



DRR IN EDUCATION: GOOD PRACTICES AND NEW APPROACHES

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**DISASTER RISK REDUCTION
IN EDUCATION:
GOOD PRACTICES
AND NEW APPROACHES**

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This report examines advances made in promoting a culture of preparedness through disaster risk reduction (DRR) initiatives. The work conducted by national counterparts and UNICEF represent strong building blocks to promote more comprehensive changes at the policy level and strengthen resilience in the everyday lives of children, families, schools and the communities they serve. This report is for DRR practitioners; decision and policy makers, and government bodies engaged in disaster DRR; development workers who seek to integrate DRR into their programmatic activities; parents, school principals and teachers who seek to help children understand their environment and take appropriate actions to enhance their safety.

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Executive Summary

The advances made in promoting a culture of preparedness through disaster risk reduction (DRR) initiatives are strong building blocks to promote more comprehensive changes at the policy level and strengthen resilience in the everyday lives of children, families, schools and the communities they serve.

This report examines good practices and innovations made to improve awareness and preparedness to disasters induced by natural hazards in Central Asia, South Caucasus and Eastern Europe. The report looks at good practices achieved in often financially resource-poor situations and politically and socially complex environments. The practices developed to create awareness are supported by a range of learning materials and multimedia that facilitate the dissemination of knowledge and education on disaster risk reduction.

These initiatives are critical as a majority of the population in these regions live in seismically active zones with a number of other natural hazards. Severe earthquakes and other disasters have created an imperative to address hazard exposure, not just through state response, but equipping people, particularly children, with the knowledge and skills on how to prepare for and what to do during an emergency.

Based on UNICEF's DRR work in the region, several themes have emerged which are explored in this report. First, the DRR initiatives are being integrated into education policies through various ways, such as through the Child Friendly School certification process. Such initiatives are being supported by the UNICEF Regional Office to promote knowledge exchange platforms and materials to help spread good practices and ideas among government and other practitioners.

Second, activities are focusing on enhancing curriculum development throughout the region. DRR topics are being integrated into existing courses, and, in some places, new courses covering DRR issues are being introduced. In addition, there are many forms of non-formal education initiatives addressing gaps in knowledge and practice.

Third, the report examines the development of learning and training materials. The experiences in some countries have served to help other countries develop their own materials. This is building up a good repository of knowledge in local languages to be used in schools and other settings to help raise awareness. Multimedia is also widely used to promote engaging formats for young people to learn and share knowledge.

Fourth, disaster risk planning and preparation is explored. School disaster management teams serve an important function by promoting safety in and around their schools. Likewise, the activities of national coordination mechanisms have an important role in facilitating work, particularly in complex political and social environments.

Fifth, preschool and school safety assessments are discussed. These are critical to understanding then structural and non-structural needs to increase safety in education institutions. This is examined alongside the role of engaging youth to promote safety in schools and their communities.

Maintaining these practices and not permitting gaps in advocacy, engagement and implementation is critical to take these initiatives beyond the pilot stage and integrate them across disciplines, and make children not just the recipients, but the leaders in educating others on DRR issues.

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Abbreviations

ARNAP	National Platform for Disaster Risk Reduction (Armenia)
C4D	Communication for Development
CFS	Child-Friendly Schools
DFID	Department for International Development (United Kingdom)
DIPECHO	Disaster Preparedness of the European Commission General-Directorate for Humanitarian Aid
DRR	Disaster Risk Reduction
ECHO	European Commission General-Directorate for Humanitarian Aid
EMD	Emergency Management Department (Georgia)
GIS	Geographical Information Systems
HFA	Hyogo Framework for Action
KAP	Knowledge, Attitude and Practice
MoU	Memorandum of Understanding
NDMP	National Disaster Management Platform (Moldova)
NGO	Non-Governmental Organization
OFDA	Office for Disaster Assistance
PISA	Programme for International Student Assessment
RIPSKO	Republican Institute for Teachers' In-service Training (Kazakhstan)
SDMT	School Disaster Management Team (Armenia)
TG	Thematic Group
UNICEF	United Nations Children's Fund
UNISDR	United Nations International Strategy for Disaster Reduction
USAID	United States Agency for International Development
WASH	Water, Sanitation and Hygiene

Introduction

This report gathers information on good practices of disaster risk reduction (DRR) primarily focusing on the education sector from the Central Asia, South Caucasus and Eastern Europe regions. This report provides descriptions on certain aspects of countries' DRR programming to highlight good practices and innovations. The examples provided here offer a variety of methods and ways to advance DRR activities that may be useful for other countries.

The countries included in this report all have unique challenges, but in each case, opportunities have also emerged that have facilitated the inclusion and integration of DRR activities in some form. No matter how complex the political and social contexts, there are many approaches to navigate through these to implement programming that is essential and necessary.

What is disaster risk and disaster risk reduction?

Disaster risk is 'the potential loss expressed in lives, health status, livelihoods, assets and services, which could occur to a particular community or a society due to the impact of a natural hazard'.¹ Disaster risk reduction (DRR) is 'a systematic approach to identifying, assessing and reducing that risk'. In particular, the purpose of DRR is 'to minimize vulnerabilities and disaster risks throughout a society in order to avoid (prevent) or to limit (mitigate and prepare for) the adverse impacts of natural hazards, and facilitate sustainable development'.² This includes preparing people for hazards such as fires, earthquakes, floods, mudslides, landslides, droughts and cyclones.³

Resilience

A principle idea in the work on DRR is resilience. Resilience refers to 'the ability of children, communities and systems to withstand, anticipate, prevent, adapt and recover from stresses and shocks, advancing the rights of every child, with special attention to the most vulnerable and disadvantaged children'.⁴ In addition to this, it is important to highlight the role that families have in this process and also in promoting the rights of the child. This concept was developed from humanitarian programming, but it has important lessons for development initiatives that seek to build knowledge and skills to prepare for natural hazards and to address preventable hazards. It is more comprehensive in its approach as it encompasses DRR, climate change and social protection. This is crucial as UNICEF seeks to integrate resilience into its programming. DRR is an essential component of this and a holistic approach to develop capacities within countries

to establish a base for the wider focus of resilience. In practice, and particularly for UNICEF, it is essential that all such training and knowledge generation involves children. In many cases, they are the ones that will inform their parents and communities.

Hyogo Framework for Action

The Hyogo Framework for Action (HFA) was a framework agreement to 'promote a strategic and system approach to reducing vulnerabilities and risks to hazards'.⁵ At the World Conference on Disaster Reduction in 2005, participating members adopted the HFA for the period of 2005 to 2015. In the region examined in this report, all countries ratified the agreement except for Turkmenistan.

The HFA built on the Yokohama Strategy for a Safer World: Guidelines for Natural Disaster Prevention, Preparedness and Mitigation Plan and its Plan for Action adopted in 1994. Based on the review of progress in implementing the Yokohama Strategy for a Safer World: Guidelines for Natural Disaster Prevention, Preparedness and Mitigation Plan and its Plan for Action adopted in 1994, the HFA document outlined five specific gaps and challenges to be addressed:

1. Governance: organizational, legal and policy frameworks;
2. Risk identification, assessment, monitoring and early warning;
3. Knowledge management and education;
4. Reducing underlying risk factors;
5. Preparedness for effective response and recovery.

This has set the framework through which countries can strengthen their disaster risk reduction and preparedness in collaboration with international and national actors. This has been the framework through which UNICEF has worked and supported government partners.

Good practices and innovations

UNICEF describes 'good practices' as techniques, methods, processes or activities 'well documented and assessed programming practices that provide evidence of success/impact and which are valuable for replication, scaling up and further study. They are generally based on similar experiences from different countries and contexts'.⁶ A good practice may not be something new, but it demonstrates effectiveness within the context it is employed. This report bases its approach to identifying good practices in this way.

In addition to this, and specifically related to DRR, this report regards good practices as activities which have succeeded in achieving goals as outlined in the HFA and grant agreements. These are practices that have led to the establishment of linkages between stakeholders to facilitate the implementation of DRR activities and development of materials that have had an impact on people's and children's understanding of disasters and behaviour to avoid or take appropriate measures during disasters.

Innovation 'may be pilot projects or new approaches to a standard programming model that can demonstrate initial results.'⁷ In other words, an innovation is a new way of doing things that has a positive impact.

In the report, good practices and innovations are both examined. Innovations usually are a result of good practices. These are described together to demonstrate how they have come about and the effect they are having so that others may follow and adapt them for their own contexts.

Why is this work necessary?

The need to train children on risk awareness and preparedness measures is more than simply providing up-to-date information. The specific context within the region of the former Soviet Union is that preparedness was not the main drive of protection measures. The focus of the government at the time was how to best respond to a natural disaster, more than raising awareness and taking actions to minimise people's exposure to natural hazards. The changing shift in perception is reflected in the terminology used. In Russian, the concept of 'civil defence' (*grazhdanskaya oborona*) was used to refer to the idea of responding to threats and rescuing people during emergencies. This idea is also closely connected with military readiness and response in the event of war. Furthermore, the concept also implied that this sphere of action was the obligation of the state. People's participation, therefore, was not mandatory or only required under specific circumstances. This idea has remained, but an idea that is linked more with the notion of awareness, preparedness and response is 'civil protection' (*grazhdanskaya zashchita*). It is under this new thinking that many of these initiatives are being introduced. Interviews with programme beneficiaries often indicate that DRR is being conceptualized differently from the past and that they are actively learning what to do in case of emergencies. It was not that they were unaware of their surroundings, but that there had been little or no effort to inform people about the extent of the hazards, the influence of their actions on their hazard exposure, and ways that they could protect themselves.

In the former Yugoslavia, there was an understand-

ing of civil protection which combined the aspects of preparedness and response. There were civil protection groups that undertook preparedness measures in their communities. After the breakup of the socialist state and the turbulence in the region, the preparedness measures were abandoned to focus more on response. The DRR activities in the region are now causing older generations to recall their participation in preparedness measures whereas for younger generations this information is entirely new.

Experiences from Montenegro

"This piloting is a good foundation to integrate the programme throughout the whole system."

Radoslav Milošević Atos
Deputy Director
Bureau for Education Services
Montenegro

This changing awareness is having a transformational impact on being able to introduce DRR topics and improve the safety of children at school and in their communities. It is helping to create a culture of preparedness. Although in some countries the DRR programmes are still in a piloting phase, they are having an important impact on creating awareness and working with decision makers who promote civil protection. Where there are obstacles, such as finances and resources, they are now providing opportunities for learning and creating spin-off ideas that are being applied in everyday situations that are helping people to protect themselves.

Countries involved

This report examines three regions:

- Central Asia (Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan, Uzbekistan);
- South Caucasus (Armenia, Azerbaijan, Georgia);
- Eastern Europe (Bosnia and Herzegovina, Moldova, Montenegro).

These countries were chosen as the respective governments have actively contributed expertise and participated in developing DRR-related activities under UNICEF's regional DRR programmes.

Funding

Funding for DRR activities in these regions has been met through strong donor commitment to improve the resilience of communities in these regions. Since 2008, The European Commission General-Directorate for Humanitarian Aid (ECHO) has funded UNICEF

DRR programmes through the regional allocations. This two-year funding cycle in Central Asia Disaster Preparedness ECHO (more commonly known as DIPECHO) started with implementing initiatives in Kazakhstan, Tajikistan and Uzbekistan. This built on previous work conducted in the region to promote communities' resilience against natural hazards. In 2010, DIPECHO continued to fund activities in Kazakhstan, Tajikistan and Uzbekistan, and included the Kyrgyz Republic. In 2012, further DIPECHO funding was received to fund activities in Kazakhstan, Kyrgyz Republic, Tajikistan and Turkmenistan. During this period, other funding has been provided by a range of donors, including the Department for International Development (DFID United Kingdom), the Office for the United States Foreign Disaster Assistance (OFDA), under the United State Agency for International Development (USAID), and the Government of Kazakhstan and the Government of Japan.

From 2010, ECHO began to fund DRR activities through the regional grants in Armenia, Azerbaijan and Georgia. This funding was renewed in 2012.

In late 2012, the OFDA/USAID, gave the Regional Office a grant to fund DRR activities in Bosnia and Herzegovina, Moldova and Montenegro.

UNICEF has contributed its own funds through regular programmatic work, but also the Regional Office has provided funds for such activities as documenting DRR good practices, regional events and capacity-building training.

Hazard exposure overview

The specific geographical features make the Central Asia and South Caucasus region highly prone to a number of natural hazards. A brief overview of the most prominent types of natural hazards risks in Central Asia are:

- Kazakhstan: earthquake; flood;
- Kyrgyzstan: earthquake; landslide, flood;
- Tajikistan: flood, earthquake, landslide;
- Turkmenistan: earthquake, flood;
- Uzbekistan: earthquake, drought.⁸

For a majority of the countries in the region, earthquakes represent the greatest threat. The region is seismically active, with many small earthquakes every year, in addition to frequent medium-scale earthquakes. There have also been severe earthquakes which have caused extensive damage. In 1911 the Kebin Earthquake, with an estimated 8.2 moment magnitude on the border of what is today Kazakhstan and Kyrgyzstan, destroyed most of the town Verny (today Almaty). In 1948, an estimated 7.3 moment magnitude earthquake near Ashgabat, Turkmenistan destroyed most of the city and is believed to have caused the death of around 110,000 people.⁹ Both Armenia and Uzbekistan have experienced devastating earthquakes causing many deaths (see tables below). The most recent earthquake in the region causing significant destruction and death was the in October 2008, when a moment magnitude 6.6 earthquake devastated the village of Nura, Osh Oblast, Kyrgyz Republic. Mud-brick houses collapsed under the weight of heavy aluminium roofing, killing 75 people, of which 43 were children.¹⁰

Other significant disasters, together with economic loss,¹¹ are outlined in the tables below.

Table 1: Some notable recent disaster events in Central Asia¹²

Date	Type of disaster	Number of deaths	Affected population	Economic Loss (USD million)
26 April 1966	Tashkent earthquake, Uzbekistan	10	100,000	300
13 October 1985	Mag. 5.9 earthquake, Tajikistan		8,080	200
19 August 1992	Mag. 7.3 Jalalabad earthquake, Kyrgyzstan	54	86,806	130
25 May 1992	Tajikistan flood	1,346	63,500	300
8 May 1993	Dushanbe region flood, Tajikistan	5	75,357	149
June 2000	Central Asia region drought		3,600,000	107

A brief overview of the most prominent types of natural hazards in the South Caucasus are:

- Armenia: earthquake, drought, flood;
- Azerbaijan: drought, flood, earthquake;
- Georgia: landslide, earthquake.¹³

Table 2: Some notable recent disaster events in the South Caucasus¹⁴

Date	Type of disaster	Number of deaths	Affected population	Economic Loss (USD million)
12 Dec 1988	Mag. 6.9, Spitak earthquake, Armenia	25,000	1,642,000	14,200
25 April 2002	Mag. 4.8, Tbilisi earthquake, Georgia	6	19,156	350
18 July 1997	Mag. 4.2, Noyemberyan city earthquake, Armenia		15,000	33
29 April 1991	Mag. 7.0, Racha-Imereti earthquake, Georgia	100	100,000	10
14 Feb 1987	Tbilisi region flood, Georgia	110	36,000	546
10 March 1989	Adzharia region landslide, Georgia	98	2,500	423
16 April 2003	Ismayilli–Gobustan region flood, Azerbaijan		31,500	55
June 2000	Caucasus sub-region drought		993,000	400

The South Caucasus region has also experienced many severe earthquakes, but also flooding, and landslides, which have created widespread damage.

Europe has a range of natural hazard threats:

- Bosnia and Herzegovina: flood, earthquake;
- Moldova: drought, flood, earthquake;¹⁵
- Montenegro: earthquake, flood.

The frequency of natural hazards occurring and the devastation that they have brought to the region only strengthens the need to enhance DRR awareness and preparedness activities in the region.

Report structure

The report explores good practice by thematic area in separate sections. Each section has two chapters. The first chapter examines one aspect of the thematic area with one lead country to demonstrate good practices in this area. Other countries' experiences are also introduced in each chapter to demonstrate the variety and diversity of approaches.

A lead country for each chapter was chosen based on a number of criteria:

- 1. Actions:** What types of activities have been conducted and which demonstrate actions that may not have been taken in other countries?
- 2. Integration:** What extent have DRR topics been integrated into the education sector and are sustainable?

- 3. Context:** What are the specific contexts within the country that make a particular way of integrating DRR in education an achievement?

For example, Kazakhstan is the lead country for a discussion on raising awareness through the development of learning and training materials. All countries have developed such materials, but the specific context in the country and the engagement with national partners made this a good practice. This approach is to highlight achievements for countries, which providing fuller descriptions from one country to demonstrate why a specific focus became a good practice and how it was conducted.

The second chapter in the section examines a general issue with contributions from several countries. The country examples are chosen as they have additional insights to provide into the situation and demonstrate good practices in action.

Section I: Education Policies

Introducing DRR into national disaster management and education policies

Strong partnerships in complex contexts have enabled UNICEF to introduce key elements of school-based disaster risk reduction through the Child-Friendly Schools approach in Uzbekistan.

All of the communities covered through UNICEF DRR DIPECHO-funded programme and other funding platforms are in areas that suffer from natural hazards. One such place is Preschool No 26 in Yangikurgan District, Namangan Region, Uzbekistan. The preschool is threatened by mudflows and other natural hazards. Community members recommended that a dam be built to provide protection from mudflows. The Regional Department of the Emergency Situations, Yangikurgan District Administration (*khokimiyat*) and the local *mahalla*¹⁶ supported the initiative. Local residents began to build the dam through *khashar* (Uzbek, a common task that brings community members together and contribute their time and materials). In addition, the director of the preschool director appealed to the district and regional departments of Public Education, and Yangikurgan District Administration to provide funds to repair the building. The District Administration provided 30 million Uzbek sums (approximately USD 19,500) to repair the building. Now the preschool has become an example of what is able to be achieved through community involvement and state support. Other schools have become interested as well.¹⁷

Community members coming together and support from the government is a success. It highlights innovations in mobilizing community members, but also indicates good support from the government. However, important aspects behind this story are the country-wide policy reforms and UNICEF's engagement with the government partners to establish disaster risk reduction as an integral part of government policy for preschools and schools. Community mobilization has taken on a broader aspect of DRR policy integration to formalize risk awareness and preparedness throughout the country.

Political platforms for action

Changes in government structures have enabled UNICEF to support the government in identifying and engaging with partners to develop DRR methods and materials in Uzbekistan. On the basis of Resolution

No. 71 (2007) of the Cabinet of Ministers, a separate National Steering Committee was formed from the relevant ministries to serve as a coordination body for DRR. The Steering Committee officially meets twice a year to review and discuss disaster preparedness issues in all sectors, including the education sector. Focal points from the Ministry of Emergency Situations, Ministry of Public Education and the Ministry of Health are all members of the Steering Committee. The information and tools that the members gain are brought back to their respective ministries to influence the work and approach to DRR.

At the same time, in May 2007, the Ministry of Emergency Situations and UNICEF signed a Memorandum of Understanding, which created a Coordination Council for the implementation of the DRR initiative funded through UNICEF's DIPECHO grant. The Coordination Council included members of the Ministry of Emergency Situations, Ministry of Public Education, Ministry of Health, the Institute of Seismology of the Academy of Sciences, the '*Mahalla*' Foundation and UNICEF.¹⁸ The Council members decided to create an Expert Group that would review and develop recommendations for improving the concept and action plan for disaster preparedness and risk reduction to support *mahallas* which was based on Uzbekistan's commitments under the Hyogo Framework for Action. The Expert Group also developed educational materials for schools and communities. As part of this work, the Expert Group revised curriculum of a number of subject areas (including Biology, Physics and Geography) to include information about natural hazards and disaster risk reduction. It is important to note, however, that these activities came later. Community-based disaster preparedness was the first point of entry for UNICEF to introduce DRR in Uzbekistan, which then expanded into schools.

Initial training was conducted in six regions of the country (Bukhara, Kashkadarya, Samarkand, Syrdarya, Tashkent and Fergana) by the regional training centres of the Ministry of Emergency Situations. About 300 personnel from health care workers of rural health units, polyclinics, district and regional hospitals were

trained on preparing medical institutions to disasters. These people became instructors for others in their places of work. They also developed disaster response plans in the medical institutions. The regional branches of the Republican Research centre for Emergency Medicine conducted simulation exercises on what to do during an earthquake.¹⁹ In addition, community members, school administrators, teachers, parents, teachers and children aged from 7 to 15 years old were also included in training on disaster preparedness by the Centre for Emergency Medicine.

Additional UNICEF DIPECHO funding saw the project initiatives expanded to Jizzak, Namangan and Navoi regions. This did not only focus on earthquake preparedness, but also on mudflows, landslides and floods. From 2010, this initiative was expanded to Andijan, Surkhandarya, Khorezm and the Republic of Karakalpakstan.

Based on the success of this work, UNICEF and other organizations were able to advocate for the Government of Uzbekistan to adopt a comprehensive programme for 2011-2015 to conduct emergency preparedness among the population.²⁰ The programme, which is in line with ECHO priorities, aims to improve the system of prevention, response and preparedness of the populations for natural disasters.²¹

Child-Friendly Schools approach

UNICEF has had long engagement in education reform in Uzbekistan. From 2003 to 2005 the agency

was involved in the Global Education initiative to broaden the support base for participatory methods and child-centred educational approach. The strengths of the programme were limited by the lack of linkages to other education initiatives and teaching strategies. From 2006, UNICEF implemented the Child-Friendly Schools (CFS)²² approach in Uzbekistan.²³ By 2010, CFS approaches had been introduced in 850 schools.²⁴

Based on the Convention on the Rights of the Child,²⁵ the CFS approach seeks to build on the country's obligation to meet children's right for quality education and keeps the interests of the child at the centre of educational activities. Through the pilot work, the Ministry of Public Education included all five CFS principles: 1) Effectiveness; 2) Inclusion; 3) Gender equity; 4) Participation; 5) Health, safety and protection.²⁶ The health, safety and protection principle includes DRR topics. In 2013 the Ministry developed indicators as part of the National Quality Basic Education monitoring system that would be used for all schools in the country. The Ministry was using information from initiatives such as the CFS pilot schools, DRR and Water, Sanitation and Hygiene (WASH).

This allows UNICEF to provide guidance on ways to protect children from physical harm and hazards. One way that the agency is doing this is through recommendations on addressing non-structural elements²⁷ as well as teaching safety basics are major components to ensuring that schools provide a safe learning environment.

Experiences from the region

Armenia

The CFS certification process is also being used in Armenia to ensure that schools meet minimum safety standards. The Ministry of Education and Science has developed an internal and external assessment methodology to collect data against indicators outlined in a School Vulnerability Assessment Tool, a checklist of essential safety issues that was created by the State Academy of Crisis Management. This Tool is now being piloted in 10 schools, known as School Centres. The results of this work will establish DRR issues into the Health and Safety standards of the CFS certification process in the country.

Azerbaijan

Assisting the Government of Azerbaijan, UNICEF has worked to develop CFS standards, which were adopted in 2009.²⁸ The Ministry of Education has now introduced the standards to 300 schools across the country. The efforts to institutionalize the standards coincided with an education reform process (2003-2013). The reform process focused on 1) quality and relevance of general education; 2) efficiency and financial reforms; 3) equity and access to quality general education; and 4) management, planning and monitoring capacity.²⁹ Initiatives to introduce CFS standards began in 2005, which supported much of the work that was being introduced through the education reform. The Government then adopted the CFS standards as a way to ensure they meet their obligations under these reforms. This has been complemented by in-service teacher training programmes to ensure that DRR messages are understood and to support safe learning environments for children.

Turkmenistan

UNICEF has been working with government counterparts in Turkmenistan to introduce a CFS certification package. This will create standards to monitor the effectiveness of schools along certain criteria. The criteria chosen in Turkmenistan focus on: gender; inclusiveness; healthy, safe and protective environment; teaching effectiveness; and participation in schools. Within the healthy, safe and protective environment section, UNICEF has supported the Government in including DRR topics. This will ensure that children and teaching staff have minimum awareness and understanding of DRR issues and will measure this. The package also includes assessment tools, questionnaires and other instruments to measure whether a school has achieved specific standards. The standards will also ensure that schools are fitted with the basic safety equipment and materials to protect children and staff.

UNICEF and counterparts in the Ministry of Education will present the CFS certification package to the Government of Turkmenistan for approval as a normative document. This means that it will guide actions at the policy and institutional level. It also creates measurement standards to ensure that are meeting minimum standards to be accredited as child-friendly schools.

With the Government's focus on civil protection, and together with the CFS indicators, schools, communities and health rural medical points developed joint disaster preparedness plans. Small mitigation activities were conducted in some communities. Additional training by school administrators in coordination with Ministry of Emergency Situations allows for the allocation of responsibilities and the development of coordinated emergency response by residents, teachers, emergency personnel, and doctors.

UNICEF is seeking to institutionalize CFS principles through teacher training courses. Teachers are required to retrain every three to five years. Under government regulations, regions are permitted to choose the focus during retraining sessions. Two regions – Republic of Karakalpakstan and Fergana Region – chose to include DRR, and UNICEF works with these regions to improve training to reflect interactive teaching methods, and the agency is developing

curriculum and materials for in-service training. This often begins with a situation analysis to understand the teachers' level and to make teaching materials meet their needs.³⁰

Civil protection

These efforts are also moving towards changing understanding from preparing to react to hazard risks to conducting training and education to prepare people for emergencies. The Government, through the Ministry of Emergency Situations, has extensive experience in conducting trainings on how to act during an emergency. UNICEF has provided technical expertise to focus attention on disaster risk reduction in advance of an emergency. UNICEF has prepared training materials and assessments, which include guidelines for rural health workers, school health care personnel, rescue volunteers, *mahalla* activists and volunteers.

Special Focus: Bridging knowledge and practice across the region

Regional engagement, exchange of ideas and distribution of materials is enhancing the development and implementation of DRR activities in education throughout the region.

Regional workshops³¹

In 2011 UNICEF organized regional workshops on knowledge management to facilitate the exchange of information, experiences and resources in DRR in education between the countries in Central Asia and South Caucasus involved in the regional UNICEF DRR DIPECHO-funded programme. UNICEF staff from country offices in the region and national counterparts participated in the event. This allowed for greater engagement and the development of a network on the issue within the region. Building on the positive experience of this event, the Central and Eastern Europe and the Commonwealth of Independent States Regional Office (henceforth, 'Regional Office') organized a second event in 2013. This meeting brought in other DRR stakeholders in the region, such as NGO partners and donors.

The workshops served two purposes:

- Provide a platform for DRR stakeholders working in the areas of disaster risk reduction in education to share their experiences and approaches to DRR in education; and
- Provide an opportunity to UNICEF and its implementing government counterparts to exchange information and experiences in implementing DRR interventions under the UNICEF DIPECHO-funded programme.³²

In addition, these workshops have sought to increase awareness and government preparation ahead of the Global Platform for Disaster Risk Reduction.³³

During the forums, each country delegation presented experiences and lessons learnt as a part of the workshop. In 2013 the Ministry of Education of the Government of Turkey showcased its advanced level of disaster risk reduction interventions being carried out countrywide. This provided further insights into how DRR work is conducted and possibilities for building on existing frameworks.

Each of the country delegations also exhibited their DRR tools and products, such as posters, leaflets, manuals and information, education and communication materials in the 'marketplace' session. This was a point of exchange of ideas and methods, and an opportunity to expand networks. This was useful for all countries involved, especially those countries that had only recently become part of the regional DRR

Experiences from the field

"The participation of the Ministry of Defence and the Ministry of Education in the regional event provided them with the knowledge and understanding of the importance of a cross-sectoral approach in DRR."

Jepbar Byashimov
Programme Officer
Disaster Risk Reduction
UNICEF Turkmenistan

programme, such as Turkmenistan.³⁴

Also in 2013, the Regional Office presented the Regional Education in Emergencies Capacity Development Strategy. The forum provided an opportunity to introduce UNICEF's longer-term vision on this issue, and highlight the organizations' commitment to support governments in the future.

School Safety Assessment Tool³⁵

In 2010 UNICEF developed a simple multi-dimensional analytical framework and a methodology to assess school safety. This follows calls from the 2009 session of the United Nations International Strategy for Disaster Reduction (UNISDR) Global Platform calling for national safety assessments to be conducted on education and health facilities.

In 2011 UNICEF hired a consultant to develop a methodology for nationwide safety assessments at the individual preschool and school level. The School Safety Assessment Methodology was piloted in Armenia and Tajikistan. After discussion with the respective governments and the UNICEF country offices, the methodology was revised and pilot-tested in two schools in each country. The methodology was further refined based on the experiences of the field testing.

The methodology focused on two sets of inquiry. First, one safety assessment team member would speak with school staff to determine their level of knowledge regarding natural hazard exposure, and investigate the non-physical elements of school safety. Second, another team member (often a construction expert) would carry out a visual examination of all buildings, structures and facilities belonging to the

school. The team member would then rank the school on the key dimensions of safety. Team members also conducted background research to understand the national policy and regulatory framework, as well as understanding the natural hazards present in the vicinity of each school.

State officials and construction experts in Kyrgyzstan, with support from UNICEF, have adapted this methodology and conducted a nationwide preschool and school safety assessment. This visual assessment provides information to better understand the needs and to then conduct more detailed assessments in preschools and schools scored low in terms of safety.

The UNICEF Regional Office has continued to support the implementation of methodologies in other countries – such as Armenia, Azerbaijan, Kazakhstan and Tajikistan – to support government counterparts and national experts to conduct similar studies in their countries.

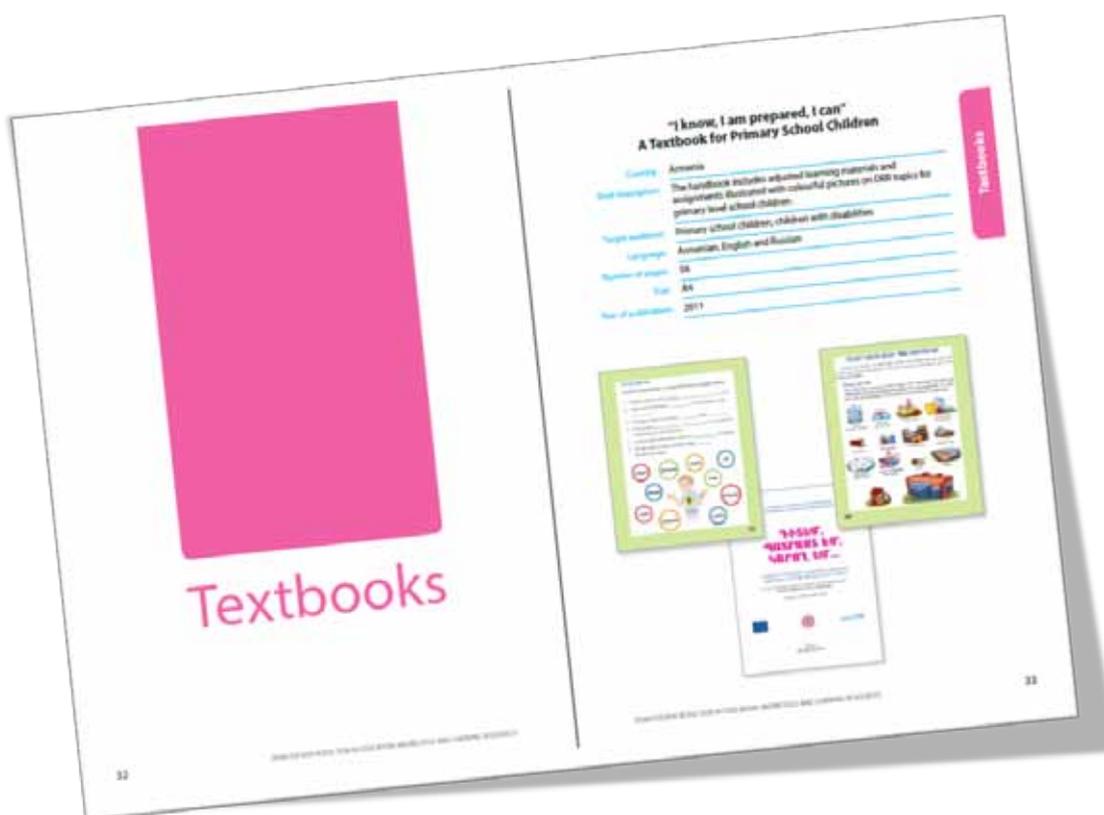
Capacity building

The Regional Office has also supported capacity building measures targeting local government bodies to enhance their understanding and implementation of the disaster risk analysis. The Regional Office has developed a guidance note which provides functional explanations and practical examples in conducting

the risk analysis, with a particular focus on vulnerabilities and capacities. The first part of the guidance note is an introduction to DRR. It provides an overview of disaster risks and explains why DRR is relevant for programming the types of activities that can be incorporated into local government planning to address these risks. The second part of the manual is a practical step-by-step guide to perform a disaster risk analysis. It provides a range of methods for reviewing and analyzing data for stronger disaster preparedness and risk reduction at the sub-national/local level. This is an innovative approach in that it actively seeks to support local government bodies and stakeholders with the experience gained at the regional level to provide a comprehensive approach to understanding, assessing and addressing disaster risks, which in turn contributes to local planning processes.

Compendium

Another knowledge management function of the Regional Office has been to gather manuals, textbooks and other learning materials from the region. This information has been compiled in a 'Compendium' which lists the publications and provides information on the different materials.³⁶ This has been useful for country offices to refer to and build on when developing similar materials for their own programme activities.



Section II: Curriculum Development

Integrating DRR into formal education curriculum³⁷

Continuous advocacy and collaboration, and the preparation of materials during a national curriculum review gave the Government of Georgia the opportunity to introduce DRR topics into formal curriculum with support from UNICEF.

Innovative approaches

Through revisions to the formal curriculum, government bodies, with support from UNICEF, introduced two DRR study components to the national curriculum. First, national experts assisted by UNICEF included DRR topics into a new subject 'Civil Protection and Safety', prepared for grades 4 and 8. Second, local partners and UNICEF the identification of an innovative practice on furthering DRR knowledge through creating specific modules to be taught during the Head of Class Hour for grades 5-9.

When national counterparts and UNICEF (the only non-governmental actor to be working on DRR in formal education), began to review the curriculum, they found few opportunities to add new DRR topics to the curriculum. Primary education levels (grades 1-6) contained DRR concepts in natural sciences and social sciences. In basic and secondary education levels, DRR concepts were already included in geography, civic education and natural sciences. As the state review period of the curriculum was almost completed, the Head of the Class Hour (or *klassnyi chas*, in Russian) was identified as the entry point for introducing more DRR topics into the curriculum.

The curriculum review in 2010 came during the post-conflict period in Georgia. Following the experiences at that time, a presidential order³⁸ initiated the development of the subject Civil Protection and Safety. Even before this period, UNICEF was an active supporter of the Emergency Management Department to launch a civil protection and safety subject, which was reiterated in a numbers meetings and letters. When the presidential order was issued, the Emergency Management Department was a key government body to promote the order and subject. The Ministry of Education and Science convened a group of experts to develop the curriculum for the subject and a teaching manual. UNICEF assisted in the development of materials through expert analysis and financial support. This resulted in improved content and methods to teach the DRR topics and development of the teacher's guide for grades 4 and 8.

This work also served as a catalyst for the government bodies to find other ways to include DRR topics into formal curriculum. In particular, UNICEF recognized that they were not able to introduce many changes that would expand the range of topics covered and the methods through which they were taught in the new curriculum. The curriculum review process for grades 1-4 had already been completed. There were elements of emergency and safety-related content already included in these classes. Nonetheless, the national experts and UNICEF identified an opportunity to introduce DRR topics through the Head of the Class Hour for grades 5-9. This is not a separate discipline but comprises a number of different topics that are taught once a week – a teaching method used throughout Commonwealth of Independent States countries, with a particular emphasis made on interactive methods of teaching. In some countries it is considered to be part of non-formal curriculum. In Georgia, however, it is part of the formal curriculum and mandatory for all grades throughout the country. The Head of the Class Hour is led by teachers in addition to their regular teaching responsibilities and teacher training is provided to understand the content and develop their professional portfolios.

Experiences from Armenia

The Ministry of Education, with support from UNICEF, has worked on a number of ways to strengthen non-formal education activities to increase DRR awareness in Armenia. The agency works closely with student councils to engage them in exploring DRR issues in their communities. The councils select one issue they feel is more relevant to them and their communities. The council members research the particular issue by reviewing documents, conducting interviews, watching TV programmes, searching the Internet and meeting with local authorities. They then present their findings to their schools and local government administrations and recommend ways to address the particular DRR issue.

From the end of 2010 to the beginning of 2011, government bodies, assisted by UNICEF, developed teaching manuals. The Head of the Class Hour materials was piloted in 25 schools throughout the country starting in spring 2011. Since September 2011, the courses on Civil Protection and Safety and the Head of the Class Hour became part of the curriculum. Since then, the DRR lessons are now taught in all 2,084 public schools, reaching more than 506,000 school children.³⁹ Manuals were printed by the Ministry of Education and Science with financial support from UNICEF and distributed to all schools.⁴⁰

Collaborative engagement

UNICEF's success in integrating DRR topics into curriculum was facilitated through strong partnerships with government counterparts and timely preparation of materials during the national curriculum review process.

Although legal provisions for disaster management existed in Georgia, disaster prevention and DRR were not explicitly included. In 2007 the government passed the Law on 'Protection of the Population and Territories from Natural and Man-Made Emergencies'. Within the framework of the law, the cross-sectoral National Natural and Technological Emergency Response Plan' guides various administrative bodies on disaster response. In addition, the Emergency Management Department of the Ministry of Internal Affairs has the mandate to coordinate disaster response actions. This created some challenges for advancing DRR principles at the national level, but there were national-level government counterparts prepared to collaborate on UNICEF-led initiatives.

In 2010, the National Curriculum and Assessment Centre of the Ministry of Education and Science reviewed both the National Education Policy and the National School Curriculum for 2011-2016. In order to assist with this work and integrate DRR into the curriculum, UNICEF signed a Memorandum of Understanding (MoU) with the Ministry of Education and Science, and the Emergency Management Department (EMD). Although not formally included in the MoU, other governmental bodies joined the group, including the Ministry of Environment and Natural Resources Protection.

UNICEF participated in the review and recommended DRR topics to be covered in the new course 'Civil Protection and Safety'. Teacher training had already begun, but UNICEF was able to provide additional materials to assist with the training.

In addition to this, under the DIPECHO programme, a Technical Working Group was established to support the organization and execution of project activities. This Group included representatives from the Ministry

of Education and Science, EMD, National Curriculum and Assessment Centre, National Centre for Teacher Professional Development, National Environmental Agency of the Ministry of Environment and Natural Resources Protection and UNICEF. With the Director of the National Curriculum and Assessment Centre as chair, and with support from outside experts, the Technical Working Group developed the content and training methodology for the DRR component of the Head of the Class Hour programme.

The Technical Working Group developed an extensive list of DRR topics to be covered in the Head of the Class Hour programme:

1. Natural hazards and global disaster trends
 - Emergency situations, causes and effects of natural disasters;
 - Linkage between development and disasters;
 - Climate change and disasters
2. Natural hazards and their prevalence in Georgia
3. Role of the education system in DRR
4. Interactive methodologies in teaching DRR
5. Application of basic concepts and tools of DRR
 - Hazards;
 - Disaster risk;
 - DRR;
 - Disaster risk management;
 - Vulnerability;
 - Prevention;
 - Mitigation;
 - Hazard and vulnerability mapping;
 - School emergency preparedness and response planning;
 - Family emergency planning
6. Natural hazards characteristic to Georgia: definitions; cause-and-effect relationships; prevention or mitigation measures; rules of behaviour before, during and after disasters
 - Earthquakes;
 - Flooding and flash floods;
 - Landslides;
 - Avalanches;
 - Wildfires;
 - Droughts;
 - Wind storms, hail, thunderstorms
7. Natural hazards on the global level
 - High winds (cyclones, typhoons, hurricanes);
 - Volcanic eruptions;
 - Tsunamis
8. Developing the concept of volunteerism among students
9. Community involvement and awareness-raising on disaster risk reduction

For the Head of the Class Hour, UNICEF created a one-day training workshop for teachers and used a specially prepared guidebook. Teachers found that this was not enough and asked to have further training.

The National Teacher Professional Development Centre, together with UNICEF, developed a 20-hour teacher training course. The training is conducted by a core group of five trainers that are members of the Centre. Open to teachers of Civil Protection and Safe-

ty and the Head of Class Hour, training is offered free of charge to groups of five or more teachers.⁴¹ This means that more than 30,000 teachers are eligible to take the training. Teachers who complete the training receive professional credit within the National Centre for Teacher Professional Development; meaning that they can improve their qualifications and professional status. This training module will be institutionalized into the systems under the National Teacher Professional Development Scheme.

Experiences from the region

Armenia

UNICEF works closely with preschools and schools to become DRR learning centres in Armenia. Teachers from these schools are trained at the State Academy of Crisis Management, a higher education institution specializing in emergency training and preparedness. Teachers were encouraged to develop interactive lesson plans on DRR and emergency preparedness. DRR-specific lessons were integrated into the regular state curriculum and UNICEF assisted in the development of training materials.

Azerbaijan

DRR has been integrated into formal school curriculum and in-service teacher training curriculum. The Ministry of Education in Azerbaijan endorsed the national-level in-service training component and designed a programme to be implemented by the largest state-run training provider. The training organization has already provided training to 2,250 teachers and will continue to train all school teachers in the country. Additional training will be provided to 500 teachers from the pilot districts to strengthen their capacity. Specialists from the Ministry of Emergency Situations have created separate manuals for both training programmes.

Kazakhstan

Using the priorities outlined in the 'National Plan for the Development of Functional Literacy of Students from 2012 to 2016', UNICEF has advocated for the inclusion of DRR into the formal education in Kazakhstan. DRR topics have been prepared to be integrated into the following subjects: 'Surrounding World', 'Self-cognition', 'Physical Culture and Health', 'Man and Society', 'Natural Science' and others.

Montenegro

Collaboration between the Bureau for Education, Directorate for Emergency Situations and UNICEF in Montenegro has piloted DRR activities in five schools. Through a consultative and participatory process with school staff and management, as well as students, the Directorate for Emergency Situations developed risk assessments and emergency action plans. In addition, the Bureau for Education developed an interdisciplinary syllabus on preparedness and response to hazards to be integrated into other regular curriculum subjects, such as geography, biology, and nature and society. This syllabus was adopted by the National Council for Education in June 2013. Furthermore, around 15 per cent of the curriculum of each subject is open, that is, it is available to be developed and can provide more information about the local community and its needs. Some of this time has been used to introduce more DRR topics into the formal curriculum

The Head of Class Hour teaching methodology focuses on interactive class exercises, such as mini-lectures, debates, brainstorming exercises, presentations, games, Socratic Method formats, learning by doing and other activities. The focus is that children 'learn

to evaluate danger before facing it, and stay calm and respond adequately if it actually happens.'⁴²

Through this work, UNICEF has increased its presence in DRR platforms and is supporting a DRR Think Tank for strengthening DRR coordination mechanism in

Georgia. The agency has participated in various DRR meetings, advocated for greater inclusion of DRR principles and conducted HFA awareness-raising events for government officials. UNICEF is also supporting the Ministry of Education and Science to establish a national inter-agency coordination mechanism on DRR education, the Disaster Risk Reduction Education Coordination Group. The objective is 'to promote initiatives and support further mainstreaming of DRR in both formal and informal education, as well as school and pre-school disaster preparedness and safety.'⁴³ This is an important step to ensure national ownership and institutionalization of DRR activities in education curriculum.

Identifying curriculum needs

The education sector in Georgia is developing, but there are still challenges in the system. The PISA 2009 Plus⁴⁴ results indicated that many children are still below the minimum attainment levels in reading literacy, mathematics and science. Just over a third of school children scored were estimated to have the required functional skills in these three areas.⁴⁵

Finding ways to improve and broaden the curriculum is a constant concern. UNICEF found that the Head of the Class Hour helped to strengthen lessons to provide important life skills together with a teaching methodology that would help school children to

enhance their critical thinking skills. The Head of the Class Hour is "flexible" and "fills gaps" in education curriculum.⁴⁶

Experiences from the field

"Most things depend on individual enthusiasm."

Nino Gvetadze

Programme Officer, Disaster Risk Reduction, UNICEF Georgia

The challenge is to ensure that the DRR lessons in the Head of the Class Hour are taught and that they are done using interactive teaching methods. In some cases, Head of Class Hour teachers were unaware of the new DRR curriculum, but others have taken it up and have noted how children quickly learnt how to behave in a disaster. Classroom monitoring is not conducted, but the offer of free training courses will create the impetus to learn about DRR and to teach the courses in a new and engaging way.

Continued advocacy

The next national curriculum review in Georgia is scheduled for 2016. While mainstreaming efforts continue, UNICEF's continued engagement is essential to ensure that DRR remains in education curriculum and is expanded to reach younger school children.

Special Focus: Non-Formal Curriculum Innovations

Small initiatives to state-wide campaigns are driving awareness on DRR practices throughout the region.

School innovations

Frequent natural disasters in the Kyrgyz Republic are a constant reminder of the need for DRR topics to be integrated into the curriculum. However, class lessons are not enough. For the residents of some communities in southern Kyrgyzstan, however, this knowledge is a survival technique. It is important to integrate it into non-formal curriculum and daily activities.



Photo of the rebuilt Özgörüş Middle School, Özgörüş village, Leilek District, Batken Oblast, Kyrgyzstan. Presentation of DRR equipment to the school. (Photo: UNICEF, 2013).

In a deep gorge in southern Batken Oblast is the small village of Özgörüş, Leilek District. There is no mobile phone reception and few landline telephones. Homes are spread out along the narrow gorge floor. There are few economic opportunities other than animal husbandry for the almost 1,000 village residents.⁴⁷ On 8 January 2007 there was an earthquake which destroyed the school and several houses.⁴⁸ The village is so remote that it took the Ministry of Emergency Situations some time to locate those affected and they had to be guided by the head of the local self-government body from a neighbouring village. School continued in tents for the remainder of the year and a new school building on 1 October 2007. The school is now a modern building at the bottom of a 150-metre stretch of flat land between a steep mountain wall and a river. The school teachers and parents worry about rock falls and want to have the village relocated to a safer place.

Photographs of the earthquake damage to the school are a chilling reminder of the danger of natural hazards. Presentations by school children in the main hall of the school demonstrated that they had learnt a great deal about natural hazards and what they can do to protect themselves. Teachers, as well, have taken active participation in working with the chil-

dren and utilizing teaching methods to make the DRR classes more relevant for the children.

Experiences from the field

"After the [DRR] training, we felt like we were donors. [...] It is a person's duty to improve things. We feel responsible."

Arzykan Berdabaeva

Russian language teacher (6-11 grades)
Jangy-Jer School, Batken District
Kyrgyz Republic

Beyond the important role that DRR topics in the formal curriculum is having, this improved awareness and local initiatives have led to a number of innovative, spin-off activities focusing on everyday safety innovations in many of the pilot communities. This is important as school staff and students are aware of the dangers that surround them.

The knowledge of how to act and the appreciation by other for their actions are having a positive effect on school children and teachers. Teachers, parents and school children have come up with innovative ways to protect themselves and prepare for emergencies. In some schools, for example, parents and children have developed school journey planners. These small maps that fit into children's backpacks showing the way from their home to school, dangerous places and homes of families and friends along the way with telephone numbers to call in an emergency.

Parents noted that they have learnt a lot through their children. After DRR lessons, children come home and tell them what they learnt. Children encouraged the parents to gather all their important documents together in one place to take them in an emergency. One father said that the children demanded that book shelves be secured to the wall and the parents were forced to do it.

Teachers have also found time to integrate DRR activities into the daily routine. For example, before school begins, students stand in orderly lines (Russian, *lin-eiki*) outside the main building. Before, this was used to check on school children's uniforms and publicly reprimand children who had received low test scores. Arzykan Berdabaeva, a Russian language teacher for grades 6-11 at the Jangy-Jer Middle School, noted that she uses this time instead to go over some basic DRR lessons with the children. She also holds special extracurricular classes throughout the year, but especially before New Year. Many children will be handling

fireworks, so they feel it is important to make children aware of the problems before New Year, but they also hold classes regularly throughout the year.

Teachers who received DRR training in Kyrgyzstan have created open lesson plans. Teachers are required to lesson plans for all classes, but are usually not distributed or made public. These lesson plans, however, were public and became a resource to share with other teachers. In Isfana town, UNICEF's partner, the non-governmental organization 'Leilek – Daanyshmany' ('Leilek – Scholar'), has become a resource centre for lesson plans, children's writing competition entries and other materials. School directors and teachers visit the NGO to see what information they had and what other schools had done.



Students of the Jangy-Jer Middle School, Batken District discussing what to do during a mudflow. (Photo: Aijan NGO, 27 September 2013)

Teachers' efforts are being recognized through salary bonuses.⁴⁹ The Government is piloting a financing scheme, whereby schools are no longer funded through the local self-government structures, but through the district education board. This has given school directors more flexibility in developing their budgets and how to use any additional funds. Teachers who are active and take on extracurricular activities are awarded points. During the academic year, a district-level expert group reviews nominated teachers with a high number of points and consider them for salary bonuses. With up to 10 per cent salary bonuses to be awarded, note that this is a good incentive to engage students more in subjects, such as DRR.

Experiences from Kazakhstan

Some pilot schools, such as Gymnasium No. 79 in Almaty and Secondary School No. 2 in Tekeli, have created independent Security Units that are run by school children. These Units engage children to ensure security and DRR in their school. They Units take part in the implementation of the school security plan, but also offer new ideas and activities to increase DRR knowledge and skills of fellow school children.

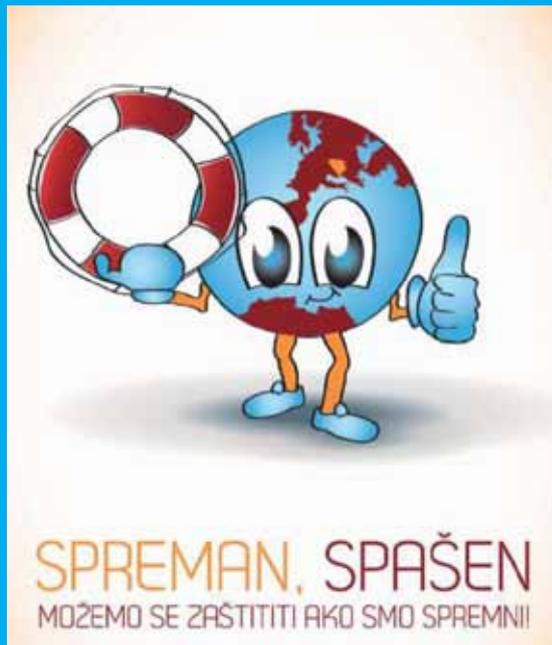
Children too are receiving public praise for taking correct actions to prevent natural hazards from damaging their school. Jangy-Jer village, Batken District is another place that susceptible to natural hazards. The countryside is deceptive. The small, undulating hills do not seem to pose a treat. However, the lack of plants and only a few trees means that when it rains, mud quickly gather and washes through the village. Behind the Jangy-Jer Middle School is a canal, built during the Soviet era, to channel mudflows. Mudflows are a regular occurrence and can often cut off the school from the road. There are paths through the canal to nearby homes, but this is too dangerous for people to cross when there is heavy rain. There have been times when children have been trapped in the building during mudflows.

A few years ago, five boys after school were standing on the embankment next to the canal when they noticed a mudflow growing in size. Azamat Manas uulu, Asanbai Sarybaev, Akylbek Akhmatbek uulu, Bekzat Uzakbai uulu and Aibek Mairambek uulu, all from the sixth grade, knew that the mudflow could come into the school yard. A chain-link fence surrounding the neighbouring private land and orchard, and crossing over the canal to the school's side of the embankment, was impeding the mudflow and would cause it to come into the school yard. The boys unhooked the fence from the school's side allowing the mudflow to continue without coming into the school yard.

Representatives from the district branch of the Ministry of Emergency Situations awarded the boys a certificate for commendation (Russian, gramota). In addition, some parents gave a small cash prize to the boys for their actions. Although the boys' actions happened before the DIPECHO funding began in republic, the commendation was given out in 2011, after government officials had attended trainings supported by UNICEF and learnt the value of mobilizing communities to protect themselves against natural hazards. It demonstrates the high value that people put on such knowledge and actions, and the attention that government is providing in this area. This positive reinforcement is encouraging children to develop their knowledge and take an active part in their community.

Campaigns

In Bosnia and Herzegovina, the municipality officials and the UNICEF country office developed a public campaign entitled 'Spreman, Sprešen' ('Prepared, Saved'). The campaign contained a number of elements, including a Knowledge, Attitude and Practice (KAP) survey, communications training, focus groups and workshops, the development and adaptation of learning materials, a game, and cartoon, and created an online presence in social media networks. This helped to reach children and parents throughout the country.



'Prepared, Saved' campaign poster logo (2013) in Bosnia and Herzegovina.

The results of the KAP survey revealed that school children and grades 3, 4, 5 and 9 were unaware of what measures to take during emergency situations. In fact, a majority of children noted that they did not know the number of the Civil Protection Service. The lack of knowledge and limited ability to address many important issues in schools strengthened the resolve to implement a number of activities under this campaign.

The Ministry of Security and UNICEF held a two-day communications training for members of the civil service and spokespersons to strengthen the skills needed to communicate with the media. This was particularly important in cases when they may be required to provide information on natural hazards and convey useful information to the public.

State-level experts, representatives from the pilot municipalities and UNICEF developed several materials to accompany the project. A children's handbook and family handbook were created. The popular board game Riskland was also adapted for children to learn about natural hazards in an engaging and interesting way. The programme partners tested these materials and game through focus groups and workshops to ensure that accurate and relevant information was provided. The distribution of materials is intended to reach around 30,000 children and parents, but may be more through the campaign's online activities and social networking presence.⁵⁰

Information was also provided through a cartoon, 'Neće Mene' ('It Will Never Happen to Me'), and made information available on a dedicated Facebook page.⁵¹ The campaign also included a photo competition which was conducted on Facebook.⁵²

Cartoons

Cartoons are a popular way to connect with children. In Kyrgyzstan, 10 episodes of the popular cartoon 'Keremet koch' ('The Magic Journey') were adapted to include DRR messages. First broadcast in 2006, the two traditional characters, Akylai and Aktan, together with the friends explore a number of topics. This show is produced in Kyrgyz and has been translated into Russian. The success of the show has been spread and has been syndicated in other countries, now reaching 250 million people.⁵³ Children are retaining key messages of the show, reflected in the entertainment, life skills and educational goals that have been achieved.⁵⁴



A still from the 'Keremet koch' ('The Magic Journey') series in the Kyrgyz Republic.

UNICEF in Bosnia and Herzegovina produced a cartoon to promote disaster risk awareness and preparedness, which was done as part of the Prepared, Saved country-wide campaign.⁵⁵ The main character does several things which put him at risk of being susceptible to certain hazards. The dog is more aware and demonstrates what should be done in such situations.



Cartoon 'Neće Mene' ('It Will Never Happen to Me') produced by UNICEF in Bosnia and Herzegovina to promote disaster risk awareness and preparedness (2013).

Video games

Video games are another popular format to create learning platforms for children. For example, in cur-

rent programming, UNICEF was not able to create specific DRR topics for young children in grades 1-4. Therefore, they decided to create a computer game with DRR topics for children to play. As part of a government initiative that started three years ago, children receive free netbooks pre-programmed with course subjects. UNICEF wants to include this computer game to improve non-formal education aspect among young school children.

Riskland

Riskland is a popular board game that forms part of

UNICEF's DRR education kit.⁵⁶ Developed in 2002 by UNISDR and UNICEF, it has become a game that has been adapted to country contexts and translated into many languages. Children enjoy it and learn new lessons on how to stay safe in emergencies.

Drawings

A number of countries have engaged children through art to strengthen their awareness of natural hazards. This is fun for children as they are able to express their ideas and knowledge in a fun way.



A still from the film 'Riskland' (2013) directed by Tinatin Svanidze (Georgia).



A drawing by Gracija Brguljan, from Savo Ilić Primary School, Kotor, Montenegro (2013) depicting flooding from the hills going into a town.



Drawings from children in Kazakhstan on DRR awareness and preparedness (UNICEF).

Section III: Educational Resources

Developing DRR learning and training materials⁵⁷

Interactive teaching and training materials have become a strong point of DRR development in Kazakhstan, and the lessons learnt have been spread throughout the region.

DRR in education beginnings

In Kazakhstan, as in many former Soviet republics, disaster response has been the main focus of government bodies responsible for coordination of emergency situation activities. Legislation passed just before and after independence explicitly highlighted the need for improved knowledge of disasters in all levels of the education system.⁵⁸ UNICEF recommended the integration DRR topics in some subjects, such as biology (grades 8, 9 and 11), safety and life skills (grades 1-11) and pre-military education (grades 10-11)⁵⁹ The topics covered, however, did not provide for a comprehensive overview for DRR topics in the curriculum or practical exercises to be conducted on a regular basis.

Other actions conducted at this time have helped create a broader awareness of the importance of DRR and the need to improve education materials. From 2002 to 2005, several donors and the US-based non-governmental organization (NGO) GeoHazards International implemented the Central Asian Earthquake Safety Initiative. This project focused on bringing government and NGOs together to improve urban earthquake safety.⁶⁰ In Almaty, Kazakhstan, the Ministry of Emergency Situations and the local NGO Man and Element jointly implemented a community-based hazard reduction and disaster mitigation project. As part of this project, the Ministry of Health of the participating countries developed Handbooks on School Disaster Preparedness and Hospital Disaster Preparedness.

From 2005 to 2007 UNDP, together with the NGO Man and Element, conducted the project 'Local risk management in earthquake zones of Kazakhstan'. Through this project, partners developed textbooks for secondary school students, carried out training in children's summer camps and developed posters, computer presentations, and pocketbooks for primary school children. Other activities included the development of a forum-theatre 'Are you ready for an earthquake?' for school children in the Almaty region. The results from this project noted that many children had increased their knowledge about earthquakes and what to do during and after an earthquake. How-

ever, the NGO noted that government bodies need to be engaged to support comprehensive training in schools.⁶¹

UNDP also commissioned an animated cartoon series and a computer game entitled 'Dzhin-Zemletryas' ('Earthquake Jinn')⁶² to be shown at pilot schools about what to do in the event of an earthquake. The producers of the multimedia products made them available in Kazakh and Russian.⁶³

Other partners, such as the Netherlands Red Cross, working with the Kazakhstan Red Crescent Society, conducted activities to strengthen community-based disaster preparedness and response, including training teachings and children in 40 schools in Almaty.

Building on tested foundations

Based on these initiatives and others, UNICEF has engaged in DRR development in education in Kazakhstan. On 12 March 2009, the Ministry of Education and Science, Ministry of Emergency Situations and UNICEF signed a Memorandum of Understanding. At the same time, UNICEF also signed memoranda with the governors of the three largest target regions. To oversee the work to be conducted in this area, a Steering Committee was established at the Vice Minister level, and included the Deputy Representative for UNICEF Kazakhstan. Through these frameworks, an Action Plan which targeted Almaty City, Almaty Oblast and South Kazakhstan Oblast was signed at the national level. These were chosen because of their higher risk of natural hazards as opposed to other parts of the country. Around 500 schools were targeted to pilot the initiatives, but this was later reduced to allow for project members to work more closely with school staff. Eastern Kazakhstan Oblast joined the DRR programme in 2010 as it is a multi-hazard prone area.

UNICEF recruited a consultant to work with people from the Republican Training and Methodological Centre for Civil Protection (Ministry of Emergency Situations) and the Republican Institute for Teachers' In-service Training (RIPSKO, Ministry of Education and

Science) to review the existing materials and develop new teaching aids and training methodologies.

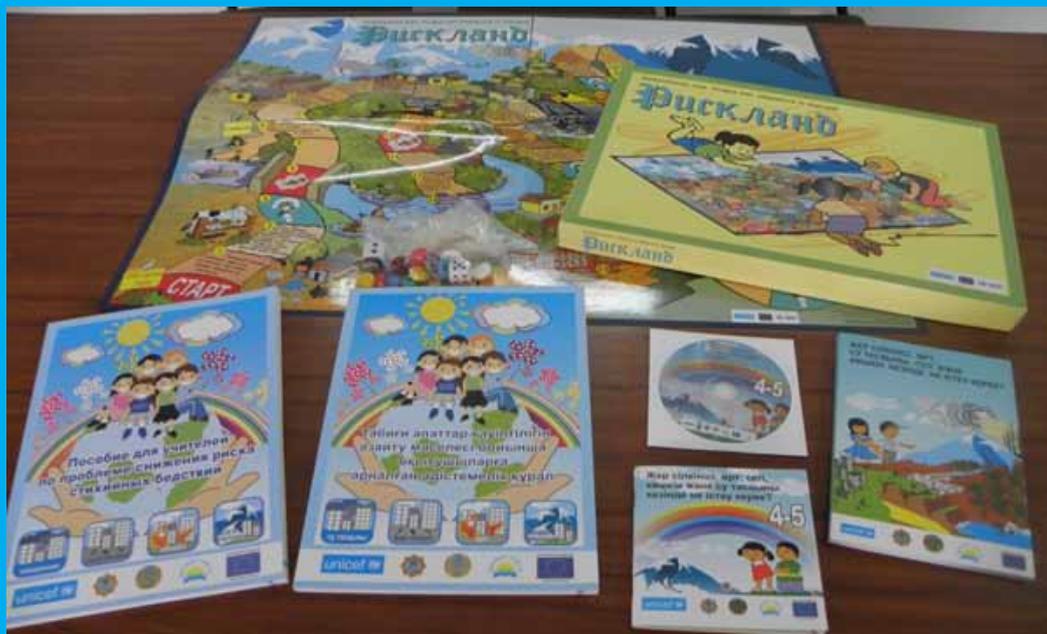
In order to enhance the awareness of their RIPSKO colleagues, the staff of the Republican Training and Methodological Centre for Civil Protection provided training on disaster preparedness and risk reduction. After this and initial collaboration, the agencies produced two educational books for school children and

a CD-ROM on DRR. Also, the Riskland board game was adapted for Kazakhstan. The materials were tested and adapted at children's summer camps in 2009. The agencies integrated the feedback from the children and revised the materials which targeted grades 4-5 and grades 6-9.

RIPSKO experts, with input from the Republican Training and Methodological Centre for Civil Protection,



An example of a textbook created in Kazakhstan. The textbook 'How to behave in the Event of Earthquakes, Floods, Fire, Landslides and Low Temperatures, left for grades 4-6 and right for grades 7-11.



An example of textbooks created in Kazakhstan. The top two photographs are of the textbook 'How to behave in the Event of Earthquakes, Floods, Fire, Landslides and Low Temperatures, left for grades 4-6 and right for grades 7-11. Below is a range of materials prepared and adapted for Kazakhstan, including the Riskland board game (Photo: UNICEF Kazakhstan).

then developed pedagogical materials for teachers. The experts developed a methodological guide for the manuals and included interactive materials and advice on using a peer-to-peer approach in testing knowledge.

Developing materials to meet needs

The agencies developed materials through a thorough, seven-stage process:

1. Study the republic's legislative and regulatory framework, as well as international and domestic DRR experiences;
2. Develop textbooks for children and teachers' manuals which take into account age, psychology, and national and regional characteristics;
3. Develop methodological accompaniments to the DRR textbooks and manuals, which included a glossary of DRR terms as a guide for teachers and school children;
4. Develop DRR teaching modules to be included in the textbooks and manuals;
5. Develop design of DRR textbooks and manuals taking into consideration national and regional characteristics;
6. Test textbooks and manuals;
7. Publish textbooks and manuals including the results of the testing.⁶⁴

In 2009 the team of experts tested the materials at a summer camp, held in the foothills outside of Almaty. Nearly 200 children representing younger and older school children were brought from around the country to participate in the three-day event. The children gave feedback on the materials and what they would like to have included. The children picked up many aspects which had been overlooked by the developers. One example is that children asked for the drawings in one book to be redone to look more like them. This is an interesting aspect of the work, which demonstrates that children not only want to be able to relate to the work, but also want to see themselves reflected in it.

This process brought many benefits to the teaching of DRR in Kazakhstan. First, it introduced a systematic approach to DRR education and continuity throughout all levels of education. In previous activities conducted in this area, practitioners and experts noted that there were gaps in the education. The development of these materials were adapted for different age groups and focused on the user. Materials were also designed to build on knowledge, thus creating greater awareness and understanding of hazards and appropriate actions to be taken during an emergency. This was also done in a way that the subject would not be frightening for children, but would be

interesting and develop knowledge and skills in a way that built children's confidence in their ability to act accordingly in an emergency.

Second, the experts developed materials in a way that they could easily be integrated into school lessons. One of the challenges that the experts faced was developing DRR topics to be used in a range of disciplines, not in a special course dedicated to DRR. Furthermore, the experts developed a methodology that was clear for teachers to use and gave practical examples how to achieve course objectives. Many teachers went through trainings to understand the course material and interactive methodology. Replicating this in the classroom, however, can be a challenge. All necessary methodological and teaching aids were built into the manuals. Experts provided materials in Kazakh and Russian, so that these could be used throughout the country and in a number of contexts.

Experiences from the field

"No one has to look around for anything. Everything is included in these materials. And they are meeting needs."

Almagul Mukhamedkhanova
UNICEF National Consultant
on DRR

Third, the lesson plans were not designed on the basis of testing knowledge, but interaction to achieve educational goals. Using the peer-to-peer method for children, parents and teachers, the materials and the structure of the lesson plans were designed for learners to improve their knowledge on DRR topics by collaborating on various activities. This is a change from the type of teaching methodology used in many other courses, but is regarded as a more engaging format and better for knowledge retention.

Fourth, the development of these materials represented a successful collaboration between government agencies. The development of these materials brought together the technical knowledge on DRR together with current teaching methodologies to develop materials and activities that provide essential knowledge. The tested materials were also approved by all participating government agencies, providing a united government approach to the development and introduction of new materials to be used in lessons.

Development into practice

As part of the development of the materials, the experts and UNICEF organized a training of trainers for 54 teachers at the national level in 2009. In a cascading system, these trainers then went on to train 150

Experiences from the region

Armenia

Some countries have put learning materials and teaching and training resources online. In Armenia, for example, the Ministry of Emergency Situations has put all materials developed through the DRR programme online and are open access.⁶⁵

UNICEF in Armenia has also worked with teachers to engage parents in DRR activities. During Parent-Teacher Association meetings, teachers have interactive sessions with parents to raise their understanding of DRR and increase resilience at home. The teachers provide parents with materials prepared by the State Academy of Crisis Management, which includes a Family Preparedness Plan, which is a checklist for families to fill out together to improve safety at home. Teachers also give key messages to parents to reinforce the lessons they learned during the meetings. For example, 'Let your children teach you,' puts the children in the centre of the family preparedness measures and helps parents and children learn from each other. Another message, 'Raise your children to assist those with disabilities and the elderly,' promotes creating a culture of resilience which ensures that the most vulnerable groups are also included in the planning measures.

In addition, the Armenian State Pedagogical University and UNICEF in Armenia worked together to support better inclusion of DRR topics into the curriculum of the teacher preparation universities to provide future teachers with a clearer understanding of the topic and tools to promote interactive DRR learning for the classroom. The Armenian State Pedagogical University has four main schools, but a shared set of core subjects in the undergraduate courses. A group of experts developed a plan to integrate DRR topics into these core subjects and will be taught from September 2014. In addition, the group developed proposals for elective courses on specific DRR topics to be included into the different schools' curriculum, as well as to be considered as an integrative component in internships which all graduate students must complete as part of their course.

This innovative approach was the result of close work between a research team and school teachers. A team from the University visited schools, observed classroom and extracurricular activities and spoke with teachers to understand the specific needs. The group noted that there was a gap in knowledge and awareness about disasters, but also in teaching methods. Teachers in Armenia do not write their own lesson plans. If the DRR lessons are not integrated into the curriculum or emphasis placed in the importance of the topics, then children are less likely to learn important actions to take during an emergency. The research team suggested that teachers be encouraged to develop their own lesson plans including interactive methods to put teachers at the centre of classroom development of DRR knowledge. Based on this work, and through the regular meetings between the research team and group of experts, teacher preparation became an important matter to address DRR awareness and preparedness.

Kyrgyz Republic

The development of materials for preschool and school children is regarded as a good practice in the Kyrgyz Republic. From 2010, UNICEF supported two national consultants to review current curriculum and existing materials. The results were that there were almost no materials on DRR for preschool children. At the same time, a group of experts examined DRR teaching from other countries and reviewed the work that had been supported by UNICEF in Kazakhstan to develop teaching and training materials. The experts – three from the Academy for Education and one who had DRR experience and attached to the Ministry of Emergency Situations – recommended that several publications be created that targeted preschool children. The experts and UNICEF developed a number of materials: an educational programme, manual for preschool teachers, three books for children on safety measures in different emergency situations, a colouring book with a safety theme, and posters. Based on the feedback from testing in preschools, they were approved and have been distributed to children in southern Kyrgyzstan. The group of experts then met to develop materials for school children. This was to ensure that there was a continuous teaching so that children do not lose knowledge. These have been developed and approved and are being printed. To accompany these materials, 10 special episodes of '*Keremet Koch*' ('The Magic Journey') cartoon were developed to provide both preschool and primary school children as a complementary format to learn DRR lessons.

teachers at the regional (oblast) level. Since this time these teachers have trained around 3,000 teachers at the city and town level, and have reached over 57,000 children.

This knowledge has been vital for some. Almaty City and Almaty Oblast are located in a seismic area. On 24 May 1887 an earthquake destroyed the city of Verny (today, Almaty). In a report filed after the earthquake, the scene was described as 'complete desolation of

which words cannot convey an idea'.⁶⁶ This history lesson is a practical reminder for children today. During an earthquake in 2010, children from Koktobe village school (Yenbekshikazakh District, Almaty Oblast) were able to use their knowledge to take appropriate measures to protect themselves. Furthermore, when children saw the 2011 earthquake and tsunami damage in Japan on television, they shared their course materials with their parents.

Spreading good practices

The methodologies and materials developed in Kazakhstan have been adapted in Azerbaijan, Georgia and Turkmenistan.

Azerbaijan

The DRR Teacher Training Manual developed in Kazakhstan was translated into Azeri language, and adjusted to local context and curriculum in 2011. Later, experts of Ministry of Emergency Situations conducted training for 200 school teachers on DRR from 10 pilot schools and in 2012-13 under the DIPECHO programme. The Azerbaijan Teachers Training Institute also used this manual to develop In-Service Teacher Training Manual.

Georgia

A technical expert group – comprising members of the Ministry of Education and Science, Emergency Management Department (Ministry of Internal Affairs), Ministry of Environmental Protection, local NGOs and UNICEF – developed educational materials. The team developed general outlines and then gave draft chapters to relevant stakeholders for feedback. UNICEF and the Department of Curriculum of the Ministry of Education and Science consolidated all feedback and documents, and produced the materials. This was the result of exchanges between officials from Georgia and Kazakhstan at the Regional Knowledge Management Event hosted by the Regional Office. The Georgian officials brought back the lessons learnt from Kazakhstan to implement at home.

Turkmenistan

After attending the Regional Knowledge Management Event hosted by the Regional Office in 2011, government officials from Turkmenistan explored the lessons of Kazakhstan in developing learning and training materials. Almagul Mukhamedkhanova, the National Consultant on DRR in Kazakhstan, travelled to Turkmenistan bringing her experience of material development. She was able to establish good relations with the experts from the Ministry of Education, which facilitated the development of DRR textbooks and teacher's manuals. She was also able to advocate effectively for DRR topics to be mainstreamed into the mandatory 'Basics of Life Activities' course, which has been achieved. This course is now being taught throughout Turkmenistan.

Special Focus: Raising Awareness and Building Resilience through Multimedia

The role of media and forms of communication are playing an important role in the spread of knowledge and information on DRR throughout the region.

OneMinutesJr.

The OneMinutesJr. films give children and youth an opportunity to express themselves on certain themes.⁶⁷ Children and youth, aged 12 to 20, work with trainers and develop stories and film them. It allows them to express their ideas in their own way.

In Central Asia, the South Caucasus and Eastern Europe have taken part in developing OneMinutesJr. films on the topic of disaster risk reduction. A majority of the films focused on earthquake preparedness, as many of the children involved in making the films were from areas affected by earthquakes. This section examines some of the films that were done in the region. Other countries, such as the Kyrgyz Republic, are also supporting school children to direct films on similar DRR topics.

Armenia

Many of the films from Armenia focused on earthquakes. The 1988 earthquake in Gyumri devastated most of the town and had a profound effect on the people. In one video 'What do you know...?' (2013), Alisa Karapetyan asks people on the street what they learnt after the earthquake. Some were uncertain, but others had understood the problems. One man noted that they did not know what to do and people began to run. This caused more fatalities, which could have been avoided. This film, and others like it, demonstrated the importance of knowing how to act in an earthquake.



A still from 'What do you know...?' (2013) directed by Alisa Karapetyan.

Georgia

The children who developed OneMinutesJr. films in Georgia focused on a number of disaster hazards. They also demonstrated the importance of knowing skills like first aid. There was a film which demonstrated the importance cross-over effect work conducted in other countries. In the film 'Little Hero' (2013), the director Christina Dvalishvili showed a boy watching a cartoon and learning how to protect himself during an earthquake. The cartoon was 'Keremet koch' ('The Magic Journey'), a popular children's show that the UNICEF Kyrgyzstan office developed.



A still from 'Little Hero' (2013) directed by Christina Dvalishvili.

Kazakhstan

Children in Kazakhstan discussed a number of different disaster risk issues.⁶⁸ There was a greater focus, however, on environmental risks. This is an important



A still from 'Solid Foundation' (2012) directed by Madina Tyhmetova.

aspect of understanding natural hazards, their causes and potentially increasing risks that relates to improving resilience. Children also talked about the ‘Polygon’, the nuclear testing area that has since resulted in higher number of children born with disabilities and associated health problems.

The films made in Montenegro mainly focused on earthquakes. The 1979 earthquake, has remained a topical issue and is often the focus of preparedness exercises. Jelena Todorović directed a film entitled ‘Safe and Sound’ (2013) about what to do during an earthquake. In her unscripted role, Jelena, a child with Downs Syndrome, demonstrated and told viewers how to protect yourself. It was a powerful reminder of the need for inclusive education and the role that all children have to play in protecting themselves and others against disasters.

Montenegro



A still from ‘Safe and Sound’ (2013) directed by Jelena Todorović.

Social media networks

Social media networks, such as Facebook, have become popular places for highlight information and activities on DRR. A number of countries, such as Armenia, Bosnia and Herzegovina, Georgia and Montenegro have been using social media networks. This is engaging for children. For example, children from different pilot schools that met during the youth camp where they learnt about risks and what to do, have kept in touch through Facebook.



DRR in Education in Armenia Facebook page.

Photo competition

UNICEF Bosnia and Herzegovina launched a photo competition as part of the ‘Spreman, spašen’ (‘Prepared, saved’) campaign. UNICEF invited entries on

natural or other disasters in the country or attempts to prevent natural hazard risks. The winner won a digital camera and had the photographs displayed online and in other media events.

SPREMAN, SPAŠEN

Pobjedničke fotografije



Ermina Mešić, jedna od pobjednica foto natječaja 'Spreman, spašen'



Pobjednička fotografija
Posljedica prošlogodišnjih suša u živinicama.



One of the photo competition winners with her prize. She also added her winning photograph to her Facebook page cover photo.

Section IV: Disaster Planning

School Disaster Management Planning

Planning, preparation and organization has become a critical aspect of school preparedness for natural hazards in Armenia.

Lessons to remember

The principal of School No. 7 in Gyumri, Armenia, is welcoming and enthusiastic. He is proud of his school and happy to show off their achievements. The school is the largest in the region and has good facilities. The principal is also an outspoken advocate of integrating disaster risk reduction into school curriculum. His school is one of seven target schools which UNICEF is working with to integrate DRR lessons into the formal curriculum.

The desire to promote DRR comes from bitter experience. On 7 December 1988 a severe earthquake with a moment magnitude of 6.7 destroyed most of Gyumri, the second largest city in Armenia. The principal lost his mother and a nephew. Other teachers at the school told how they also lost family members. Official statistics stated that over 25,000 people died.⁶⁹ They all say, however, that it was because they did not know what to do when the earthquake struck that more people died. If they had taken basic precautions and been safe, many more people could have been saved.

Experiences from the field

“I don’t consider earthquakes and other natural hazards as disasters. We make them disasters because we don’t know how to deal with them.”

Hamlet Matevosyan
Rector of the State Academy of
Crisis Management, Yerevan, Armenia

The principal, awarded by the Armenian government as the best school principal for his work on DRR, wants to continue improving students’ knowledge of potential threats and their ability to respond appropriately to them.

School disaster management plans

In order to promote better preparedness and response to emergencies and natural hazards, government bodies and UNICEF formed School Disaster Management Teams (SDMT or Team) in the pilot

schools under the DIPECHO-funded programme. The SDMT team comprise the school principal, deputy principal, Head of the Civil Protection Unit, Representatives of the Parent-Teacher Association, teachers, and school children from the student council. Other people may be invited at the

The SDMT develops plans, coordinates actions and implements activities to make their school safe as they can within their capabilities. The main task of the SDMT is to conduct a school vulnerability assessment with the participation of school children. This is to understand the non-structural and some basic structural issues in the school, and what natural hazards may post a risk for the school.

Based on this information, the SDMT decides on what actions to take to make the school a safer environment. The SDMT is supported by four sub-teams: 1) fire and rescue team; 2) evacuation and protection team; 3) first aid team; 4) radiation and chemical observation team. These teams provide information to the SDMT to assist their decisions in what activities to conduct in the school.

The SDMT has an eight-stage process through which it develops and implements activities based on the results of the school vulnerability assessment. First, the SDMT begins the planning phase. Each sub-team submits their plans to for improving safety in the school. The SDMT then develops a school disaster management plan which is valid for three to five years. They must also develop an annual plan, in which roles and responsibilities are designated to the team and sub-team members about what kinds of activities they will do, who is responsible and when activities will happen during the year.

Second, the sub-teams prioritize activities to mitigate non-structural issues. The Team identifies what they can and cannot do in order to improve safety. This may mean that the SDMT will prepare a letter to the regional administration asking for support to address safety issues, or it may involve finding simple solutions to addressing common problems, such as securing shelves to walls.

Third, the sub-teams develop a range of evacuation plans with accompanying alarm signals to specify

between the natural hazards in their area. The school evacuation plan must be developed for all school buildings and the surrounding territory with clearly marked safe areas where children and staff can gather. There must also be evacuation plans for each floor of a building and each room. In addition, evacuation plans must account for evacuations during a lesson and during break time. The SDMT designates roles and responsibilities to ensure that all evacuations are coordinated and all possible exits are not blocked.

Fourth, the SDMT ensures that the school's alarm system functions and appoints people to manage the alarm system. These responsibilities mean that the appointed people must also receive information about hazard threats and evacuation notices from the local rescue services in their area. Based on this information, they will have to signal an alarm dedicated for a specific hazard so that children and staff know which evacuation plan is to be used. The plans must also include a schematic diagram of the alarm system.

Fifth, the sub-teams develop plans for the provision of first aid and establish a school first aid team (separate from the SDMT sub-team) and outline its functions. The team undergoes training and organizes trainings for teaching staff.

Sixth, the SDMT outlines the stages of psychosocial support for children. This plan covers support during and after emergencies.

Seventh, the SDMT creates a plan to resume education in an emergency. This is an area where UNICEF has experience and has been able to provide input in developing this aspect of the plan.⁷⁰

Eighth, the SDMT must document all these plans and procedures. The documentation must also include basic information on the school and children with dis-

abilities. In addition, information is included on what kind of basic emergency equipment is needed, such as first aid kits, megaphones, stretchers and other items. People are appointed to use the equipment and training is planned in order to learn how to use the equipment.

Evacuation plans

As outlined above, the target schools must develop evacuation plans as part of their school disaster management plans. The evacuation drills are not just an important part of DRR preparedness, but also reflect country context and needs of children with disabilities. In many schools, evacuation and fire hazard signs had been posted, emergency exits indicated and children had been trained in how to protect themselves. School principals also ensured that the school bells were functioning to alert children and staff in case of an emergency. Some schools introduced more comprehensive alarm systems that do not require electricity (as damage to the building might also create power outages). Schools also conducted evacuation drills at least twice a year.

At least one of the evacuation drills was intended to coincide with World Civil Defence Day, 1 March. Events in the country have strengthened the Government's intention that citizens should have basic evacuation skills in case of a disaster. However, to improve an understanding of DRR and preparedness, not just response, school principals and the State Academy of Crisis Management felt that it was important to have a second day in the school calendar dedicated to the International Day for Disaster Reduction, 13 October.⁷¹ Special events are planned to mark this day and highlight ways to prepare for hazards and risks.

Experiences from the region

Azerbaijan

On 7 May 2012 a major earthquake struck the Zagatala region, Azerbaijan. When the quake struck, children knew immediately what to do. Their school in the affected region had been part of UNICEF's project 'Supporting disaster risk reduction among vulnerable communities and institutions in South Caucasus'. Experts had worked with children to train them in what to do in case of an emergency. Children first calmed themselves and then took shelter under their desks. The 200 children and staff then left the building without any injuries. However, the quake had damaged around 3,000 public buildings in the region. The training saved the children's lives, demonstrating the value of such projects.⁷²

Kazakhstan

Children from School No. 79 in Almaty have benefitted from the materials. A team of experts went to assess the structural integrity of the school building where around 1,600 children study. The team assessment was that the school building was structurally unsound and should not be used. The children, however, had nowhere

else to go. The teachers and school children took the learning materials that had been developed and set to implementing non-structural changes in the school. When the assessment team returned, they saw that window panes and glass had been made secure, how shelves had been secured to the wall and other changes. The teachers and children had learnt to assess risks and had taken action to prevent and reduce the risk from hazards in the school.

The pilot schools in the DIPECHO projects in Kazakhstan have also created school disaster management plans. This has included the creation of DRR working groups, including representatives of the school administration and staff, teachers, school children and parents, as well as specialists from the Departments of Education, Emergency Preparedness and Training. They are tasked with assessing risks in the school buildings and surrounding territories. The working groups keep security passports of the school and other relevant documentation. They then discuss the results of the assessment and prepare a school DRR plan to be integrated school activities.

Kyrgyz Republic

North of Isfana town, near to the border with Tajikistan, the gravel road dives down into to the river bed, lined by high rock walls. The car splashes through puddles of water before eventually rejoining the road and continuing on to Ak-Suu village (Leilek District, Batken Oblast, Kyrgyz Republic). In the hallway of the Gorky Middle School a hazard map of the village has been posted on the wall. More than a third of the streets are coloured brown, indicating where mudflows usually occur. The school yard is marked a safe gathering area for children as it is protected by a wall. Looking out the front entrance of the school, the steep mountain wall starts behind the buildings across the street, a visual reminder of the close proximity of hazards, such as mudflows.

Smoke starts to come out of the one of the classrooms and students exit, bent over with handkerchiefs over their noses and mouths. Outside, the school director hits a gong that alerts the rest of the school there is an emergency. Suddenly students pour out of all the classrooms and a student rescue group looks for injured students. In the school yard, trained teachers and students perform basic first aid on injured schoolmates, with some parents looking on. Wearing plastic bags over their hands to prevent contact with blood, teachers treat a boy with a broken arm. They immobilize the arm and tie it with a bandage from the first aid kit. Other teachers call the ambulance which arrives within a couple of minutes. This well-rehearsed drill demonstrates that students have learnt essential skills in how to react to emergencies.

The simulation exercise is one of several activities in which children are involved. Many schools also hold a Civil Protection Day, which has turned out to be very popular. Members from local self-government bodies, the district education board, local branch of the Ministry of Emergency Situations, teachers, students and parents all take part. They have found this to be an exciting way to demonstrate their knowledge. Children from neighbouring schools are also encouraged to participate. On this day, schools have also organized writing and drawing competitions on DRR topics. Children are able to demonstrate and perform all they have learnt, and have received praise from the local government structures.

Moldova

Government bodies and UNICEF have engaged in a number of activities to raise DRR awareness throughout the country for the International Day for Disaster Reduction. UNICEF Moldova supported the development of radio and television shows to discuss DRR. The District Civil Protection and Emergency Situations Service, supported by UNICEF, organized a thematic study visit for various groups of children from project districts to the public information centre (also known as the 'Security School'), under the Civil Protection and Emergency Situations Service. There, children attended an interactive class on disaster risks and received awards for their entries into a drawing competition entitled 'Disaster and Me'.

Open access

An important aspect of the school evacuation plans has been addressing the needs of children with disabilities. The 2005 Law on Education for Children with Special Needs and the 2009 Law on General Education created a legal framework for inclusive education, which permitted children with disabilities to study in

Experiences from the region

The UNICEF campaign 'It's about ability' is advancing awareness of children with disabilities and addressing issues of social exclusion and discrimination in **Montenegro and Bosnia and Herzegovina**. This has been used to advocate effectively for better inclusive education.

any school that could meet their needs. Many schools now have children with disabilities attending school. The schools have taken then needs of children with disabilities into consideration when creating school evacuation plans.

In a general move to be more inclusive, the Ministry of Emergency Situations has also made a point about hiring people with disabilities. Formally established in 2008,⁷³ the Ministry has opened purpose-built buildings to allow for greater access for people with disabilities. The condition of many schools, however, pales in comparison with the Ministry's modern buildings. Not only do schools have limited access for children, but the often the general understanding of people regarding the needs of children with disabilities is also limited. Nonetheless, the actions of individuals and state laws supporting greater inclusivity are a step forward in providing greater access and care during emergencies for children with disabilities.⁷⁴

Psychosocial support

An important aspect of UNICEF's work in Armenia has been to include psychologists at every stage of implementation. The development of learning materials and teaching manuals, in teacher training exercises, and in working with children, expert psychologists and school psychologists have taken an active role in developing materials and working with teaching staff and school children.

The scars are still visible. Some buildings have not been torn down or repaired and remain an everyday reminder of the destruction wrought by the earthquake. In parts of Gyumri, behind buildings and down small alleys, people continue live in containers that were intended as temporary shelters after the 1988 earthquake. An annual commemoration service is held for those that perished during that time.

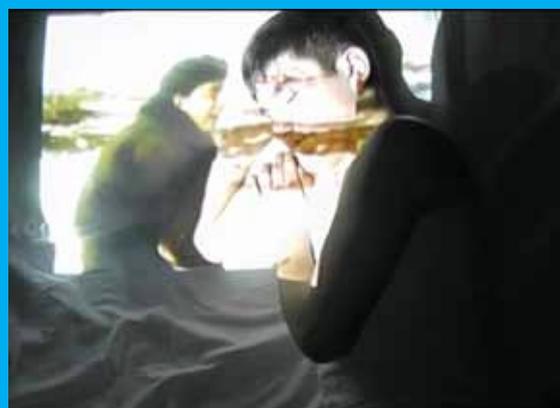
The earthquake, however, remains a "sore point" said Marine Grigoryan, the Deputy Director of School No. 7 in Gyumri said. People did not speak about the Spitak earthquake or did not feel that they had the support to do so. In the teacher training workshops, however, a psychologist asked teachers directly about this event and their feelings associated with it. Grigoryan recalled that this was the first time that she and others had really spoken about it. She said that words began to gush out and she cried. It was the first time that she felt she had been able to deal with her emotions related to the tragedy.

The psychologists that have been involved in the UNICEF programme have noted that preparedness is more than just the repetition of drills, it is also requires psychological preparedness to understand and deal with a disaster. Armen Bejanyan and Alina Galstyan, psychologists and members of the State Crisis Management

Academy expert team that worked on developing materials and with children in schools through the UNICEF programme, wanted to institutionalize debriefing and group work techniques to be conducted after a disaster. They noted that these types of intervention within the first 24 hours after a disaster help to prevent other complications, such as post-traumatic stress disorder. After 72 hours, group therapy becomes ineffective. In their experience, however, most countries focus on physical and medical safety, but often do not include psychological safety.

Several other psychologists spoke about the importance of strengthening the psychological preparedness of teachers and their ability to address psychosocial needs of the school children. Naira Hakobyan and Mels Mkrtumyan, psychologists at the Armenian State Pedagogical University and expert team members of including DRR topics into the university's undergraduate and graduate curriculum, noted how parents' and teachers' attitudes and behaviours are transferred onto children. Laura Asatryan and Hakob Grigoryan, professors from the Armenian State Pedagogical University, noted that if teachers ignore DRR preparedness measures, the children will also not learn how to prepare themselves. Likewise, if a teacher has strong negative emotions regarding the earthquake, for example, this can also create fear in children.

For example, in a OneMinutesJr. film entitled 'Haunted', the director Tigran Kochiboryan depicts how he is haunted by a nightmare of the 1988 Spitak earthquake.⁷⁵ He did not witness it, but he has been affected by the way people speak about it and images of destruction that he has seen. Lying in his bed, with images from the earthquake flashing over his head, he talks that the fear and loss that he and his community has experienced, "[Is] in our town, in people's minds, in their dreams." Although Tigran's depiction may be a rare case of young people reacting to the fears of those that lived through the earthquake, it nonetheless highlights the lasting deep sense of insecurity that people have about natural hazards and effects of disasters.



A still from the OneMinutesJr. film 'Haunted' directed by Tigran Kochiboryan (2013).

Special Focus: State-level Coordination Mechanisms

Inter-sectoral coordination mechanisms are bringing together government bodies and groups to create a common vision to improve DRR awareness and preparedness in their countries.

Promoting working relationships

The activities conducted in Bosnia and Herzegovina (BiH) demonstrate an innovative way to create a common coordination platform in complex political environments.

Travelling through the wooded hills in BiH brings a sobering reminder of lasting legacy of the 1992-1995 war. The Dayton Accords achieved a peace deal, setting in place the complex tripartite political structure. Below the state-level are two entities, the Federation of Bosnia and Herzegovina and the Republic of Srpska, and a separate District Brčko. The Republic is centrally administered, but the Federation comprises 10 cantons, each of them with a government structure. As a result, for example, interventions related to education or DRR require intensive coordination with 13 ministers of education or civil protection institutions.

The DRR programme that UNICEF supported in BiH was implemented at the state level and the local level, in two selected municipalities: Tuzla municipality (Federation of Bosnia and Herzegovina) and the City of Bijeljina (Republic of Srpska).

Both municipalities set up their own working groups on DRR and child safety with cross-sectoral representation. In Tuzla, the working group included members from civil protection, education, architectural planning, urbanism institutes, entrepreneurship and development, residence, health care and social protection. In Bijeljina, the working group included members from civil protection, education, science and culture, health care and social protection. The Red Cross was also present in both working groups. Before the project, members of the various sectors – especially the Department of Education (under the Ministry of Civil Affairs) and the Department of Civil Protection (under the Ministry of Security) – did not work together. UNICEF BiH facilitated extensive cross-sector coordination, which turned out to be one of the successes of the programme.

The Federation of Bosnia and Herzegovina and the Republic of Srpska both have separate risk assessment methodologies. In addition, each canton with the Federation can choose its own risk criteria. This provided a fractured picture for the risk assessment.



Coordination meeting, Sarajevo, Bosnia and Herzegovina (UNICEF Bosnia and Herzegovina, 2013).

UNICEF recommended its own risk assessment methodology which was agreed upon by all sides. This helped to gather similar information both municipalities and to create a better understanding of the needs to be addressed.

The working groups also developed municipal DRR action plans to address the most common types of natural hazards and social vulnerabilities of identified groups, such as children with disabilities and children in institutions.

Coordination between the heads of the working groups was another success. They organized working visits to each municipality and called each other regularly to ensure that they were progressing forward in a joint manner. The Department for Civil Protection, under the Ministry of Security at the state level, oversaw the overall coordination for the project and viewed this collaboration as a positive step for establishing further relations within the country.

Comprehensive mechanisms⁷⁶

In order to coordinate DRR activities, the Government of Armenia established the 'National Platform for Disaster Risk Reduction' (ARNAP) in 2010.⁷⁷ It is a multi-disciplinary mechanism that facilitates the implementation of Priority Actions under the HFA to reduce risks and possible consequences from emergency situations. ARNAP's priority areas seek to:

- Introduce a comprehensive approach to main-

stream DRR into national development programmes alongside with climate change related risk management and environmental issues to ensure the country's sustainable development.

- Endure the smooth transfer of existing UN coordination functions to ARNAP.
- Establish common approaches in formulating and introducing DRR priorities and solutions.
- Mainstream DRR in the education sector as an effective vehicle for preparing children and the young generation to be equipped with the necessary skills and competences for disaster preparedness and risk reduction.

The structure of ARNAP is overseen by the Board of Trustees, which acts at the governing body. The President of the Board of Trustees is the Ministry of Emergency Situations. Under the management body, which oversees the administrative arrangements, there are 14 thematic groups (TG):

1. TG on Development Implementation and Monitoring of the DRR National Strategy;
2. TG on Gender Issues in DRR;
3. TG on Local Level Risk Management;
4. TG on Climate Change And Environment;
5. TG on Public Awareness and Communication;
6. TG on National Standards for Disaster Management;
7. TG on National Disaster Observatory and Sharing of Inter-Agency Information;
8. TG on Persons with Disabilities;
9. TG on Health, Safety and First Aid;
10. TG on Seismic Issues;
11. TG on International Cooperation and Mainstreaming Adaptation and Disaster Reduction into Development;
12. TG on Education;
13. TG on Reproductive Health in Emergency Situations;
14. TG on Youth and Volunteerism.

The TG on Education was established in late 2011, with the objective to promote a culture of safety and resilience in education at all levels. The TG on Education comprises members of the Ministry of Education and Science, the State Academy of Crisis Management (Ministry of Emergency Situations) and interna-

tional and national actors working to improve education and safety standards.

This format has proved effective and helped to mainstream DRR initiatives throughout the country.

Broad coordination⁷⁸

The National Platform for Disaster Risk Reduction in the Kyrgyz Republic was created in 2011. The main role of the Platform is to 'contribute to the country's resilience by establishing a coordination mechanism, developing a culture of prevention through advocacy and integrating DRR into national policies.'⁷⁹ There are three Participating Authorities in the National Platform. The Inter-Ministerial Commission for Civil Protection of the Kyrgyz Republic, which existed before the establishment of the National Platform, is the state authority responsible for coordinating the State System for Civil Protection. This body consists of 29 members from government bodies and state authorities. The Scientific and Technical Council, under the Inter-Ministerial Commission, is the 'expert advisory body responsible for cooperation between the Ministry of Emergency Situations, scientific institutions and government authorities working in the natural and man-made disaster management area.'⁸⁰ The Council consists of 14 members, largely of research institutes of government bodies. Also, the Disaster Response Coordination Unit is the body, which 'coordinates disaster response activities of UN agencies, Red Cross and Red Crescent Movements, local and international non-governmental organizations, and donor organizations.'⁸¹ This Unit comprises also 14 members from a range of state, local and international organizations.

The National Platform is also served by the National Platform Secretariat. The Secretariat oversees daily operations of the Platform, but also can help to prioritize issues to be addressed within the Platform. Under the Secretariat are the Expert Group, which develops DRR proposals, and Technical Working Groups, which discuss specific thematic issues and provide recommendations on these areas.

The National Platform has been important in promoting DRR within Kyrgyzstan and coordinating actions. In particular, the Science and Technical Council of the Inter-Ministerial Council was engaged in reviewing, commenting and approving the safety assessment that was conducted in all preschool and school buildings and structures from 2012 to 2013. This is been an important partners to UNICEF's work in the country.

Experiences from the region

Kazakhstan and Kyrgyz Republic

In August 2011 the Central Asian Centre for disaster Response and Risk Reduction was established. The Ministries of Emergency Situations in Kazakhstan and the Kyrgyz Republic signed the agreement. The goal is to 'strengthen cooperation in the field of prevention of emergency situations and response to cross-border hazards in the region.'⁸²

Moldova

An important aspect of the DRR work in Moldova was establishing an inter-sectoral platform. This brought together the district administration, mayors of the most vulnerable communities, representatives of district-level services such as healthcare, social assistance, education, civil protection, environment, architecture, water management and cadastre, and representatives of active civil society associations from Ștefan Vodă and Ungeni Districts. UNICEF encouraged the inter-sectoral members to direct special attention to the needs of most vulnerable layers of population, including children with disabilities and their families, as well as develop new materials for families. UNICEF also expressed its willingness to become a member of the National Disaster Management Platform (NDMP). UNICEF also participated at the consultation meeting of with national partners, led by UNDP, on the need for the NDMP. UNICEF's role in the NDMP would be to ensure that DRR activities also focus on children and vulnerable people.

Section V: Preschool and School Safety Assessments

Preschool and School Safety Assessment⁸³

Identifying safety risks in buildings and addressing them through structural and non-structural measures is an important aspect to disaster preparedness in preschools and schools in the Kyrgyz Republic.

Over 1 million children attend preschool and school in unsafe conditions every day in the Kyrgyz Republic. The age of buildings, lack of investment in maintenance, harsh climatic conditions and threat of natural hazards means that over 89 per cent of preschools and over 81 per cent of school buildings and structures are regarded as unsafe. Funding from the Ministry of Education is less than one per cent than the estimated need for urgent repairs and reconstruction. The Kyrgyz Scientific and Research Institute for Seismic-Proof Construction conducted the assessment of all preschool and school buildings in the republic with technical support from UNICEF and funding from the Office of United States Foreign Disaster Assistance (OFDA), United States Agency for International Development (USAID). The results are now being used to help prioritize actions to improve safety.

Assessment and methodology

During the UNISDR Global Platform in 2009, participants recommended that 'national assessments of existing education and health facilities should be undertaken' by 2011. They also stated that 'by 2015 concrete action plans for safer schools and hospitals should be developed in all disaster prone countries. Similarly, disaster risk reduction should be included in all school curricular by the same year.'⁸⁴ In response to this recommendation, throughout 2010 and 2011 the UNICEF Central and Eastern Europe and Commonwealth of Independent States Regional Office worked to develop an analytical concept and methodology to assess safety in schools; 'a tool which was primarily meant for governments to help them assess the physical and non-physical safety of schools.'⁸⁵

As part of these activities, through the regional DIPECHO programme, UNICEF commissioned an international expert to develop a methodology for nationwide school safety assessment at the individual school level. This draft methodology was then pilot tested in Armenia and Tajikistan. The findings were presented at the 2011 Central Asia and South Caucasus Workshop on Disaster Risk Reduction in Education, which took place in Istanbul.

Based on the presentation and feedback received during the 2011 workshop, UNICEF in the Kyrgyz Republic developed the project 'Reducing Disaster Vulnerability of Children – Safety Assessment of School and Pre-school Education Institutions in Kyrgyzstan'. In November 2011, national and international experts, state officials and the UNICEF Kyrgyzstan country office worked together to adapt the methodology for Kyrgyzstan.

The Kyrgyz Scientific and Research Institute for Seismic-Proof Construction, with the support of a disaster risk expert, completed the newly adapted methodology, which was presented to the Ninth Meeting of the Scientific and Technical Council of the Inter-Agency Committee for Civilian Protection of the Kyrgyz Republic on 13 February 2012. Additional comments were made later by Prof. Sh. Khakimov, an international technical expert who provided consultative assistance, on 25 April 2012. A second Council meeting was held and the revised methodology was adopted.

One of the main aspects of the adaptation process in Kyrgyzstan was to separate out structural and non-structural aspects of the assessment. Greater detail was given to non-structural safety measures, which included examining the conditions of facilities and utilities in preschool and school buildings and structures.

UNICEF, with funding from OFDA, provided technical support conduct the visual safety assessment. A team of experts conducted the research from May 2012 to January 2013. The assessment examined four safety areas:

1. Structural integrity assessment – an inspection of an institution's building (each edifice, structure and block, if they stand separately from each other), as well as the likelihood of injury or death resulting from the effects of an earthquake.
2. Hazard exposure assessment – an overview of the disaster risk level of the institution in relation to the existing natural and human-made hazards.
3. Condition of facilities and utilities assessment – an inspection of facilities and utilities to identify their physical condition, operating life and engineering systems.

4. Risk awareness and preparedness assessment – interviews with preschool and school administrators or staff members about their level of awareness of the particular threats to their institution and disaster risk preparedness measures that had been taken in those institutions.

The assessment methodology was divided into two parts which were conducted simultaneously. A structural engineer undertook a preliminary visual assessment of the structural integrity of and the condition of facilities and utilities in buildings and structures. A geological engineer and disaster risk reduction specialist also reviewed the disaster risk threats to schools and their risk awareness and preparedness of staff. Risks to buildings and structures were marked on a scale ranging from high to medium to low.

1. The structural integrity through visual assessment examined 13 structural types together with the reliability of the structures dependent on their seismic resistance. This was the only section that incorporated a fourth safety category where structures could be marked as having no reliable seismic resistance. Construction engineers used the map of seismic zoning in the Kyrgyz Republic (updated in March 2011) as the basis for establishing seismic conditions and the level of structural integrity safety of the educational institution buildings and facilities.
2. The hazard exposure assessment examined 16 natural and human-made threats to structures, children and school staff.

3. The condition of facilities and utilities assessment examined the provision and condition of hot and cold water, water disposal, heating, telephone access, air conditioning, ventilation, roof drains and pavements within the institution's territory, as well as fire safety.

4. In the risk awareness and preparedness assessment the disaster risk reduction specialist interviewed school staff to understand the specific strengths and weaknesses of structures, facilities and utilities, natural hazards in the area and disaster risk preparedness of school children and staff.

The results of this work were entered into an online database.⁸⁶ Detailed reports were also compiled to provide additional information to technical experts together with photographs for visual documentation.

Once the draft State Programme is approved, more detailed assessments will be conducted and full cost estimates will be provided.

Results

In total, the survey team visited 806 preschools and 2,222 schools, which included assessing 1,198 preschool and 5,583 school buildings and structures throughout the country. The preliminary visual results indicated that more than 89 per cent of preschool and 81 per cent of school buildings and structures received a 'low' ranking, meaning that they do not meet the legislative requirements for a number of safety measures (Table 1).

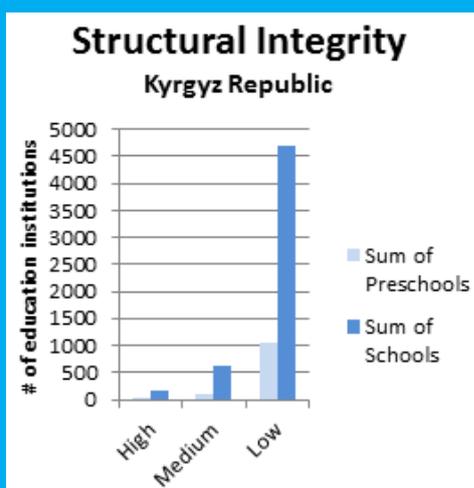


Table 1: Level of structural integrity of preschools and schools in the Kyrgyz Republic.

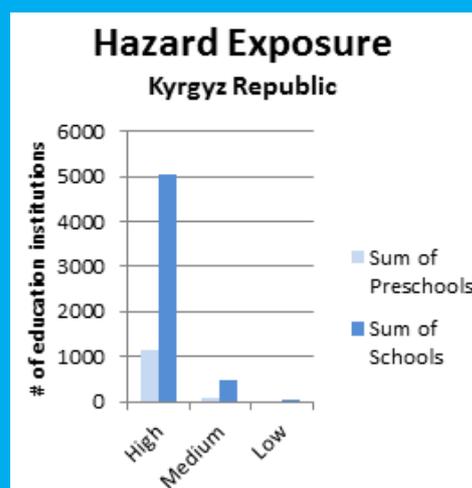


Table 2: Natural hazard exposure which poses a threat to preschools and schools in the Kyrgyz Republic.

Furthermore, many of the schools are located in areas with a high level of seismic activity and may also be at risk from other hazards, such as mudflows, landslides and flooding (Table 2).⁸⁷ From 1 June 2009 to 30 September 2010 there were 2,398 earthquakes in the republic with a moment magnitude of 6 or more according to official data. This means that on average there were nearly five strong earthquakes a day during this period. This significantly lowers the ability of buildings and structures to withstand these and other

natural and human-made events over a long period of time and particularly for older structures that require repairs as a normal part of their maintenance. Insufficient funds to support capital repairs suggests that many buildings and structures are now in critical need of strengthening, repair and reconstruction, as well as non-structural measures to enhance the safety of school children, teachers and administrators throughout the country.

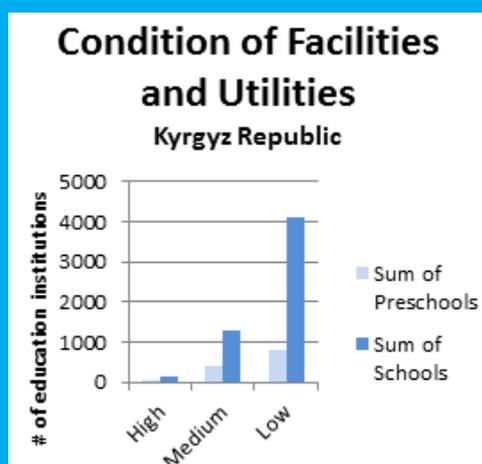


Table 3: Level of the conditions of facilities and utilities preschools and schools in the Kyrgyz Republic.

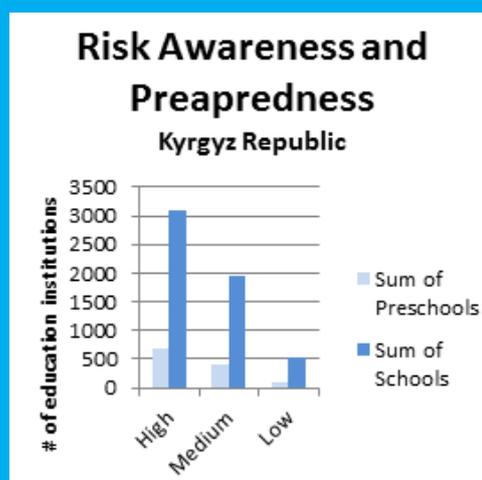


Table 4: Level of teaching staff and school children's awareness of disaster risk reduction in preschools and schools in the Kyrgyz Republic.

The non-structural aspects of preschools and schools were also examined, with a focus on the overall safety of facilities and utilities (Table 3). The assessment results indicated that many of these were in poor condition and little to no attempt had been made to introduce non-structural reforms that would bring greater safety, such as putting film on glass to stop them shattering or securing bookshelves and other free-standing objects to the wall.

An encouraging result from the assessment was the relatively high level of knowledge and awareness that teaching staff and school children demonstrated regarding potential hazards and risks in their surroundings (Table 4). This suggests that the DRR topics introduced into the school curriculum by the Ministry of Education in Science in 2011-2011 academic year was having a positive effect.

Children in pilot preschools and schools have had les-

sons on what to do in case of an emergency. Many children are now knowledgeable about the risks in their area and what they should do. Simulation exercises and drills have helped to practice this knowledge, especially when administering basic first aid. For many of the children, it is vital they learn about these things and develop these skills as they live in remote communities and it may be some time before assistance comes after a disaster.

This information gathered through this project will contribute to the development of the State Programme 'Repair and Construction of School and Preschool Education organizations in the Kyrgyz Republic from 2014 to 2020'. Together with other DRR conducted in the country, this research will have an important impact on the development of the State Programme's Action Plan and can be a useful advocacy tool to fund the Programme activities.

Assessing preschool and school safety in the region

In 2013 engineering consultants were recruited to work with national counterparts in Central Asia and the South Caucasus to adapt the methodology proposed by UNICEF and the further development of the methodology in Kyrgyzstan to the country conditions.

Armenia

The school safety assessment in Armenia has been through several rounds of development and refinement. After Armenia tested the original methodology in two schools, experts made recommendations on how to simplify it. Another pilot assessment was later conducted in five DIPECHO target schools. UNICEF has continued to work with state agencies, such as the National Survey for Seismic Protection, and reviewed the revised methodology used in Kyrgyzstan to adapt the methodology and assessment to the country's needs.

A new approach has identified four building periods and over 20 different types of building designs to provide a basis for understanding some of the main safety issues in the assessment. This has been combined with examining soil types and taking samples of concrete in the buildings to test material strength and understand the way a building would react in an earthquake. UNICEF Armenia would like to create a national database which links this information and other government agency databases to provide a comprehensive view of education institutions and their risks. UNICEF Armenia will hire experts to analyze 60 buildings based on their different design types and conduct thorough visual assessments, materials testing, and computational dynamic analyses of how the building will respond to earthquake vibrations. The results of 60 buildings will be used to then estimate the vulnerability of other buildings with similar designs. This will be supported through a memorandum of understanding with the Ministry of Education and Science, the Ministry of Emergency Situations, the Ministry of Urban Planning and UNICEF.

Azerbaijan

The adapted Kyrgyzstan school safety assessment formed the basis of Azerbaijan's approach. Two engineers from the State Construction Design Institute under the Ministry of Emergency Situations reviewed and adapted the school safety assessment methodology based on the version that Kyrgyzstan implemented. Using the four components – structural safety, hazard exposure, condition of facilities and utilities, and safety awareness and preparedness – the engineers implemented the assessment in five pilot schools. The engineers prepared a draft report and made recommendations. These included: adjusting the methodology to existing legislation and norms in Azerbaijan; providing training for relevant personnel on how to conduct the assessment; translating the methodology into Azerbaijani language; and that the updated assessment be applied in all schools.

Kazakhstan

The general methodology for school safety methodology is being revised, and work is being done to take into consideration lessons from the assessment from the Fire Prevention Committee (Ministry of Emergency Situations) and the Department of Epidemiology and Sanitation (Ministry of Health). However, the range of natural hazards present in Kazakhstan is greater than in some other countries in the region. As the ninth largest country in the world, the geographical features change quite significantly, as do the natural hazards present. In some places earthquakes are a greater risk, but in other places flooding is more important to the structural integrity of preschool and school buildings and structures. These issues are being considered as part of the revision to the assessment methodology.

Tajikistan

UNICEF, in partnership with the Institute for Seismology, combined the assessment developed in Kyrgyzstan together with an existing assessment used by the Institute. Drawing on the best elements of each, the new assessment was piloted in three schools. A review of the assessment will be used to refine the approach and to engage the government on conducting a wider study.

Special Focus: Youth Engagement in DRR

Engaging older school children in DRR activities has been an important aspect of UNICEF's work to create awareness that bridges school and communities.

Student council DRR plans

One of the measures UNICEF has promoted is youth engagement through student councils. In pilot schools where this has taken hold, teachers and student council members develop a plan to address one safety issue in their community. This usually is focused on something related to the school.

In School No. 7 in Gyumri, Armenia, the student council wanted to enhance the safety of children by improving the surrounding territory of the school. In this case, the student council focused on an abandoned building site next to the school. The site was dangerous and children sometimes played there. Furthermore, people used to dump their garbage there, which had led to an infestation of rats. Selecting the building site was part of a long assessment and debate process with guidance from experts from the State Academy of Crisis Management.⁸⁸ School children and teachers attended a two-day workshop which helped them to identify the risks in their communities and to decide on one risk that they would tackle.

Once the plan had been decided, the children put together an action plan. They gathered information by doing research and interviewing people in their communities. They also interviewed people in the municipality administration and other public officials. This was specifically designed to develop the children's analytical and problem-solving skills, and interviewing techniques.

In this particular case, the children found that a local bank owned the territory and vacant building. As a result of the children's activism, the bank put extra protective measures around the building to prevent people, particularly the school children, from entering the dangerous site. The bank promised to clean up the site, which they did. They are also planning to complete building on the site next year. The children's community engagement also helped the teachers and the residents of the neighbourhood to become more knowledgeable and undertake preventive measures.

In Yeghegnadzor City, southeast of Yerevan, the student council at School No. 2 took on a different project. The children identified that their main concern was the lack of safety measures on the road next to the school and an inadequate wall around the school. Children would sometimes run out of the school yard and cross the street. In one case, a child was hit by a car and was killed. The school is located in one of the

main intersections of the city. There were no pedestrian crossings, signs were covered by tree branches and there were no traffic lights.

In order to improve safety around the school, the children developed an action plan and had meetings with local officials and citizens. The municipality marked a pedestrian crossing on one side of the school, near where there is a public drinking fountain so that cars would stop in case children run across the road. And the city municipality hired a local company to build a wall on another side of the school to provide additional protection. The owner of the company, a former student of School No. 2, said he wanted to do something for his school and was happy that he could contribute in this way.

At a special gathering, student council members presented their plan, they were proud of their results and what they were able to accomplish. The teachers and parents had also found it a good exercise to be involved in. After the presentation, a lively discussion between community members took place. They wanted to know how easy it had been for the children to work with the municipality officials. The children noted that because they had researched the particular issue they wanted to address, they were treated with respect by the local officials who understood and appreciated the changes that the students wanted to make.

This activity had also spurred other initiatives in the area. A representative from a local grassroots orga-



Students from School No. 2 in Yeghegnadzor City presenting their community DRR plan. (Photo: UNICEF Armenia, 2013)

nization had taken the experience of this school and the materials that had been published by the State Academy of Crisis Management to other schools in the region to develop their knowledge and awareness of DRR. This was an unexpected result and demonstrates that people understand the benefit of such a programme and want to spread the word.

Youth community engagement

School children are practising what they have learnt in school in their communities. Shulmak, Garm District, Tajikistan is a remote village on a hill and prone to mudslides. After DRR lessons, two older school children, Salohiddin and Faizali started to take notice of hazards in their community. One man planned to build a home on land that was at risk of mudslides. They spoke with their teacher Saisharifov Nurullo about the issue. They then spoke with the man and convinced him to relocate his home to a safer area of the village. The boys have also demonstrated their knowledge among their peers. Salohiddin and Faizali participated in an inter-school competition on emergency situations. Using the educational materials developed under the UNICEF DRR programme, they were able to win the competition. This is one example of UNICEF's DRR work in Tajikistan, together with the Ministry of Education and Committee on Emergency Situations, which has reached more than 4,500 school children.⁸⁹

Youth camp

Youth camps have been used by a number of countries to get feedback on learning materials and to do OneMinutesJr. films. In Montenegro, government bodies, an NGO and UNICEF used youth camps to conduct training on DRR that would not otherwise be

taught in school.

In summer 2013, government officials and the NGO Forum MNE,⁹⁰ with the support of UNICEF, brought together children from grades 7 and 8 to attend a summer camp. In total, 25 children attended – five children each from schools in Bar, Berane, Kotor, Podgorica and Ulcinj.⁹¹

Held in a national park, the four-day camp focused on teaching children about fires, floods and earthquake, and what to do in these situations. It also provided practical training in first aid. Led by two trainers and with the participation of representatives from the Bureau for Education and the Directorate of Emergency Situations, the children had trainings and then practical exercises.⁹²

On the first day, trainers realized that many children had little awareness of the dangers that surround them and how to behave in an emergency. They did not know that school should have safety equipment. The training went well, and by the end of the camp, the children displayed a good level of awareness and knowledge on how to act in emergencies.

The youth camp was the preferred methodological approach as it permitted interactive engagement with the children, which they found more interesting. Forum MNE maintains that this is the best way to engage children and to promote learning through non-formal education environments.

Children recalled that this was a good event and have become focal points for improving DRR awareness and safety in their schools. Five girls who participated in the camp from the Savo Ilić School in Kotor were happy to share their experiences. They found it a useful experience and have given a presentation to their school. The school also held a drawing competition where children were able to demonstrate their knowledge about natural hazards.



A photograph from the 2013 summer camp in Montenegro. Here, children learn first aid techniques in Montenegro. (Photo: UNICEF, 2013)

Experiences from the field

“We are more aware of things now. We take more care of our actions.”

Ivana Vučinić

Participated in the youth camp
Savo Ilić School, Kotor, Montenegro

Experiences from Moldova

Youth camps were also held in Moldova in 2013. Children from Chisinau, the capital, attended a week-long camp where they received training from the Civil Protection Service.

The Bureau of Education and the Directorate for Emergency Situations see that the youth camps complemented the integration of DRR topics into the formal curriculum and development of learning materials. Officials from these government bodies noted that they are still trying to instill a culture of preparedness since the earthquake on 15 April 1979. On that day, a severe earthquake struck,⁹³ and caused widespread damage. Some recall the haunting, deep rumbling noise that preceded the earthquake. Damage was widespread, but most serious along the coast. The fact that it was a Sunday meant that fewer people were killed, but nonetheless was devastating.

Kotor was one of the towns affected by the earthquake. The Savo Ilić School was also damaged. With financial assistance from the Swiss Government, the school was rebuilt and now has an enrolment of over 700 children. While the structure may be more earthquake resistant, children still need to know how to protect themselves and what to do in case of an emergency. This is particularly important as the narrow, residential streets that lead to the school prohibit large trucks, like a fire truck, from getting to the school. Therefore, the children must remain aware of their surroundings and be prepared to act appropriately in an emergency.

In Moldova, youth summer camps offered a good way to engage children in disaster risk reduction practical exercises. The District Department of Education and the District Civil Protection and Emergency Situations Service, with support from UNICEF, in summer 2013 carried out on-the-spot DRR training. In two summer camps in Ștefan Vodă District and one camp in Ungheni District, the trainings reached 120 children from 8 to 18 years of age. These children received training as a part of their regular camp activities.

The trainers had experience in emergency response and preparedness, communications and psychology. There was also a trainer from the Red Cross who

taught the basics of first aid. The trainers used available materials on disaster risk reduction and evacuation plans to teach children what to do in case of an emergency, including practical simulations with the support of State Civil Protection and Emergency Situations Service.

The inclusion of the psychologist in such training was an important measure. The organizers felt that it was necessary to address the psychological aspects of before and after an emergency situation occurs. This is a new approach in Moldova and has been recently introduced into state-level social services provisions. The district-level Department for Social Assistance supported the approach in the youth camp trainings.

In parallel the project team involved the summer camp teachers and supervisors in these activities, and offered them relevant materials and tools for further DRR education and practical exercises that can be conducted during the summer camps. The children's and teachers' feedback indicates that the format was engaging and provided them with relevant information. The teachers also noted their appreciation for the quality of training and the engagement of the District Department of Education, the District Civil Protection and Emergency Situations Service, the police and UNICEF.

The youth camp resulted in increased awareness and interest in promoting DRR in Moldova. The Department of Education in Ștefan Vodă District asked whether it would be possible to develop DRR-based topics to be integrated into primary, secondary and high school curriculum. UNICEF also discussed the creation of new materials with the State Civil Protection and Emergency Situations Service. The materials that exist are more theoretical in the design and are not designed for children. This is an area for improvement that the state authorities and UNICEF continue to explore.

Recommendations

Resilience comes from cultivating a culture of preparedness. Continuing good practices, engaging partners and strengthening and establishing preparedness measures are all critical as next steps.

Among the benefits of the DRR programme work in the region, there are issues that need to be considered or strengthened to make a shift from disaster response only, towards disaster preparedness, resilience and response. The recommendations are divided into two areas of focus. The first concerns topics to be considered. The second examines UNICEF programmatic issues to be addressed.

1. Issues to address in developing and strengthening DRR awareness and preparedness

Education

Interactive, integrative and inclusive forms of education are among the principal lessons to be learnt from the work that has been conducted.

Interactive teaching methods are one of the most effective means for children to engage with a subject. The experiences of preschool and school children across the region demonstrate that they quickly learn new topics and enjoy the classes more when they are involved in the lesson activities. Open lesson plans, simulation drills, camps and other forms of involving children are all good ways to encourage children to hear, learn and demonstrate their knowledge.

Interactive methods are not new to the region. Reforms in countries' respective education sectors have looked to create interactive environments. Education specialists have developed new teaching materials to facilitate such methods. Organizations conduct teacher training seminars to develop skills and provide practical experience. Despite this, interactive methods are not the main method of teaching. Time is required for new approaches to take hold. Adaptation and refinement of methodologies and teaching resources are also required. In addition, improved classroom monitoring will identify gaps and areas for strengthening skills. Continuous work is required to bridge gaps and create conditions within education policies, teachers' preparation and retraining, and classrooms to allow for interactive methods to flourish.

Another area of focus was **integrative forms of education**. DRR lessons can be integrated into the lesson plans of other subjects, such as geography, biology, physics and mathematics to name a few. In Central Asia and the South Caucasus, DRR lessons have also

been included in pre-military preparatory classes, a course created during the Soviet era which teaches civilian defence and other military topics for students in grades 9-11. Distributing topics throughout subjects, supported by materials that create a continuous and holistic approach to enhancing DRR knowledge is critical. Some countries have created or plan to develop a separate, dedicated course on DRR issues. This can also have significant benefits, but if the key skills and knowledge are not supported in other courses, then some of the lessons may be forgotten.

Inclusive forms of education are also essential. This ensures that all children, irrespective of age and ability, are educated and included in DRR activities. Knowledge can help someone save their life and the lives of others. In particular, actions must be taken to create standards and approaches that will include children with disabilities and allow them to take part in preparedness measures. This also means that schools must examine ways in which they can make their schools accessible to children with disabilities so that they are not excluded from these important lessons.

Interactive, integrative and inclusive education approaches require **psychosocial support**. Preparedness is not simulation drills alone, it also includes mental awareness to think through problems and not to be overcome with fear. Psychologists working with children in schools need to be supported to make children aware of dangers in a way that is not frightening, but which encourages responsible behaviour and self-confidence to act in an appropriate way in the event of an emergency.

Other reforms and changes in the education sector are also having an impact on the ways in which curriculum is developed and implemented. **The Bologna Process⁹⁴ and other international and national education reforms** are changing learning environments. These are important changes, but ones that must include and accompany DRR topics.

Climate Change

Climate change is an important area for expansion in DRR education topics, as well as for the broader discussion on resilience, which includes both of these issues and social protection issues. DRR topics focus on the cause of disasters and emergencies, but not

always the principle causes. Even on an everyday level, this can have significant impacts. The destruction of rainforests and the burning of fossil fuels are changing the environment. However, to make this a real and more personal lesson is to ensure that these lessons have local relevance. For example, for children living in rural areas, cutting down for fuel will increase the changes of landslides and mudflows, while also creating changes in the local ecology. This topic is of increasing importance at all levels of government and society. Allowing children to understand their impact on the environment and how they can contribute to lessening it, is a necessary feature to include into lessons. The next step is to use this as the foundation for discourses on resilience and its relevance to country.

Gender and Age

Inclusive education is more than ensuring that all children receive lessons on DRR. Schools must understand the **gender-based and age-specific needs** of children before, during and after emergencies. This includes specialized training during simulation drills and first aid training, as well as ways for children to protect themselves after a disaster. In this respect, lessons from protecting refugees and internally displaced persons immediately after an emergency can be adapted into the DRR training. In addition, this should also encourage gender equity in all aspects of preparation and response.

Engagement of national counterparts

Key oversight bodies and decision-making groups made up from government bodies regarding the development and implementation of DRR education and activities in a country are important to the success of programmes and projects. In many cases, a memorandum of understanding or other framework document is the founding guide to the work of such groups. These formal bodies, which support the actions being recommended, are sometimes limited in their engagement and collaboration. The experience from many countries in the region, however, is that these bodies have been transformative. They have provided expertise in the development and implementation of DRR topics into education curriculum. These bodies have also provided an opportunity for government bodies that may not have previously worked together to learn from each other and take lessons back to their respective areas of focus and colleagues. These groups should be or continue to be accountable to promote within their members respective professional bodies to lead change.

Partnerships

Collaborations between government bodies, international and national organizations, and non-governmental organizations are important to bring in a **range of experiences** during the development, adaptation and implementation of DRR materials, trainings and activities. These can help to promote the needs of all sectors of society, especially the most vulnerable, and participate in the development of materials and activities that will be relevant for children and meet their needs.

Communication for Development

Access to and awareness of forms of information and communication technology is expanding. Using communication for development (C4D) enables children to express their views and find information on risks that are prevalent in their communities and learn more how to deal with them. New communication forms are becoming available even to remote communities. Strategies to integrate DRR messages into C4D to **engage children that may not be part of pilot or target schools, or where DRR in curriculum is not taught well**, and by helping them to learn about risks and how to protect themselves.

Child-Friendly Schools

The Child-Friendly School certification package approach is a useful way to be able to **integrate minimum standards on DRR into education policy and institutions**. This ensures that DRR becomes a national-level criterion for schools to follow. It creates formal requirements to make sure that the physical safety of children is prioritized. Also, the official recognition of the standards means that materials and textbooks must be created to support the process. This is a great method to accomplish many aspects of protecting and improving children's right to study, while also providing a safe environment for children and teaching staff

2. Issues to consider when integrating DRR into programmatic work

Integrating DRR into international organization's programmatic work

Depending on financial support and human resources, DRR activities can be assigned to a dedicated specialist to implement or often to the education programme specialist. In both cases, DRR needs to be integrated into broader education initiatives. In the

former case, there is a person that can manage programme activities and provide support to the education specialist to understand and address DRR issues within education curriculum. In the latter, the education specialist, or other programmatic officer, has a double duty of understanding and integrating DRR activities on top of their current work packages. The appointed DRR focal point may need support to raise their level of awareness to the specific in this programmatic area. Irrespective of the programme area through which DRR is introduced, a broad perspective on country programme activities will be required to integrate DRR across all programmes. This will often **require additional support and possibly training to ensure that DRR is comprehensively integrated into all programmes and a common understanding of the goals to be achieved.**

Consistency and sustainability

When there are **gaps in funding, there emerge gaps in engagement, monitoring, preparedness and advocacy.** Funding opportunities do not always follow immediately after another cycle has completed. If staff are only retained during the duration of the programme, this can create critical gaps in knowledge retention and in maintaining relationships with national counterparts. This can lead to challenges in restarting programming and re-engaging partners, especially if new staff are brought on to continue projects. Strategies for periods between funding and sustainability measures for end of programme activities should be developed.

Funding agendas

Funding breathes life into ideas, but if they are **driven by specific agendas, they may miss the needs on the ground.** It is important that donors' assistance is matched by comprehensive needs assessments and contribution of ideas by national counterparts to ensure that activities will address the right issues to have the greatest impact on teaching and preparing children.

Risk mapping

A challenge to providing applicable and effective DRR messaging is the lack of up-to-date **risk maps** of targeted regions. In certain cases, the lack of maps, and geographical information systems (GIS) mapping, is creating challenges in understanding the prevalent risks and addressing them at the community level. Programme activities could collaborate with local institutes that are engaged in mapping to develop risk maps and use these to work with communities to address risks that they can prevent.

DRR equipment tools

DRR equipment is a key component to address emergencies. In many cases UNICEF has supported this by providing this equipment. Particularly in remote communities, such equipment is essential, as it is unclear how long fire brigades or other protection agencies will take to come to schools.

Regional Map

Map of the Central and Eastern Europe, and Commonwealth of Independent States



Endnotes

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- 3 See <http://www.unisdr.org/who-we-are/what-is-drr> (accessed 25 October 2013) for more information on disaster risk reduction and the work of the United Nations Office for Disaster Risk Reduction. Also see document outlining issues on the Hyogo Framework for Action. United Nations, 'Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters', Extract from the final report of the World Conference on Disaster Reduction (A/CONF.206/6), 2005.
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- 10 OCHA, 'Situation Report 3 – Earthquake – KYRGYZSTAN – 14 October 2008, 2008', p. 1.
- 11 The economic losses are approximations. Needs assessments and data analysis is weak. Furthermore, there are gaps in datasets, particularly immediately after the collapse of the Soviet Union. There is conflicting information within data, and countries have different standards for the kind of information gathered. Also, there are gaps and inaccuracies in global datasets (such as EM-DAT). Thurman, Michael, 'Natural Disaster Risks in Central Asia: A Synthesis', UNDP/BCPR, 2011, p. 2.
- 12 RMSI, op cit., p. 62.
- 13 RMSI, op cit., p. 12.
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- 17 This story was adapted from DIPECHO and UNICEF (2011) 'Best Practices of Secondary Schools and Preschool Institutions in Uzbekistan in the Area of Disaster Risk Reduction', pp. 8-10.
- 18 DIPECHO and UNICEF, 'Best Practices of Secondary Schools and Preschool Institutions in Uzbekistan in the Area of Disaster Risk Reduction', 2011, p 5.
- 19 Due to strong and severe earthquakes in Andijan (1902), Tashkent (1946 and 1966), Gazli (1976 and 1984) and other places, the original focus for DRR preparedness focused on earthquakes. DIPECHO and UNICEF, 2011, op cit., p. 5.
- 20 This was based on Resolution No. 208 of the Cabinet of Ministers of the Republic of Uzbekistan, 19 July 2011.
- 21 DIPECHO IV covered only preparedness for earthquakes, whereas DIPECHO V and VI funding added preparedness measures for mudslides, floods and avalanches.
- 22 For more on the CFS approach, see http://www.unicef.org/education/index_focus_schools.html (accessed 3 October 2013).
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- 24 Baykabalova, Nigina, 'Child-friendly schools making inroads in Uzbekistan', http://www.unicef.org/infoby-country/uzbekistan_53243.html, 2010 (accessed 3 October 2013). According to National Statistical Committee,

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26 These are global principles that a government can choose to adopt or adapt for their own context.

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46 Interview with Nino Gvetadze, Programme Officer, Disaster Risk Reduction, UNICEF Georgia (18 September 2013), Almaty, Kazakhstan.

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48 Visit <http://www.med.kg/News/ViewNews.aspx?NewsDate=08.01.2007&SectionID=14> (accessed 29 September 2013) for more information from the Ministry of Health.

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80 Ibid., p. 14.

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87 Note that the scale used for determining hazard exposure differs from the other tables, as the scale used indicated that a 'high' ranking meant that preschools and schools were more exposed to hazard risks. In other tables, a 'low' ranking meant that there was poor safety standards and knowledge observed in preschools and schools.

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