

# DISASTER RISK REDUCTION, CLIMATE CHANGE ADAPTATION AND RESILIENCE

Briefing Note, October 2016



## KEY MESSAGES

- Disasters are not purely the results of shocks, stresses and hazardous events, but the product of social, political and economic context in which they occur. Whilst all countries suffer from disasters, they have the heaviest impact on poor and developing countries. Further, it is the poorest people which are hit the hardest, with everyday small-scale disasters causing the most harm.
- Appropriate measures can prevent or reduce the impacts of hazardous events and have the potential to avoid disasters. A holistic integrated risk management approach is necessary to address underlying disaster risk drivers.
- The effects of climate change increase the impact of disasters on the most vulnerable. It is estimated that climate change impacts and disasters could push over 100 million women and men back into poverty in the next 15 years.
- Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) can save lives and livelihoods and aim to strengthen the resilience of communities enabling them to anticipate, absorb, and bounce back from shocks, stresses and hazardous events.
- Disasters can be causes and consequences of development failures. Development can increase or decrease disaster risk depending on how it is managed, that is why development activities need to be risk-informed.
- DRR is cost effective: investment in prevention, preparedness and awareness raising can limit expensive reconstruction and rehabilitation costs.

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**LIST OF ACRONYMS**

AR5 Assessment Report  
CCA Climate Change Adaptation  
COP 21 Paris Climate Change Conference  
CRED Centre for Research on the Epidemiology of Disasters  
DFID Department for International Development  
DRM Disaster Risk Management  
DRR Disaster Risk Reduction  
IPCC International Panel for Climate Change  
IRM Integrated Risk Management  
NGO Non-Governmental Organisation  
ODI Overseas Development Institute  
SDG Sustainable Development Goal  
SFDRR Sendai Framework for Disaster Risk Reduction  
UNISDR United Nations Office for Disaster Risk Reduction

The **Swiss NGO DRR Platform** was founded in 2011 and is a network of Swiss-based NGOs, dedicated to increase the resilience of women and men, communities and governments, through an integrated approach to DRR and CCA. The Platform serves as a forum for its members to facilitate activities in the following three domains: exchange and learning; conceptual support and technical advice; raising awareness and advocacy.

The Platform, in March 2016, has 17 members: Caritas Switzerland, HELVETAS Swiss Intercooperation, Swiss Red Cross, HEKS/EPER, Terre des hommes, MEDAIR, SOLIDAR Switzerland, World Vision Switzerland, Global Risk Forum Davos, Bread for All, TearFund Switzerland, Save the Children Switzerland, Christoffel Blindenmission, Innovabridge, Plan International, ADRA and Zoï Environment Network.

<http://drrplatform.org/>

*The Briefing Note was put together for the Swiss NGO DRR Platform in March 2016 by HEKS, GRF Davos, Caritas Switzerland and HELVETAS Swiss Intercooperation.*

# DISASTERS – A THREAT TO DEVELOPMENT

**Large-scale disasters** such as the earthquake in Nepal in April 2015, the Balkan floods in May 2014, typhoon Haiyan/Yolanda in the Philippines in November 2013, the Horn of Africa drought in 2011/2012, the Tohoku great eastern Japan Earthquake and Tsunami in March 2011, but also more localised **small-scale disasters**, events such as floods, landslides, storms or droughts cause tremendous devastations, human and economic losses and they significantly impede progress towards sustainable development. Whilst all countries suffer from disasters, they have the heaviest impact on poor and developing countries. According to the UN Office for Disaster Risk Reduction (UNISDR), between 1992 and 2012, 4.4 billion people, equal to 64% of the world’s population, were affected by disasters. Within the same time period 1.3 million people were killed and 2 trillion US Dollars were accounted to disaster damage.<sup>1</sup> Disasters have a heavier impact on the poorest people. Poverty and inequality often push women and men to live marginalised, in places that are risky, such as alongside rivers, floodplains, marginal lands and slopes. Other drivers of disaster risk are population growth and migration, particularly evident in cities where high population density, inadequate urban planning and poor infrastructure lead to a risk concentration. Within the next 40 years, an estimated 2.6 billion women and men will be added to the population of cities worldwide, most of them in developing countries. There are clear indices that exposure of persons and assets in all countries has increased faster than vulnerability has decreased. Already today, more than one third of the world’s poor live in multi hazard zones; and low income countries account for more than 70 percent of the world’s disaster “hotspots”.<sup>2</sup>

As Figure 1 and Figure 2 show, disaster trends are increasing worldwide. Besides the ones mentioned above, one important driver of the increase in disaster risk is climate change. The Fifth International Panel for Climate Change (IPCC) Assessment Report (AR5)<sup>3</sup> as well as the IPCC Special Report – SREX<sup>4</sup> show clear indices that climate change is increasing the frequency, intensity and magnitude of disasters. According to UNISDR, in the past 20 years, 90% of major disasters have been caused by weather-related events such as heatwaves, storms, floods and droughts.<sup>5</sup> Climate Change also leads to more gradual changes which will again have an impact on women and men’s vulnerability.

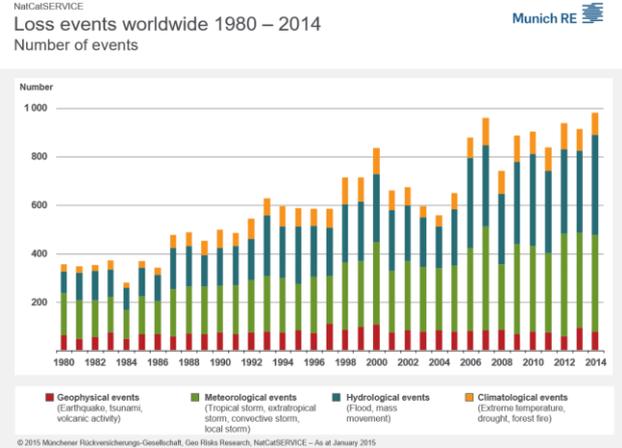


Figure 1: Munich Re 2015 Loss events worldwide 1980-2014

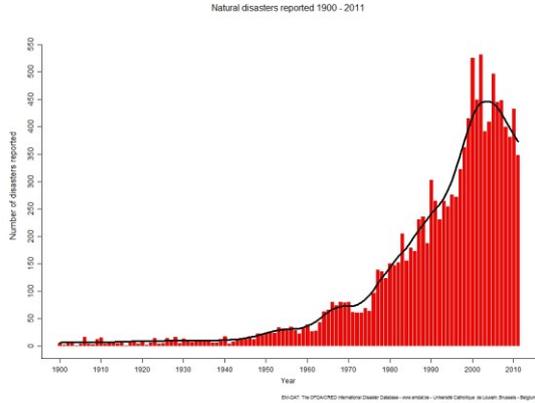


Figure 2: EM-DAT Natural Disasters Reported 1900-2011

In the light of the above mentioned, disasters are a threat to development and the adoption of measures of Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) are crucial for sustainable development.

<sup>1</sup> UNISDR (2012): Impacts of Disasters since the 1992 Rio de Janeiro Earth Summit, [http://www.unisdr.org/files/27162\\_infographic.pdf](http://www.unisdr.org/files/27162_infographic.pdf)  
<sup>2</sup> World Bank (2015): Disaster Risk Management Overview, <http://www.worldbank.org/en/topic/disasterriskmanagement/overview>  
<sup>3</sup> IPCC (2014): Fifth Assessment Report (AR5), <http://www.ipcc.ch/>  
<sup>4</sup> IPCC (2012): Special Report Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation – SREX, <http://www.ipcc-wg2.gov/SREX/>  
<sup>5</sup> UNISDR & CRED (2015): The human cost of weather related disasters 1995 – 2015, [http://www.unisdr.org/2015/docs/climatechange/COP21\\_WeatherDisastersReport\\_2015\\_FINAL.pdf](http://www.unisdr.org/2015/docs/climatechange/COP21_WeatherDisastersReport_2015_FINAL.pdf)

## 1 TERMINOLOGY AND DEFINITIONS<sup>6</sup>

**Hazards**, such as earthquakes, droughts, flood, landslide, storms or technological incidents are potentially damaging physical events, phenomena or human activities that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation. A **disaster** is a serious disruption of the functioning of a community or society due to hazardous events interacting with conditions of **vulnerability** and **exposure**, leading to widespread human, material, economic and environmental losses and impacts. **Disasters** happen when the impact of a hazardous events test or exceed the **capacity** of a community or society to cope using its own resources, and therefore may require assistance from external sources. A hazard in itself does not cause a disaster, it results when a hazard impacts on a vulnerable, exposed and/or ill prepared community. **Disasters are not purely the results of hazardous events, but the product of the social, political and economic context in which they occur.**

Disasters can be distinguished in size and time, such as **small-scale** and **large-scale disasters**, or **frequent** and **infrequent**; but also by **slow-onset** changes and **sudden-onset events**. Where small-scale disasters can be dealt with local assistance, large-scale disasters affect societies which require national or international assistance. Slow-onset disasters emerge gradually over time and can be associated with e.g. drought, desertification, or sea level rise. Sudden-onset disasters, on the other hand emerge quickly or unexpectedly and can be associated with e.g. earthquake, volcanic eruption, flash flood.

**Vulnerability** is determined by physical, social, economic and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards. High vulnerabilities therefore increase the likelihood of a disaster. Vulnerability is a greater element of disaster risk than hazards themselves. Vulnerability is not uniform within a community but often differential among and between groups. This is furthermore reflected in the term 'most vulnerable' which according to the disaster situation can refer to groups such as women, children, the elderly, persons with disabilities or ethnic minorities. These groups are inherently more susceptible to the impacts of hazardous events and have thus a higher vulnerability towards them. **Exposure** indicates people, property and other assets or systems that are physically exposed to hazards. Measures of exposure can include the number of people or types of assets in a hazardous area. These can be combined with the specific vulnerability of the exposed elements to any particular hazard. **Capacity** on the other hand is the combination of all the strengths, attributes and resources available within a community, society or organization to manage and reduce the risks and strengthen resilience.

**Disaster risk** refers to the combination of the probability of a hazardous event and its consequences which result from interaction(s) between natural or man-made hazard(s), vulnerability, exposure and capacity. Beyond expressing the probability of a hazardous event and its consequences, it is crucial to recognize that risks are inherent, exist or can be created within social systems. It is important to consider the social contexts in which risks occur and that people therefore do not necessarily share the same perceptions of risk and their underlying risk factors (e.g. poverty and inequality, climate change and variability, unplanned and rapid urbanization, demographic change, poor land management,

### EM-DAT - The International Disaster Database

The Centre for Research on the Epidemiology of Disasters (CRED) defines a disaster if at least one of the following criteria is met during an event: **10 or more people dead; 100 or more people affected; declaration of a state of emergency; Call for international assistance.**

Since 1988 CRED has been maintaining an Emergency Events Database EM-DAT. EM-DAT contains essential core data on the occurrence and effects of over 18,000 disasters in the world from 1900 to present which meet the above criteria. The database is compiled from various sources, including UN agencies, non-governmental organisations, insurance companies, research institutes and press agencies.

<http://www.emdat.be/>

<sup>6</sup>Terminologies and Definitions are based on the UNISDR (2015) Terminology for Disaster Risk Reduction, <http://www.preventionweb.net/documents/framework/Working%20background%20text%20on%20DRR%20Terminology%20%20October%20reissued%20on%2023%20October.pdf> and the IPCC (2014) Fifth Assessment Report (AR5), Glossary on Climate Change, [http://www.ipcc.ch/pdf/assessment-report/ar5/wg2/WGIAR5-AnnexII\\_FINAL.pdf](http://www.ipcc.ch/pdf/assessment-report/ar5/wg2/WGIAR5-AnnexII_FINAL.pdf)

environmental degradation, weak institutional arrangement, etc.). **Extensive risk** refers to risk of low-severity, high-frequency disasters, mainly but not exclusively associated with highly localized hazards.

**Disaster Risk Reduction (DRR)** is broadly understood as the development and application of policies, strategies and practices to reduce vulnerabilities, exposures and disaster risk throughout society. UNISDR (2015) defines it as the policy objective aimed at preventing new and reducing existing disaster risk and managing residual risk, all of which contributes to strengthening resilience. The term **Disaster Risk Management (DRM)** is often used in the same context and is defined as the application of DRR policies, processes and actions pursuing the same goals.

The impacts of climate change, such as the predicted increase of frequency and severity of certain types of hazards and the gradual climatic changes, which are likely to have an impact on people's vulnerabilities call for a broader approach to reducing risk.

The IPCC AR5 defines **climate change** as a change in the state of the climate that can be identified by changes in the mean/or the variability of its properties, and that persists for an extended period, typically decades or longer. Current global climate change is understood to be the result of human activities since the Industrial Revolution - such as the burning of fossil fuels and land-use change (for example, deforestation) - resulting in a significant increase in greenhouse gases such as carbon dioxide. While greenhouse gases are a natural part of the earth's atmosphere and serve to maintain temperatures to support life, excessive emission of these is causing more heat to be trapped in the atmosphere, leading to rising temperatures. Projected changes in the climate include temperature increases on land and at sea, sea-level rise, melting of glaciers and ice caps, and changing and irregular rainfall patterns. These changes affect almost every aspect of human life and the ecosystems on which it depends.<sup>7</sup>

Efforts to reduce the impacts of climate change are known as **Climate Change Adaptation (CCA)**. In this context, **adaptation** is the process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate negative impacts and to exploit beneficial opportunities where possible. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects.

There is significant convergence between the problems that DRR and CCA seek to address (Figure 3). Both conceptual frameworks share a common understanding of the components of risk and on how to reduce it: exposure needs to be minimised, vulnerability reduced, and capacities strengthened in ways that address disaster and climate change risk.

In a nutshell, **DRR and CCA are conceptual frameworks intended to systematically avoid (prevent) and limit (prepare/mitigate) disaster risks and adapt to changes which are difficult to predict** with regard to losses in lives and the social, economic and environmental assets of women and men in communities and countries.

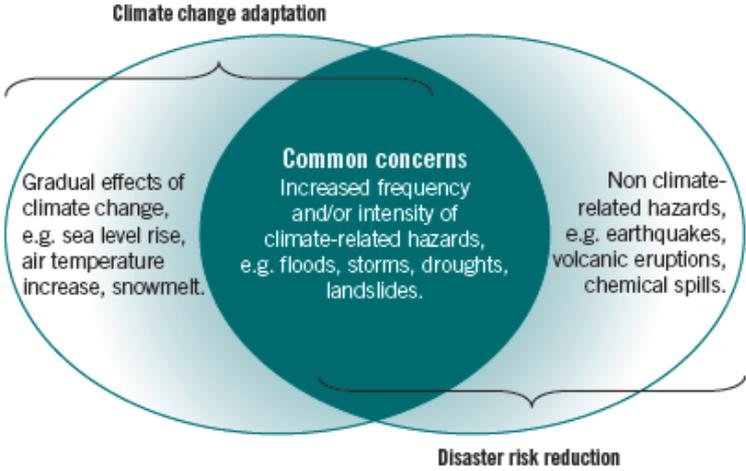


Figure 3: Convergence between CCA and DRR (Turnbull et al. 2013)

<sup>7</sup> Turnbull et al. 2013. Towards Resilience, <http://www.alnap.org/pool/files/ecb/downloads/ECB-toward-resilience-Disaster-risk-reduction-Climate-Change-Adaptation-guide-english.pdf>

## 2 MEASURES OF DRR AND CCA

Successful risk reduction must be instigated well before a disaster strikes; it is therefore crucial to not merely focus on responding to disasters, but to also focus **on disaster prevention, mitigation and preparedness activities**. Hence, DRR and CCA need to be integrated into long-term development planning to reduce underlying socio-economic vulnerabilities, protect interventions against hazards and ensure that development policies and programmes do not inadvertently increase or create risk.

The adoption of an integrated risk management (IRM) approach - a systematic approach to identifying, analysing, assessing and reducing risks associated with hazards and human activities, should be an integral part of how organisations do their work. A risk management approach recognises that there is a wide range of geological, meteorological, environmental, technological, socio-economic and political threats to society. Risks are located at the point where hazards, communities and environments interact; thus, effective risk management must address all of these aspects. Disasters are seen not as one-off events to be responded to, but as deep-rooted and longer-term problems that must be managed and planned for. Effective risk management generally involves a variety of different but related actions. Such integrated approaches work best when they are informed by specific local conditions and targeted towards local needs.<sup>8</sup>

By asking three fundamental questions: *What can happen? What is acceptable to happen? What needs to be done?* the IRM approach aims at identify the most pressing risks, prioritizing them and taking effective and efficient measures for risk reduction.

Good risk management starts with the identification and analysis of hazards which evaluates the risks involved and then leads to risk assessment which classifies risks in terms of their acceptability and relevance, before the planning of measures. As illustrated in the Disaster Management Cycle (see Figure 4), **integrated and holistic risk management** assumes that a combination of risk reduction measures are considered at different stages of the cycle involving different actors. To capture the full complexity of a disaster situation the disaster management cycle should not be understood as a continuum where all phases are consecutive but rather as a contiguum, where all phases are operating at the same time in overlapping juxtaposition.

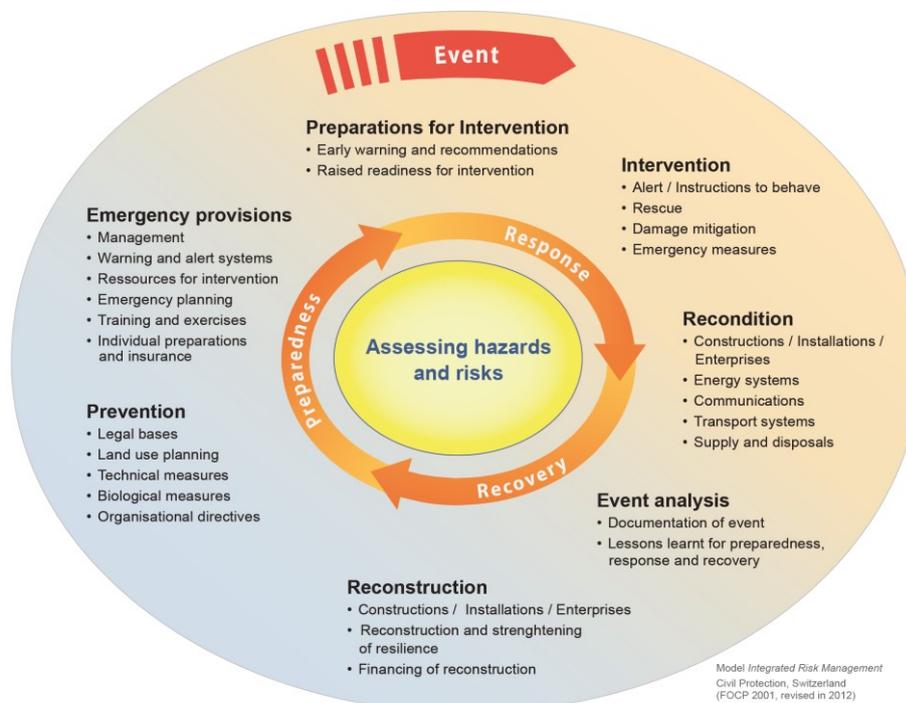


Figure 4: Disaster Management Cycle (Swiss Government, 2014)

<sup>8</sup> Twigg, J (2015): Disaster Risk Reduction, Good Practice Review 9, <http://goodpracticereview.org/wp-content/uploads/2015/10/GPR-9-web-string-1.pdf>

The underlying objective for risk management is, to plan and implement preventive and protective measures. Responses to risk can be very different: women and men, or institutions can for example ignore risks, accept, avoid, reduce, share or transfer them to reduce the risks from the total original risk level, to the acceptable risk level that also reflects the self-responsibility of e.g. an individual, a community or a state. The risk staircase (Figure 5) provides a clear sequencing of risk reduction measures based on a Swiss understanding of IRM, where preventive measures are the starting point to manage risk, followed by mitigation of impact of disasters, to preparedness for response and risk sharing mechanisms.

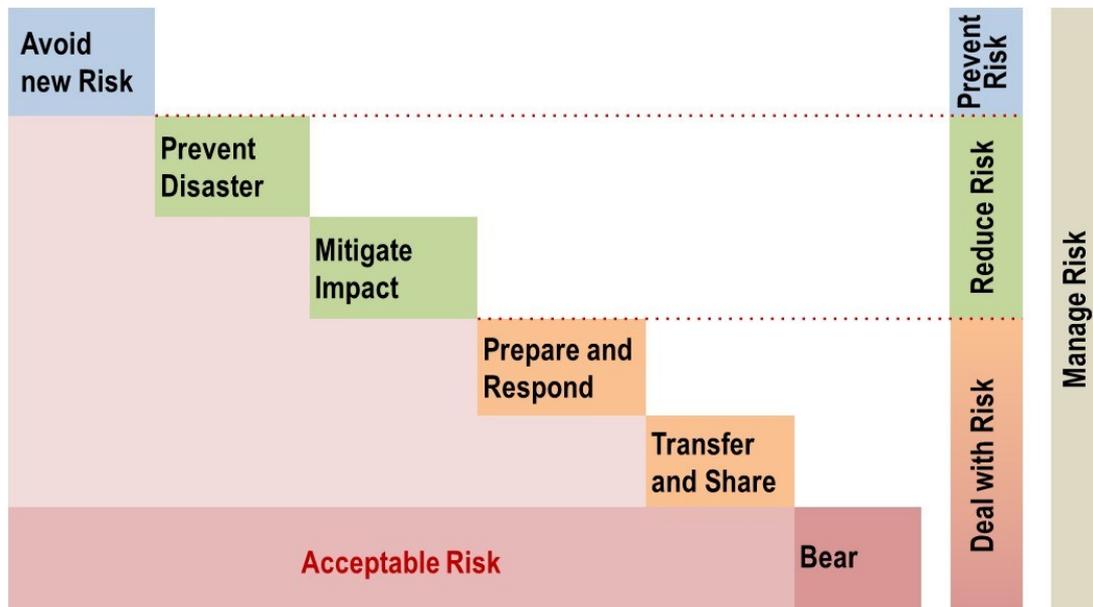


Figure 5: Risk Staircase Model (Swiss NGO DRR Platform based on the Sendai Framework for DRR, 2015)

To reduce disaster risk in an integrated manner, different types of measures along the Risk Staircase can be implemented:

- *Avoid new risk*: Regulation and practices that avoid and reduce the creation of new “unacceptable” risks, for example: territorial planning with prohibition of settlements and other investments in disaster prone areas, banning the use of toxic substances such as harmful fertilizers, environmental impact checks for private sector investment, laws and regulations to avoid the overuse of natural resources. Avoidance of “new” risks is mainly directed to man-made (technological, biological, environmental) or mixed manmade/natural hazards.
- *Prevent Disaster*: Technical/structural, organizational and management measures that completely avoid potential adverse impacts of “existing” hazards, vulnerability factors and exposure through action taken in advance of a hazardous event. Examples include dams or embankments that eliminate flood risks, land-use regulations that do not permit any settlement in high risk zones, and seismic engineering designs that ensure the survival and function of a critical building in any likely earthquake.
- *Mitigate Impact*: Technical/structural, organizational and management measures that reduce the adverse impacts of existing risks. Mitigation measures encompass engineering techniques and hazard-resistant construction as well as improved environmental policies and public awareness, resulting in reinforced built infrastructure such as earthquake and storm-resistant construction, flood dams or river bank protection, avalanche protection or similar. It should be noted that in climate change policy, “mitigation” is defined differently, being the term used for the reduction of greenhouse gas emissions that are the source of climate change.
- *Prepare and respond*: While preparedness comprises the knowledge and capacities to effectively anticipate, respond to, and recover from the impacts of likely, imminent or current disasters, response is the actual action taken during or immediately after a disaster in order to save lives, reduce health impacts, ensure public safety and meet the basic subsistence needs of the people affected. Preparedness measures are most effective, when well integrated into an early warning system, which includes access to information to monitor (such as precipitation, river flow monitoring), and includes

activities like contingency planning, stockpiling of equipment and supplies (emergency kits, food, seeds), the development of arrangements for coordination, evacuation and public information, and associated training and field exercises. It may as well be directed to increase life-saving capacities such as first aid training, swimming courses etc.

- *Transfer and share*: The process of formally or informally shifting the financial consequences of particular risks from one party to another whereby a household, community, enterprise or state authority will obtain, under predefined conditions, resources from another party after a disaster occurs, in exchange for ongoing or compensatory social or financial benefits provided to that other party. Insurance is a well-known form of risk transfer. Another form of risk transfer are solidarity mechanisms at community level that help people to share and bear impacts of a disaster in form of community saving groups, including seed banks to replenish stocks. Remittances, which are generated after a disaster at higher rates, are another example of risk transfer poor people benefit.

Measures for risk reduction can also be distinguished between:

- **Structural measures**: Any physical construction to reduce or avoid possible impacts of hazards, or application of engineering techniques or natural buffers to achieve hazard-resistance and resilience in structures or systems;
- **Non-structural measures**: Any measure not involving physical construction that uses knowledge, practice or agreement to reduce risks and impacts, in particular through policies and laws, public awareness raising, training and education.

Depending on the willingness and the ability to reduce risks, a certain level acceptable risk is reached. This acceptable risk can vary in probability and impact and it cannot be fully eliminated.

To structure and classify approaches for CCA, one can identify a similar cascade of measures. A useful orientation is provided in Figure 6 below. The four intervention fields depict a continuum of measures ranging from approaches geared towards addressing the drivers of vulnerability and approaches tackling the direct impacts of climate change. The first are measures that can be inherent to development interventions, alleviating poverty and inequality and thereby strengthening fundamental capabilities. The latter are more climate-specific interventions across sectors, ensuring that livelihoods and resource base are preserved and the impacts of climate change, such as droughts, extreme temperatures or shifted precipitation patterns do not cause harm for the people affected.

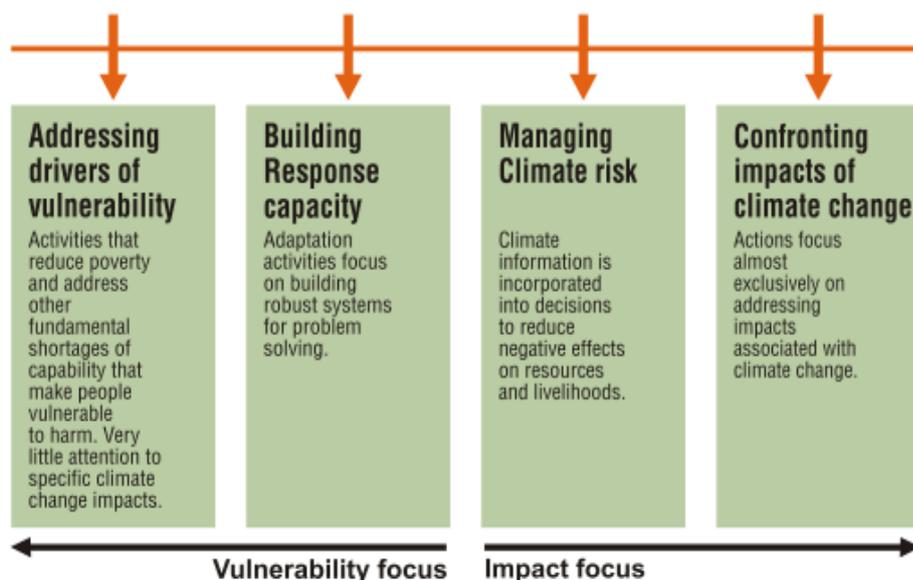


Figure 6: Adaptation Classification (McGray et al.<sup>9</sup>)

As discussed in section 2, DRR and CCA share a common understanding how to reduce risks, hence measures of DRR and CCA are hugely overlapping.

<sup>9</sup> McGray, et al. 2007. Weathering the Storm Options for Framing Adaptation and Development. [http://pdf.wri.org/weathering\\_the\\_storm.pdf](http://pdf.wri.org/weathering_the_storm.pdf).

Mainstreaming DRR and CCA means considering and addressing risks associated with disasters and climate change and to fully integrating it into relief and development policy, planning, budgeting, implementation, and monitoring. This entails an analysis of how potential risks and vulnerabilities could affect the implementation of policies, programmes and projects. Concurrently, it also analyses how policies, programmes and projects, could increase vulnerability to disaster or climate change impacts. This analysis should lead on to the adoption of appropriate measures to reduce potential risks and vulnerabilities, where necessary, treating risk reduction and adaptation as an integral part of all programme management processes rather than as an end in itself.<sup>10</sup>

### 3 RESILIENCE

The concept of resilience has been discussed for quite some years and has evolved considerably. It has emerged as a combination of ideas from multiple disciplinary traditions, rooted mainly in ecology and in sustainable livelihoods within the development community.<sup>11</sup> Over the last few years, the growth of popularity of resilience does not only concern development but also humanitarian organisations, including both non-governmental organisations (NGOs) and donors, which has led to an explosion of resilience focussed frameworks. The concept of resilience has become prominent in development and humanitarian debate and policy. It is widely seen as a useful organising concept that can be applied across different sectors and disciplines, helping to break down the silos between them. In the recent years, a vast majority of institutions have been working extensively on the topic of resilience, with a tendency to focus on risks, disasters, and climate change. On this basis, the DFID approach paper<sup>12</sup> presents an interesting approach for humanitarian organisations.

An increasing amount of institutions have started to understand resilience from a broader point of view, including other thematic areas such as health, education, social protection, food security, gender, conflict and fragility, agriculture, etc. Indeed, quite some work was done on how to measure resilience. The majority of approaches, tools, frameworks and methods currently available to measure resilience reflect strongly the diversity of disciplines and sectors that have appropriated the term. An interesting resilience navigator provided by the Overseas Development Institute (ODI)<sup>13</sup> is summarizing the most important ones.

The aim of resilience programming is to ensure that shocks, stresses and hazardous events, whether individually or in combination, do not lead to a long-term downturn in development progress, economic growth and other means. A wide range of definitions are available, for example UNISDR (2015) “*The ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions.*”

What is inherent to definitions of resilience is, that “resilience is not just the ability to maintain or return to a previous state, but about adapting and learning to live with changes and uncertainty. Resilient systems (individuals, households, communities or countries), possess a specific set of capacities that enables them to anticipate the impact from a hazard, to withstand, absorb, and recover from shocks and stresses and to reorganise and transform accordingly. In absence of these capacities, a system is less robust, flexible and diverse and thus suffers greater losses and damages. There are three types of capacities related to resilience: *Absorptive capacity*, that is, the ability to cope with, and absorb the

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<sup>10</sup> IFRC (2013): A guide to mainstreaming Disaster Risk Reduction and Adaptation to Climate Change,

[http://www.ifrc.org/PageFiles/40786/DRR%20and%20CCA%20Mainstreaming%20Guide\\_final\\_26%20Mar\\_low%20res.pdf](http://www.ifrc.org/PageFiles/40786/DRR%20and%20CCA%20Mainstreaming%20Guide_final_26%20Mar_low%20res.pdf)

<sup>11</sup> ODI (2012): Resilience: A Risk Management Approach, <http://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/7552.pdf>

<sup>12</sup> DFID 2011: Defining Disaster Resilience – A DFID Approach Paper, [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/186874/defining-disaster-resilience-approach-paper.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/186874/defining-disaster-resilience-approach-paper.pdf)

<sup>13</sup> ODI resilience navigator : [http://bwa-presentation.co.uk/odi\\_reviews/index.php](http://bwa-presentation.co.uk/odi_reviews/index.php)

effects of shocks and stresses – for instance when a household temporarily reduces its expenses following a drop in its income; *adaptive capacity*, that is, the ability of individuals or societies to adjust and adapt to shocks and stresses, but keep the overall system functioning in broadly the same way – for instance when a household decides to diversify its crops in order to respond to changing weather conditions; *transformative capacity*, that is, the ability to change the system fundamentally when the way it works is no longer viable – for example, when a farmer decides to stop farming, and migrates to a city to become a taxi driver.<sup>14</sup>

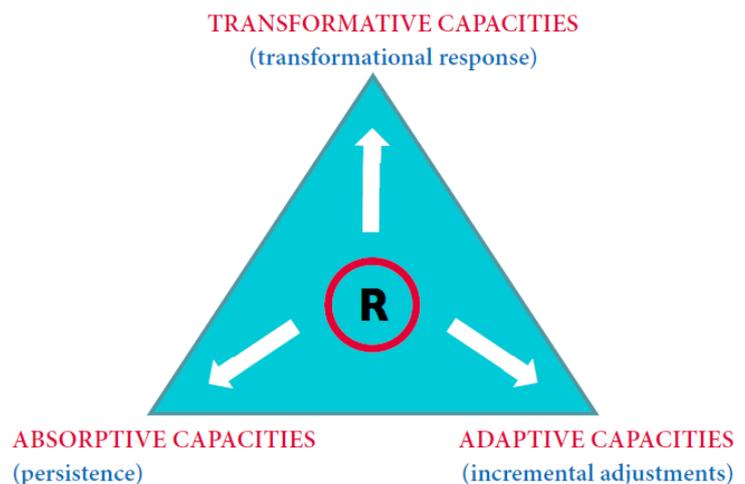


Figure 7: The three elements of resilience (Swiss NGO DRR Platform)

A resilience approach requires us to consider a number of different issues and perspectives all together. It helps to think holistically and encourages adopting a cross-sectoral and inter-disciplinary approach. Such an approach supports the development of coherent, wide-ranging strategies and programmes involving a variety of complementary and mutually supporting interventions, with the aim of permanently reducing risk for women and men. Such an approach contrasts with more conventional disaster programming, which has often focused solely on specific hazards and excluded aspects of vulnerability and resilience. Moreover, resilience thinking encourages a system of systems approach to enable a better understanding of how different types of systems interact with one another, and the connections and interactions between different elements within particular systems.<sup>15</sup>

## 4 INTERNATIONAL FRAMEWORKS – INTEGRATION OF DRR AND CCA

2015 marked an important year of international norm setting and cooperation for the global community, also with regard to DRR, CCA and Resilience. The following three key policy frameworks were agreed upon by the world community: The Sendai Framework for Disaster Risk Reduction (SFDRR) 2015-2030; the Sustainable Development Goals (SDGs) as well as the Paris Climate Agreement.

### 4.1 THE SENDAI FRAMEWORK FOR DISASTER RISK REDUCTION (SFDRR) 2015-2030<sup>16</sup>

The SFDRR 2015-2030 (successor framework of the Hyogo Framework for Action 2005-2015 - HFA) was adopted by 187 states at the Third UN World Conference on Disaster Risk Reduction in Sendai, Japan, in March 2015. It defines the following guidance for the implementation of risk reduction measures at all levels and across all.

**Outcome:** The substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries.

#### **Four priorities for action:**

1. Understanding disaster risk;
2. Strengthening disaster risk governance to manage disaster risk;
3. Investing in disaster risk reduction for resilience;
4. Enhancing disaster preparedness for effective response, and to “Build Back Better” in recovery, rehabilitation and reconstruction.

<sup>14</sup> IDS 2013: Policy Brief – Making the most of resilience: <http://www.ids.ac.uk/files/dmfile/IF32.pdf>

<sup>15</sup> Twigg, J. (2015)

<sup>16</sup> Sendai Framework for Disaster Risk Reduction (SFDRR) 2015-2030: [http://www.preventionweb.net/files/43291\\_sendaiframeworkfordrren.pdf](http://www.preventionweb.net/files/43291_sendaiframeworkfordrren.pdf)

## **4.2 THE SUSTAINABLE DEVELOPMENT GOALS (SDGs) 2015 - 2030<sup>17</sup>**

In September 2015, Heads of State concluded years of negotiation with the adoption of a normative framework for development for the next decade. The 2030 Agenda for Sustainable Development is a transformative plan of action for all countries and all stakeholders to implement. It sets poverty eradication as an overarching aim and has, at its core, the integration of the economic, social and environmental dimensions of sustainable development.

DRR, CCA and Resilience cut across different aspects and sectors of development. The 2030 Agenda for Sustainable Development recognizes and reaffirms the urgent need to reduce climate and disaster risk and emphasises that building the resilience of communities and nations is fundamental to achieving the SDGs. There are 25 targets related to DRR, CCA and resilience in 10 of the 17 SDGs. Direct references to DRR, CCA and resilience can be seen in goals and targets particularly related to poverty, ending hunger, ensuring healthy lives, education, sustainable management of water, building resilient infrastructure, resilient cities, climate change and marine and terrestrial ecosystems.<sup>18</sup>

## **4.3 THE PARIS AGREEMENT FOR CLIMATE CHANGE (COP21)**

The legally binding Paris Agreement which was signed on the 12 December 2015 is the successor of the Kyoto Protocol.<sup>19</sup> It aims to address both the factors that lead to anthropogenic climate change and its adverse impacts. It contains ambitious targets for restricting global warming between 1.5 and 2 degrees C,<sup>20</sup> as well as long-term goals to achieve climate resilience.

Approaches to enhance climate resilience and climate risk management are strengthened significantly by the Paris Agreement. With the agreement a process to better balance between mitigation and adaptation and to more comprehensively address climate risks has been initiated. It can be expected that in the future approaches to climate adaptation, loss and damage will be better integrated to achieve the goal of climate resilience. Climate risk assessments will gain importance and adaptation planning will be scaled up in order to meet the requirements under the review and ambition mechanism, i.e. regular country reports and inclusion of adaptation in the global stock-take. While much work remains to be done towards its national level ratification and the definition of concrete measurements, the agreement provides the legally binding frame for phasing out fossil fuels, foster climate resilient development and serious commitment of resources to climate finance.

For further readings and information please visit: <http://drrplatform.org/>

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<sup>17</sup> Sustainable Development Goals: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>

<sup>18</sup> For a full list of DRR, CCA and Resilience in the SDGs refer to UNISDR (2015): Disaster Risk Reduction and Resilience in the 2030 Agenda for Sustainable Development, [http://www.unisdr.org/files/46052\\_disasterriskreductioninthe2030agend.pdf](http://www.unisdr.org/files/46052_disasterriskreductioninthe2030agend.pdf)

<sup>19</sup> <http://newsroom.unfccc.int/unfccc-newsroom/finale-cop21/>

<sup>20</sup> The High Ambition Coalition: <http://www.businessgreen.com/bg/opinion/2439215/eu-climate-commissioner-how-we-formed-the-high-ambition-coalition>

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