

World Conference on Education for Sustainable Development (WCESD)

31 March – 2 April 2009, Bonn

Concept note

Learning to live with risk -
Disaster Risk Reduction to encourage
Education for Sustainable Development

”

**We need to keep our children safe and to involve them directly
in our work to strengthen disaster preparedness ”**

UN Secretary General Kofi Annan, 11 October 2006

”

**Anticipating, educating and informing are the keys to reducing
the deadly effect of such natural disasters. Unfortunately such
activities have not been given priority ”**

UNESCO Director-General Koichiro Matsuura, 3 January 2005

Prepared by the German Committee for Disaster Reduction (DKKV) and
the UN ISDR Thematic Platform on Knowledge and Education (TPK&E)



This paper is a document prepared by the German Committee for Disaster Reduction (DKKV) and the UN ISDR Thematic Platform on Knowledge and Education (TPK&E) with contributions from:

- > Coalition for Global School Safety (COGSS)
- > Capacity Building International (InWEnt)
- > French Association for the Prevention of Natural Disasters (AFPCN)
- > German Technical Cooperation (GTZ)
- > Global Risk Forum GRF Davos
- > Hazard Management Cayman Islands (HMCI)
- > United Nations International Strategy for Disaster Reduction (UNISDR)
- > United Nations Educational, Scientific and Cultural Organization (UNESCO)
- > United Nations International Children's Emergency Fund (UNICEF)
- > United Nations University-Institute for Environment and Human Security (UNU-EHS)

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Executive Summary

In this paper the German Committee for Disaster Reduction and the UN ISDR Thematic Platform on Knowledge and Education introduced their reflection on linking Education for Sustainable Development and Disaster Risk Management. It is aimed in particular at the participants of the World Conference of Education for Sustainable Development and other stakeholders¹ engaged in promoting Education, Sustainable Development and Disaster Risk Reduction at all levels.

The paper elucidates how Disaster Risk Reduction supports Education for Sustainable Development or even shows that Disaster Risk Reduction is imperative for Sustainable Development. Disaster Risk Reduction is about preventing disasters caused by natural events, such as earthquakes, floods, landslides, storms or volcanic eruptions. Hazards are part of nature but can turn into disasters as a result of human interactions. Disasters are among the biggest obstacles to achieving the UN's Millennium Development Goals for poverty reduction.

The framework of the ISS reflects the awareness that disaster prevention and mitigation is a critical issue and key sustainable development challenge, but a broad implementation is still lacking. How Education for Disaster Risk Reduction backs up the main objectives of the Decade, will be outlined in the following five strategic themes (1) Advocacy to policy makers, (2) Capacity Building, (3) Formal education, (4) Non-formal education and (5) Educational infrastructure.

The following recommendations are proposed to encourage Education for sustainable development by Disaster Risk Reduction:

1. Motivate political commitment and strengthen legal frameworks

To that end, high-level advocacy to Ministers of Education on Education for Disaster Risk Reduction is urgently required, so that it is recognized as one of the key priorities on the national education agenda and that it thus benefits from increased resource mobilization.

2. Promote Capacity Building at all levels

In the field of Disaster Risk Reduction 'capacity building' can include issues such as training, transfer of technology, application of traditional knowledge and know-how, as well as strengthening of institutional capacities at the community, national and regional levels.

3. Clarify responsibilities and promote networking and exchange between stakeholders

Acknowledging the multi-disciplinary approach of Education for Disaster Risk Reduction, institutional networks with clear responsibilities have to be set up to support networking and know-how transfer.

4. Developing effective education strategies to achieve quality education and learning

It is imperative to ensure that Disaster Risk Reduction education is rooted in existing learning theories and firmly embedded in education programmes at all levels.

5. Develop and apply minimum standards for safe and disaster-resistant schools and educational infrastructure

The safety of educational infrastructure needs to become a national priority. A safe education facility is either located in a danger-free zone or has been built to be resilient to an extreme natural event. Older school buildings should benefit from effective retrofitting programmes.

The proposed action agenda demands that Education for Disaster Risk Reduction should be encouraged as one of the programme's cross-cutting components during the second half of the Decade of Education for Sustainable Development.

¹ Stakeholders are from governmental and intergovernmental bodies, civil society and nongovernmental organisations and the private sector.

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1. INTRODUCTION ON DISASTER RISK REDUCTION AND EDUCATION FOR SUSTAINABLE DEVELOPMENT

The occurrences of natural disasters are on the rise. Images of the devastating Myanmar cyclone and China Sichuan earthquake are painful reminders of the world’s increasing vulnerability². In 2008, 321 disasters killed 235,816 people, affected 211 million others and cost a total of US\$ 181 billion. Asia was the most affected continent. The death toll in 2008 was three times more than the annual average of 66,812 for 2000-2007³.

Hazards are part of nature but can turn into disasters as a result of human interactions. The continued failure to manage natural resources, the demographic pressure and human settlements in fragile ecosystems and the increased demand on environment, are among the main causes of environmental degradation and add to the threat of global climate change and rising sea levels. The IPCC studies⁴ predict that climate change – contributed to by human activities - will increase and intensify the extension of natural events and exacerbate the underlying risk many developing countries are already facing.

Disasters are among the biggest obstacles to achieving the UN’s Millennium Development Goals for poverty reduction. Thus, reducing disaster risks and their impact has become an important development issue in its own right. Since the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992, disaster reduction has been recognized as an integral component of sustainable development (Chapter 3 of Agenda 21). This conclusion and the cross-sectoral nature of disaster risk reduction were once again underlined in 2002 at the World Summit on Sustainable Development in Johannesburg. Furthermore the linkage between the education for disaster risk reduction and sustainable development is getting more and more visi-

ble on other international agendas (Annex 1: Milestones in Education for Disaster Risk Reduction).

In December 2002, the United Nations General Assembly adopted resolution 57/254 to put in place a United Nations Decade of Education for Sustainable Development (DESD), spanning from 2005 to 2014, and designated UNESCO to lead the Decade. Education for natural disaster reduction has been identified as a core issue to be addressed under the Decade of Education for Sustainable Development (DESD)⁵. Education is

Over the last decade, disasters triggered by natural hazards have claimed more than 600,000 lives and affected more than 2.4 billion people, the majority of them in developing countries. Years of development gains have been lost, deepening poverty for millions and leaving them even more exposed to future natural hazards. Now more than ever, we must accelerate our efforts to reduce vulnerability

(Kofi Annan, 11 October 2006)

regarded in its broader concept. As defined in Chapter 36 of Agenda 21, “Education is critical for achieving environmental protection and ethical awareness, values and attitudes, skills and behav-

2 The Tropical Cyclone Nargis, killed 138 366 people in Myanmar and the Sichuan earthquake in China, caused the deaths of 87 476 people. UNISDR Press Release 2009/01, 22 January 2009.

3 UNISDR Press Release 2009/01, 22 January 2009.

4 IPCC (2007): Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Geneva.

5 A/RES/59/237 24 February 2005

our consistent with sustainable development. Both formal and non-formal education is indispensable to sustainable development". Education and knowledge contribute to raising awareness on natural hazards as well as existing vulnerabilities and threats faced by the communities. They also contribute to building life skills and thus can make a difference between life and death.

The Decade is supported by the Hyogo Framework for Action 2005 – 2015: "Building the Resilience of Nations and Communities to Disasters", adopted by 168 Member States at the World Conference on Disaster Reduction, 2005, Kobe, Japan, which highlights the importance of education and learning as part of its priorities for action, using knowledge, innovation and education to build a culture of safety and resilience at all levels. Disaster reduction initiatives should be rooted in all educational institutions in particular in schools and in educational programmes. Education for disaster risk reduction utilizes all aspects of public awareness raising, education and training to create or enhance a culture of prevention by identification and understanding of risks, learning of risk reductions measures, and disaster response.

Therefore Education for Disaster Risk Reduction (EDRR) - as part of Disaster Risk Reduction (DRR) - has to be inherent with Education for Sustainable Development (ESD), and supports the frameworks of ESD in three important ways:

- > Education for disaster risk reduction is interdisciplinary. Therefore, important consideration is given to the impacts on, and relationship between, society, the environment, economy and culture.
- > Education for disaster risk reduction promotes critical thinking and problem solving and other social and emotional life skills that are essential to the empowerment of stakeholder groups threatened or affected by disasters.
- > Education for disaster risk reduction supports the Millennium Development Goals. Without considering Disaster Risk Reduction in development planning, all efforts including, decades of development initiatives could be destroyed in seconds.

The international implementation scheme of the decade (IIS) proposes four main objectives for the DESD: (1) to facilitate networking, linkages, exchange and interaction among stakeholders in ESD; (2) to foster an increased quality of teaching and learning in ESD; (3) to help countries make progress towards and attain the Millennium Development Goals through ESD efforts; (4) and to provide countries with new opportunities to incorporate ESD into education reform efforts.

The power of knowledge in saving lives was illustrated on multiple occasions over the past decade. One of the most telling one is the story of the young British girl who, during her holidays on a beach in Phuket, Thailand, recognized the early signals of a tsunami thanks to the basic knowledge acquired on tsunamis during a geography class at school, and had the beach evacuated, thereby saving the life of hundreds of persons.

The framework of the ISS reflects the awareness that disaster prevention and mitigation is a critical issue and key sustainable development challenge, but a broad implementation is still lacking. How Education for Disaster Risk Reduction backs up the main objectives of the Decade, will be outlined in the following five strategic themes.

2. STRATEGIC THEMES ON EDUCATION FOR DISASTER RISK REDUCTION

While in the past a strong focus has been given to disaster response during or in the immediate aftermath of a disaster; disaster risk reduction measures require solid actions based on policies, which target mitigation effectively to reduce the growing vulnerability of communities and assets.

The five strategic themes are based on examples and worldwide best practices and involve elements that need to be taken into account to effectively integrate Disaster Risk Reduction into policies, plans and programmes supporting the basic vision of the Decade for ESD, “a world where everyone has the opportunity to benefit from education and learn the values, behaviour and lifestyle required for a sustainable future and for positive societal transformation”. The country case studies highlight selected experiences to share what was achieved so far and to promote international exchange to learn from each other.

Strategic Theme 1:

‘Advocacy to policy makers’

A public policy is required to incorporate Disaster Risk Reduction within the framework of education for sustainable development, and this must start with political commitment and high-level authority and be rooted in the coordination of various agencies and sectors and their participation in policy-making. Therefore the availability of a political framework for Disaster Risk Reduction on national level is a precondition.

While decisions will depend on authorities and institutions at the national level, local government, local institutions and communities must be empowered to participate in the entire policy making process, so that they are fully aware and prepared to incorporate Disaster Risk Reduction within policies targeting education. By endorsing the Hyogo Framework for Action (HFA), governments, both national and local, are committed to reducing the exposure of people and assets to the effects of disasters and to building disaster re-



Case study Iran:

In order to make children more resilient, UNICEF and the Iranian Education Ministry initiated a programme of disaster risk reduction in education focusing on two priorities: Firstly building capacity for “psycho-social support before and during emergencies and secondly advocating safe modular emergency prefabricated schools.

The capacity-building initiative seeks to improve capacities for psycho-social support from national to local level dealing with children’s condition before and during emergencies. The advocacy initiative intends to localise Inter-Agency Standing Committee (IASC) guidelines for psycho-social support in emergencies, and to encourage partners (governmental and international organizations) to harmonize and coordinate their efforts in this area.

The Project is considered a good practice because:

- (1) it helps shift attitudes and approaches of state bodies towards closer attention to the needs of children before and during emergencies;
- (2) it is an example of an emergency response project that evolved into disaster risk reduction by integrating preparedness and prevention.
- (3) the project resulted in the development of new safety standards for safer and low-cost prefabricated schools that can be built in vulnerable areas.
- (4) the government’s involvement and ownership was evident from the early stages of the project.

Source: UNICEF

silient communities and nations. This approach is fully in line with the strategy of the Decade to promote advocacy and vision building, and it supports participation and decentralisation.

The incorporation of Disaster Risk Reduction in Education for Sustainable Development is a legitimate instrument of public policy at the highest national levels for three main reasons. The first one is public safety and the protection of human life. The second is the protection of the nation's resource base and productive assets (infrastructure and private property or investments) to ensure long-term development and economic growth. The third is that States, as duty-bearers, shall undertake appropriate policy, legislative and administrative measures to facilitate the implementation of the children's rights recognized in the international bill of human rights and in the convention on the rights of the child.

Conversely, by reducing the impact of disasters, a government avoids the financial and political burden of massive rehabilitation costs. From a public policy viewpoint, disaster risk reduction must be part of a single, well-integrated process and policy concerning education for sustainable development.

Strategic Theme 2: 'Capacity Building'

Capacity building and training for Disaster Risk Reduction Education can be applied at three different levels.

1. At the individual level, capacity building refers to the process of changing attitudes and developing skills while maximizing the benefits of participation and knowledge exchange.
2. At the institutional level, capacity building concentrates on organizational performance and functioning capabilities.



Case study Mozambique:

The National Institute of Disaster Risk Management in Mozambique – Instituto Nacional de Gestão de Calamidades (INGC) implemented a local warning and response system during the past few years. The system is based on people's own capacity to protect themselves as far as possible. Hence, so called local Disaster Management Committees are created and trained with the role of warning and guiding the affected community and informing authorities and relief agencies. It is an example of how disasters can be effectively met by concerted, decentralized community action and self-organization at a low cost, and it ensures that improvements will not again be washed away by the next floods, which are certain to come. When cyclone Flavio with winds of around 200km/hr hit the country in 2007 there was extensive property damage. Several people died and more than 60,000 had been evacuated due to floods. Without this local warning system, the figures would have been much higher.

Moreover, in Mozambique efforts are being taken to integrate Disaster Risk Reduction in school lessons and into school infrastructure in order to enable people to better understand and respond to specific threats. Therefore special educational material was recently developed by the INGC and Capacity Building International (InWEnt).

Source: InWEnt

⁶ "Developing countries should conduct training programmes on disaster-resistant construction methods for contractors and builders, who build the majority of housing in developing countries. Training programmes should be extended to government officials and planners and community and non-governmental organizations to cover all aspects of disaster mitigation, such as early warning techniques, pre-disaster planning and construction, post disaster construction and rehabilitation"

3. In recent years, increased emphasis has also been placed on the systemic dimension of capacity development with emphasis on the overall policy framework.

Again, the Agenda 21 (Chapter 7) incorporates specific recommendations related to capacity building in disaster-prone urban areas⁶. Within the ESD capacity building and training is one of the seven interlinked strategies that are proposed for the Decade.

The aim of Education for Disaster Risk Reduction is to build the human capacities to understand the most likely risks, likelihood of disasters and their potential consequences. Policy decisions to reduce disasters should be based on a sound assessment of risk. However, it takes educated people - at whatever stage of life or age they are - to identify the risks, both in terms of the hazards and vulnerabilities. A challenge is before building the capacities, key persons in the education system have to be sensitised and motivated to engage themselves for disaster prevention.

Institutions and communities which execute policy decisions must be educated and trained concerning how to locally optimize disaster risk reduction measures, enabling such risks to be dealt with. Education is essential to ensure that people in such institutions and communities understand the severity of the risks they are facing, and have the capacity to implement measures required to manage such risks properly. Experiences of professionals and practitioners are vital resources that must be cultivated, engaged and sustained at local and national levels. Vulnerable communities should be duly empowered with valuable knowledge, education and skills, to take well-informed decisions and actions at times of emergencies.

Strategic Theme 3: 'Formal education'

To create a culture of safety, disaster risk reduction and environmental issues have to be integrated within all levels of education, from the pre-primary to the advanced university levels. Ter-

tiary education makes a substantial contribution towards supporting the reform processes for Disaster Risk Reduction necessary for successful sustainable development. Universities are teaching the leaders of tomorrow and are seen as „intellectual goldmines“.

The following three complementary elements are important for long-term sustainability in mainstreaming Disaster Risk Reduction in formal education: (1) Curricula and school integration, (2) Teacher training, (3) Assessment of learning. These three elements furthermore also need to be aligned to ensure coherency. One of the major challenges relies is making the complex cause-effect chains between human behaviour and environment comprehensible to children and youth, and ensuring that they, as future citizens, are and will be able to make sound decisions and act upon these in their lives through increased life skills and knowledge.

(1) Curricula integration

Disaster Risk Reduction can be integrated into formal school curricula, either as stand-alone courses or modules designed for infusion into existing courses. The most comprehensive approach is a mix between integration and infusion. Disaster Risk Reduction benefits from being integrated into a main topic that already deals with resilience and prevention skills, such as Education for Sustainable Development or life skills education. This allows for better monitoring of outputs and outcomes, and alignment with teacher training and assessments. Enriching the remaining curriculum through infusion of related knowledge matter, allows reinforcement of learning through repetition. Additionally co-curricular activities like school safety programmes should be promoted. The programmes include the whole school and reach out to the community, and the activities cut across subjects and classes.

However, it is critical to ensure, is the content of the curricula, to guarantee that it includes more than just the imparting of information on evacuation drills or first-aid attempts. Education for Disaster Risk Reduction aims at building safety and resilience at all levels. To ensure this, desired and measurable knowledge, attitudes and skills learn-

ing outcomes that contribute to decreasing risk and increasing protection in situations of natural disasters need to be established. It is also critical to ensure the relationship between the hazardous phenomenon and human interaction and the many practical countermeasures that can be implemented to reduce the risk. Therefore, curricula in primary and also in higher education should introduce principles of, and positive attitudes towards, long-term disaster preventive measures such as safe construction, appropriate land-use planning, contingency planning and effective early warning communication systems.

Parallel to the integration process of integrating Disaster Risk Reduction into school curriculum and co-curricular programmes, appropriate teaching and learning material is needed. Many materials developed by different agencies and organisations such as civil protection agencies, development/humanitarian organisations, scientific research organisations and non-governmental organisations can be used as teacher and student support for classroom activities. It is also important to promote the elaboration of chapters within textbooks, or complete textbooks dealing with particular subjects related to hazards and Disaster Risk Reduction, in particular, at the higher education level. A few countries have also achieved a positive impact by successfully integrating selected non-formal education materials into formal education, and this should be considered for replication.

(2) Teacher training (in- and pre-service)

Sustainable capacity building for maximizing protection and minimizing risk at the school level relies upon embedding both skills to access up-to-date knowledge regarding risk and protection, and on pedagogical methods that enable learners development of knowledge, attitudes and skills needed for safer behaviours in situations of disasters in higher education programmes for teacher training. Partnerships with pedagogic institutes for pre-service education like teacher training colleagues and teacher training centres for in-service continuing education will be vital to the success.

(3) Assessing student learning

What learners do to prevent natural disaster and to preserve their and others safety in situations of



Case study Sri Lanka:

Teacher training in Sri Lanka: Following the 2004 Tsunami, under leadership of the Ministry of Education and the National Institute of Education and with the support of the German Technical Cooperation (GTZ), an effort began to integrate disaster risk reduction into the teacher training curriculum and prepare teachers country wide for its implementation. India's National Institute of Disaster Management provided initial expert support and contributed to the development of a practical, skills-focused curriculum. Through the National Colleges of Education all future teachers are reached during their pre-service training and acquire basic Disaster Management know-how and relevant skills for implementing School Safety programs.

Source: UNISDR 2008

disaster is the ultimate goal of Education for Disaster Risk Reduction. But the capacity to evaluate behaviour in this way is limited by constraints of time, opportunity, expertise and financial resources. Information about knowledge and skills acquisition, values formation and behavioural intent is easier to collect, and these are practical alternatives for assessing the results of Disaster Risk Reduction learning. Such learning outcomes need to be integrated into national examinations to ensure coherence with curricula and teacher training, and also provide the necessary motivation for teachers to teach, and students to learn Disaster Risk Reduction.

Strategic Theme 4: 'Non-formal education'

Non-formal education can be the rapid entry point for Disaster Risk Reduction Education. This can take many forms, offering fun and engaging ways to introduce important knowledge, skills and competencies for students of all ages. Some examples are creative educational material, such as games, comic books, posters and videos. The use of all forms of arts, like music, street theatre and dance, to transmit essential knowledge to parents and to the wider community is especially appreciated in the non-formal settings of assemblies and special events. An important aspect is to bring together students, parents, the local community and the local government by, for instance, staging after school 'safety clubs', parent-teacher association or school welfare committee meetings.

The wealth of expertise and experience encompassed as part of indigenous knowledge, acquired and passed from one generation to another has developed more interest in recent years in the area of disaster management. Indigenous knowledge has the potential to improve Disaster Risk Reduction policies through the integration of disaster education and early warning systems. An incorporation of indigenous or local knowledge in existing practices and policies as well as its recognition within formal education processes should also encourage the participation of the affected community and empower its members to take the leading role in all Disaster Risk Reduction activities. Further project implementation can certainly be improved by obtaining valuable information about the local context.

Case study France:

Cities and students are brought together in a program called "Memo'Risks". Called upon by their Mayor, students 11 years and older lead an inquiry about a natural hazard that concerns their city. The project is a trans-disciplinary school project anchored locally and in daily life. Students are invited to start simple actions such as drawing risk maps, uncovering memories by interviewing the elderly, questioning the population about its level of information

and preparation, asking local workers, businessmen and shop-keepers about the possible consequences of a disaster. Adult awareness is raised at the same time. The finished work is present at the city-hall open to the public, and recognized in local newspapers and radio. (<http://www.prevention2000.org/memorisks/index.htm>)

Source: UNISDR 2008



Strategic Theme 5: 'Educational infrastructure'

A safe and disaster resistant educational infrastructure is important to reduce the number of students and teacher casualties. A safe education facility is that which is either located in a danger-free zone or has been built to be resilient to an extreme natural event. Older school buildings should also be made resilient and to that end, should benefit from effective retrofitting programmes.

In the long run, improving quality and constructing new, safe education buildings should make up part of national development planning. Educational infrastructure can be made resilient

through measures such as land use planning, structural reinforcement and emergency plans. In addition, schools are generally known shelters during and after a disaster. Explicit account must therefore be taken of these so-called safe havens in disaster management. Nevertheless, it is important to resume school operations as fast as possible after a disaster.

Education buildings are a large investment for a municipality, so they should be built to last and that also means they need to be disaster-resistant, because building/rebuilding an education centre always incurs heavy costs and these place an additional burden on scarce budget funds in times of emergency.

Case study India:

After the devastating Kashmere earthquake in 2005, CEE (Centre for Environment Education, India) implemented the rehabilitation program "Rebuilding Trust" prioritizing education and awareness building, but also providing psychosocial care and interim shelter support as an immediate response. In order to bring children back to school quickly, CEE organised open air schools known as 'Umang' (meaning learning with joy and fun). Earthquake resistant reconstruction was promoted and seven damaged schools were reconstructed by using earthquake resistant techniques and developed into model schools ('Anandshalas' meaning 'school of joy'). Teachers and students of these schools are trained in life skills and disaster risk reduction measures and selected stu-

dents are trained for evaluating the effectiveness of the relief and rehabilitation measures in order to find room for improvement.

Source: Gangwar, R. & Gangwar, A. 2008



3. RECOMMENDATIONS

In some countries a wealth of knowledge and information on Disaster Risk Reduction is available. One of the key remaining challenges is to effectively manage, share and use this in a productive way through awareness-raising and educational initiatives, so that people take well-informed decisions and appropriate action to ensure their resilience to disasters. Reducing risk and vulnerability to disasters requires people's understanding of how they can best protect themselves, their property and their livelihoods. Education for Disaster Risk Reduction is an interactive process of mutual learning among people and institutions.

The following are recommendations on how Education for Disaster Risk Reduction can contribute substantially to the implementation scheme of ESD to reach the decade goals by 2014.

1. Motivate political commitment and strengthen legal frameworks

Just as for any other aspect of public policy, education for sustainable development needs to be motivated and based within governmental responsibilities, especially since Disaster Risk Reduction may require exceptional executive powers but its success cannot be accomplished without the benefits of widespread decision-making and the participation of many others. To that end, high-level advocacy to Ministers of Education on Education for Disaster Risk Reduction is urgently required so that it is recognized as one of the key priorities on the national education agenda and can thus benefit from increased resource mobilization. A first step was taken in that direction at the International Conference on Education⁷ during which a Policy Dialogue on Disaster Risk Reduction Education as an essential contribution to inclusive education represented a first high level advocacy opportunity to raise awareness on Education for Disaster Risk Reduction.

2. Promote Capacity Building at all levels

Capacity building can be achieved through different means, such as training and education, public information, transfer or provision of access to technology and other forms of assistance designed to improve institutional efficiency and formulate an appropriate policy framework. In the field of Disaster Risk Reduction, depending on the context, 'capacity building' can include issues such as training of disaster managers, transfer of technology, application of traditional knowledge and know-how, as well as strengthening of institutional capacities at the community, national and regional levels. When no disaster has been experienced by the living people, a realistic scenario has to be implemented and shared at all levels of the community and stakeholders.

Substantial amounts of resources are needed to ensure that communities develop the capacities to monitor and reduce the risks they are exposed to. Human resources are essential; therefore capacities and competences in particular at local levels require ongoing support.

3. Clarify responsibilities and promote networking and exchange between stakeholders

Education for sustainable development and Disaster Risk Reduction is a multi-disciplinary and cross-sectoral approach, encompassing economic, social and environmental dimensions. Therefore institutional networks with clear responsibilities have to be set up. Benefits that accrue from such connections include improved efficiency, credibility, accountability, trust and cost-effectiveness, a unified strategic framework for decision making on issues of common concern, lessening duplication of efforts, as well as mandating an appropriate division of responsibilities.

⁷ 48th Session of the International Conference on Education (ICE) "Inclusive Education: The Way of the Future". November 2008, Geneva.

The spectrum of collaborative processes and activities includes various ways of generating and sharing information, joint research and integrated databases through to participatory strategic planning and programming. This may imply the need for decentralisation in the decision making process and enhancing local governments and communities' responsibilities.

4. Developing effective education strategies to achieve quality education and learning.

Disaster Risk Reduction requires two parallel approaches: the capacity to generate the appropriate information concerning risks which are present but hidden from view, and a cultural change to ensure that such information can be understood by those at risk to the point that they can take effective action to manage such risks and protect themselves.

It is imperative to ensure that Disaster Risk Reduction education is rooted on existing learning theories and firmly embedded in existing education programmes and infrastructures at all levels. The focus of teaching and learning must be placed on the desired knowledge, attitudes and skills learning outcomes that are identified as leading to positive attitudes towards long-term safety measures, and on action competencies designed to maximize protection and minimize risk in dangerous situations.

Education is the key to enable both approaches to be conducted in a complementary fashion. Professionals need to be educated to be able to identify and assess those risks, as well as to identify potential mitigation measures. The population of children and adults needs to be educated through both formal and non-formal approaches to understand the need to incorporate such information into their efforts targeting sustainable development.

The following items provide guidance for implementation:

- > Ensure that appropriate safety and risk reduction is integrated into the learning programmes of all children subject to risks emanating from natural hazards.

- > Country policies should promote the creation of cross-sectoral and inter-institutional platforms and action plans to include Disaster Risk Reduction subject matter into the educational systems at regional, national and local levels.
- > Traditional and local knowledge about natural hazards should be considered and integrated in curricula for applications especially at regional and local levels.
- > Develop scientific capacities, technological know-how and research.

5. Develop and apply minimum standards for safe and disaster-resistant schools and educational infrastructure.

School vulnerability strongly affects a country's ability to achieve the Millennium Development Goals (MDGs) of the universal right to primary education and the eradication of poverty, and the UNESCO led "Education for All" initiative, both only attainable when principles of resilient environments and school safety are made a priority. Much can be done to guide future educational infrastructure planning and construction and to reduce the vulnerability of schools and educational buildings through proactive mitigation programs. The safety of educational infrastructure needs to become a national priority and an essential part of the Ministries of Education's role must making it imperative to ensure that policies, guidelines, implementing and monitoring mechanisms are needed. The following conditions have to be met to ensure safe education centres:

- (1) Safe sites are defined in a detailed risk analysis.
- (2) New education centres are built for disaster resistance in compliance with building regulations.
- (3) Existing education centres are assessed and brought up to regulation standards through structural reinforcement and retrofitting as appropriate.
- (4) Minimum standards for regional building regulations are developed and applied.
- (5) Special attention is paid to educational infrastructure in land use and development planning.

4. ACTION AGENDA

During the second half of the Decade, and for the purpose of realizing Education for Sustainable Development as a holistic concept at all levels, Education for Disaster Risk Reduction needs to be developed as one of the programme's cross-cutting components, in order to render societal systems more resistant to potential disastrous impacts and to thus contribute to the sustainability of economic and social development as well as to safeguarding the environment and critical infrastructure:

- > National Platforms for Disaster Risk Reduction are strongly encouraged to work closely with UNESCO National Commissions to promote the recognition of Education for Disaster Risk Reduction as part of the national Education agenda.
- > Propose that the UNISDR Thematic Platform on Knowledge and Education and DESD Secretariat continue to promote effective implementation of Education for Disaster Risk Reduction and School Safety throughout the Decade and beyond.
- > Encourage UNESCO at global level and UN Regional Commissions at a regional level to initiate a thorough monitoring of the acquisition of life-skills through Education for Disaster Risk Reduction.
- > Strengthen the exchange of knowledge and lessons learned in the field of Education for Disaster Risk Reduction, for instance through South-South exchange, knowledge/research networks and technology transfer to create synergetic effects between the Disaster Risk Reduction and Education for Sustainable Development community.
- > Promote the involvement of the private sector and public private partnerships for Education for Disaster Risk Reduction and School Safety where appropriate.

Appendix 1: Milestones in Education for Disaster Risk Reduction

2008, Geneva: 48th session of the International Conference on Education (ICE) “Inclusive Education: The Way of the Future” Geneva and 2008, May: ICE regional preparatory meeting, Bali “Inclusive Education: Major Policies Issues in the Asia and Pacific Region”. Preventing mass exclusion of children from schools introduced as a part of agenda and discussions.

2008, Bangkok: Education for Natural Disaster Preparedness in Asia-Pacific in the context of Education for Sustainable Development (ESD). A forum for coordination and exchange of information between key stakeholders in the region created. Eight countries targeted.

2008, Islamabad: Islamabad Declaration on School Safety adopted at the Islamabad International Conference on School Safety urges resilient schools as a matter of regional and national priority.

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