	<ul style="list-style-type: none"> • Climate change and increasingly chronic disasters will alter or irreversibly damage natural resources and ecosystems, affecting productivity. These changes may also decrease biological diversity and intensify existing environmental degradation. 	<ul style="list-style-type: none"> • Schools increase access to water, sanitation and hygiene education. • Tree-planting campaigns are initiated. • Schools plant gardens. • CCEE and ESD are provided.
<p>Goal 8: Develop a global partnership for development</p>	<ul style="list-style-type: none"> • Response to the global issue of climate change requires cooperation from all countries, especially in helping developing countries to adapt. 	<ul style="list-style-type: none"> • A global network of experts and stakeholders supports climate change adaptation/disaster risk reduction mainstreaming in education. • Partners on all levels discuss the Convention on the Rights of the Child and climate change. • Global youth networks and movements for climate justice receive support.

2

DYNAMICS OF THEORY IN PRACTICE

This section explores the incorporation of different models of CCEE into child-friendly schools in different contexts. Variations are inevitable and expected. Nevertheless, child-friendly schools must share key principles based on the Convention on the Rights of the Child.

As weather patterns manifest themselves in different ways, schools will differ in their approaches to climate change and disaster risk reduction. Communities in sub-Saharan Africa, for example, respond to lack of water and frequent droughts, while Bangladeshi communities cope primarily with floods and contaminated water.

Regardless of how climate change is manifested, mitigation and adaptation are two complementary strategies that reduce risk and strengthen affected communities. 'Mitigation' covers all actions to decrease greenhouse gas emissions. 'Adaptation' changes natural and human systems to minimize the risks faced by vulnerable populations. Based on context, both mitigation and adaptation should be incorporated within child-friendly schools.

In both the developing and industrialized world, the CFS approach will base strategies on the priorities of their communities. However, it would be simplistic to assume that context will lead schools to limit their response to either adaptation or mitigation. For children to develop holistic views of climate change and take appropriate action, they must understand the complex interrelationships between mitigation and adaptation and how school communities can contribute to both.

CCEE strategies in child-friendly schools

Many child-friendly schools around the world have incorporated CCEE into their design, operation and curriculum. The most common strategies are:

- a. *Incorporating CCEE into the curriculum, with adaptations for the local context.* Lessons on key climate change topics such as global warming, the greenhouse effect and weather-related disasters are not enough. At-risk communities must develop local adaptation policies and practices, addressing disaster risk reduction, emergency preparedness and locally relevant sustainable development options. A nationally significant, child-focused, participatory approach works best. In South Africa, for example, stakeholders including the National Environmental Education Programme and the weather service designed curricular material for climate change. The tools included resource guides, training workshops, a competition among schools and a national media campaign.
- b. *Teacher training.* A large number of teacher training programmes and modules now cover climate change, environmental education and sustainable development. These modules and programmes share some basic goals: increasing teachers' understanding of the environment, climate and sustainability issues; helping them develop necessary skills and providing them with pedagogical

support. Truly innovative teacher training approaches for child-friendly schools must prioritize two concepts:

- Coordinated training of teachers to design methodologies rooted in children's rights;
- Intensive and organized participation of the community.

These manuals should also increase teachers' understanding of the social aspects of climate change, including the roles of gender, social status and other social differentiators. Attempts to incorporate CCEE into teacher training may face resistance. Policymakers may worry that CCEE will distract teachers, already burdened with heavy schedules, from their principal duties. However, once teachers are given enough responsibility, they quickly appreciate the social relevance of this training and are encouraged by increased parent and student support. This was the case in Southeast Mexico, where a multifaceted, comprehensive teacher training project was implemented on ESD. The project included training workshops, seminars, congresses, forums and distance education. New teaching units were added to textbooks, including topics on biodiversity, pollution and deforestation.

c. Strategies to raise awareness. Media campaigns, messaging through youth radio programmes, theatre and music, conferences, environment day celebrations, and other events and programmes within and outside of school can complement formal curricula and significantly strengthen learning. These strategies require collaboration with non-governmental organizations (NGOs) and the private sector. In Albania, for example, the

Child-Led Environmental Education Initiative created a partnership with local companies that introduced schools to recycling, curricular reform, teacher training and a community-wide media campaign. As a result, nearly half of the children in selected schools adopted at least one environmentally-friendly behaviour at home.¹⁵

d. Non-formal education. The child-friendly school approach is a comprehensive concept that encompasses the child's life cycle (ages 0–18). Ideally, non-formal and formal education systems are complementary, working as one holistic system to provide quality education for all learners.¹⁶ After-school activities provide opportunities for children to interact with their environment through field trips, research and action projects, and to practically apply what they have learned. Education focused on green jobs and disaster risk reduction helps young people develop their creativity, engage in productive work and contribute to the emerging green economy. The National Environment Youth Corps in Lesotho, for example,



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engages unemployed school dropouts in income-generating activities such as the production and sale of tree seedlings, recycling and off-farm activities.¹⁷

- e. *Guaranteeing a protective, child-friendly physical environment.* CCEE projects are likely to start in school buildings and on school grounds. Natural disasters and climatic events such as earthquakes, storms, drought or floods require schools to consider a range of safety and disaster preparedness measures. School environments can also promote child-friendliness by visually incorporating environmental education messages. Children took the lead in the 2004 post-tsunami reconstruction and repair of the schools in the Trincomalee district of northeast Sri Lanka. Some of their murals included messages on how to protect the environment. But most importantly, the project ensured that protection and safety were primary goals. With the direct participation of 800 children, this initiative showcased the key principles of child-friendly schools: child-centredness, protection, inclusiveness and child participation.
- f. *Water, sanitation and hygiene in schools.* One of the most devastating effects of climate change, especially in arid, drought-prone areas, is the threat to water security. As drought and desertification become more serious, water and sanitation emerge as staple issues within child-friendly schools. The most successful examples combine physical improvements with life skills-based hygiene education, and follow a gender-sensitive approach. Qualitative evidence in Malawi, for example, shows that when girls have access to soap and

private sanitation facilities at school, attendance rates increase and dropout rates reduce.

- g. *Development of green schools.* Changes in the school setting demonstrate the key concepts of quality CCEE. The 'green schools' design approach describes environmentally sustainable schools. Well-designed green schools provide ample natural light, good indoor air quality and ventilation. They are water and energy efficient and use non-toxic, locally available construction materials and renewable energy. The Green School in Bali, Indonesia is built almost exclusively with bamboo, a locally renewable resource. The school's mission is to develop responsible and green habits in its learners in an environment that models the principle of sustainability being taught.¹⁸
- h. *Carrying out CCEE projects in the community.* The Child Friendly Schools Manual identifies the fundamental link between schools and communities and the mutual benefit of community-engaged CCEE. In southern Nepal, disaster risk management projects within schools and communities were successful because they maintained a gender-sensitive focus. One project promoted girls' leadership in school-based disaster risk reduction. The real life efficacy of the approach was tested when these communities suffered floods. While no quantitative studies are available, strong anecdotal evidence found that community response in girl-led child-friendly school project sites was more proactive and organized, limiting the loss of lives and assets.¹⁹

3

CHILD-CENTRED PEDAGOGY AND TEACHER EDUCATION

The child-friendly schools approach is child-centred and includes the following principles:

- a. Interactive teaching methodologies;
- b. Child participation;
- c. Teachers as learning facilitators;
- d. Group cooperation and positive competitions;
- e. Activity-based learning methods.

CCEE is a fertile field in which to exercise these principles. Environmental education requires only scarce pedagogical resources, which is a huge advantage for most schools. A dedicated and motivated teacher can find countless ways to engage children in a range of hands-on activities with an environment and climate focus.

Taking a life cycle and life skills-based approach

As in all areas of study, the evolving and differing capacities of the child should be a central consideration in CCEE curricula. Lessons should be cumulative, linking to and building on each other and progressing from one year to the next. The figure on page 12 illustrates children's developing capacities to participate in management of the environment.

CCEE, including disaster risk reduction, should ideally be integrated into existing areas of study rather than introduced as a separate subject. CCEE may be

integrated through a limited number of carrier subject areas such as science, social studies and health, or infused throughout the whole curriculum. Sometimes a mix of approaches is used. Both approaches have advantages and disadvantages. Integration into carrier subjects can facilitate teacher training and improve oversight of the covered issues. Infusion throughout the curriculum may be more efficient if the education system is structured well and of higher quality. For resource-poor settings and beginner programs, the carrier subject approach is recommended.

A life skills-based approach should determine desired learning outcomes in each school. These goals should reflect the rights of children in the context of their community, including risk and protective factors in the environment. The environmental context depends on present and predicted local climate conditions, disaster risks, water access and quality, livelihood strategies, cultural perceptions of nature, levels of pollution and the access to and uses of natural resources. Examples of potential age-appropriate learning outcomes are presented on pages 13 and 14.

Child-centred learning outcomes related to CCEE build children's resilience to local environment-related risks and contribute to their health and long-term well-being. Outcomes include sustainable livelihood skills; abilities to cope with local environmental hazards and health issues; and positive attitudes and behaviours regarding environmental stewardship and sustainable consumption.

CHILDREN'S DEVELOPING CAPACITIES TO MANAGE THE ENVIRONMENT²⁰

Access to environments Environmental interests Ecological understanding Empathy and moral development Social understanding and skills Political awareness



EXAMPLE OF AGE-APPROPRIATE LEARNING OUTCOMES FOR CLIMATE CHANGE ADAPTATION AND DISASTER RISK REDUCTION²¹

Learning outcomes - Knowledge: The learners will understand...		
For Pre-primary School-Aged Children	For Primary School-Aged Children	For Secondary School-Aged Children
<ul style="list-style-type: none"> • The importance of the environment. • Their roles in keeping the environment clean. • How to detect and avoid risks in their daily environment. 	<ul style="list-style-type: none"> • The importance of using relevant information and sources of information. • Basic concepts of climate change. • Basic concepts of environmental stewardship. • The importance of natural resources for daily life. • Basic ecological cycles (i.e. water cycle and life cycle). • The relationship between risks, threats and vulnerabilities. • How to detect and avoid risks in their daily environment. • Basic disaster preparedness in their daily environment. • Historical factors and future consequences of present actions for themselves, others and their local environment. • That social norms and collective behaviour can be both a risk factor and a protective factor. 	<ul style="list-style-type: none"> • How to identify and analyze relevant information. • Concepts of climate change adaptation and mitigation. • Local ecological cycles (i.e. water, nutrients) necessary to maintain local resources; their interaction with other environmental, social and economic factors. • The life cycle of consumer products and concepts of environmental stewardship (including reusing, recycling and conserving environmental resources). • Historical factors and future consequences of present actions for themselves, others and their local and global environment. • The interaction of local and global actions and consequences with regard to climate change and environmental issues. • Concepts of disaster preparedness. • How to identify risks, local threats and vulnerabilities and their relationships. • The impact of social norms and collective behaviour on risk and protection. • The impact of inequity on risk for individuals and society. • How to evaluate alternative solutions to problems.

continued...

Learning outcomes - Attitudes: The learners will demonstrate...		
For Primary School-Aged Children	For Secondary School-Aged Children	For Secondary School-Aged Children
<ul style="list-style-type: none"> Concern with and appreciation for the local environment. Awareness of basic environmental hazards. 	<ul style="list-style-type: none"> Concern with and appreciation for the local environment. Respect and empathy for people in different circumstances and with different opinions. Appreciation of local (i.e. indigenous) knowledge of the environment. Awareness of their own and others' rights and responsibilities in protecting the environment and reducing risk. Responsibility with regard to use of environmental resources. Ways to recognize and deal with fear, grief and loss. 	<ul style="list-style-type: none"> Concern with environmental sustainability and disaster risk, as well as appreciation for environmental services at local and global levels. Awareness of their own and others' rights and responsibilities, including local indigenous groups, in environmental stewardship and disaster risk reduction. Responsibility with regard to use of environmental resources. Ways to positively cope with risk, fear, grief and loss. Consideration of the environmental and social impact of consumer items before purchasing. Appreciation for the complexity of interacting environmental, economic and social issues.
Learning outcomes - Attitudes: The learners will be able to...		
For Primary School-Aged Children	For Secondary School-Aged Children	For Secondary School-Aged Children
<ul style="list-style-type: none"> Use resources responsibly. Stay away from dangerous things in their environment. 	<ul style="list-style-type: none"> Communicate openly and respectfully about living in harmony with the local environment and reducing risk. Identify commonly used local natural resources (i.e. plants and animals). Review their daily practices and implement changes to become better environmental stewards. Seek help when needed. 	<ul style="list-style-type: none"> Communicate openly and respectfully about living in harmony with the local and global environment and reducing risk. Provide examples of how to collaboratively contribute to environmental stewardship, climate change adaptation and mitigation and disaster risk reduction. Identify and sustainably use local, natural resources. Act locally to preserve the environment and to reduce risk. Exercise the rights and responsibilities of active citizenship to achieve positive social goals. Seek help when needed.

A child rights-based learning and teaching methodology

Like all other activities in child-friendly schools, environmental projects inside or outside the school engage the basic principles of child-centredness, inclusiveness, participation and protective environments, emphasizing child rights and equity.

The child-centred learning and teaching methodology promotes experiential and project-based learning methods that are integrated in curricula.²² Gardening with children, for instance, develops their ecological literacy. Environmental projects are essential parts of the child-friendly schools concept and would be included even if concerns about climate change were not prominent across the globe.

Almost all environmental education projects can be designed not only to promote inclusiveness, but also to acknowledge the experience of children from traditionally excluded groups. The different lifestyles and realities of indigenous, migrant or disabled children often make them great sources of knowledge. Their inclusion during research activities can further empower them. Environmental education approaches should explore ways to better align education with students' diverse realities and the various places they inhabit.

Indigenous children, for example, can contribute to studies and projects based on their unique capabilities and knowledge of their natural environment. Children with certain disabilities can play significant roles in ecological projects, as in the case of the visually impaired child whose keen sense of smell and touch assists in encountering nature. Girls are often considered disadvantaged when it comes to technology, yet have much to add in the areas of farming and interacting

with nature. They should be involved in sustainable technology development, maintenance and use.

Child participation

Children as environmental researchers are at the heart of child-centred pedagogy. Child participation allows and encourages hands-on practices, learning while doing, group processes and democratic decision-making based on evidence.

A tremendous advantage of organizing climate change and environmental research through child-friendly schools is the ability to collect disaggregated data on communities. Often, governments and large research organizations do not have the capacity to collect community-level disaggregated data, creating a huge gap in knowledge. School systems have the potential to fill this gap, empowering thousands of student researchers in each country to collect reliable and relevant data on climate change mitigation, adaptation and disaster preparedness.

CCEE projects also provide opportunities for true child participation since the projects are likely to be directly related to the students' everyday lives. From making the school grounds safer to preparing for disasters, climate change and environmental issues are critical for children. Children's participation is crucial when working to build back better after a disaster. After a crisis, returning to some type of routine is the initial step in healing. Youth-led, participatory activities can empower children and make them feel like part of the solution, above and beyond returning to school. The more schools allow children to choose their priorities and the issues that are important for them, the greater the chances for true child participation.

CHILDREN'S MAPS OF WATER QUALITY IN TAJIKISTAN

Participatory approaches in community research and development can engage children and youth on a meaningful level. There are many excellent examples of children's involvement in local research that would otherwise require prohibitive numbers of inspectors. In Tajikistan, for example, children in hundreds of schools use inexpensive testing kits to collect data on water quality in their schools and homes. In a follow-up activity, students develop a comprehensive map of water quality and water-related illnesses linked to school attendance, a tool for influencing policy decisions. This kind of local knowledge and innovation needs to be respected and legitimized.²³

YOUNG WOMEN RESPOND TO A NATURAL DISASTER IN GUYANA

In 2005, Guyana experienced severe flooding due to torrential rainfall. Thousands of people lost their livestock, homes and personal belongings. After assessing the community's needs, the young women of the YWCA West Coast Berbice began a project aimed at providing food and sustainable income generation for more than 100 families. With a grant from the World YWCA, the women rebuilt livestock pens and purchased chickens, ducks and feed for the local households. "The project has helped the young women to improve their self-esteem," says Glynis Alonzo-Beaton, General Secretary of the YWCA of Guyana. "It has given them the impetus to try new things and even lead events without being afraid". These are essential qualities for the next leaders of our world.²⁴

Methods for investigating climate change and sustainability

Methods for investigating climate change and sustainability with children should include a range of visual techniques at which children can excel. These include mapping, modeling, community touring with a purpose, and observational techniques that require careful record-keeping at home, in the community and at school. The most common approaches used with children in the exploration of the environment are:

- a. *Mapping.* Mapping is one of the most important methods to help children understand how to reconstruct their physical environment. Even young children can create revealing maps with some support. In terms of climate change, disaster preparedness and environment, children can develop maps that identify dangerous and safe locations in their community, best routes for safe evacuation, and environmental hazards such as garbage, quicksand and wells. Maps can also show locations of play areas and highlight different types of play.



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School girls in Ampara, Sri Lanka create a map of their community and identify safe and dangerous locations.

- b. *Community tours.* Taking tours with children is one of the best ways to understand key features of a community. During these tours, children point out factors they think are important, and the facilitator asks questions to better understand the issues. Taking photos and videos during the tours helps with review and communication with other groups. Children can be creative photographers and filmmakers.



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During a tour, children in Indonesia point to undesirable environmental features in their community.

- c. *Designing with templates.* Creating physical change through participatory design is a great way for communities to respect the input of children. Cardboard templates are arranged and rearranged on a base map as a method of collective design. The projects can range from building new school latrines – separate for girls and boys – to reconfiguring the schoolyard so that all children have equal access and opportunities for play.
- d. *Measuring and recording environmental features.* With a short training in techniques of measuring, counting

and observing, children can collect reliable data for use in various environmental projects.



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Children measure physical features of their school in order to create a scale drawing of their school building and its surroundings.

- e. *Item rating and card sorting.* Boys and girls can make clear judgements about the quality of their environment by rating the features that are important to them, individually or as a group. Many techniques can be used, from card sorting, using markers or stickers to other conventional rating methodologies.



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Children in Moldova rate different features of their school by using stickers. Important features are generated by the group and listed on the cards.

- f. *Annotated drawings.* Asking children to draw pictures of things is tricky and should be used carefully. Adults usually do not interpret children's drawings accurately without help. Children themselves should explain their drawings and annotate them.



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In a village in Turkey in danger of landslides, children draw their assessment of the situation in a group exercise.

- g. *Focus groups with children.* A common way of working with children is to engage them in discussions about issues at stake – in this case, climate change, disaster risk, environment and sustainability. The school environment provides numerous opportunities to engage children in focus groups. It is often more effective to meet separately with different groups, isolating girls, boys, young children and teens.



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A children's focus group in Sudan discusses the lack of drinking water in schools and brainstorms ways to address the problem.

How child-friendly schools can ensure children's voices are heard

Child-friendly schools must strengthen the voices of boys and girls on climate change, especially children from marginalized communities. Child-centred approaches enable students to research issues and communicate their findings and ideas.

Throughout the world, children are becoming more involved in key environmental issues within their communities and effectively expressing their findings. Research from El Salvador and the Philippines, for example, found children engaged in child-led disaster risk reduction and adaptation activities at various levels. At the local level, children initiated change through specific activities to prevent landslides, removing large rocks hanging above school buildings and planting stabilizing shrubbery on steep hills. Children also raised awareness and initiated change in adults' behavior, identifying high-risk structures, suggesting ways to reinforce them and increasing awareness about communal waste disposal. The children proposed significant changes that surpassed community boundaries, lobbied for effective law enforcement on illegal logging and riverbed mining, and requested structural changes to schools and roads.²⁵

Children communicate their views about climate change and disaster risk reduction through informal channels, such as conversation with friends, parents, teachers and other close adults, and through formal channels such as school-based committees and community-based organizations. Information and communication technology play an important role in

facilitating exchanges of experiences and views among children in different countries and regions.

Formal communication channels are especially powerful components of child-friendly schools. The methods used for communication are not limited to conference addresses. In El Salvador and the Philippines, children used music, street theatre, video, photographs, discussion forums, street protests and murals to communicate their views on disaster risk and preparation.²⁶

In Kenya, children were able to clearly articulate their concerns regarding climate change through school-initiated avenues. They discussed:

- a. The lack of access to water and irrigation infrastructure;
- b. Insecure livelihoods;
- c. Risks of abuse where climate change is undermining their safety;
- d. The lack of voice or power to stop further environmental degradation.²⁷

Children's school-based research and contribution to climate change mitigation and adaptation should reach beyond local action and communication, influencing policies and programmes at national and international levels.

UNICEF's young climate ambassadors, for example, unite globally and locally around climate issues and promote youth-powered solutions. Several young ambassadors left their mark on the Conferences of Parties of the United Nations Framework Convention on Climate Change in 2009 and 2010.

Unfortunately, many countries still lack such initiatives. Policymakers fail to apply child rights frameworks to climate policies and programmes and children's participation in the climate change debate remains nominal at best.

Teacher education

Effective teacher preparation in CCEE requires pre-service teacher training at minimum. Pre-service training alone, however, is insufficient for quality life skills-based education. Ideally, teachers should access continuing education and professional development through in-service training and teacher resource centres on climate change, the environment and life skills-based education.

Lack of teacher knowledge and understanding remains the primary barrier to the effective implementation of child-centred sustainable development curricula in the schools. Stronger interdisciplinary links to key stakeholders such as researchers, teachers, NGOs and public officers can eliminate this obstacle.

Teacher education on climate change and environmental and social issues must go beyond tools and messages. It should also include worldviews on the environment. Action-based research approaches for environmental education have also been proven effective. Finally, CCEE must be locally relevant and culturally appropriate, and should include due reference to equity issues. It must balance local needs with global concerns.

Where computers and web-based instruction are accessible to schools, technology contributes to teacher training. Distance learning is a common approach. Coupled with teacher training via computer technologies, distance learning allows teachers to improve their skills and knowledge without being pulled from their classrooms. Teachers gain expertise but schools do not lose teaching hours, resulting in economic benefits.

The new technology available to teachers and students with respect to CCEE allows schools in the developing world to link directly with those in industrialized countries. The discussions between children and schools on opposite sides of the climate change mitigation and adaptation debate are likely to produce amazing ideas and contribute significantly to education on these issues.

The Global Learning and Observations to Benefit the Environment Initiative is an example of this approach.²⁸ In training teachers to engage primary and secondary students in the collection of weather and environmental data in their schools, it connects children and schools from around the world to pursue inquiry-based investigations about the Earth. The programme instils a sense of environmental stewardship in students and advances a broader understanding of global environmental science.

TEACHER COMPETENCIES IN EDUCATION FOR SUSTAINABLE DEVELOPMENT

Teacher competencies for essential characteristics of ESD include:

- a. A holistic approach that seeks integrative thinking and practice;
- b. The capacity to envision change, explore alternative futures, learn from the past and inspire engagement in the present;
- c. The achievement of transformation, changing the systems that support learning and the ways people learn.

The report of the International Commission on Education to UNESCO refers to the clustering of competencies:

- a. 'Learning to know' refers to understanding the local and global challenges facing society and the potential role of educators and learners ('The educator understands...')
- b. 'Learning to do' refers to developing practical skills and action competencies in relation to education for sustainable development ('The educator is able to...')
- c. 'Learning to live together' refers to the development of partnerships and an appreciation of interdependence, pluralism, mutual understanding and peace ('The educator works with others in ways that...')
- d. 'Learning to be' addresses the development of one's ability to act with greater autonomy, judgement and personal responsibility in relation to sustainable development ('The educator is someone who...')

Proposed by United Nations Economic Commission for Europe Expert Group (UNECE, 2011, ECE/CEP/AC.13/2011/5)

4

SCHOOLS AS PROTECTIVE ENVIRONMENTS

The physical and social protection provided by schools defines CFS and links intrinsically with all other principles. As a protective environment, the school building and other associated structures need to be designed and constructed safely. In the face of the seismic threats and extreme events likely to be triggered by climate change, the physical safety of schools is paramount. Worldwide, 875 million schoolchildren live in seismic high-risk zones and hundreds of millions more face regular floods, landslides, and extreme wind and fire hazards, situations that are only increasing.²⁹

Unfortunately, an enormous number of schools are not constructed to be disaster resilient. A quality school model can address this problem. By giving the utmost priority to schools as protective environments, the child-friendly schools initiative can significantly improve school safety. It is imperative to recognize the special circumstances of some schools – for example, their location in dangerous areas that are susceptible to landslides. A perilous environment is not an acceptable reason to expose children to dangers. Ensuring that all children have access to safe, protective school environments without any form of discrimination is the basic concept behind the child-friendly schools approach.

CCEE and disaster preparedness

Adaptation to climate change is integrally linked to the global mandate for disaster risk reduction, articulated by the Hyogo Framework for Action (2005 – 2015). At the school level, disaster risk reduction

and climate change adaptation should be delivered as one. The education sector should consider not only weather-related disaster risks exacerbated by climate change, but also other environment-related risks such as seismic and volcanic activity.

Ensuring the safety of the physical school building and associated structures starts with assessment and raising awareness. The children, school community and community at large should ask the questions: How safe is the school? What are the risks? Are the children, teachers and community aware of these risks? Are some groups more vulnerable than others? How can resilience best be enhanced?

Once these and a number of other (possibly more technical) questions are identified, schools can decide to address the issues through various strategies that have proven to be effective. These include:

- a. Integrating disaster risk reduction themes into the formal curriculum;
- b. Training teachers and school administrators in disaster risk reduction;
- c. Creating emergency preparedness and evacuation plans;
- d. Establishing school disaster management committees;
- e. Assessing school buildings for structural integrity and stability;
- f. Identifying early warning systems and adapting these to local needs;
- g. Conducting safety drills.

As an essential part of the community, child-friendly schools need to play a central role in Community-Based Disaster Risk Management (CBDRM) efforts. Every community must have the right and capacity to assess their exposure to hazards and take necessary precautions.³⁰ Effective CBDRM activities are initiated at the local level, putting child-friendly schools in a unique position. The curriculum of primary and secondary schools, teacher training, school-based manuals and emergency drills may integrate disaster risk management topics.³¹

Participation of children, the community and experts is essential in disaster preparation. In many cases, local expertise in terms of construction, early warning and similar topics will be important to tap. Children's knowledge of the physical environment is an extremely valuable resource. Play and journeys from home to school acquaint children with community areas unknown to adults and make them keenly aware of safe and dangerous localities. This knowledge is essential for the development of disaster management plans. Children's involvement in establishing evacuation routes is invaluable, for example, as demonstrated by Thailand's curriculum-integrated Child-Led Disaster Risk Reduction education.³² Such curricula empower students to solve problems with local knowledge.

In some cases, temporary precautions such as reinforcing school buildings prove insufficient. To ensure children's safety, more drastic measures must be taken. In the Philippines, for example, schoolchildren in the barangays (villages) of the San Francisco municipality learned that their high school was at risk for landslides. They debated whether and how to relocate the school. The headmaster opened the decision to a community-wide referendum. The students were in favor of relocation, while parents



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protested the extra travel time and local businesses the loss of lunch trade. Student organizations in the high school developed an education campaign and their relocation proposal won. They dug ditches around their temporary school site and put up tents with their parents. Students now bicycle to their new permanent school, which incorporates earthquake mitigation measures and can be used as an emergency shelter.³³

A major environmental challenge: Access to clean water and hygiene

School buildings are not the only physical structures relevant to safety in the school. In developing world schools, many children are at risk of waterborne diseases and diarrhoea due to insufficient and unsafe sanitation facilities. While this issue impacts all children, girls are affected to a much higher degree. See the module on WASH in Schools from this *Child Friendly Schools Manual* for more information.

FIELD DIARY: SCHOOL LATRINES IN SUDAN

A field visit by the author in South Sudan revealed that some school latrines were not often used. It appeared the main reason was cultural; visiting the toilet is considered a very private affair and children, particularly girls, felt embarrassed if others saw them heading to or coming from the toilet.

The latrines in the observed school were clearly visible from the school building as well as from most parts of the schoolyard. As a result, most of the children preferred to disappear quietly behind the bushes rather than use the latrines. This affected girls more than boys, raising serious questions about inclusion. Some girls said they preferred not to come to school some days because they were not comfortable using the latrines.

Installing privacy screens or making other simple physical changes would allow latrines such as these to be more readily usable. This is an example of the importance of child participation during the decision-making process on a school's physical environment.³⁴

5

CLIMATE CHANGE AND ENVIRONMENTAL EDUCATION IN THE SCHOOL AREA

School buildings and grounds should serve as laboratories to increase the physical environment's child-friendliness while promoting key CFS principles such as inclusion and participation. School-based environmental projects that encourage full child participation are a good starting point. However, ensuring democratic decision-making is not easy in most schools. Child-friendly schools may propose direct involvement of all students or a system of voting by democratically elected student representatives. A truly democratic decision-making process needs to be sensitive to the views and participation of excluded minority groups within the school. In most cases, the participation of adult stakeholders, such as parents and teachers, should be sought. But their voices should not override children's preferences.

School buildings and grounds can be made more friendly, safe and sustainable through various concrete actions. Common activities include planting trees on school grounds, introducing solar water pump projects, harvesting rainwater, installing wind pumps, improving waste management projects and upgrading school playgrounds.

Some projects will require children's participation not only during the construction and installation of the systems, but also in long-term maintenance and repair. Rainwater harvesting projects in schools in Myanmar are a good example. Prior to the projects, the school rarely used rainwater for drinking, instead transporting water from long distances. Now the rainwater is collected in tanks from corrugated galvanized roofs of the school buildings. The system requires maintenance, cleaning and repair, completed collaboratively by the students, parents and local NGO's. The system provides children the opportunity to participate equally with adult stakeholders.

These initiatives alone make schools more child-friendly, but they must still consider the framework of key child-friendly schools principles, including equity. In many cases, adults direct group activities such as tree planting without respect to children's individuality and initiative. Such practices defy the spirit of the Convention on the Rights of the Child, which emphasizes individual autonomy over the 'one-size-fits-all' approach.³⁵



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School gardens

School gardens can effectively involve children in environmental education and improve nutrition for them and their families.³⁶ Many schools have underutilized outdoor spaces that are suitable for growing crops and plants. Gardens can also be created in unused car tires.

In addition to the educational value of school gardens in the developing world, in very poor areas, gardens can provide much needed nutrition for the children. In South Sudan, for example, where many children have only one meal a day, a local agricultural consultant helped develop school gardens to supplement young children's diets and provide them with food alternatives.

School gardens teach gardening and strengthen food security. They also impart the principles of ecology, the origins of food and respect for all living systems. Within the principles of child-centred pedagogy, gardens link to the rest of the school's curricula, from literature to mathematics to science. Examples include calculating, drawing and building garden plots (math and geometry) and the use of gardens to inspire reading and writing about nature (literature, creative writing). These activities also strengthen values such as cooperation and respect for nature and each other.

School gardens can effectively involve the community in the school. Community members with expertise in agriculture, for example, can support children in their gardening activities. There is mounting evidence of the positive relationship between green schoolyards and student health.

School cluster approach: Efficiency by organically linking schools

Linking geographically proximate schools brings well-documented benefits. Professional educational activities such as teacher trainings and curriculum development are more efficient when shared among schools. Linking elementary schools and community preschools helps transition children into basic education. For the purposes of CCEE, the cluster approach has multiple benefits.

The school cluster approach promotes more efficient use of resources. In most locations, environmental projects and climate education can take many forms, but single schools can rarely implement more than a few of these at a time. The school cluster approach allows for diversity. Multiple schools can share various projects and provide a rich experience for all children. A cluster resource centre, for example, provides schools an effective way of implementing projects related to climate change adaptation and environmental issues. Children encounter a variety of environment-related experiences in centres with relevant resources. The centres also encourage exciting and efficient teacher training.

The school cluster approach can multiply the reach of environmental projects at the community level. No matter how successful a single school, its impact is limited. Disaster preparedness is a good example of cluster approach synergy. When clustered schools coordinate their efforts in developing disaster preparedness activities at the community level, their positive influence increases exponentially.

CASE STUDY: SCHOOL CLUSTER APPROACH IN ETHIOPIA, INTEGRATING CCEE

The Ethiopian cluster approach focused mainly on Grades 1 through 4. Within five years, it trained more than 10,000 teachers in child-centred, participatory learning approaches including environmental education. The school clusters promoted:

- a. The training of teachers by a set of core teachers;
- b. The establishment of cluster resource centres;
- c. Child-centred, integrated lesson plans;
- d. Special attention to gender issues;
- e. The development of stimulating classrooms and low-cost, innovative teaching materials.

In addition to a range of positive results for children, teachers and overall learning in the cluster schools, the school clusters encouraged local innovations and greater community involvement in education, which fostered increased support to schools.³⁷ Through such an approach, CCEE could be more readily mainstreamed within teacher trainings and educational planning.

6

SCHOOL AND THE COMMUNITY

Child-friendly schools can only be effective if they are an integral part of the community. No school can or should operate in isolation from the community where it resides. While this principle is widely accepted, it is even more relevant within the framework of CCEE.

Most adults should see the value in cooperating with schools on environmental issues. After all, the effects of climate change threaten the security and livelihoods of adults as well as children. In that sense, parents and other adults' participation in the school life must extend beyond children's education to the society. The school carries the primary responsibility for facilitating this relationship, however, and should proactively develop and strengthen its links with the community. Setting up an effective parent-teacher association structure, for instance, remains one of the most effective ways of ensuring community participation.

Community as a resource for schools

Every community, even the poorest, has a large range of untapped resources that can widely benefit schools. Often, these are individual women and men with different degrees of experience relevant to child-centred education. They may be artisans, farmers, shopkeepers or others who can share their experiences with children. Adults and other children who have survived past natural disasters, for instance, can tell their stories and discuss their survival strategies with children who must prepare themselves for similar future events. Elders from

indigenous communities also have myriad knowledge and experiences to share about the local environment.

Identifying community resources relevant to climate change adaptation and local environmental issues can begin with community resource mapping with children (*see page 29*). In mapping exercises, children make lists and maps of all the community resources that relate to climate change and the environment. These can be the people they know, places they go, things they observe or simply data received from the questions they ask of their mothers, fathers and grandparents. Children compile this information in large charts and maps displayed on the school walls, forming a basis for climate change and environment-related programme design.

Children's community outreach may sound simple, but in fact requires significant planning and adjustments to the standard school curricula. Transferring the experience of the community to the school extends beyond inviting speakers to organizing class outings and visits, talking to individuals and, most importantly, encouraging children's research and action projects within the community. Unfortunately, most schools and teachers are not equipped to deal with such complexities. In many cases, strict school curricula do not allow for such flexibility. Therefore, it is important to find opportunities to link conventional learning with community experience and knowledge systems.

FIELD DIARY: MAP OF INCLUSION AND ENVIRONMENTAL RESOURCES WITHIN THE COMMUNITY IN GEORGIA

During a field visit in Georgia, the author observed children in an elementary school. The students had ensured the inclusion of all children by generating a map of their community and posting it on a wall in their school. The map shows every house in the community and the number of school-aged children living in each house. Households where children are not attending school or have had long periods of absences are clearly marked, pushing the school and community to take action. Additionally, homes of families who live in poverty or with children with special needs are identified. The student committee in charge of the project regularly updates the map. The committee indicated that the children are planning to use the same strategy to identify various environmental resources in their community.



The community map generated by children is displayed in their school.

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Schools as a resource for the community

While there is agreement regarding the value of community participation in schools, the reverse is usually less appreciated. In reality, all child-friendly schools can be turned into valuable resources for the community.

The real social value of the school lies in the activities conducted by the students within the community. Many people fail to understand the incredible value of the data collected and organized by children. Their research can be more powerful when large numbers of schools participate. Such initiatives require coordination on a regional and national scale and awareness and commitment from the ministries of education.

At the simplest level, school buildings and school grounds are resources that the community can use at certain times. During and after natural disasters, school buildings, especially well-constructed and designed ones, often provide emergency shelters to the community.

Most school buildings are vacant after school hours and during weekends. During these times, they can host various activities such as non-formal education, training activities on climate change and environmental issues, community meetings, mothers' groups and group play sessions. In addition, the community can use school grounds for activities such as gardening, cooking and other beneficial activities.

Research repeatedly shows that it is important for children to participate in the affairs of their community and to have their

voices heard.³⁸ This is not just a good idea; it is a right as established by Article 12 of the Convention on the Rights of the Child. By involving children from diverse backgrounds in local climate change adaptation projects, child-friendly schools will improve the lives of all children and the community at large.

Linking child-friendly schools to child-friendly cities and communities

The Child-Friendly Cities Initiative (CFCI), a worldwide movement led by UNICEF, aims to fulfil children's rights at the community and local levels. It recognizes the progress made in many countries to develop national policies, strategies and programmes to achieve children's rights, but demands more effort to bring the children's rights agenda to the local level. CFCI simultaneously engages citizens in assessing children's rights at the community level and promotes improvement of municipal level governance structures.

There is a synchronicity between the child-friendly community and the CFS concepts. By extending community assessments to child-friendly schools, large numbers of children engage critically and identify priorities for their schools and communities. From the perspective of climate change and the environment, assessment tools must incorporate the physical qualities of the school and community; the learning environment; and teaching and learning issues in disaster preparedness and sustainable development. This assessment process can establish the school as a strategic institution or community observatory for continued monitoring, reflection and advocacy for rights with children.

7

SCALING UP AND MAINSTREAMING

Scaling up involves a systematic and rapid replication of the CFS model within a given period to ensure that all schools implement the CCEE curriculum. Mainstreaming ensures that CCEE becomes a sustainable and holistic part of education sector processes and systems, including policies and legislation, plans and budgets, curricula and examinations, teacher education, school infrastructure and facilities, learning environments, and school governance and management (see pages 32 and 33).

As with integration of CCEE in child-friendly schools, scaling up and mainstreaming CCEE through the child-friendly schools model must be principle-based. National or sub-national standards should incorporate child rights principles such as inclusiveness, child-centredness, democratic participation and protective environments.

It is important for sectors other than education to take part in the process of scaling up and mainstreaming. The cross-sectoral nature of CFS begins with child-centredness. From early childhood through secondary school and beyond, health care, water, sanitation, nutrition, protection and education must come together around the child.

A cross-sectoral approach can help apply CFS principles to global and national frameworks around climate change and sustainable development. Many national policy frameworks address children, poverty alleviation, economic development and urban renewal, but many do not feature climate change and the potential role of child-friendly schools.³⁹



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CONCEPTUAL FRAMEWORK FOR MAINSTREAMING AND SCALING UP CLIMATE CHANGE AND ENVIRONMENTAL EDUCATION⁴⁰

MAINSTREAMING AND SCALING UP OF CLIMATE CHANGE ADAPTATION AND ENVIRONMENTAL EDUCATION INTO EDUCATION SECTOR WORK				
Contributes to CFS Principles		Child-Centredness, Democratic Participation, Inclusion, Protection		
Education Sector Components	Education Planning, Policy, Legislation and Budget	Governance and School Leadership	Learning Environment	Teachers and Other Education Personnel
				Learning and Teaching
Mainstreaming in Learning and Teaching				
Learning outcomes in curricula and assessments – as illustrated by examples of potential learning outcomes at the end of primary education				
Competencies The learner will be able to...	Knowledge The learner will know and understand...	Attitudes The learner will be someone who demonstrates...	Skills The learner will be able to...	
<ul style="list-style-type: none"> Employ a holistic approach, which seeks integrative thinking and practice Envision change, which explores alternative futures, learns from the past and inspires engagement in the present Achieve transformation, which serves to change the way people learn and the systems that support learning 	<ul style="list-style-type: none"> The importance of using relevant information and sources of information Basic concepts of climate change Basic concepts of environmental stewardship The importance of natural resources for daily life Basic ecological cycles (i.e. water cycle and life cycle) The relationship between risks, threats and vulnerabilities How to detect and avoid risks in their daily environment 	<ul style="list-style-type: none"> Concern and appreciation regarding the local environment Respect and empathy for people in different circumstances and with different opinions Appreciation of local (i.e., indigenous) knowledge of the environment Awareness of his/her own and others' rights and responsibilities in protecting the environment and reducing risk 	<ul style="list-style-type: none"> Communicate openly and respectfully about living in harmony with the local environment and reducing risk Identify local natural resources (i.e., plants and animals) commonly used Review their daily practices and implement changes to become a better environmental steward Seek help when needed 	

continued...

	<ul style="list-style-type: none"> • Basic disaster preparedness in their daily environment • Historical factors and future consequences of present actions for self, others and their local environment • That social norms (and collective behaviour) can be both a risk factor and a protective factor 	<ul style="list-style-type: none"> • Responsibility with regard to use of environmental resources • Ways to recognize and deal with fear, grief and loss 	
<p>Measured by Standards</p>	<p>Standards identified through the education and risk analysis (see <i>Module 5</i>) and elaborated in a monitoring and evaluation plan</p>	<p>Contribution of education sector to climate change adaptation and disaster risk reduction through:</p> <ul style="list-style-type: none"> • Methods – measured per integration in teacher training • Implementation – measured per observation of classroom instruction and child and community participation 	<p>Contribution of education sector to climate change adaptation and disaster risk reduction through:</p> <ul style="list-style-type: none"> • Content – measured per integration in school curricula • Results – measured per integration in assessment and the results therein

8

MONITORING, EVALUATION AND SUCCESSFUL PROGRAMME INDICATORS

Ongoing mechanisms must monitor and evaluate the effectiveness and efficiency of CCEE, with results guiding adjustment to programmes and processes.

Monitoring and evaluation should take place on two levels:

- a. *Within schools:* measuring and assessing individual knowledge, attitudes, skills and behavioural intent;
- b. *At the national level:* focusing on the process of mainstreaming and scaling up climate change and environmental issues into the national educational system.

Evaluating these programmes and processes in isolation is unlikely to reveal their success. CCEE programmes should be measured within the context of child-friendly principles such as child-centredness, protective environments, inclusiveness and participation. Sensitivity to the country context and due reference to equity aspects are important factors in evaluation.

Especially with regard to school-level monitoring, assessment of CCEE is an excellent opportunity for child participation. Using the basic criteria, children should be central in identifying the dimensions of the evaluation, collecting data and interpreting it. Child participation in evaluation also ensures sustainability. Children's environmental clubs can manage monitoring and evaluation for extended periods of time. The establishment of 'children's governments' is another good way of ensuring youth participation. The

national ministries of environment can collaborate with children's governments to ensure that children play a meaningful role in this area.

Another assessment option for CCEE programmes is the use of self-assessment methodologies. CFCI self-assessment tools, including simple techniques such as checklists and rating scales, can be adapted to child-friendly schools. Self-assessment involves groups of children, teachers and parents discussing and voting on different dimensions of the CCEE programmes, for example schools' qualities related to children's environmental rights. Stakeholders analyze the results, identify gaps, create action plans and track progress.

Key dimensions to assess CCEE in child-friendly schools are presented on page 35.

At the national level, monitoring and evaluation of scaling up and mainstreaming can include 1) integration of CCEE-related learning outcomes into school and teacher college examinations and 2) evaluation of the safety and sustainability of buildings and facilities during school inspections. Participatory and self-assessment methodologies should be engaged to the extent possible.

All stakeholders should agree upon the criteria for assessing the progress of mainstreaming and scaling up. These criteria and indicators should reflect the context of the particular country, but adhere to the principles and standards of the conceptual framework (*see pages 32 and 33*).

For further discussion of this area, refer to the *Child Friendly Schools Manual*, in particular, Chapter 8 on monitoring and evaluation processes from a CFS perspective and Chapter 9 on mainstreaming child-friendly concepts.

Module 4 in the resource pack ‘Scaling Up and Mainstreaming Climate Change Adaptation and Disaster Risk Reduction in the Education Sector: Promoting child rights and equity’ will provide insight on the analysis of education and risk.

SAMPLE OF CHILD-FRIENDLY SCHOOLS’ CCEE ASSESSMENT DIMENSIONS

Dimension	Yes/No/Additional Information
There are private latrines for boys, girls and adults	
All children, including boys, girls and minority groups, feel safe in the school	
All children do and can participate in environmental projects	
Children participate in hands-on activities to understand CCEE	
CCEE is fully integrated into the curricula	
Children’s knowledge, skills and attitudes on CCEE are evaluated and meet adequate standards	
Teachers are knowledgeable about CCEE and teach it in their classrooms	
Teachers use active learning methods when teaching CCEE	
CCEE learning and teaching are primarily based on the local context and relevant to children	
CCEE learning and teaching materials are available and used	
Families know about CCEE issues from their children	
Community members are involved in CCEE at school or work together with children on community environmental projects	
School environments are clean and ‘green’	
Schools have emergency preparedness plans	
School buildings are resilient to local hazards	
Children have adequate food and water	
Children are healthy	

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