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Swiss Agency for Development
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SDC Guidelines on Disaster Risk Reduction



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1. The purpose of this publication

Disaster risk reduction – an important dimension of poverty reduction and sustainable development

Every day, populations face a wide variety of risks arising from geopolitical, economic and natural hazards. Disaster risk reduction (DRR) deals with the effects of natural hazards, which often threaten human life, health, livelihoods and safety. Moreover, they can heavily impact the environment, put communities at further risk, displace populations and destroy development achievements. Reducing disaster risks is not just necessary in order to save lives and livelihoods, but also to contribute to poverty alleviation, to sustainable development and therefore to resilience building.

Disasters are not so natural

Disasters are not natural. They occur when the impacts of a natural hazard exceed the ability of the affected community or society to cope using its own resources. Natural hazards affect rural and urban areas alike, putting lives, livelihoods and assets at risk. What makes hazards into disasters depends primarily on the way societies develop, build and construct. The extent to which a hazard can turn into a disaster is determined by how well these risks are assessed, the extent to which information on what could happen is available, and the measures taken to reduce those risks. In the document the term 'natural' disaster refers to disaster emanating from a natural hazard as opposed to 'man-made' disasters.

Natural hazards are naturally occurring physical phenomena caused either by the rapid (e.g. earthquake, flash flood, cyclones) or slow (e.g. drought, desertification, sea level raise) onset of events. They can be geophysical in nature (e.g. earthquakes, rock falls, tsunamis and volcanic activity), hydro-meteorological (e.g. tropical cyclones, avalanches, floods) or climatological (e.g. droughts caused by the El Niño Southern Oscillation, extreme temperature). Biological hazards (e.g. disease epidemics and insect/animal plagues) are normally not covered by the DRR programmes of SDC.

Disaster risk reduction contributes to achieving the 2030 Agenda

In line with the Sendai Framework for Disaster Risk Reduction (SFDRR), the Sustainable Development Goals (SDGs), and the UN Framework Convention on Climate Change (UNFCCC), SDC continues to invest in activities to reduce disaster risks, thereby contributing to global efforts to substantially reduce disaster losses in terms of both human life and the social, economic and environmental assets of communities and countries.

The SDC Guidelines on Disaster Risk Reduction provide orientation on how to manage systematically disaster risks and on how to integrate them into SDC's planning and operational processes.

Target audience

The Guidelines are primarily intended for SDC staff in Swiss cooperation offices and embassies and at the SDC headquarters, who manage both development and humanitarian programmes and projects in partnership with governments, civil society, communities and the private sector as well as international organisations. They also serve as guidance for the staff of partner agencies operating on the basis of an SDC mandate.

2. Background: disasters have a dramatic impact on sustainable development

Natural disasters take a high toll

Every year, natural disasters take a high toll in terms of fatalities, affected population and economic losses (see Figure 2) and thus have devastating impacts on poverty alleviation and sustainable development.

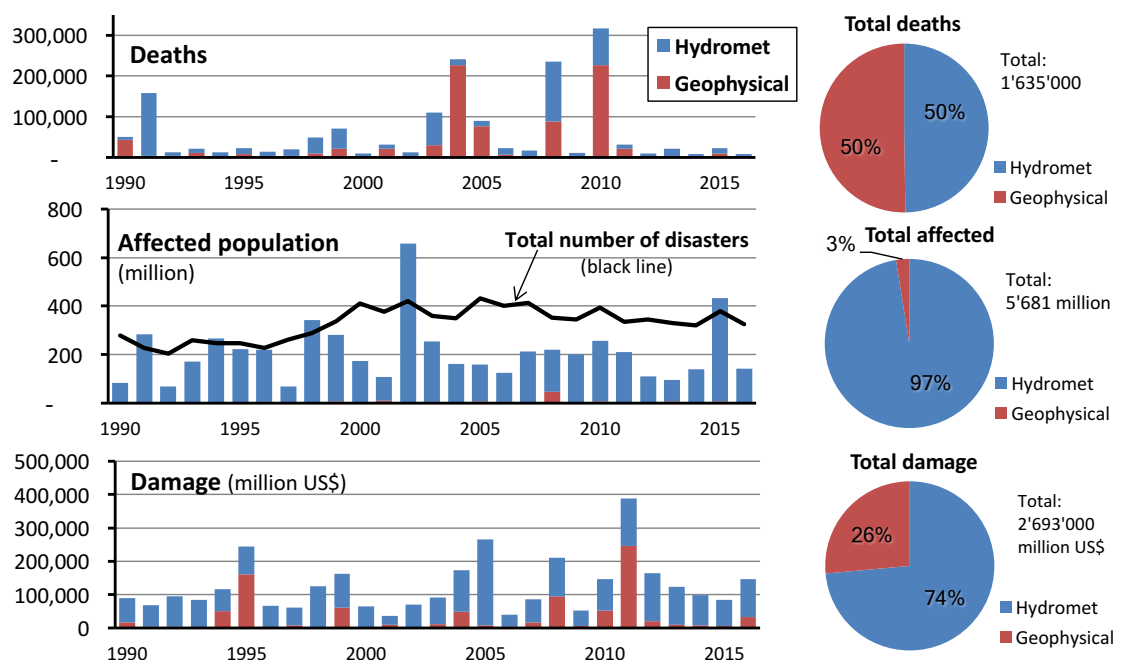


Figure 2: Number of fatalities, affected populations and the economic cost (damage) of natural disasters in 1991–2016. Damage is measured in USD for 2016 in accordance with the US Consumer Price Index (Bureau of Labour Statistics). Source: D. Guha-Sapir, R. Below, Ph. Hoyois - EM-DAT: International Disaster Database – www.emdat.be – Université Catholique de Louvain – Brussels – Belgium.

In the 25 years from 1991 to 2016, both hydro-met (including hydro-meteorological and climatic) and geophysical events claimed a total of 1.6 million lives and left 5.6 billion people affected. Over this period, floods, storms, periods of extreme temperatures and other weather-related hazards caused the majority of events. The predominance of hydro-met events is reflected in the numbers of affected people and in the economic losses. Geophysical events caused an equivalent number of deaths.

Impacts on livelihoods

Disasters may affect poverty directly in many ways. Even when losses from disasters are small on average, some victims may lose everything during an event, including their health, their home and their assets, triggering displacement¹ and, in the case of children, their chances of escaping poverty through education.

¹ The Nansen Initiative was launched by Switzerland and Norway in 2012 to ensure better protection for people forced to flee across borders in the context of disasters and the effects of climate change. The Platform on Disaster Displacement constitutes the next stage and aims at the implementation of the Nansen Initiative Protection Agenda 2015.

Even though recurrent smaller-scale disasters are usually not included in the inventories², they are estimated to cause around half of the losses of the most vulnerable groups, limit development opportunities and undermine state and household budgets.

Natural disasters affect the poor disproportionately

Poverty and vulnerability to disasters are closely linked: low- and lower-middle income countries suffer disproportionately high numbers of fatalities. Poor communities often live on marginal land in high-risk areas. They lack the resources to mitigate the adverse impacts of natural hazards and to recover from disasters through insurance or savings. As reflected in the negative impact on gross domestic product (GDP), low-income countries are typically more vulnerable to and disproportionately affected by disasters. While the damage caused by the earthquake in Haiti in 2010 was estimated at USD 8 billion, representing 120% of Haiti's GDP in that year³, the damage caused by Hurricane Katrina in the USA in 2005 was estimated at USD 125 billion, which is equivalent to 'only' 1% of US GDP⁴.

The reasons for the upward trend of natural disasters are manifold:

- population growth, the use of marginal land, rapid urbanisation and unplanned human settlements are the most important factors increasing the vulnerability to natural hazards.⁵
- Climate change and global warming, causing more frequent, longer and more intense natural processes such as droughts, storms and heavy rainfall are a crucial element. The number of disasters is expected to increase in the future as global warming generates more severe weather-related events.⁶
- Environmental degradation caused by the over-exploitation of natural resources, e.g. deforestation, is also leading to an increase in disaster risks.

Although progress in DRR has been made since the adoption of the Hyogo Framework for Action in 2005 - for instance in investments by governments in adapting legislation, new policies and early warning mechanisms⁷ - disasters continue to undermine efforts to achieve sustainable development.

Limited DRR financing poses a threat to development

Investments in DRR are widely accepted to yield several times their amount in disaster response and reconstruction cost. Nevertheless, despite rising human and economic costs of disasters, the international aid community continues to focus on responding to disasters and their aftermath: more than 95% of humanitarian

2 The 'Views from the Frontline' initiative of the Global Network of Civil Society Organisations for Disaster Reduction is trying to close this gap (<http://gndr.org/frontline.html>). See also Desinventar: <http://www.desinventar.org>

3 The World Bank > Countries > Haiti: <http://www.worldbank.org/en/country/haiti>

4 EM-DAT; The World Bank > Data: <http://data.worldbank.org/country/united-states?view=chart>

5 IPCC, 2012: Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change (SREX).

6 IPCC, 2014: Climate Change 2014: Synthesis Report. A Report of the Intergovernmental Panel on Climate Change.

7 UNISDR, 2015: Global Assessment Report on Disaster Risk Reduction (GAR) 2015.

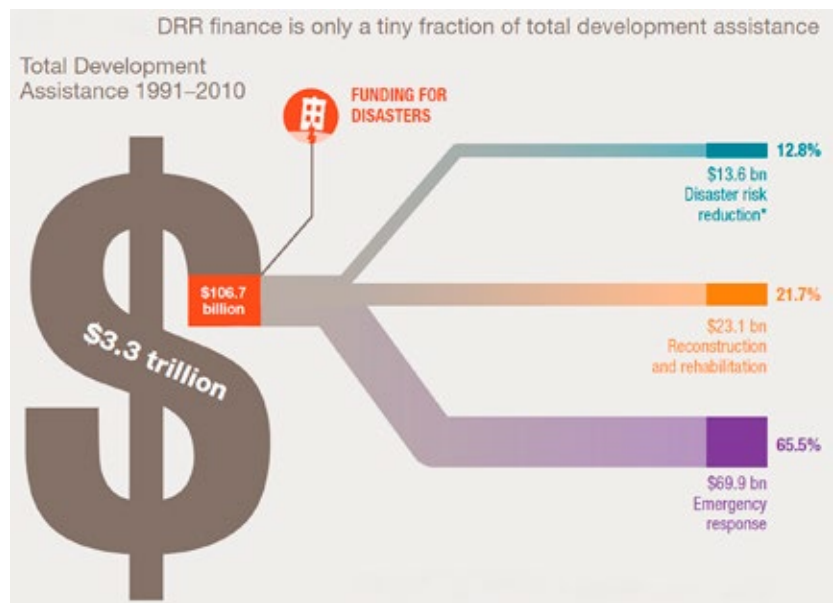


Figure 3: Between 1991 and 2010, the international community committed over USD 3 trillion in international aid. Of that amount 106.7 billion was allocated to disasters and a fraction of approximately 13% made available for risk reduction measures before disasters strike. IFRC, World Disaster report 2016 (Sources: GFDRR, ODI, 2013)

funding is spent on response measures and less than 5% spent on reducing underlying risk factors⁸. Both development and humanitarian stakeholders must reinforce their efforts to sustain development gains.

DRR in SDGs

The urgent call for DRR and to strengthen resilience to disasters is reflected in the resolution on the Sustainable Development Goals (SDG)⁹. The 2030 Agenda highlights the fact that DRR is a crosscutting and multi-sectoral issue: 10 out of the 17 goals show direct or indirect links to DRR¹⁰.

As a consequence of the expected increase in the frequency and severity of disasters and of increased vulnerability in many parts of the world, achieving and sustaining the SDGs will require the integration of DRR approaches into national policies and development interventions. Development plans that do not sufficiently address disaster risks and incorporate disaster risk reduction activities will further increase vulnerability to hazards.

Addressing DRR in particularly poor and vulnerable contexts closely abides to the commitment of the Agenda 2030 to Leaving no one behind, aiming to end absolute poverty and allow for development progress.

⁸ ODI 2013: Financing Disaster Risk Reduction – A 20 Year Story of International Aid

⁹ Transforming our world: the 2030 Agenda for Sustainable Development (resolution adopted by the General Assembly on 25 September 2015).

¹⁰ UNISDR, 2015: Disaster Risk Reduction and Resilience in the 2030 Agenda for Sustainable Development (reflection paper prepared by the UN Office for Disaster Risk Reduction).

3. The conceptual framework

Disaster risk reduction aims to make lives and livelihoods safer

3.1. Integrated disaster risk management (IDRM)

SDC is strongly advocating for an integrated disaster risk management (IDRM). IDRM refers to an overall risk assessment process and its components (risk identification, risk analysis and risk evaluation) as well as risk treatment (prevention, preparedness, response, recovery). Natural disasters¹¹ are the manifestation of risks resulting from the combination of an exposure to hazard, the conditions of vulnerability¹² and insufficient capacity or measures to reduce or cope with the potential negative consequences. Even if disasters cannot be completely avoided, their root causes can be addressed and their impacts mitigated.

The overall goal is sustainable development and human welfare that is not compromised by natural hazards.

11 For the definition and explanation of the key terms, refer to the terminology in Annex E.

12 The UNISDR Terminology (see Annex E) explicitly mentions exposure to refer to the physical aspects of vulnerability.



Figure 4: Slope stabilisation measures to mitigate flash floods in the Chail Valley in the Swat District of the north-western Pakistan, in the SDC and WFP Integrated food security and DRR programme. © SDC, Pakistan

Focus on reducing vulnerabilities

To contribute to making communities more resilient, prevailing risks have to be prevented, reduced or transferred to another party. DRR measures aim at avoiding or reducing exposure, reducing vulnerability or reducing the hazard; often they tackle all aspects at the same time.

In many cases, risks grow and new risks arise more as a result of population growth or (urban) expansion of settlements into hazard-prone areas than from a changing hazard situation. Therefore, it is more efficient to focus on the reduction of vulnerabilities (for example with risk-based land-use planning) than on hazard prevention with technical protection measures, which are often not feasible or incur high costs.

Through a systematic approach risks are assessed, evaluated and reduced

The systematic approach of IDRM identifies and assesses the risks (what can happen?), evaluates and prioritises them (what is allowed to happen?) and takes appropriate measures to reduce them (what should be done?). The broad range of measures in the IDRM cycle (see figure 5) has to be continuously reviewed to keep risks at an acceptable level.

The cycle covers measures for prevention and preparedness, e.g. the seismic resistant construction of buildings or training of rescue teams. Response aims at limiting the extent of losses. After an event, both reconstruction measures, e.g. repair of vital facilities such as schools and hospitals, and rehabilitation measures, e.g. restoring livelihoods and supporting the functioning of schools or health centres, have to be undertaken. The reconstruction and rehabilitation measures should be based on event analyses and lessons learnt in order to avoid repeating failures from the past and to reduce possible future losses. Recovery efforts must avoid creating new risks and exacerbating existing ones ('build back better').

Successful integrated disaster risk management considers prevention and mitigation, preparedness, response and recovery as complementary mechanisms that need to be combined in an appropriate way and involve all actors and affected people.

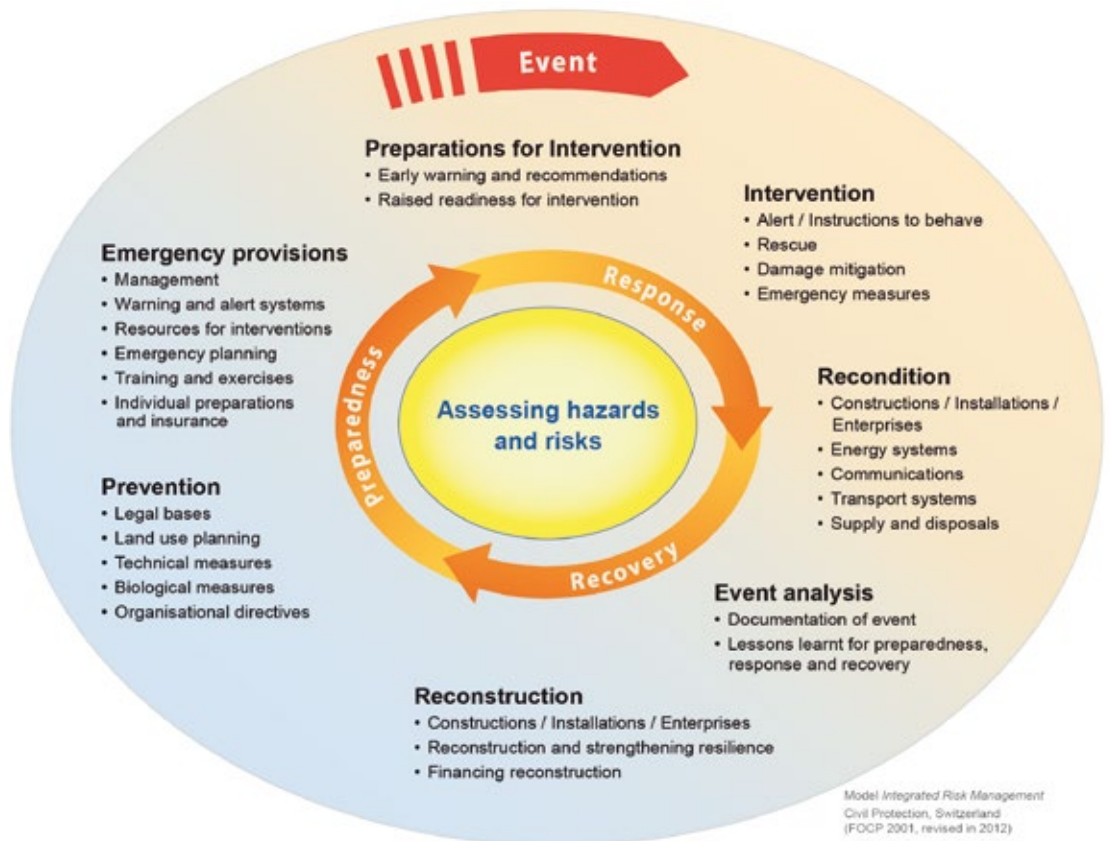


Figure 5: Risk management cycle (Federal Office for Civil Protection, FOCP)

DRR is a governance issue

*“... the benefits of prevention are not tangible; they are the disasters that did NOT happen.”
(Kofi Annan, 1999)*

Disaster risk management is a cost-effective investment in sustainable development

Recovery phase, a window of opportunity for change

Poverty reduction, sustainable development and DRR are mutually supportive objectives. They are strongly influenced by the way public affairs are managed and authority is exercised. SDC's DRR programmes therefore also support countries in making further progress in improving the quality of governance processes in regard to IDRM in accordance with the principles of effectiveness and efficiency, transparency and accountability, participation, equality and non-discrimination, and rule of law at all state levels.

Although increased safety, secured livelihoods and protected assets are often only visible and recognised as such after an event, DRR measures provide additional benefits. They can improve access to services and offer opportunities to improve the livelihoods of individuals and communities over the long term. For example, agricultural techniques that aim at reducing slope erosion may also contribute to higher yields.

Integrated disaster risk management is a cost-effective investment in sustainable development. There is growing evidence of the economic benefits of specific programmes aimed at reducing disaster risk. The evaluation of the effectiveness of SDC DRR programmes¹³ shows that every Swiss franc spent on risk reduction yields a return of four to seven Swiss francs in non-occurring disaster losses.

To be successful, DRR measures have to be carried out well before a disaster hits. It is necessary to move the focus from merely responding to disaster to pursuing pre-disaster prevention and preparedness activities. Unfortunately, it often takes a major disaster to mobilise the necessary political commitment and adequate resources. In such cases, the recovery phase after a disaster can provide a crucial window of opportunity for enduring change (e.g. in environmental management, access to land, water resources or finance, and in power structures) and building resilience to future risks.

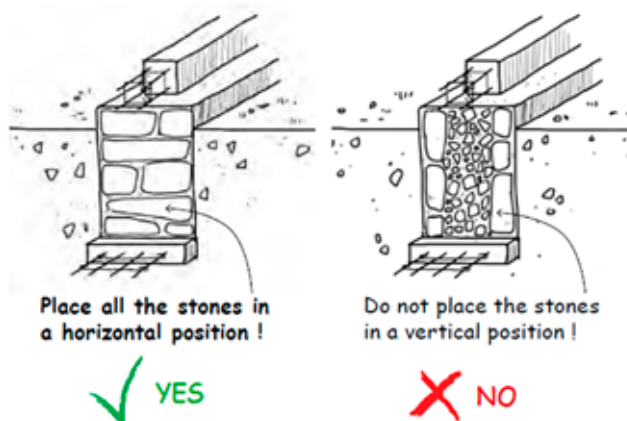


Figure 6: The competence centre for reconstruction in Haiti, which is supported by SDC has developed a guide book on building earthquake-resistant houses using the confined masonry technique.

DRR and climate change adaptation – many synergies!

3.2. DRR and climate change adaptation

Nearly 80 per cent of disasters caused by natural hazards are hydro-meteorological in nature. In the future, climate change will further increase the frequency and intensity of such hazards. In managing these risks, there is a significant convergence between the concepts and practices of DRR and climate change adaptation (CCA). The common space of concern includes increased frequency and/or intensity of climate-related hazards such as floods, storms, droughts and landslides (see Figure 7).

¹³ SDC, 2011: Disaster Risk Reduction in International Cooperation: Switzerland's Contribution to the Protection of Lives and Livelihoods.

DRR and CCA have similar aims and mutual benefits. Both approaches are closely linked as they focus on reducing communities' vulnerability to weather and climate-related hazards by improving their capacities to cope.

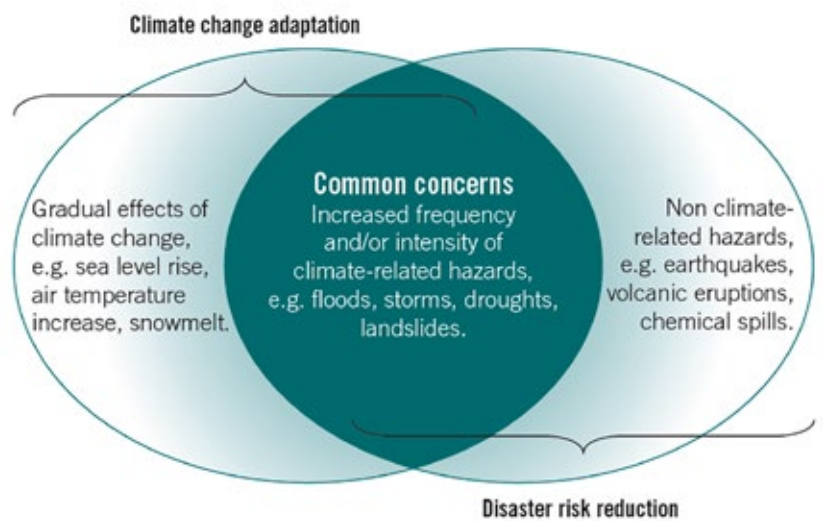


Figure 7: Common concerns of DRR and CCA. © Turnbull et al. 2013

Synergies between the Sendai Framework for DRR and the UNFCCC Paris Climate Agreement

These common challenges have also been recognised by both the international DRR and CCA communities, and efforts have been undertaken to bring them closer together. As a result, both the Paris Agreement on Climate Change and the Sendai Framework for Disaster Risk Reduction (SFDRR) recognise the strong synergies that exist in tackling the challenge of reducing the impacts of weather- and climate-related natural disasters.

4. The SDC approach to disaster risk reduction

SDC's long-standing expertise in DRR

SDC has been active in specific aspects of DRR for many years. Development endeavours such as watershed management, rural development and natural resource management, which have been practised for a long time, also contribute significantly to DRR. Furthermore, SDC considers DRR to be a core element of CCA.

One of the seven strategic objectives of Switzerland's international cooperation is "to prevent and manage the consequences of crisis and disaster, and of fragility; promote conflict transformation"¹⁴. DRR is one of the 12 core themes of SDC and its thematic lead is given institutionally to the Swiss Humanitarian Aid Department.¹⁵

Conceptually, SDC concentrates its DRR activities by adopting a disaster risk management approach which comprises support for an enabling environment for DRR, risk analysis, prevention/mitigation, preparedness for better response, and risk transfer.

Informed by the Sendai Framework for Disaster Risk Reduction, SDC's approach to addressing DRR is based on the three following lines of action:

Implementing targeted DRR programmes

1. SDC assists partner countries (through governments, civil society, communities, the private sector and international organisations) by implementing targeted programmes to reduce disaster risks and increase resilience, and supporting national strategies and initiatives.

Mainstreaming DRR

2. DRR is mainstreamed within SDC and systematically integrated into development and humanitarian programmes and projects: SDC and its partner organisations screen projects, programmes and strategies in development and humanitarian interventions, and incorporate DRR considerations where relevant.

Influencing international policy

3. SDC influences the international DRR policy system and institutions at regional and global level, which in turn aim to reduce risk in disaster-prone countries and enhance institutional partnerships.

Criteria and skills for DRR activities

DRR is particularly relevant in countries and regions where natural events are frequent and intense, where risks for the population and their livelihoods are high, and where coping capacities are low (see Annex B). As DRR implies a long-term perspective and commitment, DRR-targeted programmes are preferably embedded in development cooperation activities. The mainstreaming of DRR is done in all relevant countries and/or sectors where SDC is active (development cooperation and humanitarian aid).

SDC has developed a series of basic strategic documents and tools in the field of DRR and its related fields, such as the Climate, Environment and Disaster Risk Reduction Integration Guidance CEDRIG, the thematic gender checklist DRR and guiding principles on microinsurance for catastrophic events.¹⁶

¹⁴ Dispatch on Switzerland's International Cooperation 2017–2020.

¹⁵ Bundesgesetz über die internationale Entwicklungszusammenarbeit und humanitäre Hilfe/ Federal Act on International Development Cooperation and Humanitarian Aid. SR 974.0

¹⁶ All available on www.shareweb.ch/site/DRR

SDC DRR Network

SDC is committed to ensuring that its programme staff has the appropriate technical, social and process skills and tools to implement the present SDC Guidelines on DRR. Making development and humanitarian efforts disaster-resilient and integrating DRR into the design of strategies, programmes and projects requires: a) risk awareness; b) knowledge of existing natural hazards and vulnerabilities; c) thematic and technical competencies.

In order to meet these requirements, SDC has established an in-house community of practitioners, the DRR Network, that

- promotes learning and passes on professional and methodical knowledge;
- provides theme-related operational advice to the organisational units within the network; and
- capitalises on experience and formulates good practices.

The DRR Network consists of a DRR theme manager, a DRR network focal point and a network moderator (based at the Multilateral Humanitarian Affairs Division of the Humanitarian Aid Department), a core group (composed of focal points at headquarters and the field) and the members (interested SDC staff and partners working in the field of DRR). Tasks of the focal points in the divisions and departments comprise the following:

- identify the potential for DRR in SDC's activities;
- raise staff awareness; and
- contribute to knowledge management.

The network maintains a thematic internet platform at: www.shareweb.ch/site/DRR.

SHA expert group

The Swiss Humanitarian Aid Unit (SHA) has a DRR/environment expert group which provides specialists for programmes and projects, DRR advisers and secondments to partner organisations (under SHA contracts by SDC/HA).

5. Towards the implementation of the three lines of action

5.1. Implementing targeted DRR programmes

a) Conceptual considerations

Capacity building of partners

SDC assists partners – governments, civil society, communities, the private sector and international organisations – in disaster-prone countries in the planning and implementation of targeted DRR activities by means of capacity development and strengthening institutions, organisations and populations. The main objective of a targeted programme is the reduction of risks.

SDC considers an enabling environment for successful DRR to be just as important as concrete DRR measures, and it supports its partners in this respect.

Risk concept and possible measures

Interventions are based on the risk concept: all risks and the corresponding hazards, vulnerabilities and coping capacities are assessed and evaluated ('know your risks'). An in-depth assessment of all prevailing risks and their complex interconnectedness provides the basis on which to decide which risks to address.

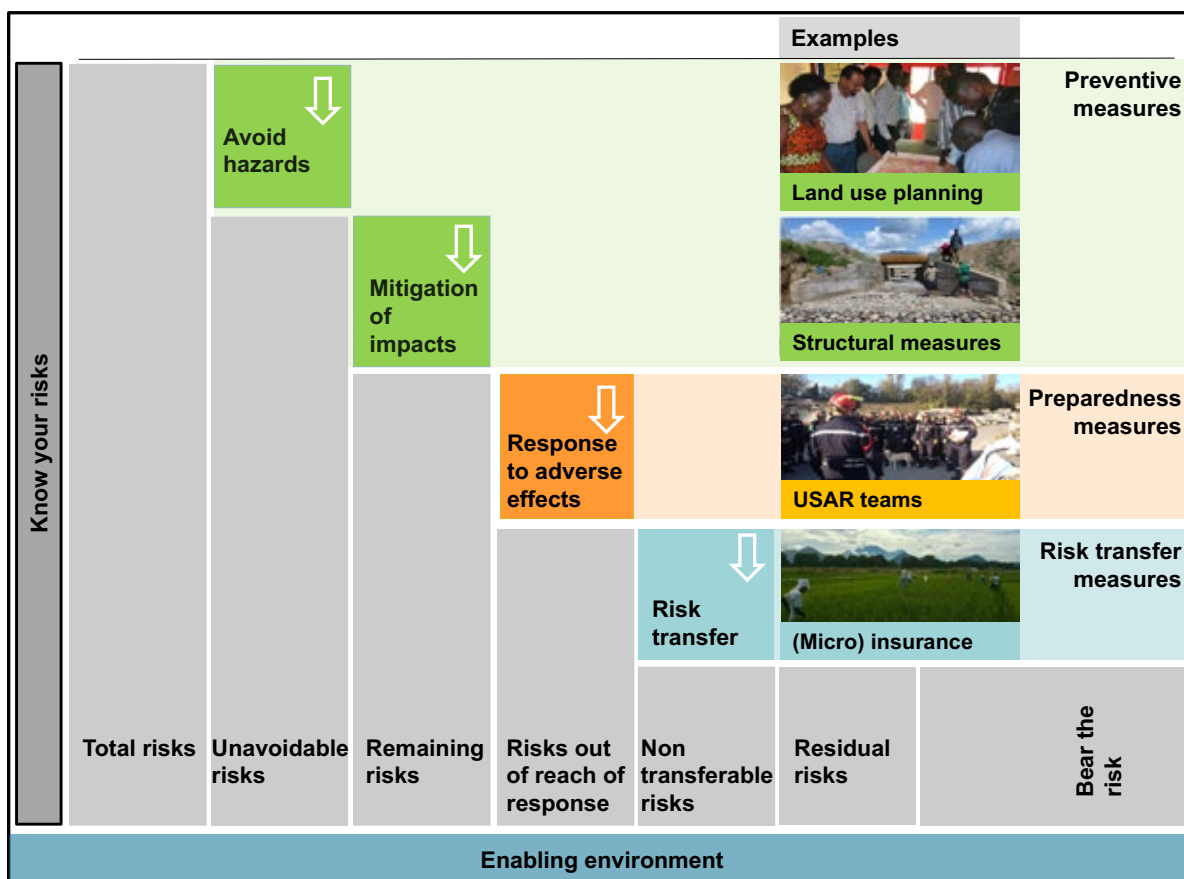


Figure 8: Risk staircase: set of possible measures to reduce and prevent risks. Based on a risk analysis, the total risk is consecutively reduced by prevention/mitigation and preparedness measures and transferred or shared. The residual risk of disaster has to be borne.

DRR relies on a combination of measures

Appropriate measures to reduce existing and prevent new risks¹⁷ are planned and implemented. Figure 8 shows the range of possible measures for risk reduction.

SDC focuses its DRR activities on proactive measures (prevention/mitigation, preparedness for better response, risk transfer). In addition, in the aftermath of disasters, SDC contributes to 'building back better' in order to prevent future risks and losses¹⁸.

b) Activities

Specifically, SDC's partners are supported in the following areas:

Supporting an enabling environment

Enabling environment

SDC supports the development of an enabling environment and recognises it as a precondition for an effective DRR programme.

For example, an appropriate structural and regulatory framework has to go hand in hand with an accountability system and a culture of compliance and rule of law. The definition of clear roles and responsibilities to respond to people's needs, meaningful participation, and corresponding capacities and resources are of particular importance at all relevant administrative levels (municipal, district, national) and for all stakeholders (state authorities, private sector institutions, academic sector, international and non-governmental organisations and civil society).

The political will – regrettably more often present in the aftermath of a disaster – is of equal importance.

Global and regional standards also contribute to raising awareness among national stakeholders about relevant DRR standards and principles, and enable them to promote required change.

For more information about the development of an enabling environment, please refer to 'SDC Governance as transversal theme, a practical guide to integrating governance in SDC sectors and priority themes' (see Annex D - Further reading).

Risk assessment

Risk assessment – know your risks



Figure 9: Natural hazard mapping in Haiti, 2015. © SDC

¹⁷ A distinction is drawn between corrective and prospective disaster risk management. See terminology in Annex E.

¹⁸ Response/emergency assistance as well as recovery/rehabilitation are important direct SDC interventions, which, however, are not limited to natural disasters. Response and recovery are not covered here due to the fact that they follow different (institutional) mechanisms. For further details see SDC, 2010: Reconstruction and Rehabilitation Concept of the Humanitarian Aid of the Swiss Confederation and the Swiss Humanitarian Aid Unit.

To determine the risk profile for a location, area or country, the nature and extent of risk is assessed by analysing potential hazards (multi-hazard approach) and evaluating existing conditions of physical, social, economic, institutional and environmental vulnerability and the available coping capacities. Risk evaluation includes the perception of risks, the weighting of natural risks vis-à-vis other risks, such as health or economic risks, and the willingness to invest in greater safety. This process is known as a risk dialogue and includes all stakeholders concerned, including the local population and authorities (governance issue). Geographic information systems (GIS) and open data platforms are used to provide sound information for decision-making.

Prevention and mitigation measures

Prevention/ mitigation

Preventive and mitigation measures aim to avoid the hazards and mitigate the impact of disasters. Possible measures include:

- introducing land-use planning in the legal framework and supporting the enforcement of land-use regulations in order to avoid using hazard-prone areas for settlement, thus reducing exposure to hazards;
- introducing and supporting the enforcement of building codes for hazard-resistant constructions and infrastructure;
- planning and implementing structural measures, such as flood protection dams, rock-fall protection nets or reforestation;
- strengthening natural resource management and integrated watershed management as means of reducing disaster risks; and
- supporting awareness building, education and training among the population and stakeholders on the risk context.



Figure 10: Raising risk awareness with school children in Bangladesh. © SDC

Preparedness measures

Preparedness for better response

Preparedness aims to ensure an effective response to disasters. The population, communities and authorities, as well as systems (e.g. information and communication systems, critical infrastructure) have to be well organised and prepared to cope adequately with a natural disaster. Possible measures include:

- strengthening crisis management structures (e.g. urban search and rescue teams) and equipment stockpiles;



Figure 11: In the narrow alleyways of the medinas, rapid intervention by residents can be decisive in saving lives. © SDC, Morocco

- the organisation, education and training of emergency services and community members;
- building up and running early warning, alerting and emergency information systems;
- strengthening national meteorological and hydrological services that are responsible for, among other things, the early warning of high-impact weather and climate events;
- building up capacities to monitor losses and damage caused by natural disasters in order to quantify local risks and improve emergency structures;
- developing and implementing contingency and evacuation plans.

Risk sharing and transfer mechanisms

Risk transfer

An essential component of risk reduction is risk transfer. Mechanisms of risk transfer can include:

- insurance and reinsurance;
- catastrophe bonds;
- contingent credit facilities;
- reserve or reinsurance funds.

Insurance is a well-known mechanism based on the principle of solidarity whereby an individual, a company or even a country, by paying a premium, transfers a part of its prevailing risks to a larger community. When a disaster strikes, the affected parties receive an indemnity payment to help it deal with the financial

losses it suffers. This avoids negative coping strategies (e.g. the hasty selling off of productive assets) and allows communities and families to maintain an acceptable level of consumption¹⁹ and to get back to their productive activities as soon as possible, without becoming over-indebted, and hence, even more vulnerable.

Insurance may be an effective and efficient alternative to traditional governmental and non-governmental disaster relief approaches, or at least complement them. Insurance is a useful component in a broader risk management strategy, however it should never be relied on alone, but rather used in combination with preventive and preparedness measures.

For the design and the assessment of agriculture and catastrophe insurance projects, please refer to the SDC Guiding principles on insurance for smallholder farmers and vulnerable households against catastrophic events (see Annex D - Further reading).



Figure 12: Bolivian farmers insure their agricultural production through crop insurance. © SDC, Bolivia

c) Roles and responsibilities for targeted DRR programmes

SDC contributions to DRR are implemented through multilateral cooperation or partner organisations, partnerships with the private sector, collaboration with governments or by direct interventions. SDC can rely on a number of highly competent institutions for technical support (see Annex C).

¹⁹ One of the core goals of insurance is to 'smooth' consumption. In normal years disposable income is somewhat lower (compared to uninsured status) as premiums have to be paid, while during disasters consumption can be maintained at an acceptable level thanks to claims payments. In the context of low-income households, 'consumption' mainly refers to the consumption of basic goods and services.

While the Humanitarian Aid and SHA Department has the legal mandate²⁰ to implement targeted DRR, all SDC departments are encouraged to invest in targeted DRR activities.

Thematically, the Humanitarian Aid and SHA Department has the lead for DRR, while the Global Cooperation Department focuses, i.a., on climate change adaptation (Thematic Network Climate Change and Environment), and the South Cooperation Department on risk transfer measures (Thematic Network Employment and Income).

5.2. Mainstreaming DRR

a) Conceptual considerations

SDC integrates disaster risk concerns into SDC processes and programmes

DRR is central to all development and humanitarian programmes implemented by SDC with the objectives of protecting poverty-reduction and development gains and preventing new risks that may arise as a result of development and humanitarian activities (do-no-harm). DRR considerations have to be integrated in planning and operational processes at an early stage.

Mainstreaming DRR is important for all projects located in a hazard-prone area. Special attention needs to be given to development and humanitarian aid activities that have an impact on land use, such as projects in agriculture, fisheries, forestry, water and sanitation, infrastructure construction and resource management. Other important sectors are migration (with regard to shelter management) and education (with regard to school construction and school disaster management).

SDC makes informed decisions as to whether or not disaster risks are an issue in a specific context and how these risks can be reduced (avoided, mitigated or transferred, see possible measures in chapter 5.1).

Taking DRR into account can be very effective as examples from SDC's programmes show (see boxes).

Mainstreaming example from Mongolia

Sustainable pasture management in Mongolia²¹

Since its transition to a market economy in 1990, privatised livestock grazes on the vast common steppes in Mongolia. As the size of herds steadily increases, pastures are turned into deserts, pushing more herding families into poverty. A harsh climate with consecutive droughts and extremely cold winters is a further threat.

The livelihood projects (2007–2012) focused on herder households and also contributed to DRR: herders were organised into pasture-user groups which developed and applied pasture-management plans to avoid over-grazing, and introduced new practices, including preparing fodder reserves, as well as alternative income opportunities, such as selling yak handicrafts. They are now better equipped to address risks of land degradation and desertification and to handle harsh winters. This case shows how closely interlinked natural resource management, climate change adaptation (CCA) and DRR are.

²⁰ Bundesgesetz über die internationale Entwicklungszusammenarbeit und humanitäre Hilfe/ Federal Act on Development International Cooperation and Humanitarian Aid. SR 974.0 and Dispatch on Switzerland's International Cooperation 2017–2020.

²¹ See also: SDC, 2011: Disaster Risk Reduction in International Cooperation: Switzerland's Contribution to the Protection of Lives and Livelihoods.

Mainstreaming example from Nicaragua

Mainstreaming DRR into water and sanitation systems in Nicaragua²²

The water and sanitation (WASH) sector has been growing in Nicaragua since marginal communities gained access to basic services. At the same time, however, frequent and intense tropical storms and hurricanes are affecting the country's water systems, while more frequent and less predictable droughts and intense deforestation are depriving the Nicaraguan dry zone of the water needed for human consumption and agricultural production over prolonged periods. Natural disasters not only cause direct losses in terms of infrastructure, but the destruction of water supply and sanitation systems can pose a serious threat to human health.

SDC supported the national authorities in reviewing and updating the sectorial guidelines. Risk assessment instruments were incorporated both into existing water projects and those in the stages of conception, design and construction.

In several workshops and courses, professionals and technical staff from the sector institutions validated the guidelines while gaining training at the same time. The regulatory bodies are now preparing mandatory regulations for integrating DRR into WASH projects.

Break the silos with CEDRIG, and integrate climate, environment and natural hazards in one go

b) Instruments

The Climate, Environment and Disaster Risk Reduction Integration Guidance (CEDRIG)²³ helps to determine whether existing and planned strategies, programmes and projects are at risk from climate change, environmental degradation and natural hazards, as well as whether these interventions could further exacerbate greenhouse gas emissions, environmental degradation or risks from natural hazards. CEDRIG is also an online tool that allows storing your results online, creating a team, accessing examples of studies and key documents, sharing with CEDRIG community of practice (see www.cedrig.org). CEDRIG is divided into three modules: CEDRIG Light serves as an initial filter to determine whether an activity faces risks from climate change, environmental degradation or natural hazards, and whether it could have significant negative impacts in terms of greenhouse gas emissions, the environment or natural hazards. The results are used to decide if a detailed assessment should be conducted. CEDRIG Light takes approximately one hour and can be conducted individually.

The modules for CEDRIG Strategic (for strategies and programmes) and CEDRIG Operational (for projects) provide a more detailed assessment of risks and impacts and the identification of concrete measures. They can be conducted in the form of a participatory workshop in the field with all relevant stakeholders. Workshops can vary from one to three days in duration depending upon the scope and inclusion of field visits. Prior to the workshop, an additional in-depth context analysis on climate change, the environment, disaster risks as well as economic and political factors needs to be conducted. CEDRIG is developed and managed jointly by the climate change and environment (CC&E) and DRR networks of SDC. Project managers in the field and at headquarters as well as SDC's project partners or other interested organisations can use the tool.

DRR considerations have to be incorporated into the following SDC instruments where relevant (see Annex B):

- strategies (country and global programme strategies): opening note, concept note, strategy documents, mid-term reviews



Figure 13: The CEDRIG tool is developed and managed jointly by the CC&E and DRR networks of SDC. © SDC

Incorporation of DRR in strategies and credit proposals

²² See also: SDC, 2015: Mainstreaming Disaster Risk Reduction in WASH. Experience in DRR mainstreaming in Nicaragua.

²³ For more information on CEDRIG, visit the website www.cedrig.org

- the project cycle management (PCM), starting with entry proposals, project documents, and credit proposals
- PCM annual planning processes (annual report, annual plan and budget, allocation of human resources).
- Monitoring System for Development-Relevant Changes (MERV).

c) Roles and responsibilities in mainstreaming DRR

The operational units at SDC headquarters (department and divisions) and Swiss cooperation offices or integrated embassies are primarily responsible for mainstreaming DRR into SDC planning and operational processes where required. Each cooperation office may nominate a DRR focal point, who would ideally also cover the themes of climate change and environment with allocated time.

Responsibility of the operational units and cooperation offices

5.3. Influencing international policy and enhancing institutional partnerships

a) Conceptual considerations

In 2015, the international community witnessed some of the most important milestones in DRR in recent decades. In March 2015, the Sendai Framework for Disaster Risk Reduction (SFDRR) was adopted, which will guide action on DRR for the next 15 years.

Growing international commitment



Figure 14: The international community agrees on joint pathways to reduce risks from natural disasters: the Sendai Framework for Disaster Risk Reduction (2015-2030) is the first major agreement on the post-2015 development agenda, with seven targets and four priorities for action. © southerntorch.com

The UN conference in Addis Ababa in July 2015 affirmed the strong political commitment of the international community to financing DRR.

In September 2015, members of the United Nations General Assembly ratified the 2030 Agenda for Sustainable Development. The critical role of building resilient communities in the face of growing climate and disaster risks as a precondition for the success of the Agenda is strongly reflected in the resolution.

In October 2015, 109 States endorsed the Nansen Initiative Protection Agenda, which reunites effective practices on how to better prevent, and prepare for disaster displacement, as well as better protect those affected.

In December 2015, the 21st Conference of the Parties of the United Nations Framework Convention on Climate Change (UNFCCC) adopted a global agreement to address the devastating effects of climate change.

At the 2016 World Humanitarian Summit, nations also committed to improving their resilience in the event of future disasters brought about by growing climate risk.

Need for increased coherence of policy processes

Switzerland supports these important agreements and supports the international system in focusing and coordinating efforts, and enhancing policy coherence.

DRR is a multi-stakeholder issue. Coordinated efforts at all levels are crucial to achieving efficient risk reduction. SDC promotes an improved normative and operational international DRR system that supports institutions at local, national and regional levels in increasing the capacity of disaster-prone countries to take appropriate measures and decisions to reduce the risk of disasters. SDC is committed to supporting its partner countries in implementing the SFDRR.

International DRR partnerships are essential

SDC's multilateral and international DRR partners include the Global Facility for Disaster Reduction and Recovery (GFDRR) hosted by the World Bank, the UN Office for Disaster Reduction (UNISDR), the Global Network of Civil Society Organisations for Disaster Reduction (GNDR), the United Nations Development Programme (UNDP) and the International Federation of Red Cross and Red Crescent Societies (IFRC).

b) Activities

SDC's activities relating to international policy and institutional partnerships include the following:

- promoting coherence in DRR, CCA and multilateral processes and forums in relation to the 2030 Agenda for Sustainable Development, in the High-level Political Forum (HLPF), the UNFCCC, the Red Cross/Red Crescent Movement conferences, and other international frameworks and mechanisms;
- cooperating with the major global development organisations, i.e. the international finance institutions (IFIs), UN organisations and regional institutions to promote DRR financing and to make development activities and processes disaster resilient, notably by integrating DRR into poverty reduction strategy papers, common country assessments and UN development assistance frameworks (UNDAFs) in disaster-prone countries;
- advocating for the integration of DRR aspects in the strategies of humanitarian actors, especially SDC's Humanitarian Aid priority partners, including the World Food Programme (WFP), the UN Office for the Coordination of Humanitarian Affairs (OCHA), the UN Refugee Agency (UNHCR), the UN Children's Fund (UNICEF), the IFRC/ICRC, the UN Relief and Works Agency for Palestine Refugees in the Near East (UNRWA);
- engaging boards, steering and consultative groups/mechanisms, acquiring Swiss chair/co-chair functions where appropriate, and make use of strategic secondments;
- strengthening the global DRR hub in Geneva, which includes the UNISDR secretariat, the World Bank GFDRR Geneva office and others, and making resources available for climate funds useful and accessible for DRR initiatives; and
- long-term financing of relevant and key partner organisations with core contributions, supporting scaling up and mobilising financial resources for more investments through advocacy with governments, private sector actors, funds, foundations, others.

c) Roles and responsibilities in influencing the international policy

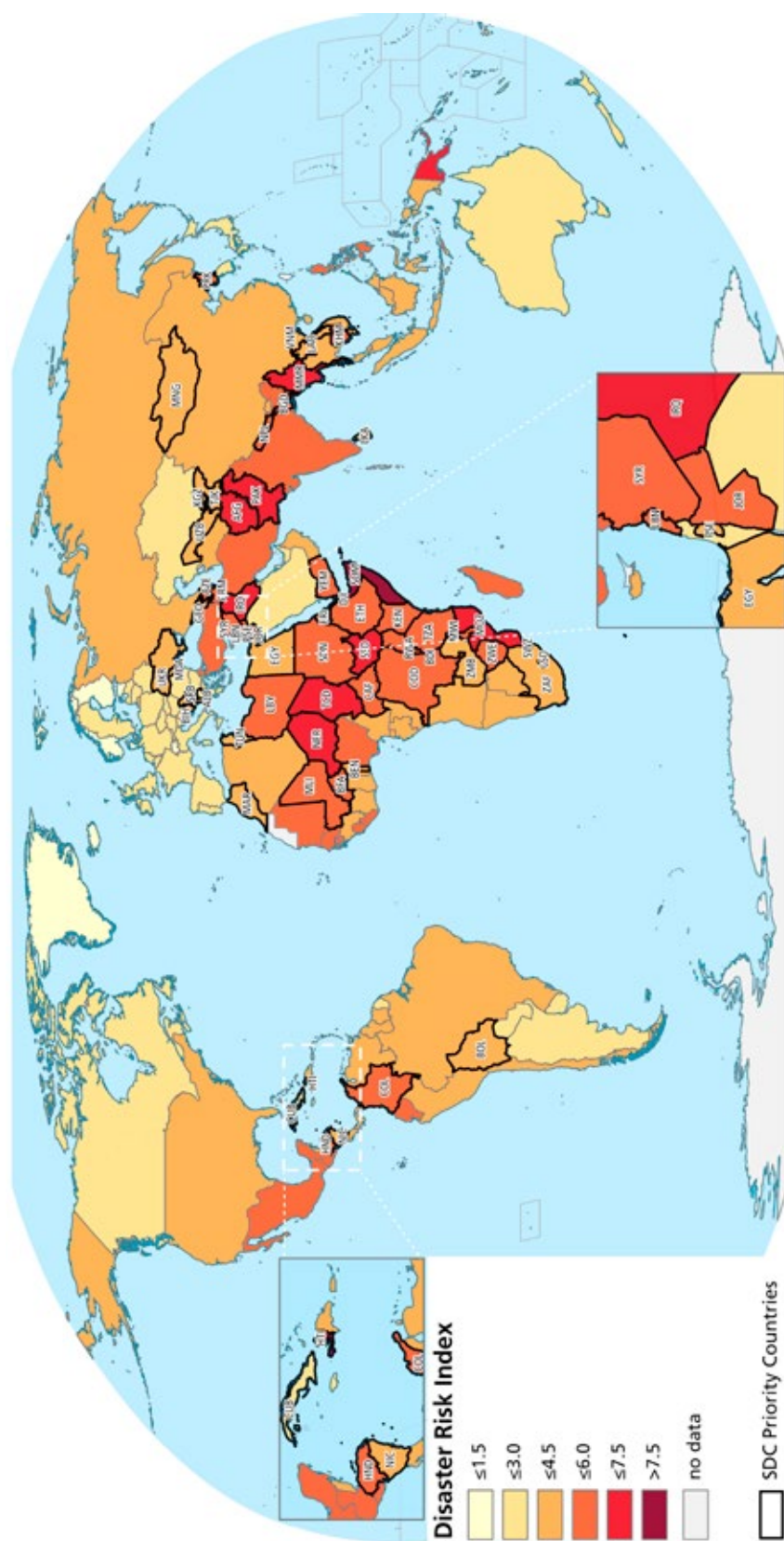
The lead within SDC for supporting the international DRR system is with the Humanitarian Aid Department and its Multilateral Humanitarian Affairs Division (Multi-H) in close collaboration with the other units of SDC and the federal administration. Experiences gained from targeted DRR programmes and mainstreaming within SDC are capitalised and fed back into multilateral processes ('working in triangle').

Participation and engagement in multilateral processes

Annex A: Abbreviations

CCA	Climate change adaptation
CEDRIG	Climate, Environment and Disaster Risk Reduction Integration Guidance
DRR	Disaster risk reduction
EM-DAT	The OFDA/CRED International Disaster Database – www.emdat.be – Université Catholique de Louvain, Brussels, Belgium
ENSO	El Niño Southern Oscillation
GDP	Gross domestic product
GFDRR	Global Facility for Disaster Reduction and Recovery
GNDR	Global Network of Civil Society Organisations for Disaster Reduction
IDRM	Integrated Disaster Risk Management
IFI	International finance institution
IFRC	International Federation of Red Cross and Red Crescent Societies
IPCC	Intergovernmental Panel on Climate Change
MERV	Monitoring System for Development-Relevant Changes
NRM	Natural resource management
OCHA	UN Office for the Coordination of Humanitarian Affairs
PCM	Project Cycle Management
SDC	Swiss Agency for Development and Cooperation
SDG	Sustainable Development Goals
SECO	State Secretariat for Economic Affairs
SFDRR	Sendai Framework for Disaster Risk Reduction
SHA	Swiss Humanitarian Aid Unit
UNCCD	UN Convention to Combat Desertification
UNDAF	UN Development Assistance Framework
UNDP	UN Development Programme
UNFCCC	UN Framework Convention on Climate Change
UNHCR	UN Refugee Agency
UNICEF	UN Children's Fund
UNISDR	UN Office for Disaster Risk Reduction
UNRWA	UN Relief and Works Agency for Palestine Refugees in the Near East
WASH	Water, Sanitation and Hygiene
WFP	UN World Food Programme

Annex B: Disaster risk classification of SDC priority countries and focus regions



Sources: Natural Earth (2014) Thematic data adapted from the INFORM Index for Risk Management v. 0.3.1, October 2016 (excluding human hazards).

General Remarks: The boundaries and names shown, as well as the designations used on this map do not imply official endorsement or acceptance by Switzerland. Data compiled by: FDFA, SDC, HA/SHA, HA-GIS.

Annex C: Main thematic stakeholders in the field of disaster risk reduction

Switzerland (administration, academic institutions, private sector)

Coordination

- › Swiss Consultative Group DRR: composed of representatives from SDC; the Federal Office of the Environment (FOEN), the Federal Office of Civil Protection (FOCP), National Platform for Natural Hazards (PLANAT), State Secretariat for Economic Affairs (SECO), the Swiss NGO DRR Platform, the Swiss cantons, private sector institutions (Swiss Re, Zurich Insurance), academia (Centre for Security Studies ETHZ).

Strategic planning

- › PLANAT, Platform Natural Hazards: strategic outline, www.naturgefahren.ch
- › FOEN, Federal Office for the Environment: overall hazard, risk and safety issues, <https://www.bafu.admin.ch/bafu/de/home/amt/abteilungen-sektionen/abteilung-gefahrenpraevention.html>
- › FOCP, Federal Office for Civil Protection: overall coordination to protect the population and its resources in the event of disasters, emergencies and armed conflict, www.babs.admin.ch

Hazard assessment, monitoring

- › ETHZ/EPFL (various institutes): particular hazards, specific issues, www.ethz.ch, www.epfl.ch
- › WSL (Birmensdorf/ Davos): mountain hazards, avalanches, www.wsl.ch
- › University of Zurich, Geography: issues of the impact of climate change on high-alpine areas, <http://www.geo.uzh.ch/en/units/3g.htm>
- › SED (Swiss Seismological Service): seismic monitoring, www.seismo.ethz.ch

Risk assessment, risk evaluation

- › ETHZ: Earthquake Engineering and Structural Dynamics, <http://www.stojadinovic.ibk.ethz.ch/>
- › ETHZ: Centre of Security Studies (CSS), <http://www.css.ethz.ch/en>
- › Stiftung Risikodialog: www.risiko-dialog.ch
- › University of Lausanne, Institute of Earth Surface Dynamics <http://unil.ch/idyst/home.html>
- › University of Bern, Geography, Research Group for Geomorphology, Natural Hazards and Risk Research, [/www.geography.unibe.ch/research/geomorphology](http://www.geography.unibe.ch/research/geomorphology)

Prevention, mitigation, response, recovery

- › FOEN, Federal Office for the Environment: forest, water, geology, earthquake, www.bafu.admin.ch
- › SECO, State Secretariat for Economic Affairs: water, environment, climate, www.seco.admin.ch
- › BABS, Bundesamt für Bevölkerungsschutz, www.babs.admin.ch
- › VBS, Einsatzkommando Katastrophenhilfe Bereitschaftsverband, <http://www.vtg.admin.ch/de/organisation/heer/lvbgtrttg/kata.html>
- › IRV, Interkantonaler Rückversicherungsverband, www.irv.ch/
- › Swiss Re, www.swissre.com
- › Zurich Insurance Group, www.zurich.com

Education and personnel resources

- FAN, Fachleute Naturgefahren Schweiz, www.fan-info.ch
- CERG-C, Certificat de spécialisation en évaluation et management des Risques Géologiques et risques liés au climat / Specialization certificate for the assessment and management of geological and climate related risk, University of Geneva, www.unige.ch/sciences/terre/mineral/CERG
- EPFL Lausanne: Cooperation & Development Center CODEV; Disaster Risk Reduction <http://cooperation.epfl.ch/UNESCO-Chair/DRR>
- University of Bern, Geography, Research Group for Geomorphology, Natural Hazards and Risk Research: www.geography.unibe.ch/research/geomorphology

Private sector companies

- See: Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) in International Cooperation: A Landscape of Swiss Expertise. PLANAT Publication of Swiss institutions and companies working in the field of DRR.
http://www.planat.ch/fileadmin/PLANAT/planat_pdf/alle_2012/2011-2015/PLANAT_2013_-_Disaster_Risk_Reduction_DRR.pdf

Swiss NGOs

- See: Swiss NGO DRR Platform, <http://drrplatform.org/>

International partners

- ADRC – Asian Disaster Reduction Centre, www.adrc.asia
- CEPREDENAC - Coordination Center for the Prevention of Natural Disasters in Central America (<http://www.cepredenac.org/>)
- GFDRR - Global Facility for Disaster Reduction and Recovery, <https://www.gfdr.org>
- GNDR - Global Network of Civil Society Organisations for Disaster Reduction, <http://www.gndr.org>
- IFRC - International Federation of Red Cross and Red Crescent Societies, <http://www.ifrc.org/en/what-we-do/disaster-management/preparing-for-disaster/risk-reduction/>
- OCHA – United Nations Office for the Coordination of Humanitarian Affairs, <https://www.unocha.org>
- ProVention Consortium, <http://www.proventionconsortium.net>
- UNDP - United Nations Development Programme, <http://www.undp.org/content/undp/en/home/our-work/climate-and-disaster-resilience/overview.html>
- UNISDR – The United Nations Secretariat of the International Strategy for Disaster Risk Reduction, <http://www.unisdr.org>
- WMO – UN World Meteorological Organization, www.wmo.int

Annex D: Further reading

International framework

Paris Agreement on Climate Change (2015), http://unfccc.int/paris_agreement/items/9485.php

Sendai Framework for Disaster Risk Reduction (SFDRR) 2015 – 2030, <http://www.unisdr.org/we/coordinate/sendai-framework>

Transforming our world: the 2030 Agenda for Sustainable Development, Resolution adopted by the General Assembly on 25 September 2015, <https://sustainabledevelopment.un.org/post2015/transformingourworld>

The Agenda for the Protection of Cross-Border Displaced Persons in the Context of Disasters and Climate Change (the Protection Agenda), endorsed by a global intergovernmental consultation on 12-13 October 2015 in Geneva, Switzerland, consolidates the outcomes of a series of regional intergovernmental consultations and civil society meetings convened by the Nansen Initiative. <https://www.nanseninitiative.org/>

Publications of international organisations

BHRC 2003: An Operational Framework for Mainstreaming Disaster Risk Reduction

DFID 2006: Reducing the Risk of Disasters – Helping to Achieve Sustainable Poverty Reduction in a Vulnerable World: A DFID policy paper

Global Facility for Disaster Reduction and Recovery (GFDRR), Oxfam international secretariat, United Nations children's fund (UNICEF), United Nations Development Programme - headquarters (UNDP), 2014: Disaster risk reduction makes development sustainable: a call for action.

Hallegatte, Stephane, Adrien Vogt-Schilb, Mook Bangalore, and Julie Rozenberg. 2017. Unbreakable: Building the Resilience of the Poor in the Face of Natural Disasters. Climate Change and Development Series. Washington, DC: World Bank.

IPCC, 2012: Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change (SREX).

IPCC, 2014: Climate Change 2014: Synthesis Report. A Report of the Intergovernmental Panel on Climate Change.

ODI 2013: Financing Disaster Risk Reduction – A 20 Year Story of International Aid

ProVention Consortium, 2007: Tools for Mainstreaming Disaster Risk Reduction: Guidance Notes for Development Organisations

The World Bank, <http://www.worldbank.org/en/>

Turnbull, Marilise; Sterrett, Charlotte L; Hilleboe, Amy, 2013: Towards resilience: a guide to disaster risk reduction and climate change adaptation. Catholic Relief Service

UNISDR 2005: Hyogo Framework for Action (HFA)

UNISDR, 2015: Disaster Risk Reduction and Resilience in the 2030 Agenda for Sustainable Development. A reflection paper, prepared by the UN Office for Disaster Risk Reduction.

UNISDR, 2015: Global Assessment Report on Disaster Risk Reduction (GAR) 2015.

Publications of Swiss partners

Federal Office for the Environment (FOEN), 2011: "Living with Natural Hazards – Objectives and priorities for action of the FOEN in dealing with natural hazards.

FOEN, 2012: Anpassung an den Klimawandel in der Schweiz. Ziele, Herausforderungen und Handlungsfelder. Erster Teil der Strategie des Bundesrates vom 2. März 2012

FOEN, 2014: Anpassung an den Klimawandel in der Schweiz. Aktionsplan 2014–2019. Zweiter Teil

FOEN, 2016: Umgang mit Naturgefahren in der Schweiz. Bericht des Bundesrats in Erfüllung des Postulats 12.4271 Darbellay vom 14.12.2012.

FOCP (Federal Office for Civil Protection): Nationale Gefährdungsanalyse von Katastrophen und Notlagen.

PLANAT, 2013: Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) in International Cooperation: A Landscape of Swiss Expertise. PLANAT Publication of Swiss institutions and companies working in the field of DRR.

Swiss framework

Dispatch on Switzerland's International Cooperation 2017 – 2020

Bundesgesetz über die internationale Entwicklungszusammenarbeit und humanitäre Hilfe./ Federal Law on Development Cooperation and Humanitarian Aid. SR 974.0

Publications of SDC

SDC, 2017: Gender, Climate Change and Disaster Risk Reduction – Thematic Guidance Sheet

SDC, 2017: Governance as transversal theme, a practical guide to integrating governance in SDC sectors and priority themes.

SDC, 2014: Guiding principles on Insurance for smallholder farmers and vulnerable households against catastrophic events

SDC, 2017: SDC internal Operational Concept Note Preparedness/ USAR Capacity Building

SDC, 2017: SDC Handbook USAR Training Infrastructure

SDC, 2015: Mainstreaming Disaster Risk Reduction in WASH - Experience in DRR mainstreaming in Nicaragua

SDC, 2011: Disaster Risk Reduction in International Cooperation: Switzerland's Contribution to the Protection of Lives and Livelihoods.

SDC, 2010: Reconstruction and Rehabilitation Concept of the Humanitarian Aid of the Swiss Confederation and the Swiss Humanitarian Aid Unit

SDC, 2010: Reconstruction and Rehabilitation Concept of the Humanitarian Aid of the Swiss Confederation and the Swiss Humanitarian Aid Unit

SDC, 2007: Manual for USAR medical units – A guide on how to support and train medical units of local Urban Search and Rescue (USAR) teams

SDC, 2006: Neighborhood Disaster Volunteers (NDV) - NDV resource package - Strengthening civil society for disaster preparedness and response - Part 1: Decision-maker's guide

SDC, 2006: Neighborhood Disaster Volunteers (NDV) - NDV resource package - Part 2: Program Manager's handbook

SDC: CEDRIG, Climate, Environment and Disaster Risk Reduction Integration Guidance - www.cedrig.org

SDC: Thematic GENDER Checklists - Disaster Risk Reduction, www.shareweb.ch/site/DRR

Data sources (disasters and DRR)

PAST DISASTERS

EM-DAT: <http://emdat.be>: # deaths, affected people, economic losses (by country and type of hazard)

DESINVENTAR: more detailed, covers 82+ countries (hosted by UNISDR) <http://www.desinventar.net>

Germanwatch Global Climate Risk Index (extreme weather events, deaths & direct losses): <http://germanwatch.org/en/cri>

Global Network for Civil Society Organisations for Disaster Reduction, "Views from the Frontline", <http://gndr.org/frontline.html>

Munich RE NatCatSERVICE: <http://www.munichre.com/en/reinsurance/business/non-life/natcatservice/annual-statistics/index.html> (requires registration for datasets older than the last year)

RISK BY COUNTRY

INFORM Index for Risk Management (IASC – EU/EC): <http://www.inform-index.org/>

World Risk Report (Entwicklung Hilft - UNU) <http://worldriskreport.entwicklung-hilft.de/WorldRiskIndex.worldriskindex.0.html>

Global Assessment Reports (UNISDR), every 2 years, by country: <http://www.preventionweb.net/english/countries/>

GFDRR Climate Risk and Adaptation Country Profiles (88 countries): http://sdwebx.worldbank.org/climate-portalb/home.cfm?page=country_profile

PORTALS / GATEWAYS TO DISASTER / RISK INFORMATION

GRIP (Global Risk Information Platform) – hosted by UNDP: - <http://www.gripweb.org/gripweb/?q=about-grip>
<http://www.gripweb.org/gripweb/?q=countries-risk-information/continents-regions/global>

The Humanitarian Data Exchange : <https://data.hdx.rwlab.org/>

HUMANITARIAN RESPONSE

Global information on humanitarian responses: <https://www.humanitarianresponse.info/home>

Global Disaster Alert and Coordination System / Virtual OSOCC: <https://vosocc.unocha.org/>

Annex E: Terminology relating to disaster risk reduction (selection)

Recommendations of the open-ended intergovernmental expert working group, endorsed in 2017 by the UN General Assembly Resolution A/RES/71/276

Build back better	<p>The use of the recovery, rehabilitation and reconstruction phases after a disaster to increase the resilience of nations and communities through integrating disaster risk reduction measures into the restoration of physical infrastructure and societal systems, and into the revitalisation of livelihoods, economies and the environment.</p> <p><i>Annotation: The term 'societal' will not be interpreted as a political system of any country.</i></p>
Capacity	<p>The combination of all the strengths, attributes and resources available within an organisation, community or society to manage and reduce disaster risks and strengthen resilience.</p> <p><i>Annotation: Capacity may include infrastructure, institutions, human knowledge and skills, and collective attributes such as social relationships, leadership and management.</i></p> <p>Coping capacity is the ability of people, organisations and systems, using available skills and resources, to manage adverse conditions, risk or disasters. The capacity to cope requires continuing awareness, resources and good management, both in normal times as well as during disasters or adverse conditions. Coping capacities contribute to the reduction of disaster risks.</p> <p>Capacity assessment is the process by which the capacity of a group, organisation or society is reviewed against desired goals, where existing capacities are identified for maintenance or strengthening and capacity gaps are identified for further action.</p> <p>Capacity development is the process by which people, organisations and society systematically stimulate and develop their capacities over time to achieve social and economic goals. It is a concept that extends the term of capacity-building to encompass all aspects of creating and sustaining capacity growth over time. It involves learning and various types of training, but also continuous efforts to develop institutions, political awareness, financial resources, technology systems and the wider enabling environment.</p>
Disaster	<p>A serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts.</p> <p><i>Annotations: The effect of the disaster can be immediate and localised, but is often widespread and could last for a long period of time. The effect may test or exceed the capacity of a community or society to cope using its own resources, and therefore may require assistance from external sources, which could include neighbouring jurisdictions, or those at the national or international levels.</i></p> <p>Emergency is sometimes used interchangeably with the term disaster, as, for example, in the context of biological and technological hazards or health emergencies, which, however, can also relate to hazardous events that do not result in the serious disruption of the functioning of a community or society.</p> <p>Disaster damage occurs during and immediately after the disaster. This is usually measured in physical units (e.g. square meters of housing, kilometres of roads, etc.) and describes the total or partial destruction of physical assets, the disruption of basic services and damages to sources of livelihood in the affected area.</p> <p>Disaster impact is the total effect, including negative effects (e.g. economic losses) and positive effects (e.g., economic gains) of a hazardous event or a disaster. The term includes economic, human and environmental impacts, and may include death, injuries, disease and other negative effects on human physical, mental and social well-being.</p> <p><i>For the purpose of the scope of the Sendai Framework for Disaster Risk Reduction 2015-2030 (para. 15), the following terms are also considered:</i></p> <p><i>Small-scale disaster: a type of disaster only affecting local communities which require assistance beyond the affected community.</i></p> <p><i>Large-scale disaster: a type of disaster affecting a society which requires national or international assistance.</i></p> <p><i>Frequent and infrequent disasters: depend on the probability of occurrence and the return period of a given hazard and its impacts. The impact of frequent disasters could be cumulative, or become chronic for a community or a society.</i></p> <p><i>A slow-onset disaster is defined as one that emerges gradually over time. Slow-onset disasters could be associated with, e.g. drought, desertification, sea-level rise, epidemic disease.</i></p> <p><i>A sudden-onset disaster is one triggered by a hazardous event that emerges quickly or unexpectedly. Sudden-onset disasters could be associated with, e.g. earthquake, volcanic eruption, flash flood, chemical explosion, critical infrastructure failure, transport accident.</i></p>

Disaster risk	<p>The potential loss of life, injury, or destroyed or damaged assets which could occur to a system, society or a community in a specific period of time, determined probabilistically as a function of hazard, exposure, vulnerability and capacity.</p> <p><i>Annotation: The definition of disaster risk reflects the concept of hazardous events and disasters as the outcome of continuously present conditions of risk. Disaster risk comprises different types of potential losses which are often difficult to quantify. Nevertheless, with knowledge of the prevailing hazards and the patterns of population and socioeconomic development, disaster risks can be assessed and mapped, in broad terms at least.</i></p> <p><i>It is important to consider the social and economic contexts in which disaster risks occur and that people do not necessarily share the same perceptions of risk and their underlying risk factors.</i></p> <p>Acceptable risk, or tolerable risk, is therefore an important sub-term; the extent to which a disaster risk is deemed acceptable or tolerable depends on existing social, economic, political, cultural, technical and environmental conditions. In engineering terms, acceptable risk is also used to assess and define the structural and non-structural measures that are needed in order to reduce possible harm to people, property, services and systems to a chosen tolerated level, according to codes or ‘accepted practice’ which are based on known probabilities of hazards and other factors.</p> <p>Residual risk is the disaster risk that remains even when effective disaster risk reduction measures are in place, and for which emergency response and recovery capacities must be maintained. The presence of residual risk implies a continuing need to develop and support effective capacities for emergency services, preparedness, response and recovery, together with socioeconomic policies such as safety nets and risk transfer mechanisms, as part of a holistic approach.</p>
Disaster risk management	<p>Disaster risk management is the application of disaster risk reduction policies and strategies to prevent new disaster risk, reduce existing disaster risk and manage residual risk, contributing to the strengthening of resilience and reduction of disaster losses.</p> <p><i>Annotation: Disaster risk management actions can be distinguished between prospective disaster risk management, corrective disaster risk management and compensatory disaster risk management, also called residual risk management.</i></p>
Disaster risk reduction	<p>Disaster risk reduction is aimed at preventing new and reducing existing disaster risk and managing residual risk, all of which contribute to strengthening resilience and therefore to the achievement of sustainable development.</p> <p><i>Annotation: Disaster risk reduction is the policy objective of disaster risk management, and its goals and objectives are defined in disaster risk reduction strategies and plans.</i></p> <p>Disaster risk reduction strategies and policies define goals and objectives across different timescales and with concrete targets, indicators and time frames. In line with the Sendai Framework for Disaster Risk Reduction 2015-2030, these should be aimed at preventing the creation of disaster risk, the reduction of existing risk and the strengthening of economic, social, health and environmental resilience.</p> <p><i>A global, agreed policy of disaster risk reduction is set out in the United Nations endorsed Sendai Framework for Disaster Risk Reduction 2015-2030, adopted in March 2015, whose expected outcome over the next 15 years is: “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”.</i></p>
Early warning system	<p>An integrated system of hazard monitoring, forecasting and prediction, disaster risk assessment, communication and preparedness activities systems and processes that enables individuals, communities, governments, businesses and others to take timely action to reduce disaster risks in advance of hazardous events.</p> <p><i>Annotations: Effective ‘end-to-end’ and ‘people-centred’ early warning systems may include four interrelated key elements: (1) disaster risk knowledge based on the systematic collection of data and disaster risk assessments; (2) detection, monitoring, analysis and forecasting of the hazards and possible consequences; (3) dissemination and communication, by an official source, of authoritative, timely, accurate and actionable warnings and associated information on likelihood and impact; and (4) preparedness at all levels to respond to the warnings received. These four interrelated components need to be coordinated within and across sectors and multiple levels for the system to work effectively and to include a feedback mechanism for continuous improvement. Failure in one component or a lack of coordination across them could lead to the failure of the whole system.</i></p> <p>Multi-hazard early warning systems address several hazards and/or impacts of similar or different type in contexts where hazardous events may occur alone, simultaneously, cascadingly or cumulatively over time, and taking into account the potential interrelated effects. A multi-hazard early warning system with the ability to warn of one or more hazards increases the efficiency and consistency of warnings through coordinated and compatible mechanisms and capacities, involving multiple disciplines for updated and accurate hazards identification and monitoring for multiple hazards.</p>
Exposure	<p>The situation of people, infrastructure, housing, production capacities and other tangible human assets located in hazard-prone areas.</p> <p><i>Annotation: Measures of exposure can include the number of people or types of assets in an area. These can be combined with the specific vulnerability and capacity of the exposed elements to any particular hazard to estimate the quantitative risks associated with that hazard in the area of interest.</i></p>

Hazard	<p>A process, phenomenon or human activity that may cause loss of life, injury or other health impacts, property damage, social and economic disruption or environmental degradation.</p> <p><i>Annotations: Hazards may be natural, anthropogenic or socionatural in origin. Natural hazards are predominantly associated with natural processes and phenomena. Anthropogenic hazards, or human-induced hazards, are induced entirely or predominantly by human activities and choices. This term does not include the occurrence or risk of armed conflicts and other situations of social instability or tension which are subject to international humanitarian law and national legislation. Several hazards are socionatural, in that they are associated with a combination of natural and anthropogenic factors, including environmental degradation and climate change.</i></p> <p><i>Hazards may be single, sequential or combined in their origin and effects. Each hazard is characterised by its location, intensity or magnitude, frequency and probability. Biological hazards are also defined by their infectiousness or toxicity, or other characteristics of the pathogen such as dose-response, incubation period, case fatality rate and estimation of the pathogen for transmission.</i></p> <p>Multi-hazard means (1) the selection of multiple major hazards that the country faces, and (2) the specific contexts where hazardous events may occur simultaneously, cascadingly or cumulatively over time, and taking into account the potential interrelated effects.</p> <p><i>Hazards include (as mentioned in the Sendai Framework for Disaster Risk Reduction 2015-2030, and listed in alphabetical order) biological, environmental, geological, hydrometeorological and technological processes and phenomena.</i></p> <p>Biological hazards are of organic origin or conveyed by biological vectors, including pathogenic microorganisms, toxins and bioactive substances. Examples are bacteria, viruses or parasites, as well as venomous wildlife and insects, poisonous plants and mosquitoes carrying disease-causing agents.</p> <p>Environmental hazards may include chemical, natural and biological hazards. They can be created by environmental degradation or physical or chemical pollution in the air, water and soil. However, many of the processes and phenomena that fall into this category may be termed drivers of hazard and risk rather than hazards in themselves, such as soil degradation, deforestation, loss of biodiversity, salinisation and sea-level rise.</p> <p>Geological or geophysical hazards originate from internal earth processes. Examples are earthquakes, volcanic activity and emissions, and related geophysical processes such as mass movements, landslides, rockslides, surface collapses and debris or mud flows. Hydrometeorological factors are important contributors to some of these processes. Tsunamis are difficult to categorise: although they are triggered by undersea earthquakes and other geological events, they essentially become an oceanic process that is manifested as a coastal water-related hazard.</p> <p>Hydrometeorological hazards are of atmospheric, hydrological or oceanographic origin. Examples are tropical cyclones (also known as typhoons and hurricanes); floods, including flash floods; drought; heatwaves and cold spells; and coastal storm surges. Hydrometeorological conditions may also be a factor in other hazards such as landslides, wildland fires, locust plagues, epidemics and in the transport and dispersal of toxic substances and volcanic eruption material.</p> <p>Technological hazards originate from technological or industrial conditions, dangerous procedures, infrastructure failures or specific human activities. Examples include industrial pollution, nuclear radiation, toxic wastes, dam failures, transport accidents, factory explosions, fires and chemical spills. Technological hazards also may arise directly as a result of the impacts of a natural hazard event.</p>
Mitigation	<p>The lessening or minimising of the adverse impacts of a hazardous event.</p> <p><i>Annotation: The adverse impacts of hazards, in particular natural hazards, often cannot be prevented fully, but their scale or severity can be substantially lessened by various strategies and actions. Mitigation measures include engineering techniques and hazard-resistant construction as well as improved environmental and social policies and public awareness. It should be noted that, in climate change policy, ‘mitigation’ is defined differently, and is the term used for the reduction of greenhouse gas emissions that are the source of climate change.</i></p>
Preparedness	<p>The knowledge and capacities developed by governments, response and recovery organisations, communities and individuals to effectively anticipate, respond to and recover from the impacts of likely, imminent or current disasters.</p> <p><i>Annotation: Preparedness action is carried out within the context of disaster risk management and aims to build the capacities needed to efficiently manage all types of emergencies and achieve orderly transitions from response to sustained recovery.</i></p> <p><i>Preparedness is based on a sound analysis of disaster risks and good linkages with early warning systems, and includes such activities as contingency planning, the stockpiling of equipment and supplies, the development of arrangements for coordination, evacuation and public information, and associated training and field exercises. These must be supported by formal institutional, legal and budgetary capacities. The related term ‘readiness’ describes the ability to quickly and appropriately respond when required.</i></p> <p>A preparedness plan establishes arrangements in advance to enable timely, effective and appropriate responses to specific potential hazardous events or emerging disaster situations that might threaten society or the environment.</p>
Prevention	<p>Activities and measures to avoid existing and new disaster risks.</p> <p><i>Annotations: Prevention (i.e. disaster prevention) expresses the concept and intention to completely avoid potential adverse impacts of hazardous events. While certain disaster risks cannot be eliminated, prevention aims at reducing vulnerability and exposure in such contexts where, as a result, the risk of disaster is removed. Examples include dams or embankments that eliminate flood risks, land-use regulations that do not permit any settlement in high-risk zones, seismic engineering designs that ensure the survival and function of a critical building in any likely earthquake and immunisation against vaccine-preventable diseases. Prevention measures can also be taken during or after a hazardous event or disaster to prevent secondary hazards or their consequences, such as measures to prevent the contamination of water.</i></p>

Reconstruction	The medium- and long-term rebuilding and sustainable restoration of resilient critical infrastructures, services, housing, facilities and livelihoods required for the full functioning of a community or a society affected by a disaster, aligning with the principles of sustainable development and 'build back better', to avoid or reduce future disaster risk.
Recovery	The restoring or improving of livelihoods and health, as well as economic, physical, social, cultural and environmental assets, systems and activities, of a disaster-affected community or society, aligning with the principles of sustainable development and 'build back better', to avoid or reduce future disaster risk.
Rehabilitation	The restoration of basic services and facilities for the functioning of a community or a society affected by a disaster.
Resilience	The ability of a system, community or society exposed to hazards to resist, absorb, accommodate, adapt to, transform 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 through risk management.
Response	<p>Actions taken directly before, 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.</p> <p><i>Annotation: Disaster response is predominantly focused on immediate and short-term needs and is sometimes called disaster relief. Effective, efficient and timely response relies on disaster risk-informed preparedness measures, including the development of the response capacities of individuals, communities, organisations, countries and the international community.</i></p> <p><i>The institutional elements of response often include the provision of emergency services and public assistance by public and private sectors and community sectors, as well as community and volunteer participation. 'Emergency services' are a critical set of specialised agencies that have specific responsibilities in serving and protecting people and property in emergency and disaster situations. They include civil protection authorities and police and fire services, among many others. The division between the response stage and the subsequent recovery stage is not clear-cut. Some response actions, such as the supply of temporary housing and water supplies, may extend well into the recovery stage.</i></p>
Risk transfer	<p>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 resources from the other party after a disaster occurs, in exchange for ongoing or compensatory social or financial benefits provided to that other party.</p> <p><i>Annotation: Insurance is a well-known form of risk transfer, where coverage of a risk is obtained from an insurer in exchange for ongoing premiums paid to the insurer. Risk transfer can occur informally within family and community networks where there are reciprocal expectations of mutual aid by means of gifts or credit, as well as formally, wherein governments, insurers, multilateral banks and other large risk-bearing entities establish mechanisms to help cope with losses in major events. Such mechanisms include insurance and reinsurance contracts, catastrophe bonds, contingent credit facilities and reserve funds, where the costs are covered by premiums, investor contributions, interest rates and past savings, respectively.</i></p>
Structural and non-structural measures	<p>Structural measures are any physical construction to reduce or avoid possible impacts of hazards, or the application of engineering techniques or technology to achieve hazard resistance and resilience in structures or systems. Non-structural measures are measures not involving physical construction which use knowledge, practice or agreement to reduce disaster risks and impacts, in particular through policies and laws, public awareness raising, training and education.</p> <p><i>Annotation: Common structural measures for disaster risk reduction include dams, flood levies, ocean wave barriers, earthquake-resistant construction and evacuation shelters. Common non-structural measures include building codes, land-use planning laws and their enforcement, research and assessment, information resources and public awareness programmes. Note that in civil and structural engineering, the term 'structural' is used in a more restricted sense to mean just the load-bearing structure, and other parts such as wall cladding and interior fittings are termed 'non-structural'.</i></p>
Vulnerability	<p>The conditions determined by physical, social, economic and environmental factors or processes which increase the susceptibility of an individual, a community, assets or systems to the impacts of hazards.</p> <p><i>Annotation: For positive factors which increase the ability of people to cope with hazards, see also the definitions of 'Capacity' and 'Coping capacity'.</i></p>

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