

Chapter 7

DRR in an education goal

Realising the interplay of education
and disaster risk reduction in
development goals: a review of
integrated indicators and options for
post-2015

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Executive summary

The 2000-2015 MDGs framework was risk blind, not taking into account the impact of natural hazards, conflict and climate change on sustainable development. However, as evidence mounts regarding the ways in which disasters challenge development, this is being seen as an increasingly important topic for the post-2015 agenda. This chapter puts forward options and recommendations for targets and indicators that leverage the interplay between education and DRR.

Education is unique in that disasters have a great impact on the sector yet in itself it is also a powerful tool to reduce disaster losses. Specifically, disasters have a major effect on educational achievements by damaging school infrastructure and disrupting education cycles, thereby affecting the most vulnerable and exacerbating poverty, forcing children to drop out of school and undermining the resiliency of communities. At the same time, however, education, which increases public awareness and equips youth with critical thinking skills, is essential to build disaster resilience.

Since DRR is inherently a cross-sectoral field, it is believed that having education-related DRR concepts in both an education goal and a DRR goal encourages integration and synergy, leading to a more comprehensive approach to DRR. The table below presents proposed targets and indicators, which were generated through a literature review and stakeholder discussions.

The post-2015 MDG agenda has the opportunity to create an integrated and holistic approach to education and child wellbeing. While there is a need to prioritise DRR/climate change adaptation (CCA)/resilience in order to better safeguard the provision of education services to ensure quality education, education is an essential tool for promoting DRR and CCA skills development, behaviour change and action. Creating clear and measurable indicators that leverage this interplay is challenging, but funding needs to be invested in participatory and transparent/accessible mechanisms to document and hold governments (national and local) accountable. With relevant and appropriate integration of DRR/CCA into development policies and interventions for education, it is envisaged that there will be substantial increased resilience of vulnerable children and their communities to changing risks.

7.1 Purpose

The 2000-2015 MDGs framework was risk blind, not taking into account the impact of natural hazards, conflict and climate change in terms of sustainable development. However, as evidence mounts regarding the ways in which disasters challenge development, this is being seen as an increasingly important topic for the post-2015 agenda. Disaster risk and resilience² cuts across multiple development sectors, and the UN System Task Team on the Post-2015 Development Agenda plans to consider goals in this area as they relate to mortality, economics, poverty, health and education.

This chapter puts forward options and recommendations for targets and indicators that leverage the interplay between education and DRR³ by:

- Examining the role of DRR in educational achievement as well as the role of education in strengthening DRR efforts;
- Providing an overview of relevant target/indicators to date;
- Discussing the advantages and disadvantages of different options for targets/indicators;
- Identifying what the preferred targets and indicators are and why;
- Discussing what it will take to gather and assess data; and
- Discussing what other practical opportunities and challenges exist.

7.2 Introduction

A universal challenge of the 21st century, the increasing threat of disasters and their costly consequences demand that the international community integrate DRR into the post-2015 agenda. As evidenced by both the HFA (i.e. HFA Priority 3 on DRR Knowledge and Education) and the UN Framework Convention on Climate Change (UNFCCC) (Article 6), awareness has grown on the significance of climate change, reflecting both an increase in knowledge regarding the phenomenon and mounting concerns worldwide about the frequency of natural disasters.

Knowledge and education is a key component in resilience-building strategies. The HFA (2005-2015) serves as the first effort to explain, describe and detail the work required of all different sectors and actors – including education – to reduce disaster risk. A number of agencies see the post-2015 development agenda as providing a new chance to address the underlying causes of vulnerabilities and hazards, particularly for at-risk children and communities. Furthermore, the post-2015 HFA agenda is an unparalleled opportunity to demonstrate international leadership on integrating DRR into the top-level framework that will guide poverty reduction and development efforts after the MDGs.

Education is unique in that disasters have a great impact on the sector yet in itself it is also a powerful tool to reduce disaster losses. Specifically, disasters have a major effect on educational achievements by damaging school infrastructure and disrupting education cycles, thereby affecting the most vulnerable and exacerbating poverty, forcing children to drop out of school and undermining the resiliency of communities (WHO, 2009a). At the same time, however, education, which increases public awareness and equips youth with critical thinking skills, is essential to build disaster resilience, as illustrated by HFA Priority Action 3, 'Use knowledge, innovation and education to build a culture of safety and resilience at all levels'. As a result, this chapter sets out potential indicators and targets relating to (i) education as a tool for building disaster resilience and (ii) DRR as an essential practice for improving the educational attainment of children around the world.

7.3 Impact of disasters on education

The World Education Forum, which supports the Dakar Framework for Action on Education for All (EFA) by the year 2015, is acutely aware of the significant challenges disasters pose in hazard-prone countries to meeting their EFA goals and the need for international support to mitigate these effects.⁴ Natural hazards and extreme weather patterns destroy educational institutions, interrupt educational processes and result in great human

losses. More than a billion students are enrolled in primary and secondary school, with about 875 million school children living in high seismic zones and hundreds of millions exposed to regular flood, landslide, extreme wind and fire hazards (UNISDR, 2010). While loss of life from major disasters is decreasing significantly, economic and livelihood losses associated with disasters are increasing considerably, undermining already stressed education budgets, as well as aggravating barriers to children's access to education and completion of quality learning – particularly for girls and other marginalised groups. In particular, **disasters have an impact on education** by (Risk RED, 2008):

Increasing death tolls on students, teachers and staff

Exclusion from education can result when students, teachers and staff are killed or suffer physical harm as a consequence of unsafe school infrastructure. The 2008 earthquake in Sichuan, China, killed around 5,335 children because school classrooms collapsed, in many cases while buildings around them stood firm (Branigan, 2009). The 2005 earthquake in Kashmir left 17,000 students dead inside their classrooms, with at least 20,000 more disabled or severely injured. The 2012 earthquake in Haiti left hundreds of teachers and thousands of students dead when more than 3,000 school buildings in the earthquake zone were destroyed or damaged, according to estimates by the UN Children's Fund (UNICEF) (Romero, 2010). Those in schools built in harm's way (i.e. land exposed to floods, landslides, tsunamis and earthquakes) or not built to withstand expected and recurring natural hazards can experience fatal or serious injury, given the concentration of students attending classes at the same time (i.e. Haiti earthquake) ... impacts that could be prevented!

Disrupting educational services and learning

- **Access to school:** damages caused by disasters can result in students and teachers as well as school personnel being cut off from school facilities. Flooded rivers and plains, damaged bridges and blocked roads are a common occurrence in disaster-prone areas. In Cambodia's flood-prone areas, the annual

swelling of the Mekong River reportedly cause 60% of schools to close for 2.5 months each school year (Risk RED, 2008). In Nepal since 1991, the number of days off has increased by up to 65% in both the hills and the Terai, though slightly more in the former. Much of this increase is attributed to extreme weather and natural disasters and to the use of schools as shelters in the aftermath of such occurrences. The number of days off is so great that it threatens to reduce school attendance to below the required 220 days (Plan International, 2012). Chaos and lack of law and order in the aftermath of disasters also cause concern for the safety of girls in travelling to schools (Plan International, 2013).

- **School interruption when school facilities are used as shelter:** Schools are often used as shelter for those internally displaced by disasters. 'Pakistani children reported schools staying closed for six months after the 2010 Attabad landslide disaster, as school buildings became refugee camps' (ODI and Plan International, 2012). Throughout South and Southeast Asia, annual monsoons and typhoons, and inadequate housing and emergency asylum, force large numbers to seek shelter in schools, sometimes for a month at a time, causing students to fall behind and many to drop out.
- **New responsibilities for children, affecting enrolment and gender parity:** school enrolment dropped, especially among girls, in Bolivia, Indonesia, Nepal and Vietnam following extensive disasters (UN, 2011). Death or injury of parents or caregivers, or simply loss of family income, forces children to take on new responsibilities, such as looking after younger siblings, or to adopt new livelihood responsibilities. Loss of housing and harvests/land forces disaster-affected families to relocate, causing disruption to children's education, as well as making families rely on their children for greater support with household chores and income generation activities. Girls and boys in South Asia have shared how frequent droughts and floods are increasing their workload within the home, as well as child labour, early marriage and child trafficking (ODI and Plan International, 2012).
- **Lost school days owing to climate change impacts on morbidity:** climate change puts

more children at risk of malaria and dengue fever. Increases in rainfall, temperature and humidity will favour the spread of malaria-transmitting mosquitoes, which could 'put 220 million to 400 million additional people at greater risk of the disease that kills about 1 million a year'. Additionally, reduced water availability as a result of climate change inhibits provision of school sanitation, often meaning menstruating girls have to stay at home.

Wasting development investments

- **Impacts on school facilities:** if schools are damaged as a result of a disaster, children are left without a place to learn. With no plans for an alternative location or facility, children may be excluded from school for prolonged periods of time and in great numbers. In 2008, heavy flooding in Bolivia damaged 347 schools, interrupting the education of 20,000 students.⁵ The 2006 Super Typhoon Durian in the Philippines caused \$20 million in damage to schools, including to 90-100% of school buildings in three cities and 50-60% of school buildings in two other cities (UNISDR, 2008b).
- **Reverses in progress on youth economic empowerment:** the World Bank states that, 'Much of the progress so far achieved [...] to tackle challenges of high unemployment and integration with the global economy can be jeopardised by climate change. Income and employment may be lost as a result of more frequent droughts in rural areas, and floods and sea surges in urban and coastal areas'.⁶ The increased strain from damages and economic losses resulting from disasters is set to exacerbate problems in already under-resourced education systems, and calls for a greater focus on relevant education to ensure future generations have the skills to adapt to climate change.

Inhibiting recovery and resilience

- **Psychosocial impacts on students, teachers and staff:** without knowledge of the hazards associated with context-specific disasters and vulnerabilities, and without risk reduction literacy, school communities can fall into perpetual cycles of incapacity, where low levels of functionality block proactive prevention, protection and response to catastrophes.

Interruptions to students' education and learning trajectory could reduce their confidence and hopes for a promising future. Without psychosocial support, post-traumatic stresses can also inhibit some children from refocusing on their studies long after a disaster event has passed.

- **Missed opportunity to offer stability and hope in times of crisis:** 'Education in emergencies is a necessity that can be both life-sustaining and life-saving, providing physical, psychosocial and cognitive protection. It sustains life by offering structure, stability, and hope for the future during a time of crisis, particularly for children and adolescents, and provides essential building skills, and supporting conflict resolution and peace-building' (INEE, 2008).

All girls and boys have a fundamental right to both education and safety under the UN Convention on the Rights of the Child. Equal access for all children to quality and relevant learning and to safe schools is a growing development challenge, one that is exacerbated by climate shocks and other stresses. Ensuring education continuity within a safe, resilient environment is of utmost importance. Equally essential is that the post-2015 education targets and indicators focus on relevant and quality learning that will equip students with CCA and DRR skills that will be of use for their future families and livelihoods (UNESCO, 2012).

7.4 The role of education in strengthening DRR efforts and building resilience⁷

Education can be a cost-effective approach to proactively building DRM and resilience in communities. It provides sectoral, widespread reach and systemic sustainability for climate-smart DRR awareness raising, knowledge and skills development. The HFA acknowledges the role of education in solving the global challenge of climate change and disasters and calls for the use of knowledge, innovation and education to build a culture of safety and resilience at all levels. Education plays an instrumental role in DRR by:

- **Changing perceptions and behaviours (Adams, 2012; PISA, 2006):** evidence shows that investments in climate change education, including DRR, can change both perceptions and behaviours. An individual's attitudes and behaviours with regard to the environment are likely the result of multiple factors, including knowledge, awareness, attitudes and social expectations.⁸
- **Increasing environmental responsibility for sustainable development:** a better understanding of scientific knowledge is associated with greater environmental awareness and a stronger sense of responsibility for sustainable development (ADEA, 2010). Relevant education content such as climate literacy and green technology can help provide the knowledge and skills needed for making informed decisions about how to adapt to a changing environment.
- **Equipping students with critical thinking and problem-solving skills:** critical thinking and problem-solving skills help learners make informed decisions about how to adapt to a changing environment. Given the uncertainty that climate change brings, education can provide the necessary skills to enable students to comprehend, analyse and use information to think creatively and change behaviour in order to adapt to different futures.⁹
- **Empowering communities through both formal and non-formal learning:** education is a key platform for disseminating useful information on global collective actions and negotiations, as well as local awareness, local impacts and local actions that are needed for climate change adaptation and mitigation as well as food and energy security. Recent studies from the World Bank and the Centre for Global Development state that educating girls and women is one of the best ways of ensuring that communities are better able to adapt and thus be less vulnerable to extreme weather events and climate change.¹⁰
- **Raising awareness about hazards, related risks and possible responses:** this can be done by mainstreaming DRR into the national/ local education system, in primary and secondary schools as well as within tertiary and vocational institutions, in order to help raise awareness and understanding about different local hazards. 'This can also be

passed on by students and teachers to family members, and therefore has an additional secondary impact'.¹¹

The UN Educational, Scientific and Cultural Organization (UNESCO) promotes Education for Sustainable Development (ESD) (Poutrel, 2012), which tasks education with seeking to 'balance human and economic well-being with cultural traditions and respect for the Earth's natural resources' and draws attention to learning content, including citizenship, peace and health education, among others. ESD, through its interdisciplinary and holistic approach to learning, can help create resilient societies and encourage a long-term perspective in decision-making processes, critical thinking and holistic and innovative approaches to problem solving. In this way, ESD can make a substantial contribution to DRR, while DRR can in turn increase the relevance and quality of education in disaster-prone areas. The post-2015 agenda is the ideal place to emphasise education for sustainable development.

7.5 Education metrics

This chapter proposes to integrate DRR-related targets and indicators into the education metrics for post-2015. To do so, it is first important to understand the current thinking on the post-2015 development agenda relating to education and where DRR-related targets and indicators, including CCA education, are applicable.

Overall, there is an overwhelming push for the education goals post-2015 to refocus on quality learning without compromising efforts to secure 100% access to education; to better align the EFA and education MDG frameworks, as well as with the Global Campaign for Education, the Global Partnership for Education, Education First and the UN Girls' Education Initiative; and to pay more attention to equity. While the Dakar Framework for Action on EFA was broad reaching in its agenda, focusing on the education spectrum from early childhood care and education, to primary and secondary education, and adult learning, the MDGs on education (MDG 2 and MDG 3) narrowed this focus to universal primary schooling and gender equality.

UNESCO and UNICEF are leading the Global Thematic Consultation on Education in the Post-2015 Development Agenda. This commenced in September 2012 and is coming to a close in March 2013, and aims to define the role of education in the post-2015 development agenda. It is expected to (i) review the international education and development experience since 2000; (ii) identify current development trends and challenges, as well as future scenarios that need to be taken into account when defining the post-2015 education framework, including conflict, climate change and increasing disasters; (iii) look at cross-cutting themes;¹² and (iv) consider the nature of the post-2015 agenda.

Proposals for the post-2015 education goals from the Basic Education Coalition, the Centre for International Governance Innovation, the Global Campaign for Education, the Commonwealth Secretariat and Save the Children push the quality and equity of education (see Annex E). Additionally, the Global Campaign for Education – US Chapter (2013) states, 'as the world envisions global challenges beyond 2015, certain cross-cutting issues come into focus. Economic stability and youth unemployment, security and conflict, climate change and environmental sustainability – education is at the centre of all of these leading global challenges and their solutions.' In this context, the value of teaching 'life skills', which provides an easy entry point for DRR, is expected also to receive appropriate attention.

The Learning Metrics Task Force (LMTF)¹³ is an instrumental contributor to the collaborative development of post-2015 education targets and indicators for post-2015. Co-convened by the Center for Universal Education at The Brookings Institution and UNESCO's Institute for Statistics, the LMTF aims to develop a global consensus on measuring learning beyond literacy and numeracy in order to achieve the vision of 'what every child everywhere should learn and be able to do, whether at the classroom, system, or global level, by the time they reach post-primary age'. The task force has released its first report, 'Towards Universal Learning: What Every Child Should Learn', with a holistic framework of seven learning domains important for children and youth to develop. An LMTF Measurement and Metrics Task Force has started to meet to address ways to measure learning outcomes. Overall, any consensus on the post-2015 education metrics

is still far from reality. Proposals for universal learning targets are particularly controversial, so this chapter is limited to the current discussions.

7.6

A review of current initiatives addressing education and DRR

Several initiatives that address the interplay of education and DRR currently exist. In the development of this paper, we reviewed these current guidelines, frameworks and initiatives. It is important to keep in mind that not every initiative has outlined concrete goals, targets and indicators in this area. Rather, several organisations outline activities or priorities with possible sources of data to measure. Bearing this in mind, we discuss the advantages and disadvantages of each initiative below with the goal of consolidating priorities for the post-2015 agenda. We have examined each framework in terms of how representative it is of DRR-related education challenges; its emphasis on using education as a tool for DRR; its suitability for translation to national, sub-national and community levels; its clarity; and its measurability. By no means is this a comprehensive review; rather, it is an initial look into the current work being done in this area. Please refer to Annex F for a more comprehensive description of each initiative.

As described above, most current practices are focused primarily on one of the following: (i) mitigating the impacts disasters have on education by safeguarding schools; (ii) ensuring education continuity in emergencies; or (iii) empowering the community and students to build disaster resilience. While each of these areas is essential, this chapter seeks to propose a set of targets and indicators that ensure the interplay between education and DRR is realised before, during and after an emergency. As a result, this chapter uses the three pillars from the Comprehensive School Safety Framework as an all-encompassing way to frame education and DRR (ADPC et al., 2012):

- **Safe school facilities**, which involves education authorities, architects, engineers, builders and school community members in safe site selection, design, construction and maintenance (including safe and continuous access to the facility);
- **School disaster management** established via

national and sub-national education authorities and local school communities (including children), working in collaboration with their disaster management counterparts in order to maintain safe learning environments and plan for educational continuity, conforming to international standards; and

- **DRR education and life skills**, which should be designed to develop a culture of safety and resilient communities.

Based on the learning and good practices from these initiatives, this chapter proposes that the post-2015 agenda focus on risk reduction and building resilience in the education sector, in order not only to mitigate the effects disasters have on education, but also to use education to empower children and their communities to be better prepared before, during and after disasters. In addition, relevant DRR/CCA knowledge and skills need to be part of post-2015 aims for education quality and equity, so future generations can adapt and prosper through future resilient livelihoods.

7.7

A review of possible targets and indicators addressing education and DRR

Since the literature does not explicitly state or propose targets, we have created an initial, indicative list of possible targets, adapted from the outcomes, commitments and key actions in the literature as described in Section 6.6 and outlined in Annex F. We categorise these possible targets using the three pillars of Comprehensive School Safety and list them in Table 19. Table 19 outlines only the targets we developed and considered in the development of this chapter, on the basis of initiatives described in Section 6, in order to narrow things down to the proposed targets and indicators discussed in Section 6.9.

The targets considered above would be disaggregated by age and sex, and, when feasible, include disability in order to ensure equity and inclusiveness. In addition, the term ‘disaster’ in the indicators again refers to the broader definition that includes, but is not limited to, natural disasters, longer-term consequences of climate change,

Table 18: A review of the current literature

Title/organisation	Primary focus	Challenges
INEE <i>Minimum Standards for Education: Preparedness, Response, Recovery</i>	Provides a strong foundation for key actions based on minimum standards for education; ensures education rights and needs of children affected by disasters are met in addressing emergencies from prevention to recovery; assessment of emergency situation has elements of risk analysis for strategy formulation.	Focuses on key actions rather than indicators; focuses on effective emergency education response rather than risk reduction and resilience.
UNICEF <i>Education in Emergencies</i>	A resource toolkit from emergency education preparedness and response to transition to recovery and reconstruction of education system that is gender sensitive, it establishes minimum standards for education in emergencies; monitoring and evaluation (M&E) priorities include indicators based on the Core Commitments to Children (CCCs)* in Emergencies; data collection method measures the extent to which CCCs are being carried out and achieved. Suggested indicators regarding pre-crisis secondary data, such as student and teacher information, school infrastructure and status of facilities, including availability and condition of learning materials etc., could be collected from government ministries or recent census, serve as a baseline and be monitored annually.	Assumes the ministry of education or local-level authorities have set up an Education Management Information System and information is updated periodically; indicators are largely input/output based; do not demonstrate impact or quality.
ADPC, Plan, Save the Children, UNESCO, UNICEF, World Vision International <i>Comprehensive School Safety Framework</i>	Establishes goals of child protection, educational continuity, safeguarding school infrastructure and developing a culture of safety. Bridges development and humanitarian activities. Emphasises linkages between education sector and disaster management sector at national, subnational and local levels. Could serve as organising framework for climate-smart DRR.	Data difficult to obtain unless part of an existing Educational Management Information System.
Children in a Changing Climate Coalition: Plan International, Save the Children, UNICEF, UNISDR, World Vision <i>Children's Charter for Disaster Risk Reduction</i>	Because of children's increasing vulnerability to disasters including climate-related disasters, the Children's Charter * for DRR underscores children/youth empowerment, children/youth capacity building to build resilience, clear priority on school safety and continuous access to education in disasters, especially by the most vulnerable and hardest-to-reach children, and also child protection.	Generated largely from the combined work of child-centred non-governmental organisations (NGOs) and UNICEF; indicators of effectiveness of the implementation of the Charter are captured through varying country case studies.
IFC World Bank Group <i>Disaster and Emergency Preparedness: Guidance for Schools</i>	Drawn from various resources and experiences, it underscores school safety, educational continuity and fostering a culture of safety through school disaster management (risk reduction, preparedness/physical protection and response capacity development) led by administrators and teachers with involvement of students, workers, parents and their local community. To monitor implementation of the School Disaster Management policies and procedures derived from the guidance, a School Readiness and Resilience Checklist is proposed that could also serve as 'baseline'.	Focus on activities at the local school level; except for the checklist, there are no indicators to verify its effectiveness/impact on the school community.
Global Education Cluster <i>Needs Assessment Indicators: Top 10 Core Indicators</i>	Easy-to-collect specific indicators focusing on direct effect on (i) affected groups, e.g. % of school-age children and youth not currently attending school/ learning space or % of teaching personnel unable to deliver classes owing to the emergency; (ii) status of school buildings and government education offices, e.g. % of existing schools buildings usable and unusable as well as different activities being carried out in school/learning spaces, e.g. % of schools/learning spaces with life skills-based education on crisis-related issues. Progress on these indicators can be measured each year.	Indicators are largely focused on disasters relief rather than ongoing educational continuity, risk reduction and resilience.
Plan International <i>Child-centred DRR Toolkit</i>	The potential of children as agents for resilience building at community level.	Does not incorporate CCA and expected outcomes/result indicators for the proposed interventions are lacking.

* Outline UNICEF's 'role in providing protection and assistance to children and women in natural disasters and armed conflict [...] the goal of emergency education is to promote access to quality learning and education for all children in affected communities, with a specific focus on girls and other marginalized groups'. Source: UNICEF, Regional Office for South Asia in conjunctions with NY Headquarters. (2006) Education in Emergencies: A Resource Tool Kit.

** Drafted through consultations with over 600 children in 21 hazard-prone countries in Asia, Africa and Latin America.

violence and conflict. Targets were discussed using the ODI criteria for an effective target, outlined in Annex G.

Protection of children's life is absolutely paramount to any other goal. While accurate assessment of Target A is dependent on existing data, the quality of which is highly questionable, concerted efforts are required to ensure that reliable data necessary to monitor and measure this target are collected. We added the clause regarding 'new schools built after 2015' after the literature review revealed the high price of retrofitting, which would make it an extremely difficult target for most countries.

Target B is a priority in that it encourages continuity of education in emergencies. The associated indicators would have to address the assessment of safety and accessibility for a child, which may prove challenging.

Targets C and D emphasise the importance of DRR through policy and advocacy. Target C is a national-level target that incorporates other sectors to ensure the integration of DRR. Target D is a local-level target that relates more specifically to schools and incorporates the best practices in Section 6.6 of Disaster Management Committees to ensure safety in schools.

Targets E and F encourage and emphasise the importance of using education as a tool for DRR, an essential consideration for the post-2015 agenda. Target E is aspirational in that it examines individual children being equipped with essential DRR- and CCA-related knowledge and life skills. Whether these data are easy to obtain will depend on the indicators relating to life skills measurement that are a current topic in post-2015 education discussions. Target F takes a similar approach, but is slightly easier to collect data on, given that it is evaluated at the school level. It is important to consider that much time and detail are necessary to develop and contextualise such life skills curricula.

7.8

A review of possible indicators addressing education and DRR

We took an approach similar to that in Section 7.7 in the review of possible indicators to address the interplay between education and DRR. Again, we

examined possible indicators using the ODI criteria in Annex G.

Indicator H is a measure of possible Target C, 'By 2030, all nations have developed national DRR and resilience plans for each sector'. While it is a necessary indicator and target for national-level DRR, it is important to recognise that comparability will be difficult as a result of disparities across communities, nations and even regions (including risk profile, resources and capacity and other competing priorities being set for the education sector). Transparency may be influenced by what different governments deem appropriate for their image internationally and/or by the ease of data collection. It is possible that civil society will play a role to increase accountability and support beneficiaries' engagement in M&E. Possible Indicator J addresses the lack of documentation regarding disasters and education by encouraging data management plans.

Comparing indicators C and D, D is the preferred option because it takes into account local barriers that may prevent children from attending school as a result of a disaster. For instance, it would evaluate days missed as a result of a child being fearful of violence in the school as well as whether a child is unable to attend school because his or her uniform has been ruined as a result of a disaster and can no longer meet uniform requirements. Possible Indicator C, however, is easier to collect data on.

Indicators A and E refer to ensuring school infrastructure safety through architectural and structural compliance. 'Safe' buildings are largely dependent on the adoption and implementation of appropriate building codes and construction supervision processes. Supporting governments to achieve quality construction that is safe for occupation is part of a wider issue and cannot be dealt with only as part of an education focus. Individual schools have a strong role in safety, but government engagement is key in terms of compliance with building codes and addressing larger issues such as appropriate land allocation and procurement policies/M&E.

7.9

Proposed targets and indicators

Given that DRR has a great impact on educational achievement and education is a useful and necessary tool for DRR, we propose emphasising

Table 19: Possible education/DRR targets

Possible target	Type
Safe school facilities	
A. By 2030, halve the number of children killed in schools by disasters, with no children killed by disaster in a new school built after 2015 (disaggregated by sex and age)	Impact
B. By 2030, every child is educated in a quality learning environment that is safe and accessible (disaggregated by sex and age)	Outcome
School disaster management	
C. By 2030, all nations have developed and resourced/implemented national DRR, CCA and resilience plans for each sector	Outcome
D. By 2030, all schools have in place an integrated DRR process with local government and communities, prioritising disaster management and resilience building	Outcome
Disaster risk reduction education and life skills	
E. By 2030, all children are equipped with DRR- and CCA-related life skills preparing them for a safer and prosperous future (disaggregated by sex and age)	Outcome
F. By 2030, all schools use knowledge, innovation and education to build a culture of safety and resilience through curricular and co-curricular activities	Outcome

the interplay of education and DRR in both the education-specific sector goal, targets and indicators and the DRR-specific sector goal, targets and indicators. Mitchell (2012) writes, 'A preferred outcome for the inclusion of disaster resilience in the post-2015 development framework would see it represented as a single goal (vertical integration) as well as treated as an indicator in a range of other goals (horizontal integration)'.

As discussed previously, it is expected that the post-2015 agenda (assuming an education goal is retained) will most likely focus on learning outcomes (numeracy and literacy) and other learning domains (in particular relevant learning for skills and job creation)¹⁴ that could incorporate DRR, CCA and resilience. In a 2013 Children in a Changing Climate consultation with children across the world on their views on the priorities of the post-HFA, children expressed the desire to have skills that 'enable them to protect themselves from risks and troubles' (India) and greater opportunities for children to participate in building resilience, for example community emergency planning (Dominican Republic).

Assuming there is a vertical DRR goal in the post-2015 agenda, we propose that this focuses on the development of policy and programmes that integrate DRR into the education sector. This will ensure DRR is a priority at national and local levels to address the impact on education before, during and after a disaster.

The first pillar from the Comprehensive School Safety framework is addressed through indicators that emphasise school infrastructure and infrastructure so schools' access routes meet locally appropriate hazard-resilient building standards and codes. School disaster management (Pillar 2) is addressed through national policies and integration of disaster management into existing school annual management plans/budgets/management committees. Risk reduction and resilience education (Pillar 3) is addressed by integrating context-specific DRR into both formal and non-formal curricula and public awareness. It is also important to emphasise the role of non-formal learning settings to ensure outreach to out-of-school girls and boys and to the wider community. As such, school-based disaster management activities must link to or engage with wider community DRR interventions.

Table 20: Review of possible indicators from the literature

Possible target	Type
Safe school facilities	
A. % of newly built early childhood development, primary and secondary education facilities certified to be in conformity with locally appropriate hazard-resistant building, design and construction standards, codes and norms	Output based, national
B. # of children killed in schools by disasters, with no children killed by disaster in new schools built after 2015	Impact based, local
C. # of days that school is not able to provide education owing to the impact of disasters	Output based, local
D. # of school day absences as a result of disasters	Output based, local
E. % of existing schools assessed, rehabilitated/retrofitted and maintained to conform with locally appropriate hazard-resistant building standards, codes and norms	Output based, national
F. # of teacher/learner days or contact hours lost annually as result of disaster impacts small and large	Output based, local
G. % of schools that implement and evaluate annual school drills to respond to the hazards they face (simulation of emergency warning system and evacuation and contingency plans).	Output based, local
School disaster management	Outcome
H. % of national sector authorities that have resourced and integrated DRR and CCA into all sector development policies and programmes *	Input based, national
I. % of schools incorporating school disaster management into ongoing school management and improvement plans	Impact based, local
J. # of countries with sub-national data on disaster/crisis damage and losses (disaggregated by age and sex)	Input based, national
K. % of schools that have education and child protection in emergency plans, including family reunification skills following a disaster	Output based, local
Disaster risk reduction education and life skills	
L. % of schools/learning spaces that have integrated DRR and CCA subjects into school formal or non-formal curricula and teacher professional training to be adapted to the local context	Impact based, local

* Ensuring it addresses the specific risks and vulnerabilities facing children including in fragile contexts.

The education sector is expected to have targets that revolve around building literacy, numeracy and other relevant learning skills (particularly on CCA and future livelihoods prospects). The achievement of these targets is dependent on an enabling and safe school environment, factors that disasters can affect negatively. Physically, schools must be operational, with teachers present, and students must be present in class to learn. Therefore, Table 21 proposes indicators relating to the impact of a disaster on school attendance rates, and the number of teacher/learner contact hours (in relation to global norms). Finally, equipping children with DRR- and CCA-related life skills prepares children for the future.

Since DRR is inherently a cross-sectoral field, it is believed that having education-related DRR concepts in both an education goal and a DRR goal encourages integration and synergy, leading to a more comprehensive approach to DRR. This chapter recognises that sector-specific experts will be engaged in developing and formalising the overarching post-2015 goals, and thus strongly encourages the prioritisation of DRR/CCA/resilience integration into the education goal to avoid the error of setting in place risk-blind goal/targets.

7.10 What it will take to gather and assess data

In general, education/DRR data are lacking, so building a system must be a priority. It is hoped that the data required for Table 21 can reasonably be gathered by incorporating these indicators into existing educational management information and other data collection systems.¹⁵ Data related to school attendance and curricula can be gathered through ongoing monitoring by school officials and ministries of education, and from random sample surveys of changes in risk actions at household, school and community levels. It is necessary to further explore data collection needs and feasibility.

It will be a challenge to determine the direct cause of dropout rates and school attendance, given the causality of interrelated issues of household poverty and social/gender norms. Additionally, any time that data related to a disaster are gathered, it is important to prepare for a lack of reliable

statistics. For this reason, Table 21 suggests an indicator related to disaster data systems.

The targets proposed in Table 21 can be differentiated into short-, medium- and long-term goals. The proximal, immediate impact of disasters can be death or significant lifestyle changes as a result of loss and damages experienced at household level. By addressing school infrastructure safety and emphasising DRR plans, the proposed targets and indicators mitigate the number of deaths as a result of disasters. Thus, improving access to school, through school and household safety and stability, is a necessary short-term target and foundation that enables the medium- to long-term targets of quality education and improved learning outcomes.

7.11 Challenges and opportunities

As the literature review illustrates, discussions regarding DRR and education are still in their infancy. While there are guidelines and frameworks, a comprehensive plan to integrate DRR/education needs to be agreed on and supported by mechanisms for thorough M&E. Fortunately, several governments are already taking action, and momentum is building on this topic. In China, the Ministry of Education is developing a school safety management manual, including checklists, for each school to carry out regular reassessment of risks. The government of Burkina Faso is also undertaking an analysis of the vulnerability of its education system to risks of conflict and natural hazards. In India, the government has launched a National School Safety Programme in 22 states, covering 8,600 schools. This includes the drafting of a National School Safety Policy, as well as structural and non-structural safety measures in the target schools (Children in a Changing Climate, 2013).

This chapter is limited by the fact that much of the research and data regarding education and DRR are slanted towards rapid-onset weather-related crisis events. These events and the subsequent impacts are far better documented than the slow-onset crises that are characterised by a gradual deterioration of livelihoods and assets. Recent work by Save the Children and World Vision (2012)

Table 21: Recommended education/DRR goals, targets and Indicators

Goal	Targets	Indicators
DRR goal		
To reduce risk and build resilience to disasters for all	By 2030, all nations have developed and resourced/implemented national DRR and resilience plans for each sector	<ul style="list-style-type: none"> • % of national sector authorities that have resourced and integrated DRR into all education policies and programmes * • # of countries with sub-national data on disaster/crisis damage and losses
Education goal		
Universal literacy, numeracy and life skills	By 2030, halve the number of children killed in schools by disasters, with no children killed by disasters in new schools built after 2015 (disaggregated by sex, age and disability)	<ul style="list-style-type: none"> • % of newly built early childhood development, primary and secondary educational facilities certified to be in conformity with locally appropriate hazard-resistant building standards, codes and norms • # of children killed in schools by disasters, with no children killed by disaster in new schools built after 2015 (disaggregated by sex, age and disability)
	By 2030, every child leaves primary school able to read and write, along with DRR-related learning skills (disaggregated by sex, age and disability)	<ul style="list-style-type: none"> • # of school day absences owing to the impact of disasters • # of teacher/learner contact hours provided annually (disaggregated by sex, age and disability) • % of schools/learning spaces that have integrated DRR and CCA subjects into school formal or informal curricula and teacher professional training

* Ensuring it addresses the specific risks and vulnerabilities facing children including in fragile contexts.

looked at the impact of slow-onset crises in the Sahel on children's development, linking slow-onset disasters to poor nutrition. The linkages between poor nutrition and educational achievement are well documented and can serve as a starting point for further examining the relationship between education and slow-onset crises.

That being said, the post-2015 MDG agenda has the unique opportunity to create an integrated and holistic approach to education and child wellbeing. While there is a need to prioritise DRR/CCA/resilience in order to better safeguard the provision of education services to ensure quality education, education is an essential tool for promoting DRR and CCA skills development, behaviour change and action. Creating clear and measurable indicators that leverage this

interplay is challenging, but funding needs to be invested in participatory and transparent/ accessible mechanisms to document and hold governments (national and local) accountable. With relevant and appropriate integration of DRR/ CCA into development policies and interventions for education, it is envisaged that there will be substantial increased resilience of vulnerable children and their communities to changing risks.

Chapter 7 Endnotes

- 1 Contributors: Ann Munene, Claire Beck, Jael Shisanya, Alisa Phillips and Salvador Caluyo. A very special thank you to Marla Petal, PhD, for her valuable input into and review of this chapter.
- 2 For this paper, disaster risk reduction (DRR) refers to the concept and practice of reducing disaster risks through systematic efforts to analyse and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment and improved preparedness for adverse events. Thereby, DRR encompasses disaster risk management and resiliency.
- 3 The HFA is a 10-year plan to make the world safer from natural hazards, adopted by UN 168 Member States in 2005 at the World Disaster Reduction Conference.
- 4 See UNESCO Website. 'Dakar Framework for Action'. http://www.unesco.org/education/efa/fr/ed_for_all/dakfram_eng.shtml
- 5 See ADPC. 'A Study on Impact of Disasters on the Education Sector in Cambodia'. (March 2008) Bangkok. http://www.adpc.net/v2007/ikm/ONLINE%20DOCUMENTS/downloads/2008/Mar/MDRDEducationCambodiaFinal_Mar08.pdf
- 6 See World Bank Website. 'Adaptation to Climate Change in the Middle East and North Africa Region' <http://go.worldbank.org/B0G53VPB00>.
- 7 See UNESCO Website. 'Disaster Preparedness' <http://www.unesco.org/new/en/education/themes/leading-the-international-agenda/education-for-sustainable-development/disaster-risk-reduction/>
- 8 See International Institute for Educational Planning Website. 'Integrating conflict and disaster risk reduction into education sector planning'. http://www.iiep.unesco.org/news/single-view/hash/705f7a4175.html?tx_ttnews%5BpS%5D=1327481476&tx_ttnews%5Btt_news%5D=973&tx_ttnews%5BbackPid%5D=81
- 9 See Asia-Pacific Gateway for Disaster Risk Reduction and Development. 'Mainstreaming DRR into the Education Sector. <http://www.drrgateway.net/content/mainstreaming-drr-education-sector>
- 10 See Anderson, A. 'Youth Empowering Children: Intergenerational Approaches to Climate Action'. <http://www.brookings.edu/research/speeches/2011/07/25-youth-empowering-anderson>
- 11 See Right to Education Project Website. <http://www.right-to-education.org/node/248>
- 12 (Not exclusive): gender, human rights, young people, health, inequalities, technologies, partnerships, disabilities, child labour, food security and food safety.
- 13 See www.brookings.edu/universal-education and www.uis.unesco.org
- 14 Ensuring it addresses the specific risks and vulnerabilities facing children including in fragile contexts.
- 15 See UNESCO Website. 'Education Management Information System (EMIS)'. <http://www.unesco.org/new/en/education/themes/planning-and-managing-education/policy-and-planning/emis/>