

Training  
Module

# 5

## Reducing the Underlying Risk Factors in the Education Sector

Ministry of Education and UNESCO  
(February 2010)

## Module (5) Reducing the Underlying Risk Factors in the Education Sector

Developed by

UNESCO in consultation with Ministry of Education, Myanmar  
(January 2010)

Published by

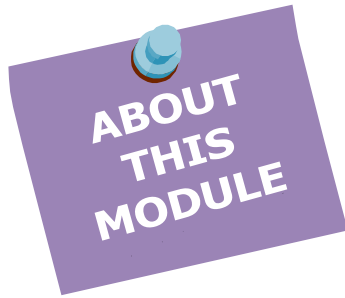
UNESCO Myanmar Education Recovery Programme  
Education for Sustainable Development Unit  
UNESCO Asia and Pacific Regional Bureau for Education, Bangkok

Printed in Myanmar



**Module 5**  
**REDUCING THE UNDERLYING RISK FACTOR**  
**IN THE EDUCATION SECTOR**

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## **LEARNING OBJECTIVES**

By the end of this session, the participants will be able to:

- ❖ Examine livelihood, gender, health and exclusion as primary underlying risks
- ❖ Assess the impact of climate change and suggest vulnerability reduction through climate change adaptation

## **METHODOLOGY**

This session looks at the underlying risks that lead to disasters or increase the impact of disasters. It comprises of the principles of inclusive education that is, incorporating the issues of livelihood, gender, AIDS and Persons with Disabilities (PWD) into the realm of DRR and education. The exercise facilitates learning on identifying the risk factors in a fun way through a quiz.

## **TIME**

The total session will be of 2.5 hours, structured as follows:

Presentation: 60 minutes

Exercise: 90 minutes



## IN THIS MODULE

- Underlying risks in education sector
- Hydro – meteorological disasters
- Impacts of climate change
- Climate and Disaster Resilience Index (CDRI)
- Livelihood
- Gender
- Poverty
- People with Disabilities (PWDs)
- Old age
- HIV / AIDS
- H1N1
- Health issues for children
- Tasks for reducing underlying risks



## KNOW THIS

## **Module 5**

# **REDUCING THE UNDERLYING RISK FACTORS IN THE EDUCATION SECTOR**

1

## **Hyogo Framework for Action**

### **Priority 4:**

**“Reduce the underlying risk factors”**

**Looking through an education lens:**

**“Reducing the underlying factors in the education sector”**

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Action Priority 4 of the HFA deals with reduction of underlying risk factors. These are causes that are developmental or environmental, and though they may seem remote from the field of disaster management, they lead to increased vulnerabilities and hence contribute to disasters.

## **Indicative Activities**

- **Understanding sustainable ecosystems and environmental management**
- **Ensuring DRR strategies integrated with climate change adaptation**
- **Ensuring food security for resilience**
- **DRR integrated into education sector and safe schools**
- **Protection of educational facilities**
- **Recovery schemes and social safety- nets**
- **Understanding vulnerability reduction**
- **Engage in public-private partnership**
- **Implementing building codes**
- **Understanding rural development plans and DRR**

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Implementation of activities for reduction of underlying risks can be a little complex to define, since underlying risks are mainly outside the core domain of the science of disaster management. Activities therefore can be very wide ranging, addressing issue ranging from poverty to climate change to development partnerships.



## Indicators of Progress

- ▶ Education includes environmental protection, natural resource management, climate change and DRR elements
- ▶ Specific policies and plans are being implemented to reduce the vulnerability of different stakeholders like students and teachers
- ▶ Building codes exist and are implemented within education sector
- ▶ A long-term programme is in place to protect schools and critical infrastructure from common natural hazard events.
- ▶ A procedure is in place to assess the disaster risk implications on the education sector

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Similarly, progress is also more difficult to measure in case of underlying risks. Indirect indicators can be relied upon, which may include items such as educational content, policy environment and programming progress addressing underlying issues, with an assumption that these will manifest in the reduction of underlying risks.

## **Underlying risk factors in education sector**

- **Poverty and related school drop-outs and out-of-school children**
- **Low visibility day-to-day stresses and small disasters that disrupt education (like seasonal diseases)**
- **Poor access to schools and low level of infrastructure in schools, including weak buildings**
- **New and unprecedented risks like un-seasonal disasters due to climate change, and new emerging diseases**
- **Basic availability of trained teachers and teaching/learning material**

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Underlying risk factors are far less visible than physical factors related to disaster vulnerability and impact. These are factors that indirectly contribute to the economic, social and physical vulnerability of communities at risk. Poverty, lack of assets, barriers to resources are all factors that reflect in one or the other way as underlying risk factors.

## **Vulnerability**

**Susceptibility of a community to the impacts of hazards resulting from following factors:**

- **Physical**
- **Social**
- **Economic**
- **Environmental**
- **Psycho-social**

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Vulnerability is the characteristic of a community that makes it prone to high impact from hazards due to physical, social or economic weakness, or conditions of degradation in its environment. Un-engineered and weak buildings, poor social networks, low level of savings and insurances, and a highly polluted environment are all factors of vulnerability. Underlying risk factors directly increase these and other vulnerability factors.

## **Education for Sustainable Development**

**Education for Sustainable Development (ESD) is a vision of education that seeks to empower people to assume responsibility for creating a sustainable future.**

**ESD uses a partnership approach that engages multiple sectors and stakeholders – including media and the private sector – and training to promote an appreciation for sustainable development.**

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UNESCO is currently coordinating the International Decade on Education for Sustainable Development. This is a global effort to promote sustainability through people's empowerment and knowledge enhancement. ESD has very direct implications on the field of DRR in education. Especially in the case of hydro-meteorological disasters such as floods, cyclones, droughts and climate change related concerns, ESD is a very effective tool for reducing risks in a sustainable way.



**ESD aims to promote a balance among the pillars of culture, society, economy and environment, by empowering people through education (formal, non-formal, and informal) to lead sustainable lifestyles.**

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Model of sustainable development adapted from Somphone (2006)

Environment, Culture, Society and Economy are the four pillars of the sustainable development model promoted by ESD. These are the four thematic issues that have a direct relationship with sustainability. Of these, cultural, social and economic issues are internal to human life and settlements. Environment is the contextual theme within which development of the other aspects takes place.



## **DRR and ESD**

**Education for Disaster Risk Reduction (EDRR) has to be inherent with ESD and support the its frameworks in three important ways**

- **EDRR is interdisciplinary**
  - Therefore, important consideration is given to the impacts on, and relationship between, society, the environment, economy and culture.
- **EDRR promotes critical thinking and problem solving**
  - It promotes social and emotional life skills that are essential to the empowerment of groups threatened or affected by disasters.
- **EDRR supports the MDGs**
  - Without considering DRR in development planning, all efforts including, decades of development initiatives would be futile.

(Background document DESD Conference, 2002)

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DRR forms an integral part of education for sustainable development. Sustainability can be achieved only when risks of major catastrophes have been eliminated, or at least controlled in a significant measure. As with the concept of sustainability and risk reduction, education for DRR needs to cut across sectors, has to be action oriented, and should support larger developmental work.

## **Income and Assets build Resilience**

- **Livelihood insecurity increases disaster risk by increasing vulnerability to disasters and reducing existing coping mechanisms. It diminishes assets including physical, social, financial and institutional assets. School buildings and education are also assets.**
- **Persons without secure livelihoods comprise two thirds of deaths from disasters**
- **Over 90% of all people killed by disasters in from 1975-2000 were low income or lower-middle income people**

Source: 20th Century Asian Natural Disasters Data Book, ADRC, August 2002 10

Poverty is one of the most prevalent of underlying risk factors across Asian countries. The region scores the highest number of disaster deaths primarily because of the poverty stricken population that lives in highly vulnerable conditions and has very low capacity to cope with disasters.

## Livelihood - Disaster Cycle



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The effect is two pronged - due to higher vulnerability, poor people are affected worse by disasters, and after the disaster they have low capacities to recover. Before their recovery process is complete, they are often hit by another calamity, thus perpetuating this poverty-disaster cycle.



## Climate Change

- ✦ Climate change is the long term significant change in a region's climate
- ✦ Climate change is expected to increase the severity and frequency of weather-related hazards such as storms, high rainfalls, floods, droughts, landslides, water stress and heat waves.
- ✦ Increase in the frequency and intensity of disasters over the last 100 years
- ✦ Climate variability and unpredictability causing abrupt disruptions in the normal functioning of life. It puts at risk basic human needs such as access to food and shelter.

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Climate change trends show an increase in disasters in the past decades, and a much higher increase is projected for the future. Besides catastrophic events, climate change is also leading to less visible and creeping disasters such as drop in crop yields that make subsistence farmers very vulnerable and reduces the food security of poor societies.

## **Climate Change**

### **Primary impacts of climate change:**

- **Rise in temperature**
- **Earlier or late arrival of seasons**
- **Heat waves / Cold waves**
- **Cyclones**
- **Change in rainfall patterns**
- **Melting of polar ice caps**
- **Melting of glaciers**

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Climate change has also been referred to as global warming. The reason is that the average temperature of the earth is rising. However, the temperature is rising by different margins in different parts of the world, and the impacts to hit human life are not the heat directly as much as the primary and secondary impacts created by it. Primary impacts are those that can be directly attributed to rising temperatures.

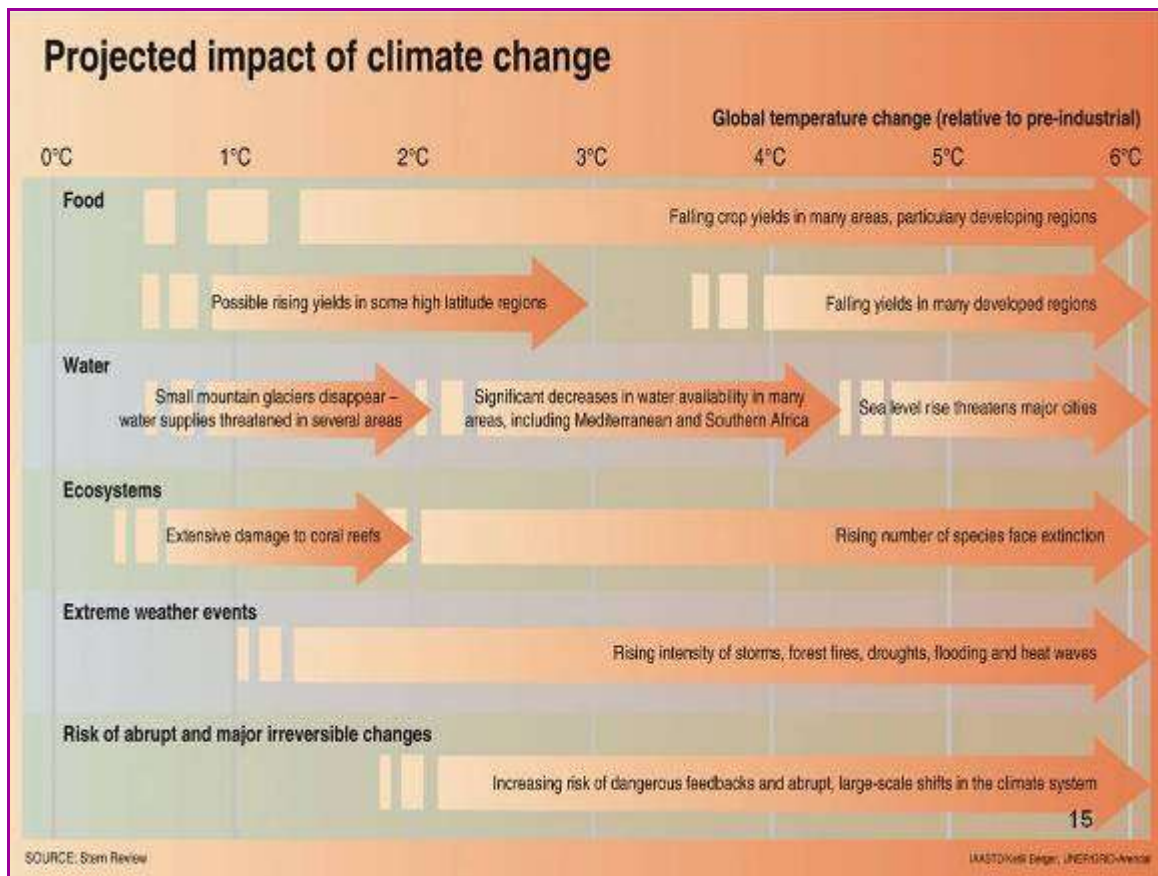
## **Climate Change**

**Secondary impact of climate change:**

- **Droughts, floods**
- **Sea level rise, loss of coastal lands and small islands**
- **Drop in agricultural production**
- **Mass migration from coastal and drought affected areas to cities**
- **More urban disasters**
- **Emergence of new diseases, spread of diseases to new areas**
- **Increased desert areas; decreased cultivated land areas**
- **Wild fire / forest fire**
- **Infiltration of sea water into fresh water**

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Secondary impacts of climate change are still to be seen by many as directly related to climate change induced by human activities. These, however, are causing widespread suffering. Increase in migration from rural to urban areas is a major threat as it will result in huge amassment of alien populations in cities in the absence of infrastructure to support them. New diseases are another emerging threat that is taking alarming proportions.



The average temperature of the earth is project to rise by up to 6 degrees in the next few decades. The range of impacts with every degree rise in temperature gets increasingly catastrophic. Some rise is inevitable due to the greenhouse gases already released in the atmosphere. The global efforts are now focused on limiting this increase to 2 degrees through urgent mitigation actions.

## **Shrinking Resources due to Climate Change**

- ☐ One of the biggest impacts of climate change is the shrinkage of natural resources.
- ☐ Scarcity of water in glacier fed rivers will affect many countries including Myanmar
- ☐ Rise in sea levels will result in loss of coastal lands and habitats. Myanmar will also be affected. Maldives will be affected so badly that the country may be wiped out.
- ☐ Many old species of animals, sea life, and crops will suffer, thus leading to shortage of food

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Hydro-meteorological disasters are the climate induced disasters. Their rate of increase has become alarming, and this is projected to increase further in coming years. Myanmar is threatened in a big way by this fact, since a large part of its land and population is exposed to hydro meteorological disasters including floods, cyclones and droughts.



## Hydro-meteorological disasters

- Intergovernmental Panel on Climate Change (IPCC) reported that the number of hydro-meteorological disasters has doubled in last five years whereas, geological hazards remain the same
- According to a recent report of UN-Habitat, there has been a 50% rise in extreme weather events associated with climate change from the 1950s to 1990s

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There is an urgent need to take up programmes to reduce the impact of this increasing risk.

# **TYPES OF NATURAL DISASTER BY CONTINENT 1994-2003**

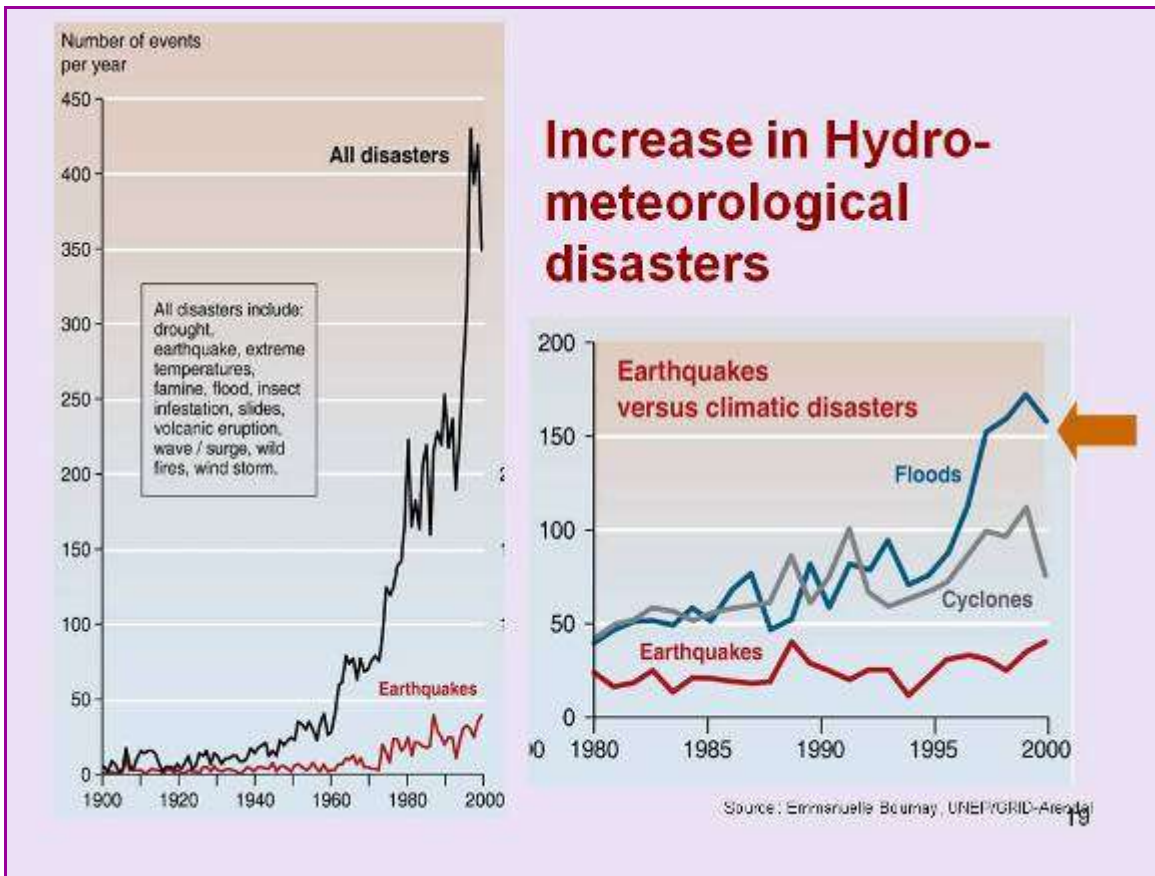
Geophysical	Africa	Americas	Asia	Europe	Oceania
Earthquakes	11	47	145	45	9
Volcanoes	4	25	12	2	6
<b>Hydro-meteorological</b>					
Avalanches/landslides	12	42	105	19	8
Drought/famines	118	46	86	13	10
Extreme temperatures	7	32	45	61	4
Floods	269	256	411	195	29
Forest/scrub fires	13	66	22	46	11
Windstorms	70	277	307	87	61
Other	3	5	10	1	2



Source: International Red Cross/Red Cross

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Asia is the most disaster prone region of the world in terms of earthquakes, avalanches, landslides, floods and windstorms. This is compounded by the fact that Asia also has the largest chunk of population, and that a large proportion of them live in extreme poverty. The population is also growing fastest, thereby pushing more and more people to live in hazard prone areas and sub-standard housing, thus increasing the degree of underlying risks.



One of the strongest evidences of growing underlying risks is the trend of hydro-meteorological disasters over the past few decades. As compared to geophysical disasters such as earthquakes, hydro meteorological disasters have grown by much higher margins. This is directly related to bad development practices and lifestyles and resultant climate change. This threatens to be the biggest underlying risk factor in years to come.



## **Climate Change**

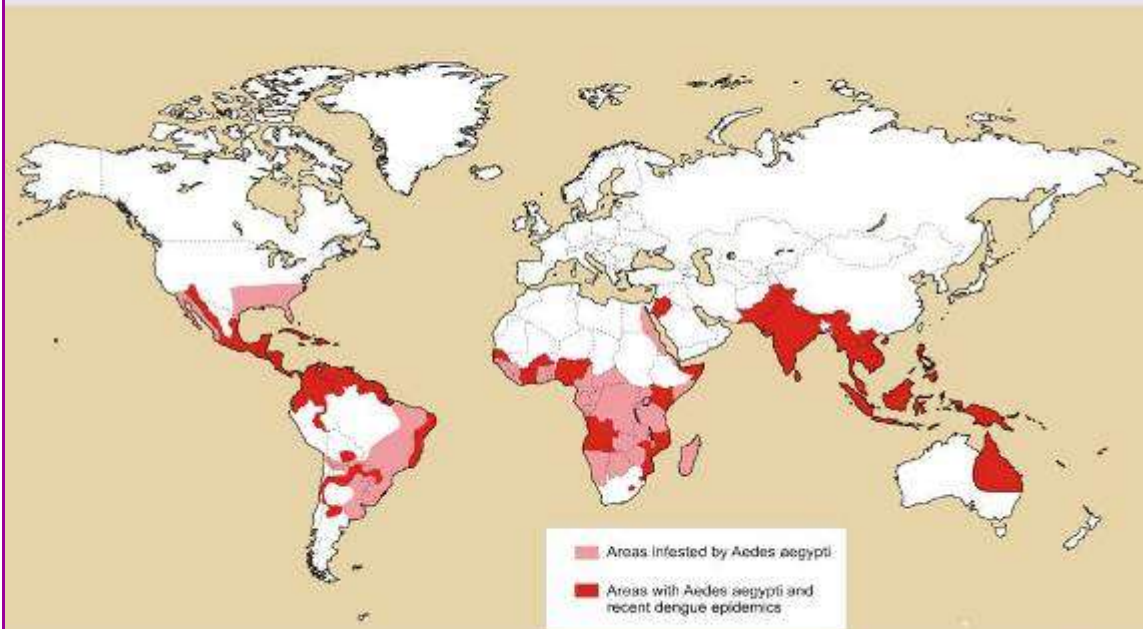
### **Significant impact in terms of health**

- **Resurgence of diseases like malaria because of favorable temperatures for disease vectors**
- **Diseases like malaria, dengue fever etc. emerging in new places**
- **Incidence of infectious diseases and waterborne diseases like diarrhea and cholera is aggravating**

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Health impacts of climate change are project to become one of the most devastating of future disasters. The current pandemic of swine flu, and recent incidences of avian flu, dengue and other such diseases are strong evidences of this. With change in temperature and rainfall conditions, disease causing vectors are now reaching places that were earlier free from them. Old and contained diseases are making a comeback in drug resistant forms.

## New grounds for diseases



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Dengue fever is one of the most prominent impacts of climate change that threatens the world with greater spread in coming times. Myanmar is one of the countries already most seriously affected by Dengue fever. The overall impact of such threats in terms of human or economic loss is often difficult to assess, but their growing presence is set to assume disastrous proportions.

## Climate and Disaster Resilience

- ▶ **International Environment and Disaster Management Laboratory (IEDM) at Kyoto University developed a yardstick called CDRI (Climate Disaster Resilience Index) to measure the resilience of communities**
- ▶ **It is used to map the communities' position in the level of climate disaster resilience, and is based on five dimensions of resilience :**
  - **Natural**
  - **Physical**
  - **Social**
  - **Economic**
  - **Institutional**

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Source: CDRI Initiative, Kyoto University (2008)

Kyoto University, Japan, has developed the CDRI methodology that looks at five developmental themes as resilience based dimensions. The methodology focuses on the resilience aspect of communities towards climate change rather than focusing just on the threat factor.

## Dimensions of Climate and Disaster Resilience

- ◆ **Natural:** topography, disasters, natural environment degradation, hydro-meteorological situation.
- ◆ **Physical:** history, location, accessibility, infrastructure and utilities, housing condition, land tenure, environmental degradation.
- ◆ **Social:** population, health, education, knowledge and awareness, social capital, conflict, crime.
- ◆ **Economic:** income, employment, expenditures, assets, access to financial services, financial coping mechanism.
- ◆ **Institutional:** internal and external institutions, institutional collaboration, coordination and cohesion.

Source: CDRI Initiative, Kyoto University (2019)

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CDRI works with a very wide range of variables, capturing all aspects of development, hazards and resilience in a city in the form of its infrastructure, human resource, and economic base and environmental resources.

## WASH

(Water,  
Sanitation and  
Hygiene)

WASH is an important area for DRR in education, as it directly relates to public health and the control of epidemics.

This leads to water borne diseases like cholera, typhoid, dysentery etc.



Unhygienic conditions and bad practices lead to contamination of water.

The same water is then used for drinking and for other purposes like cooking, washing, bathing etc.

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Poor public health is a major underlying risk factor that affects people, and its effects are further enhanced during times of emergency. It is important for children to learn the causative factors of poor public health, and the importance of small actions that can lead to improvement of public health and prevent epidemics and disaster related disease spread.

(WASH stands for Water Sanitation and Hygiene)



## **Basic health issues for children**

- **Malnutrition**
- **Children particularly susceptible to water borne diseases**
- **Iron deficiency a common phenomenon**
- **Infant mortality increases due to lack of medical facilities and no proper care to the mother**
- **Besides physical health, psychological health of children affected after a disaster**

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In the case of children even basic health issues increase vulnerability manifold, and disasters in turn have an even more adverse impact on their health. In case of hydro-meteorological disasters, the water borne diseases that follow their aftermath are big killers among children. Shadowed by the big disaster, and coming days and weeks after it, they are usually not even reported in any significant way. Childhood trauma associated with disasters (Post Traumatic Stress Disorder) is rampant among children in disaster affected areas and leaves mental scars for life.

## **Child Protection**

- Child protection is a major concern globally, particularly in view of the globalising media and cultures. Basic safety and health of children is a high priority.
- Child protection becomes more critical during emergencies, as economic and social systems are at stress.
- This is particularly important in low income communities, and where children are not in constant care.
- Schools and DRR community have a vital role to play for Child Protection.

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It is necessary to make arrangements to provide basic health education to children so that they will not get infected by water borne diseases and also psycho-social support programmes to children in disaster affected areas.

## Swine Flu: H1N1

- **Swine Flu is a Pandemic Flu caused by the Influenza A (H1N1) virus. It is a new human flu virus that is spreading rapidly because we have no previous immunity to it.**

- **The best approach for pandemic influenza is to contain its spread by sanitization and containment of the infected persons**

Seasonal Influenza:	Pandemic Influenza:
<i>Human viral respiratory infection</i>	<i>Global outbreak of new strain of human influenza virus</i>
<i>Self-limiting, but can be serious and fatal in the elderly and the very young</i>	<i>Causes increased illness and death worldwide</i>
<i>Causes an estimated 250,000-500,000 deaths each year</i>	<i>Rare event; has occurred every 11-42 years over the past two centuries; could cause millions of deaths</i>
<i>Occurs seasonally every year; occurs in winter in temperate areas</i>	<i>Three pandemics in the past 100 years: 1968, 1957 and 1918</i>
<i>Routine vaccines available</i>	<i>Vaccines can only be developed once we know the strain of the virus.</i>

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Swine Flu has recently emerged as a global threat that affects not just the poor, but also the rich – in fact it affects the rich and the global travellers more than the poor who are usually the most vulnerable.



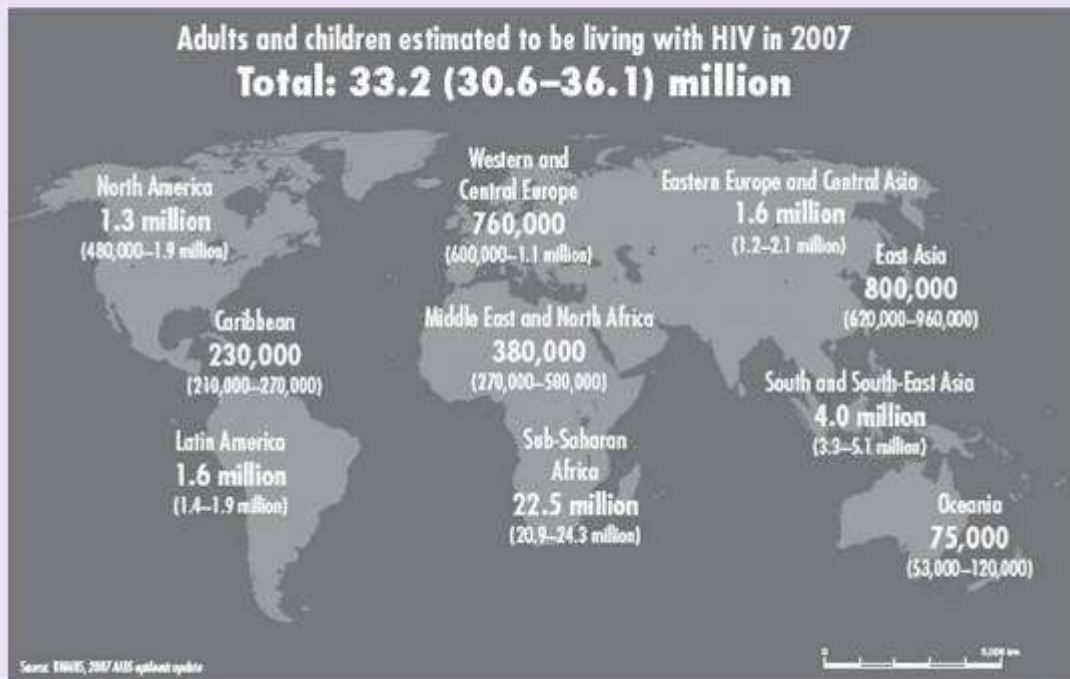
## **HIV / AIDS**

- Natural disasters break down family structures or change sexual networking in ways that might increase HIV transmission
- Children and women at highest risk soon after a disaster due to trafficking
- HIV infected people at high risk due to disruption of medical regime
- HIV-positive mothers who give birth during emergencies do not have access to medical interventions that reduce the risk of mother-to-child transmission of HIV
- Components of HIV prevention halted at time of disaster. For example, disruption in supply of condoms

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Human Immunodeficiency Virus (HIV) /Acquired Immunodeficiency Syndrome (AIDS) is another reason that leads to social exclusion of people. Its incidences are seen to increase in the aftermath of disasters. It leaves its victims vulnerable to further suffering through a slow and creeping disaster of the disease and the associated social ostracization.

## HIV / AIDS



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South and South East Asia have the second highest number of persons living with HIV, after Sub-Saharan Africa. This large population is already having a high level of vulnerability because of physical impacts of the disease, social exclusion, financial strain and mental trauma. Disasters create further stress in this dimension, and even in the aftermath of disasters, this disaster undergoes a creeping spread through distress migration.

## Gender

- **Women = primary care takers of the family**
- **Socially constructed roles assigned to women manifests in form of marginalization on social, economic, political and cultural spheres**
- **In addition to general effects of a disaster and lack of health care, women are vulnerable to reproductive and sexual health problems and increased rates of sexual and domestic violence**

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Gender is a cross cutting theme across all HFA priorities, and also all aspects of disaster management in a vulnerable community. Women suffer on many multiple counts in disasters. They are more vulnerable in many ways, and have lower capacities due to long term social limitations prevalent in traditional societies.

## **Gender**

### **Case study – tsunami 2004**

- ⊕ **More women died than men as they had put safety of their families and assets before own survival.**
- ⊕ **Many women died as their clothes were ripped off by the debris and they feared getting exposed during rescue.**
- ⊕ **Many women died because they did not know swimming even though they lived next to the sea.**
- ⊕ **Social customs, more than physical causes, led to more deaths among women.**

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In many of the tsunami affected areas the casualties among women were more than double of those among men. The reasons behind this alarming fact were deep rooted in social practices that contribute to making women weak in the face of disasters.

## Gender

Incorporating gender issues into DRR requires:

- Involving them into decision making process at all levels
- Their representation in community task forces and disaster management committees
- Generating sex disaggregated data
- Identifying and providing sex specific needs like sanitary supplies
- Ensuring that distribution of assistance allows women access to supplies without placing them at increased risk for injury

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Gender based work is long term in nature and requires a social orientation. Institutional sensitivity, participation, information and programming details are needed to support the positive role of women in disaster management and risk reduction.

## **INCLUSION:**

### **Persons with Disabilities (PWD)**

#### **Types of disability:**

- Visually impaired
- Hearing impaired
- Speech impaired
- Mental illness
- Loco motor disabled (physically disabled)
- Leprosy cured

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Source: WHO

Persons with disabilities are often not visible in society in the proportion that they are present. This is because due to physical and social difficulties in their movement and integration with society, they are mostly bound to their homes. This is truer for developing parts of the world since technical tools are not available and physical development is not sensitive to their needs.



## **Vulnerability factors of PWD**

- **Persons with Disabilities particularly vulnerable during disasters due to specific needs and barriers.**
- **PWDs face physical, cultural and social barriers in accessing services and support**
- **Excluded at all levels of disaster preparedness, mitigation and response**
- **Specific needs of PWDs can be addressed by integrating them into DRR process**

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Based on different impairments, persons with disabilities can be integrated with other people, or even among themselves to enable them receive and respond to early warnings, and also play a role in mitigation and preparedness activities. Significant work has been done in recent years on disabilities, DRR and school safety in the Asian region.

## **DRR for PWD**

**Accessibility of PWDs must be ensured.**

**Accessibility means that everyone has equal access to the built environment with no discrimination based on one's level of ability. It deals with 3 levels:**

- **Accessibility of the built environment**
- **Geographic accessibility, which looks at the ability to move about**
- **Access to means of information and communication**

(Source: Handicap International)

**Incorporation of universal/ barrier free design. Physical assistance, assistive devices or installation of ramps to ensure PWDs are not trapped in a dangerous situation.**

**Warning systems, evacuation plans and search and rescue plans must account for PWD**

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DRR for persons with disabilities involves both physical and socio-economic aspects. The physical dimension is aimed at improving access and enabling movement in emergencies. The socio-economic dimension, which is very important for DRR, is aimed at their integration with the mainstream through knowledge, engagement and communication.



## Old Age

**“An older person with arthritic knees and diminished vision, living alone in a high rise apartment with no family members or friends nearby can become incapable of getting food or water or of fleeing danger, and may be overlooked by neighbours” (WHO)**

- **208,000 older people affected by cyclone Nargis (HelpAge International)**
- **2004 Grenada: 70 % of Hurricane Ivan deceased were over 60 year old, the majority male. (PAHO)**
- **2005 USA Katrina: 71% of the deaths were in over 60 year olds, and 47% were over 77 yrs. At least 68 people were found dead at nursing homes. (PAHO)**

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Elderly people also need special assistance, often similar to the kind that persons with disabilities need. They may have locomotor (physical movement) problems, vision and hearing impairment, and slow reflexes. Children can be taught about the special needs of old people, and they can thus become sensitive to such people in their families and neighbourhood.

(PAHO- Pan American Health Organization)

## Old Age

### Key issues for the aged:

- Livelihood insecurity
- Poor health condition / Disability
- Exclusion
- Insufficient social protection
- Poverty
- Psychosocial issues

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Besides physical difficulties, old people in a community can have a wide range of problems, including marginalization, loss of income, poor care by families, loneliness, and psychosocial and trauma issues. Building the sensitivity of children to these problems and the needs of the elderly can help make them more caring and supportive to elder people in times of need.

## Old Age

DRR for the aged requires:

- Collecting disaggregated data by age
- Recognizing older people as vulnerable group and implement intergenerational approaches in emergency response programmes
- Establishing mechanisms to support older people access their entitlements
- Supporting vulnerable older people who want to work to establish their livelihood
- Developing social protection schemes in the form of small regular cash payments to older people
- Creating opportunities for older people to participate in decision making

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At the planning level, care for the elderly people as part of disaster risk reduction requires information gathering about them, identifying their vulnerabilities, and putting systems in place for supporting them during emergencies. Their involvement in the planning and DRR process can be very useful too, since they have a host of local wisdom, long term experiences, and can help bring effective indigenous knowledge to the disaster management plans.

## **Tasks for reducing underlying risk for the education sector**

- **Introduce DRR and climate change issues in schools**
- **Focus on Environmental Conservation, especially on subjects like plantation and energy efficiency**
- **Undertake coastal watching to understand coastal changes and appropriate activities in other areas as part of training**
- **Training of teachers for DRR and climate change issues**
- **Identify disabled children in schools and make preparedness and emergency plans for them**
- **Conduct special classes for the disabled**

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Reducing underlying risks in the education sector requires both short term and long term interventions. Priority tasks are in the area of DRR and education, building capacity of local institutions, identifying the most vulnerable and taking a long term perspective while planning and programming for DRR activities.



## Tasks for reducing underlying risk for the education sector

- **Make a comprehensive task list for all different underlying risk factors, and action plans to reduce them**
- **Conduct activities and games for children suffering from Post Traumatic Stress Disorder (PTSD)- i.e. trauma after disaster**
- **Carry out monitoring and evaluation for re-planning**
- **Provide emergency kits**
- **Disseminate HIV/AIDS information (already included in Life Skills subject and SHAPE project) not just to students but to local community.**
- **Disseminate information on HIV/AIDS, malaria, and dengue fever not just to students but to local community**

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Although the underlying risks for the education sector and those related to it may appear wide ranging, they can be addressed effectively through a systematic process. Identifying risks and their causative factors, identifying psychosocial issues that are of importance, carrying out activities, and monitoring them for constant improvements can help address such risks to a large extent.





### **Linkage with HFA Priority 4**

Reduce the underlying risk factors Implementing Priority 4 within the education sector requires an understanding on the sustainable use and management of ecosystems, land use and natural resources, and integrating DRR strategies and climate change. It calls for promoting food security for resilience, integrating DRR planning into the health and education sector and promoting safe hospitals and safe schools. Protecting critical public facilities and implementing recovery schemes and social safety nets is also necessary.

### **Hydro-meteorological disasters**

Hydro-meteorological disasters are the climate induced disasters. As compared to geophysical disasters such as earthquakes, hydro- meteorological disasters have grown by much higher margins. This is directly related to bad development practices and lifestyles and resultant climate change. Their rate of increase has become alarming, and this is projected to increase further in coming years. The Intergovernmental Panel on Climate Change (IPCC) reported that the number of hydro-meteorological disasters has doubled in last five years, whereas geological hazards remain the same. According to a recent report of UN-Habitat, there has been a 50 percent rise in extreme weather events associated with climate change from the 1950s to 1990s.

Myanmar is threatened in a big way by this fact, since a large part of its land and population is exposed to hydro- meteorological disasters including floods, cyclones and droughts.

### **Climate Change**

The overall rise in the global temperature is resulting in the drastic changes in the world's climate. The primary reason for this rapid change is human activities that are consuming natural resources at a very high rate, and emitting harmful pollutants into the environment. Climate variability and unpredictability can cause abrupt disruptions in the normal functioning of life. Increase in intensity and frequency of disasters due to climate change have been felt over the past few years. Climate change puts at risk basic human needs

such as access to food and shelter. Number of deaths due to climate change are also likely to increase further through a range of direct effects such as more intense heat waves, floods, and forest fires; indirect effects such as decline in water quality and food insecurity; and through social and economic disruptions such as increased poverty and migration. The consequences of climate variability and climate change are potentially more significant for the poor in developing countries. The impacts of climate variability create challenges for the world's poorest communities as their livelihoods are likely to be more sensitive to climate change. For example, agriculture and forestry activities depend on local weather and climatic conditions.

A change in those conditions could directly impact productivity levels and diminish livelihoods. These impacts may be related to more intense and frequent extreme events, like hurricanes or floods, and more long-term stresses, such as water scarcity and increased recurrence of drought. Climate change would even aggravate the incidence of infectious diseases such as malaria and waterborne diseases like diarrhea and cholera. Due to favorable temperatures provided by global warming there has been an increase in the disease causing vectors leading to spread of diseases to newer areas. Old and contained diseases are making a comeback in drug resistant forms. Further, with increase in the frequency of climatic disasters like droughts and floods, there will be wide ranging health problems like diarrhea, cholera, skin problem and acute under-nutrition.

### **Inclusion**

There is a need to identify and specifically focus on some especially vulnerable groups in order to ensure that they are able to stay in the mainstream part of the society and are well integrated. Such special groups need to be identified judiciously, and specific actions need to be planned to ensure their security from climate related risks – both direct and indirect.

### **Gender**

The socially constructed roles assigned to women manifests in the form of marginalization in the social, economic, political and cultural spheres of life. Women become especially vulnerable at the time of a disaster. For example, more women died than men and children after the Indian Ocean Tsunami in 2004. This was not due to chance, but due to gender inequalities. Their roles as care takers meant that when the tsunami hit, they put

the safety of their children and assets before their own survival. Furthermore, women spent their lives within their households and had very limited experience interacting with others outside this private space. This, in combination with the social expectations of what is acceptable for women, contributed to the large number of casualties amongst women. When their clothes were ripped off by the debris, many women died indoors rather than allow themselves to be exposed to the shame of running outside naked to escape. During the initial response to the tsunami, women found it difficult to access relief and rehabilitation support, as they were not often involved in its distribution or in decision making processes.

Important gender concerns are overlooked not only by the community members, but also by decision makers. The situation of a woman during a disaster must be understood both in terms of their capacity as well as their vulnerability. In addition to the general effects of natural disaster and lack of health care, women are vulnerable to reproductive and sexual health problems, and increased rates of sexual and domestic violence. The special security, safety and health concerns of women remain unattended in post disaster situation.

A gender conscious approach, which goes beyond awareness on gender issues and takes action to transform prevailing unequal gender relations throughout the process of DRR, needs to be adopted.

**HIV/AIDS** (Human Immunodeficiency Virus (HIV) /Acquired Immunodeficiency Syndrome (AIDS))

When natural disasters strike, HIV-positive people suffer the same negative impacts as everyone else – but certain problems affect them even more, or in particularly severe ways. Everyone is hurt when a disaster disrupts the supply of medications, but for someone on anti-retroviral, any disruption of the medical regime is likely to cause resistance to treatment. Malnutrition at time of disaster is likely to speed up the progression of the infection. Similarly, disruption of water supplies poses a huge problem for someone with advanced HIV for a variety of reasons. Clean water for food preparation is essential to minimize the risk of intestinal infections, to which PLHIV are especially vulnerable, and to make food easier to eat for those suffering from mouth ulcers or thrush. Since HIV-positive people suffer frequent attacks of diarrhoea, extra drinking water is needed to avoid dehydration, as well as to swallow medicines. Susceptibility to skin

infections means frequent bathing is necessary. In advanced AIDS care, clothing, beds and patients themselves need to be washed frequently, and toilets need to be flushed more often.

Other questions might be asked that relate more directly to HIV. For example, do natural disasters break down family structures or change sexual networking in ways that might increase HIV transmission in places where prevalence is significant? Again, there is little information available. What is certain is that some components of HIV prevention can be halted in their tracks. For example, supplies of condoms can be disrupted, sometimes for long periods of time, which can certainly put people at risk if they have unprotected sex. Similarly, HIV prevention activities such as counseling and testing and behaviour change communications – everything from school programmes to mass media campaigns – are generally put on hold while priority medical interventions are emphasized. While this is understandable and even necessary at a time when basic survival needs have to be prioritized, it is important that such services be resumed as soon as possible. A different form of risk is faced by HIV-positive mothers who give birth during emergencies, since they are not likely to have access to medical interventions that reduce the risk of mother-to-child transmission of HIV.

### **People with disabilities (PWDs)**

People with Disabilities are particularly vulnerable during disasters due to their specific needs and barriers. They suffer specific disadvantages in coping with a disaster and may face physical, cultural and social barriers in accessing the services and support to which they are entitled. In addition to having a difficult physical environment, they are excluded from educational and livelihood opportunities. They are also the poorest of the poor and have limited access to health care, shelter, food, education and employment. They are more likely to work in hazardous conditions – all factors that increase the risk of illness, injury and impairment. Discrimination and exclusion also make it much harder for people with disabilities to break out of poverty. Persons with disabilities are especially vulnerable to disasters, both on account of impairments and poverty; yet they are often ignored or excluded at all levels of disaster preparedness, mitigation and response. It is therefore required that the specific needs of the PWDs be addressed by integrating them into disaster risk reduction process.

The needs of PWDs have to be considered before, during and after disaster. Their participation in community based activities must be ensured so that their needs are met. The participation of the PWDs and their families throughout the decision making process will ensure an equitable and effective programme. The concept of universal design or barrier free design must be incorporated. Inclusion of this concept would provide a level of accessibility for people with disabilities. For example, ramps must be present in every public structure. Physical assistance, assistive devices or installation of ramps maybe necessary to ensure these persons are not disadvantaged or trapped in a dangerous situation. Special focus should be given to develop and install PWD friendly tools and equipments to empower them.

People with visual or hearing impairments are unlikely to notice warning signals and quick evacuation routes during a disaster situation. Hence their needs must be kept in consideration while planning for evacuation. Also, an ability based identification of the PWDs must be conducted and they must be incorporated in to the task forces. Allocating a special space for the PWDs should become a precursor to the development of community contingency plan. It is also necessary to address the specific needs of PWDs during risk and resource mapping. This may include: accessible drinking water and sanitation sources, accessible shelters, rehabilitation centers, healthcare services etc.





### Exercise 8

Take the quiz given below, with multiple choice questions. Select the answer that you feel is the correct one. In the end, see how many points you scored.

Q1. Which scale is used to measure the magnitude of an earthquake?

1. Richter scale
2. Fujita Scale
3. Mercalli scale
4. Denier scale

Q2. Which of these is NOT a result of climate change?

1. Rise in temperature
2. Rise in sea level
3. Melting of ice caps
4. Ozone layer depletion

Q3. Which of these is NOT a renewable source of energy?

1. Sun
2. Wind
3. Water
4. Coal

Q4. Which instrument is used to detect and record an earthquake?

1. Seismograph
2. Barometer
3. Anemometer
4. Tachometer

Q5. Which of the following is caused by the natural gravitational pull of the sun and moon?

1. Tidal waves
2. Tsunami
3. Landslide
4. Earthquake

Q6. What is one positive outcome of floods?

1. It spreads silt and fertilizes the land
2. It forces wildlife to move away
3. It makes human beings more resilient
4. It provides water

Q7. Which of the following can generate a tsunami?

1. Earthquake
2. Volcanic eruption
3. Landslide
4. All of these

Q8. Sea level rise is mainly being caused by

1. Increase in rainfall
2. Melting of ice caps and glaciers
3. El nino
4. Increased shipping

Q9. Global warming will lead to

1. Uniform increase in temperature across the world
2. Increase in temperature by varying degrees in different parts of the world
3. Increase in temperature in some parts and decrease in other parts
4. Hotter summers and colder winters

Q10. Myanmar is exposed to how many kinds of disasters?

1. Less than five
2. Between five and ten
3. Exactly nine
4. More than ten

Q11. What is NOT a known method of H1N1 transmission among people

1. Eating pork product
2. Coughing
3. Sneezing
4. Touching contaminated surfaces

Q12. You can become infected with HIV by

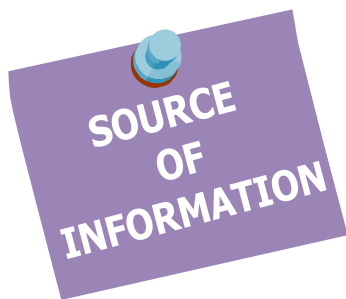
1. Sharing utensils with or drinking from the same cup as someone infected with HIV
2. Mosquito bites
3. Hugging someone with HIV
4. None of the above

Q13. How much of the earth's surface is covered by water?

1. 75%
2. 50%
3. 65%
4. 70%

Q14. Which natural disaster can produce the fastest winds on earth

1. Tornado
2. Hurricane
3. Cyclone
4. Tsunami



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## **1. UNDERLYING RISKS IN EDUCATION SECTOR**

Underlying risk factors indirectly contribute to the economic, social and physical vulnerability of communities at risk. Factors like lack of availability of trained teachers and poor access to schools can impede the progress in education.

## **2. IMPACTS OF CLIMATE CHANGE**

Climate change is the biggest underlying risk factor in the coming years. Myanmar is at the receiving end as a large part of its population is exposed to hydro-meteorological disasters.

## **3. INCLUSION**

A commitment to providing inclusive access to education is extremely essential. Poverty, gender, people with disabilities, old age and HIV/AIDS – all form an integral part of issues surrounding inclusion.





### Exercise 8

Question	Answer
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Q1	1
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Q2	4
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Q3	4
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Q4	1
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Q5	1
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Q6	1
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Q7	4
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Q8	2
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Q9	2
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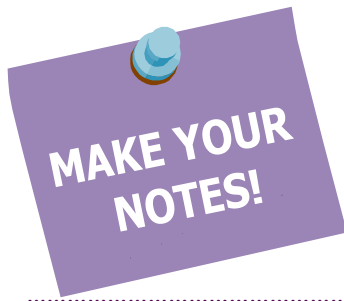
Q10	4
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Q11	1
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Q12	4
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Q13	1
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Q14	1
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ယူနက်စကို-မြန်မာ ပညာရေးပြန်လည်ထူထောင်မှုကမ္ဘာလုံးဆိုင်ရာ  
UNESCO Myanmar Education Recovery Programme  
Education for Sustainable Development Unit  
UNESCO Asia and Pacific Regional Bureau for Education,  
Bangkok.  
• ကုလသမဂ္ဂအဆောက်အအုံ  
• (၆) မင်္ဂလာဒုံလမ်း၊ ကော့ကုရမြို့နယ်၊ ရန်ကုန်မြို့  
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