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Swiss Agency for Development
and Cooperation SDC

CEDRIG

Climate, Environment and Disaster Risk Reduction Integration Guidance

Guidance to improve resilience and reduce impacts in development
cooperation and humanitarian aid

Part I Aim, Concept and Support Material of CEDRIG



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1. Motivation and scope

1.1. Aim and structure of the guidance

The Swiss Agency for Development and Cooperation (SDC) aims to systematically integrate climate, environment and disaster risk reduction (DRR) into development cooperation and humanitarian aid in order to enhance the overall resilience of systems and communities. The obligation regarding climate change is in line with the commitment of the Organisation for Economic Co-operation and Development (OECD) members on how to “work to better integrate climate change adaptation in development planning and assistance, both with their own governments and in activities undertaken with partner countries”. The obligation regarding DRR is in line with the Hyogo Framework for Action (HFA), which has also been signed by Switzerland. The so called **Climate, Environment and Disaster Risk Reduction Integration Guidance CEDRIG** is an approach to support SDC staff and their project partners in analysing whether existing and planned cooperation strategies, programmes and projects are at risk from disasters emanating from climate variability, climate change, environmental degradation and/or tectonic activities, as well as whether they have an impact on greenhouse gas (GHG) emissions and/or the environment. This guidance is structured in two main parts:

- › **Part I** outlines the **rationale** and **framework** of SDC’s CEDRIG and provides the user with procedural information about the approach, key definitions and explanations as well as supporting materials.
- › **Part II** contains the **practical handbook**. This is the **core part** of the guidance and shall guide conduct SDC staff and operational partners through the process of how to screen and assess whether strategies, programmes or projects are at significant risk from disasters emanating from climate variability, climate change, environmental degradation and/or tectonic activities and whether they have a significant impact on GHG emissions and/or the environment. The handbook is a **self-explanatory and hands-on guidance** which leads the user through the process of CEDRIG.

1.2. Rationale of CEDRIG

Tackling disaster risk emanating from climate variability, climate change, environmental degradation and tectonic activities is widely perceived as one of the greatest challenges faced today. These risks significantly influence the resilience of systems and communities. Developing countries are particularly vulnerable to those disasters risks due to their high dependence on natural resources and limited coping capacity. Hence, climate change, environmental degradation and natural disasters pose an increasing challenge to meeting sustainable development goals and seriously undermine core development priorities such as poverty alleviation. The development and humanitarian aid community is also conscious on their projects’ impact on GHG emissions and the environment.

During the last years, different guidelines and tools were elaborated by development agencies to help the integration of climate change adaptation / mitigation and DRR into development cooperation¹. The integration of environmental concerns has normally been pursued separately. SDC has developed a joint approach which targets climate, environment and DRR jointly and is applicable to SDC specific procedures.

¹ A. Olhoff and C. Schaer 2010: A Stocktaking of Tools and Guidelines to Mainstream Climate Change Adaptation provided by the UNDP provides an overview of tools and concepts.

1.3. Setting the scene and defining key terms

Climate change, environmental degradation and natural disasters are posing a challenge to development cooperation and humanitarian aid as they can have a negative influence on meeting sustainable development goals and core development priorities. Development cooperation and humanitarian aid can address this problem with two different approaches. First, they can assess the potential risks from disasters emanating from climate variability, climate change, environmental degradation and/or tectonic activities and try to reduce these risks (risk perspective). Second, they can focus on the negative impacts, which development and humanitarian aid activities might have on GHG emissions and/or the environment and try to reduce them (impact perspective). In the following chapters, these two perspectives are explained and key terms are defined.

1.3.1. Risk perspective

Defining of key terms

The following Box 1 outlines the key terms used within the risk perspective.

Box 1 - Key terms for the risk perspective

- › **Climate change:** A change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes or external forcings or to persistent anthropogenic changes in the composition of the atmosphere or in land use” (according to UN ISDR 2009).
- › **Climate variability:** Refers to variations in the mean state and other statistics of the climate on all temporal and spatial scales beyond that of individual weather events (IPCC 2007).
- › **Environmental degradation:** Process induced by human behaviour and activities that damages natural resources or adversely alters natural processes or ecosystems (e.g. land degradation, deforestation, desertification, loss of biodiversity, land, water and air pollution, ozone depletion) (UN ISDR 2004).
- › **Tectonic activity:** Natural earth process or phenomena that include processes of endogenous origin or tectonic or exogenous origin, such as mass movements (UN ISDR 2004).
- › **Hazard:** A dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage (UN ISDR 2009) (e.g. floods, mudflows, drought, desertification, temperature extremes, snow avalanches, earthquakes, tsunamis, mass movements etc.).
- › **Vulnerability:** The characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard¹ (UN ISDR 2009). The vulnerability is lower when there are positive factors, which increase the ability of people to cope with hazards (**copng capacity or adaptive capacity**)².
- › **Risk:** The combination of the probability of an event and its negative consequences (UN ISDR 2009).
- › **Disaster:** Natural disasters can be categorized in two types: (1) slow-onset disasters, that take a long time to produce emergency conditions, for instance natural disasters such as drought, and (2) rapid-onset disasters for which there is little or no warning like earthquakes, hurricanes or floods. A serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources. It results from the combinations of the exposure to a hazard, conditions of vulnerability and insufficient capacity or measures to reduce the potential negative consequences (UN ISDR 2009).
- › **Disaster Risk:** The potential disaster losses, in lives, health status, livelihoods, assets and services, which could occur to a particular community or a society over some specified future time period (UN ISDR 2009). The following definition is used for disaster risk: Disaster Risk= Hazard*Vulnerability. This means that disaster risk increases respectively decreases in line with the probability and gravity of the hazard and the vulnerability.
- › **Resilience:** 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 (UN ISDR 2009).
- › **Disaster Risk Reduction:** The concept and practice of reducing disaster risks by systematically analysing and managing the causal factors of disasters. These include reduced exposure to hazards, lesser vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events (UN ISDR 2009).
- › **Adaptation (to climate change):** The adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities (IPCC 2007b).³
- › **Adaptation (to degraded environments):** The broader concept of adaptation also applies to non-climatic factors and can hence also be used for environmental degradation.

2 As an example: Florida faces intense and frequent physical hazards such as floods and storms but the vulnerability is lower compared to locations with similar hazards (e.g. due to good status of information, good public evacuation programmes etc.). Hence, the overall risk is lower compared to locations with similar hazards and high vulnerabilities.

3 In this handbook, both terms are used jointly addressing both concepts of the DRR community (immediate reactions, decision-making and dealing with the hazard impact) as well as the climate change adaptation community (adjustments to changing conditions or changing environment in the medium-and long-term).

Disaster risk and its influencing factors

The risk perspective addresses the disaster risk emanating from climate variability, climate change, environmental degradation and/or tectonic activities. The key concept of the risk perspective is **disaster risk**, which results from a combination of different factors as outlined in Figure 1.

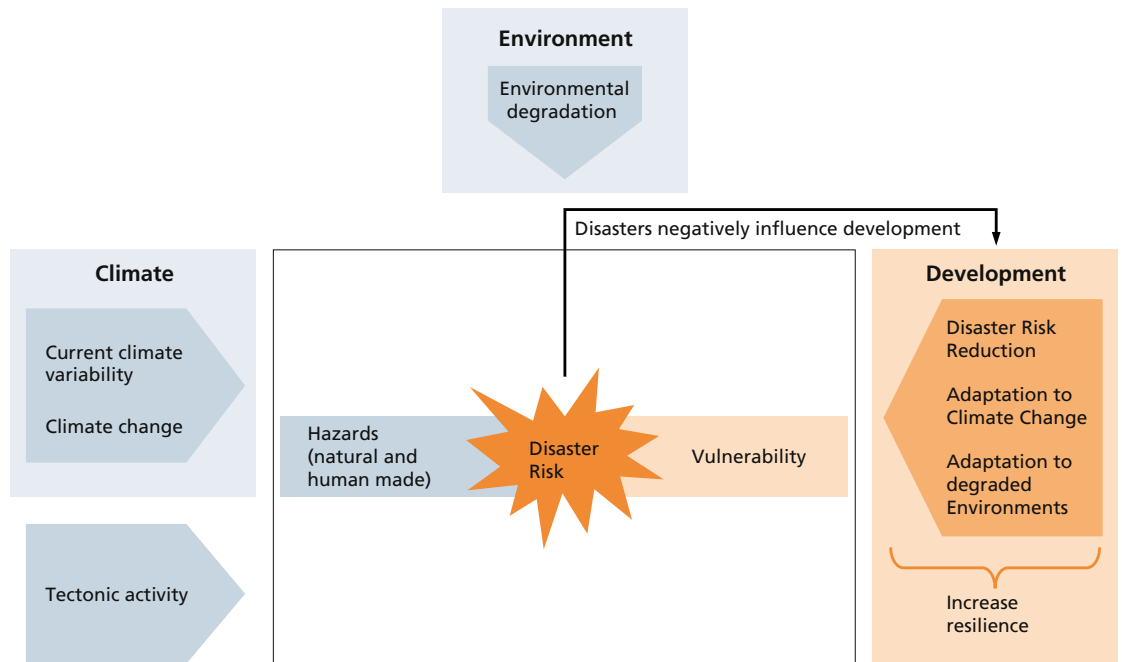


Figure 1 Key terms to the risk perspective. Due to practical reasons, current climate change, climate variability and weather extremes are not anymore mentioned separately. Hereinafter it is only referred to climate change. Source: adapted from IPCC 2012.

Climate change, current climate variability as well as weather extremes (hereinafter not anymore mentioned separately, refer to Box 2), environmental degradation and tectonic activities may cause hazards and in some cases intensify them. Climate change, for instance, does not only manifest itself through changes in the average weather conditions but also intensifies hazards such as e.g. floods, droughts, heat waves or cyclones. Environmental degradation, meant holistically including degradation of resources and pollution, might also influence hazards.

Vulnerability defines how susceptible a community or system is to the damaging effects of a hazard. The lower the vulnerability, the higher the resilience, means that the ability of a system to deal with the effects of a hazard is greater. All systems or communities have inherent vulnerability, which can however be influenced in a positive or negative way. Climate change, environmental degradation and tectonic activities usually influence vulnerability negatively.

Disaster risk can be reduced through **adaptation to climate change, adaptation to degraded environments⁴ and DRR**. These strategies have several overlaps and similarities and all together contribute to increase the resilience of systems and communities. In the following, adaptation is always referred to both adaptation to climate change and adaptation to degraded environments.

Box 2 - Climate variability & climate change

It is important to highlight that current climate variability and future climate change is posing a challenge for development cooperation and humanitarian aid. This means that one has to respond to the total risk and not only to the incremental risk due to climate change. In fact there is no need to differentiate between climate variability and climate change but rather take into account the total risk from climate. Generally it is virtually not possible to assess the risks attributed to climate change (as opposed to current climate variability).

⁴ Please note that regarding environmental degradation, mitigating of negative impacts might be considered as more important than adaptation. However adaptation shall still be addressed.

The overlap between adaptation to climate change, adaptation to degraded environments and DRR

As described above, the risk from disasters can be reduced by adaptation (to climate change and to degraded environments) and DRR⁵. While the climate change and environmental community places a stronger emphasis on gradual and creeping changes such as increases in mean temperature, sea level rise, soil degradation and changes in precipitation patterns, the DRR community addresses the prevention of, preparedness for and recovery from hydro-meteorological hazards such as floods or storms as well as geological hazards such as earthquakes. Even if the focus is slightly different, the overlaps are apparent (as outlined in Figure 2).

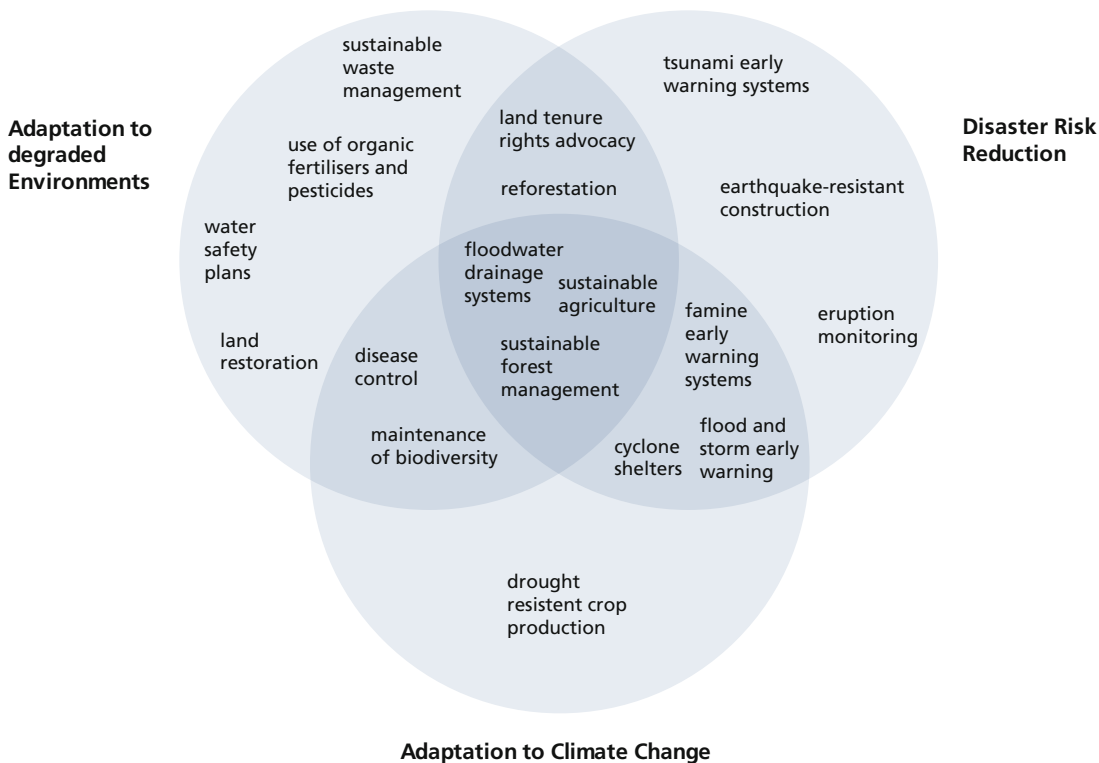


Figure 2 Overlap of adaptation (to climate change and to degraded environments) and DRR. Source: adapted from Tearfund 2009c.

How adaptation to climate change and DRR differ from regular development?

Overlaps between “business-as-usual” development strategies and adaptation can be common. Activities undertaken to achieve development objectives can automatically lead to adaptation benefits. For example, decisions taken as part of development activities oriented towards poverty reduction with activities dealing with issues such as nutrition, education, infrastructure and health should be synergistic with adaptation. Furthermore, adaptation can also take place “autonomously” if communities adapt their behaviours, even without proper long-term information. Development with a “business-as-usual” approach that does not take climate change into account may lead to **maladaptation** or have difficulties to achieve planned goals.

Box 3 - Maladaptation (increased risk)

- › A business-as-usual development which by overlooking climate change impacts, inadvertently increases exposure and/or vulnerability to climate change. Maladaptation could also include actions undertaken to adapt to climate impacts that do not succeed in reducing vulnerability but increase it instead (OECD 2009).
- › *The construction of transport infrastructure in hazardous zones might lead to maladaptation. New roads might be weather-proof, even taking future climate into account, but they might trigger new human settlement in areas at high risk for particular impacts of climate change, such as coastal zones vulnerable to sea-level rise (OECD 2009).*

Adaptation to climate change and DRR can be implemented either as part of a stand-alone adaptation strategy or be integrated within development processes in order to make these more resilient to natural disasters or better adapted to climate change. While in some cases stand-alone adaptation measures are needed, adaptation will mostly need to be implemented as part of a broader suite of measures within existing devel-

⁵ A good overview regarding the interrelation between DRR and Climate Change Adaptation can be found in IPCC 2012: Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation (SREX): <http://ipcc-wg2.gov/SREX/>

opment processes, which are referred to as “mainstreaming” or “integrating” adaptation into development cooperation and/or into institutional structures of a partner country.

Figure 3 shows an approach to map adaptation activities in the context of development cooperation. On the left side of the continuum the focus lies on vulnerability and overlaps with traditional development practices. On the right side, activities seek to target climate change impacts, and fall outside the realm of development. In between lays a broad spectrum of activities with gradations of emphasis on vulnerability and impacts (McGray et al. 2007). The continuum can be roughly divided into four types of adaptation/DRR efforts (from left to right), with the two central types reflecting integration of climate and DRR into development cooperation.

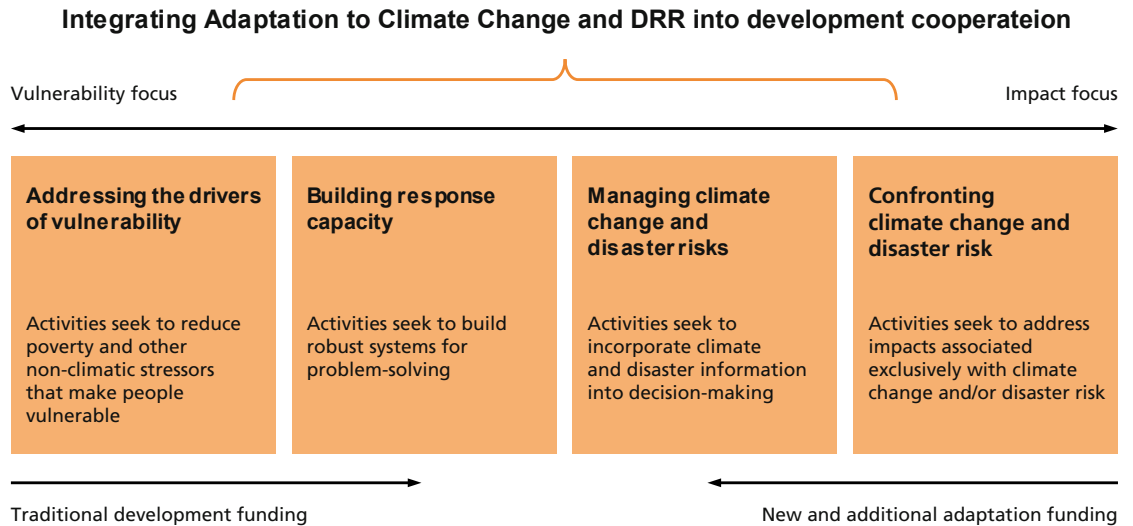


Figure 3 Source: Adapted from McGray et al. (2007) in Klein and Persson (2008).

Handling uncertainty, scenarios and contradictory information

Tackling disaster risk and climate change related issues always involves handling uncertainties. Sometimes even the description of the current climatic situation is uncertain. Even more uncertainties arise when it comes to future developments. Although there is strong agreement among different climate change models about large-scale temperature changes, uncertainties regarding changes in precipitation, climate variability and extremes are prevalent, particularly at smaller scales (national, sub-national, and local level). Climate science is not and will never be in a position to provide reliably accurate quantitative forecasts for all aspects of the climate in specific locations for the next few years, decades or centuries (OECD 2009). Dealing with current and future uncertainties is therefore one of the important characteristics of CEDRIG and hence the approach considers trends. Development and humanitarian aid activities already deal with highly uncertain planning factors such as future population dynamics, economic conditions or rules, and regulations. When tackling climate change one is often confronted by scenarios which often contain contradictory information. Particularly local climate models can sometimes be confusing. In the short term they may predict a local temperature decrease, whereas in the long term the projection maybe for a temperature increase. Such results may occur due to physical phenomena such as changes in atmospheric humidity and/or vegetation coverage and reflect the non-linearity of climate modelling. In such cases it may be helpful to compare multiple scenarios and information and asses impacts in a wider and especially longer-term perspective, selecting adaptation options which would be justified under current climate as well as under all plausible future scenarios (termed “no regret” or “low regret” approaches).

1.3.2. Impact perspective

All development and humanitarian aid activities may lead to increased GHG emissions and/or environmental degradation. Even if the “lion’s share” of GHG emissions are emitted in developed countries, reducing them should not be neglected in developing countries. Furthermore, development cooperation has a responsibility to optimize projects to reduce possible negative environmental impacts (such as e.g. adverse impacts on air or water quality). As opposed to the impacts of increasing GHG emissions, environmental degradation normally has direct local impacts on resources and thus on local livelihoods.

The impact perspective addresses the responsibility of development cooperation and humanitarian aid to reduce negative impacts on GHG emissions and the environment by applying the concept of **mitigation**. In this document mitigation refers to both climate change mitigation and environmental impact mitigation. Please note that the term mitigation is one of the most common terms used in the DRR context, however with a different meaning from the climate and environmental community (see Box 4). For DRR, mitigation refers to the partial reduction of hazard impacts (scale and severity), however not to the point of full prevention. For the climate community, this would however mean “adaptation”. In this document mitigation is applied with the climate community definition.

Box 4 - Key term for the impact perspective

- › **Mitigation (climate change):** Mitigation refers to human interventions aimed at reducing the emission of GHG at the source or at enhancing carbon sinks (IPCC 2007).
- › **Mitigation (environmental impact):** The term mitigation can also be applied for reducing environmental impacts, other than GHG, such as e.g. air pollutants.
- › **Mitigation (DRR context):** Lessening or limiting the adverse impacts of hazards and related disasters (UN ISDR 2009).

1.4. Scope of CEDRIG

As described in the previous two chapters both the risk and impact perspectives shall be considered in development cooperation and humanitarian aid. CEDRIG hence incorporates both perspectives incorporating the concepts of adaptation to climate change, adaptation to degraded environments and DRR; and climate change mitigation and environmental impact mitigation (see Figure 4).

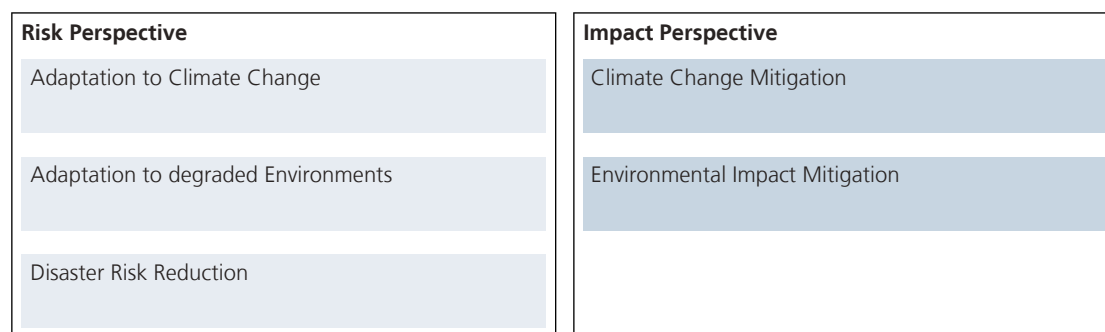


Figure 4 Risk and impact perspective of CEDRIG.

Box 5 - CEDRIG approach vs. Environmental Impact Assessment

SDC projects generally interact with the environment, e.g. agriculture, small infrastructure constructions or water and sanitation. For this reason CEDRIG also takes into account environmental impacts. However, the CEDRIG approach is not as comprehensive as an Environmental Impact Assessment (EIA). EIAs are widely used by civil engineers and others who implement major construction works such as large dams and power stations. SDC has not developed a tool at this level as they are beyond the scope of SDC’s and its partners’ normal programming.

1.5. Principles of CEDRIG

SDC's CEDRIG is based on the following principles:

Principle 1 - OECD guidance and the Hyogo Framework for Action as references

The OECD guidance on Integrating Climate Change Adaptation into Development Cooperation (OECD 2009)⁶ was approved in May 2009 by the ministers of environment and development. It has achieved high legitimacy and is recognised as the referential framework for donors regarding the integration of climate change adaptation at national, sectoral, local and project levels. This OECD guidance with its four step approach is therefore taken as reference framework for CEDRIG. The Hyogo Framework for Action (HFA)⁷ provides a further referential framework for CEDRIG. The HFA promotes a strategic and systematic approach to reduce vulnerabilities and risks emanating from natural hazards. It underscores the need for, and identified ways of, building the resilience of nations and communities to disasters.

Principle 2 - Modular approach and flexibility

The scope and depth of the CEDRIG can be adapted to reflect specific needs and constraints. A modular approach provides for an initial basic analysis of the relevance of climate change, environmental degradation and/or natural hazards (Module 1; Risk and Impact Screening) and if necessary a more in-depth assessment in a second step (Module 2; Detailed Assessment at Strategic and Programmatic Level or Module 3; Detailed Assessment at Project Level). As such only strategies, programmes or projects assessed to be at risk from disasters or posing an impact on GHG emissions and/or the environment need to run through a Detailed Assessment. The subsequent Detailed Assessment at Project Level is comprised of four steps.

Principle 3 - Integration in SDC standard procedures and Project Cycle Management (PCM)

CEDRIG is one of SDC's proposed tools for the risk assessment that is mandatory in entry and credit proposals and provides substantial input for information on key risks. CEDRIG is applicable at different activities levels such as cooperation strategies, programmes and projects. The handbook (PART II) provides practical advice on how to integrate findings into SDC's procedures (risk assessment as part of the entry or credit proposal, logframe, etc.)⁸. CEDRIG is closely connected with SDC's PCM, meaning that the steps of CEDRIG serve as a base for PCM (see Figure 5).

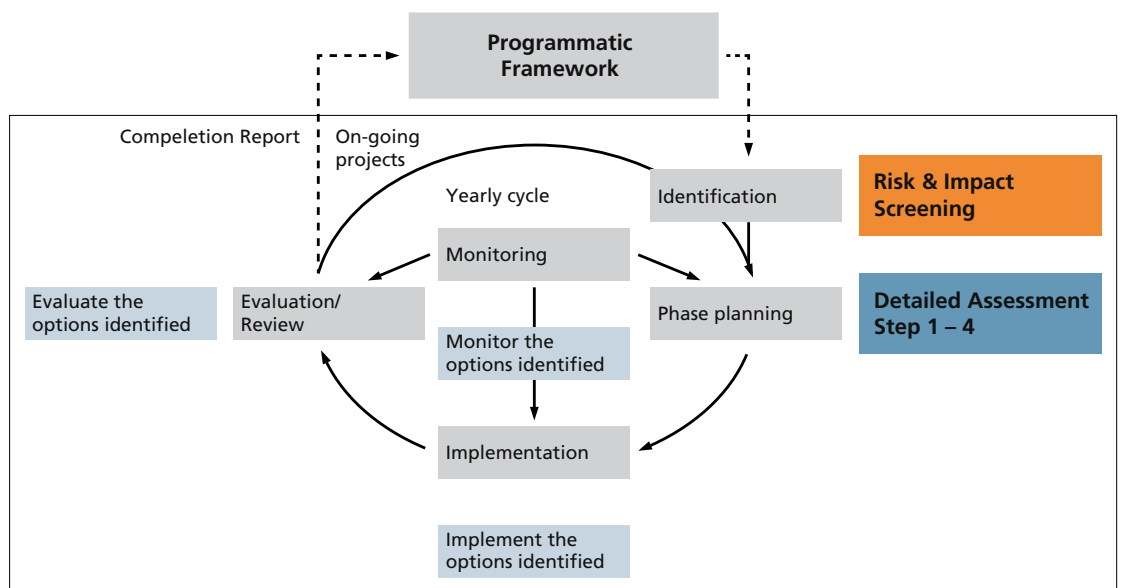


Figure 5 SDC's PCM and the link to CEDRIG's modules (Risk & Impact Screening and Detailed Assessment).

6 The OECD guidance is available at: www.oecd.org/document/3/0,3343,en_2649_34361_44096282_1_1_1_1,00.html.

7 Hyogo Framework for Action: <http://www.unisdr.org/2005/wcdr/intergover/official-doc/L-docs/Hyogo-framework-for-action-english.pdf>

8 For integrating DRR explicitly, please also refer to SDC Guidelines on Disaster Risk Reduction (SDC 2008).

1.6. Main elements of CEDRIG

CEDRIG consists of three modules:

Module 1 - Risk and Impact Screening:

This module serves as a first filter to assess whether activities are at significant risk from disasters emanating from climate change, environmental degradation and/or tectonic activities or have a significant impact on GHG emissions and/or the environment. The result of Module 1 is used to determine whether a Detailed Assessment must be conducted (Module 2 or Module 3).

Module 2 - Detailed Assessment at Strategic and Programmatic Level:

Module 2 allows for the systematic integration of adaptation to climate change and to degraded environments as well as DRR into an existing or planned strategy or programme. Module 2 is only applied when possible significant risks from disasters have been identified under Module 1 and a more thorough assessment is considered necessary. At the strategic and programmatic level, the approach is called **Risk Assessment Lens**. The methodology for strategies and complex programmes targets a different level of consideration (more strategic) than the project level.

Module 3 - Detailed Assessment at Project Level:

Module 3 allows to systematically integrate adaptation to climate change and to degraded environments and DRR as well as mitigation of climate change and environmental impacts into an existing or planned project. Module 3 is applied when possible significant risks from disasters or impacts have been identified under Module 1 and a more thorough assessment is considered necessary. At the project level, the approach is called **Detailed Risk and Impact Assessment** and follows a four step approach in accordance to the approach developed by the OECD. It consists of an assessment of risks and impacts, identification of adaptation and risk reduction options as well as mitigation options, selection of options, and definition of monitoring and evaluation indicators. A detailed approach for projects aligns with a detailed level of project planning including formulation of activities and logical frameworks.

For adaptation and DRR, this approach is described in section A) (see left hand side of Figure 6) for mitigation the approach is described in section B) of the handbook (see right hand side of Figure 6).

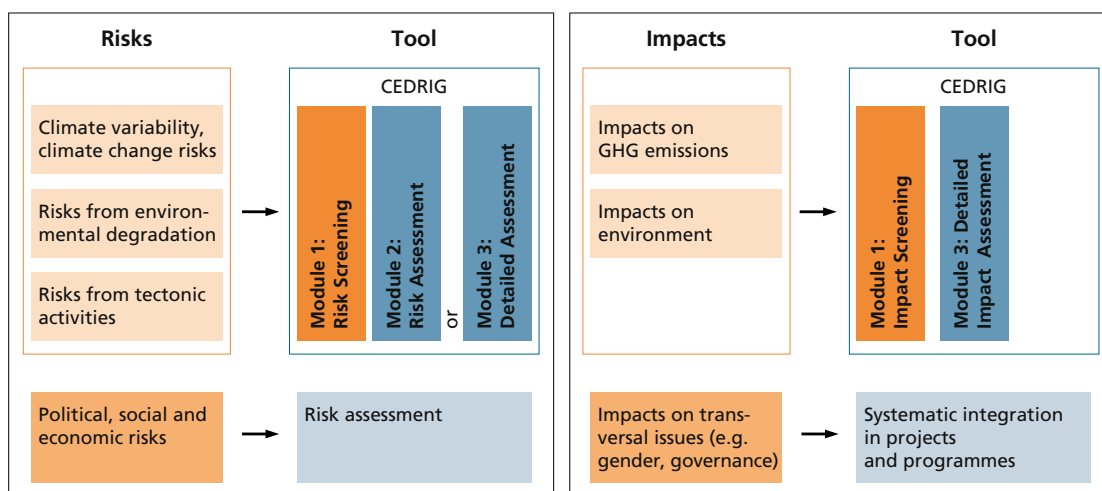


Figure 6 Scope of CEDRIG and other tools.

2. Organisational and procedural issues

Figure 7 provides an overview on organisational and procedural issues on how to apply CEDRIG:

	MODULE 1 Risk and Impact Screening	MODULE 2 Detailed Assessment at Strategic & Programmatic Level Risk Assessment Lens	MODULE 3 Detailed Assessment at Project Level Detailed Risk & Impact Assessment
What for	First screening	In depth assessment at strategic level	In depth assessment at project level
What	<ul style="list-style-type: none"> › Disaster risks from climate variability, climate change, environmental degradation and/or tectonic activities › Impacts on GHG emissions and/or the environment 	<ul style="list-style-type: none"> › Disaster risks from climate variability, climate change, environmental degradation and/or tectonic activities › Four step approach (steps A to D) 	<ul style="list-style-type: none"> › Disaster risks from climate variability, climate change, environmental degradation and/or tectonic activities › Impacts on GHG emissions and/or the environment › Four step approach (steps 1 to 4)
How	Proposed to conduct individually or participatory with involved project partners	Proposed to conduct in form of a workshop with project partners (assign at least three persons for preparation and planning of the workshop, moderation, preparation of thematic inputs)	Proposed to conduct in form of a workshop with project partners (assign at least three persons for preparation and planning of the workshop, moderation, preparation of thematic inputs)
Length	Max. 1-2 hours	Team process: 1.5 to 2 days Plus variable time for preparation	Team process: 2 to 3 days Plus variable time for preparation
When	Beginning of the planning process or new phase	As early as possible when strategy or programme planned	Elaboration of project document and credit proposal (as early as possible)
Who	NPO & country desk	SDC strategy team, ev. with selected partners	SDC programme officer and project team (including implementing partner)
Integration	Conclusions into entry proposal or in TOR for review, input in risk assessment	In the strategy or programme (Results framework)	In the planning document = PRODOC, Logframe and Credit Proposal (incl. its respective risk assessment part)

Figure 7 Overview of organisational and procedural issues.

Which strategy/programme/project should be assessed by CEDRIG?

Climate change, environment degradation and natural hazards are posing a challenge to a broad range of development objectives. Thus it is recommended for all strategies, policies, programmes or projects (hereinafter referred as activity) to conduct the Risk and Impact Screening (Module 1). The more detailed assessment at strategic or project level shall however be limited to those strategies, programmes or projects facing potentially significant risks from disasters or having impacts on GHG emissions and/or the environment (as identified under Module 1).

In order to avoid a duplication of efforts, no Detailed Assessment has to be conducted for strategies, programmes or projects that are very similar to already assessed ones, provided that the risk context is the same. These do not have to undergo the procedure, but could benefit from and integrate the result of a previous similar assessment.

Regarding humanitarian aid projects, the tool shall also be applied except in emergency cases.

When to conduct and how to integrate the results into SDC procedures?

CEDRIG shall be conducted as early as possible in the identification and planning of a new strategy, programme or project or a new phase of a strategy, programme or project (see Figure 5). In the case of a new activity, the Risk and Impact Screening (Module 1) should be applied at the beginning of the planning process and the results integrated into the entry and/or credit proposal. In the case of an on-going activity, the screening should be applied at the time of the review.

An eventual Detailed Assessment (Module 2 or Module 3) shall be conducted at the time of elaboration of the project document or cooperation strategy and credit proposal. It is advisable to apply the tool as early as possible before all content is already developed and integrate the results in the respective documents (strategies and programmes: strategy documents and results framework, projects: (1) planning document and (2) into chapter 7 (risk management), annex 2 (logframe) and annex 5 (risk analysis) of the credit proposal). Details are described in the respective sub-chapters of Part II of this document as well as in the overview in Figure 7.

Who should apply CEDRIG and who should be involved?

Box 6 - For Whom?

Please note that CEDRIG is an approach developed for professionals working in development cooperation and humanitarian aid. CEDRIG is an approach to strengthen peoples' capacities engaged in the full range of thematic fields and sectors in development cooperation and humanitarian aid. Experts may be included in order to provide specific inputs.

Responsibilities and elaboration processes differ depending on the module of CEDRIG:

Module 1 shall be conducted individually, by the programme officer in charge (national programme officer and/or desk at headquarters). If required, the screening can also be conducted through a participatory approach with project partners. The provided screening checklist is self-explanatory and screening can be conducted without additional support from experts. The decision whether to perform a Detailed Assessment should be made by the responsible person at the coordination office (COOF) and reported in the entry proposal.

The elaboration of Module 2 and Module 3 is more complex and follows a participatory approach (involving relevant stakeholders). Overall responsibility for applying CEDRIG is with the programme officers in charge (or the strategy team for country strategies). The Detailed Assessment itself shall ideally be carried out in the form of a workshop (e.g. in the framework of a planning workshop) allowing participation of different stakeholders (SDC representatives, project partners, target groups etc). The responsibility for preparation and planning of the workshop should be assigned to different persons involved in the project depending on their skills and expertise in this field.

Workshop moderation is best performed by experts outside of the project team, but with knowledge of the methodological approach. Furthermore, another person should be assigned (expert outside or inside the project team/same or different person as the moderator should be assigned) to help prepare thematic inputs. The team may seek advice and support of SDC's Climate Change & Environment Network and SDC's Disaster Risk Reduction Network. Both networks have the responsibility to coordinate climate, environment and DRR related activities and to facilitate application of the tool in the operational divisions of SDC.

The decision on how many people shall be involved for conducting the approach is left to the respective project team. Details on elaboration of CEDRIG are described in the respective sub-chapters of Part II.

Further information for SDC staff and partners initiating or involved in applying CEDRIG and e.g. preparing a workshop (initiators, thematic preparers and moderators) can be found on SDC's websites: <http://www.sdc-climateandenvironment.net/> and www.sdc-drr.net/CEDRIG

How detailed should the application of CEDRIG be?

The CEDRIG methodology allows for maximum flexibility. The depth of the approach can be adjusted to the problem (risks/impacts) and the needs. Whereas the Risk and Impact Screening (Module 1) will not take more than one to two hours (depending on the familiarity with the topics), the duration of the Detailed Assessment (Module 2 and Module 3) would usually take two to three days of workshops/stakeholder consultations, plus additional days for the compilation of data and information on the strategy/programme/project, issues related to climate change, environmental degradation and natural hazards as well as for preparation of moderation. The time needed for this preparation can vary significantly depending on existing thematic and methodological knowledge.

3. Supporting materials

3.1. Supporting service provided by SDC

For further support and information you can contact and/or check the website from the two responsible networks of SDC. All tables as well as Information from pilot workshops and other pilot activities is available on their website:

The SDC Climate Change & Environment Network (<http://www.sdc-climateandenvironment.net>), hosted by SDC's Global Programme Climate Change encompassing representatives from Headquarters and from the field.

The SDC DRR Network (<http://www.sdc-drr.net/>) encompassing representatives from Headquarters and from the field.

3.2. Additional supporting materials

(I) Background material and policy frameworks:

HFA 2005: *Hyogo Framework for Action 2005-2015 (outlining the international commitments and framework with regard to DRR):* <http://www.unisdr.org/2005/wcdr/intergover/official-doc/L-docs/Hyogo-framework-for-action-english.pdf>.

IPCC 2012: *Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation (SREX):* http://www.ipcc-wg2.gov/SREX/images/uploads/SREX-All_FINAL.pdf.

IPCC 2007: Climate Change 2007:<http://www.ipcc-wg3.de/publications/assessment-reports/ar4/working-group-iii-fourth-assessment-report>.

OECD 2009: *Integrating Climate Change Adaptation into Development Co-operation, Policy Guidance (providing the conceptual framework of this report).*

SDC 2007: Disaster risk reduction in the project cycle management (providing the basics on how to integrate DRR into SDC's project cycle management).

SDC 2010a: Climate Change & DRR check concept & consultation (providing the background and rationale of this report).

SDC 2008: SDC Guidelines on Disaster Risk Reduction, (providing SDC's background framework on DRR).

(II) Handbooks, manuals and tools:

A. Olhoff and C. Schaer 2010: A Stocktaking Report on screening tools developed by UNDP (providing an overview of different tools and guidances available in order to mainstream adaptation into development cooperation).

Brot für Alle/HEKS 2009: Participatory Tool on climate and disaster risk (it is a hands-on participatory tool and provides the reader with many useful links).

European Commission 2009: Guidelines on the Integration of Environment and Climate Change into Development Cooperation (Provides hands-on guidelines on how to integrate environment into development planning).

Sector scripts of EuropeAid: http://www.environment-integration.eu/component/option,com_docman/task,cat_view/gid,109/Itemid,278/lang,en/.

EuropeAid 2009: *Environmental Integration Handbook for EC Development Co-operation:* <http://www.environment-integration.eu/content/section/4/146/lang,en/>.

GEF: *Tracking Tool for Adaptation Projects (AMAT):* http://www.thegef.org/gef/tracking_tool_LDCF_SCCF

GIZ 2011a: *Sourcebook for climate related monitoring within the international cooperation:* <http://www2.gtz.de/dokumente/bib-2011/giz2011-0445de-klimawirkungen.pdf>.

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The **Tearfund 2009c:** http://tilz.tearfund.org/webdocs/Tilz/Topics/Environmental%20Sustainability/EA_C9465_web.pdf.

UNDP-UNEP 2011: *Mainstreaming Climate Change Adaptation into Development Planning: A Guide for Practitioners:* <http://www.unep.org/pdf/mainstreaming-cc-adaptation-web.pdf>.

USAID 2007: http://www.usaid.gov/our_work/environment/climate/docs/reports/cc_vamannual.pdf.

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(III) Knowledge platforms:

The Adaptation Learning Mechanism (**ALM**) (<http://www.adaptationlearning.net/>) is an interactive knowledge sharing platform implemented by the UNDP in collaboration with the World Bank, UNEP, UNFCCC and GEF. The platform provides the latest news on climate adaptation initiatives and general information on climate adaptation – including partners, methods, tools and experiences.

The Climate Adaptation Knowledge Exchange (**CAKE**) (<http://www.cakex.org/>) provides different kind of resources and tools as well as communication platform on climate change adaptation.

The WRI Platform **Earth Trends** (<http://www.earthtrends.wri.org/>) provides some country specific information regarding the state of environment.

FAO's Webpage (http://www.webgeo.de/fw_32/) on climate change and adaptation.

GDRR (<http://www.gdrr.org/gdrr/>) Global Facility for Disaster Reduction and Recovery is a partnership of 32 countries and 6 international organisations committed to helping developing countries reduce their vulnerability to natural hazards and adapt to climate change. The website includes valuable links on climate change adaptation and DRR.

IPCC (http://www.ipcc.ch/publications_and_data/publications_and_data_reports.htm)

National Communications: http://unfccc.int/national_reports/non-annex_i_natcom/items/2979.php, **NAPAs:** http://unfccc.int/cooperation_support/least_developed_countries_portal/submitted_napas/items/4585.php

Preventionweb (<http://www.preventionweb.net/english/>) serves the information needs of the DRR community, including the development of information exchange tools to facilitate collaboration. Information regarding the design and development of the project together with background documentation can be accessed here along with some services that have been put in place.

Platform on Disaster Risk Reduction (<http://www.sdc-drr.net/>), the platform provides a comprehensive overview of concepts and strategies relevant to SDC. Selected tools, publications and training opportunities in the field of DRR are presented as well.

SDC Network CC & Environment (<http://www.sdc-climateandenvironment.net/>) platform is hosted by the Global Programme Climate Change (GPCC).

The Swedish International Development Cooperation Agency (**SIDA**) is currently finalising a screening tool which will soon be available on their website: <http://mkb.slu.se/helpdesk/index/Sida%20Screening%20Tool%20Flyer%20FINAL.pdf>

UNDP Climate Change Country Profiles (<http://www.geog.ox.ac.uk/research/climate/projects/undp-cpl/>) provide country reports for over 50 countries containing a set of maps and diagrams demonstrating the observed and projected climate of the country.

UNFCCC (<http://unfccc.int>) webpage is the official website of the United Nations Framework Convention on Climate Change and provides all essential information

UN ISDR (United Nations International Strategy for Disaster Reduction) website: <http://www.unisdr.org/>.

The **UN platform (Division for Sustainable Development)** (http://www.un.org/esa/dsd/dsd_aofw_ni/index.shtml) provides for selected countries profiles regarding key environmental challenges.

On the **U.S. Environmental Protection Agency (U.S. EPA)** website (<http://www.epa.gov/climatechange/emissions/index.html>) you can find information on sources and sinks of different GHG.

WeAdapt (<http://www.weadapt.org/>) is a practical webplatform which disseminates existing adaptation documents from different sources. It is a discussion platform assembling "good practice" (recommendations, articles, case studies, tools and links) across a range of topics related to climate change adaptation (vulnerability, risk mapping, multi-criteria assessments, etc). A new feature on WeAdapt is the "adaptation layer" on Google earth, where adaptation activities, partnerships, etc. are accessible worldwide through Google earth.

World Bank Country Environmental Analysis (CEA) (<http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/ENVIRONMENT/0,,contentMDK:21239844~pagePK:148956~piPK:216618~theSitePK:244381,00.html>) for some countries, environmental analysis has been conducted.

World Bank indicator databases (<http://data.worldbank.org/indicator/all>).

(IV) Data tools:

Adaptation Atlas (<http://adaptationatlas.org/index.cfm>) provides useful country specific mapping facilities.

ci:grasp (<http://cigrasp.pik-potsdam.de/>) performs as a climate information service and provides sound knowledge on current and projected climate stimuli, climate impacts and adaptation options at the national, sub-national and regional level: <http://cigrasp.pik-potsdam.de/>.

Climate Change knowledge Portal (<http://sdwebx.worldbank.org/climateportal/>) provided by the World Bank, where one can search for regional climate data and projected impacts. This tool support to get a first overview or a feeling for possible changes. However, uncertainties remain with these projections: <http://sdwebx.worldbank.org/climateportal/>

Climate Change Explorer (<http://weadapt.org/knowledge-base/using-climate-information/the-climate-change-explorer-tool>) is a desktop client that provides an interface to download, manage and visualize downscaled model output. It provides users with an analytical foundation to explore the climate variables relevant to their particular adaptation decisions.

The Conservancy **Climate Wizard** (<http://www.climatewizard.org/>) provides historic climate data as well as downscaled projections.

The **Emergency Events Database (EM-DAT)** (<http://www.emdat.be/>) provides systematic collection and analysis of disaster risk data. The database provides hands-on country and disaster profiles, disaster lists, reference maps as well as disaster trends.

IPCC Data Visualization: Part of the Data Distribution Centre of the IPCC. The centre provides climate, socio-economic and environmental data, both from the past and also in scenarios projected into the future. <http://www.ipcc-data.org/maps/>. Scatter plots from: http://www.ipcc-data.org/sres/scatter_plots/scatterplots_home.html.

MunichRe (<http://www.munichre.com/de/reinsurance/business/non-life/georisks/natcatservice/default.aspx>) comprising some 28,000 data records, NatCatSERVICE is the most comprehensive natural catastrophe loss database in the world. A comprehensive world map is available on NatCatService.

Preventionweb (<http://www.preventionweb.net/english/hyogo/progress/reports/?pid:222&pil:1>): Progress report regarding the Hyogo Framework for Action.

PRECIS (<http://precis.metoffice.com/index.html>) is based on the Hadley Centre's regional climate modelling system. It has been ported to run on a PC (under Linux) with a simple user interface, so that experiments can easily be set up over any region. The tool provides climate impact assessments in developing country contexts which are freely available to numerous users. The tool uses global climate models to provide grid-scale averages of spatio-temporal hydro-climatic state variables as well as soil hydrology and thermodynamics, and some vegetation dynamic variables.

SAGE (<http://www.sage.wisc.edu/mapsdatamodels.html>) aims to improve the understanding of the global environment, and how it is being affected by human activities. To achieve this goal, they provide maps, computer models and datasets to describe the behaviour of Earth's terrestrial ecosystems, hydrological systems, and climate.

SERVIR (<http://www.servir.net>) is a regional visualisation and monitoring system for Mesoamerica and Africa that integrates satellite and other geospatial data for improved scientific knowledge and decision making. SERVIR addresses the nine societal benefit areas of the Global Earth Observation System of Systems: disasters, ecosystems, biodiversity, weather, water, climate, oceans, health, agriculture and energy. Here, "climate" covers not only current weather conditions but also climate change projections.

Swiss Re (www.swissre.com/clients/client_tools/about_catnet.html): The CatNet™ functions and data facilitate a professional overview and assessment of natural hazard exposure for any location worldwide. This makes CatNet™ a valuable tool in preparing local, regional and cross-regional risk profiles. The main features of CatNet™ are natural hazard atlas, country-specific insurance data and links to disaster statistics.

Glossary

Adaptation	Adjustments in human and natural systems, in response to actual or expected climate stimuli or their effects, that moderate harm or exploit beneficial opportunities (UNFCCC). In the handbook adaptation is referred to adaptation to climate change and adaptation to degraded environments.
Adaptive capacity/Coping capacity	The ability of people, organisations and systems, using available skills and resources, to face and manage adverse conditions, emergencies or disasters (UN ISDR). Whereas adaptation implies adjustments to changing conditions and is often long-term with the aim of maintaining the standard of living, the term coping capacity is often short-term and linked to the ability to cope with the impacts of a hazardous or extreme event. For CEDRIG both connotations are combined in the term adaptive capacity/coping capacity.
Awareness building	The processes of informing the general population, increasing levels of consciousness about risks and how people can act to reduce their exposure to risks (UN ISDR).
Capacity development	Efforts aimed to develop human skills or societal infrastructures within a community or organisation needed to reduce the level of risk (UN ISDR).
Climate change	Climate is changed if over an extended period (decades or longer) there is a statistically significant change in measurement of either the mean state or variability of the climate for that place or region – may be due to natural processes, or persistent anthropogenic changes in atmosphere or in land use (UN ISDR).
Climate variability	Climate variability refers to variations in the mean state and other statistics of the climate on all temporal and spatial scales beyond that of individual weather events. Variations may occur due to natural or anthropogenic forcing (IPCC 2007).
Disaster	Serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community or society to cope using its own resources. It results from the combination of hazards, conditions of vulnerability and insufficient capacity or measures to reduce the potential negative consequences (UN ISDR). Natural disasters can be categorized in two types: (1) slow-onset disasters, that take a long time to produce emergency conditions, for instance natural disasters such as drought, and (2) rapid-onset disasters for which there is little or no warning like earthquakes, hurricanes or floods.
Disaster Risk Management	The systematic process of using administrative decisions, organisation, operational skills and capacities to implement policies, strategies and coping capacities of the society and communities to lessen the impacts of natural hazards and related environmental and technological disasters. This comprises all forms of activities, including structural and non-structural measures to avoid (prevention) or to limit (mitigation and preparedness) adverse effects of hazards (UN ISDR).
Disaster Risk Reduction	The concept and practice of reducing disaster risks through systematic efforts to analyse and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events (UN ISDR).
Environmental degradation	Process induced by human behaviour and activities that damages natural resources base or adversely alters natural processes or ecosystems (e.g. land degradation, deforestation, desertification, loss of biodiversity, land, water and air pollution, ozone depletion) (UN ISRD).

Global warming	Increase in the earth's mean temperature due to the so-called enhanced greenhouse effect.
Greenhouse gas	A gas, such as water vapor, carbon dioxide, methane, chlorofluorocarbons (CFCs) and hydro chlorofluorocarbons (HCFCs), that absorbs and re-emits infrared radiation, warming the earth's surface and contributing to climate change (UNEP, 1998) (UN ISDR).
Hazard	A dangerous phenomenon, substance, physical event, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage (UN ISDR).
Impact	Consequences of a climate change or environmental induced hazard or any other natural disaster on natural and human systems.
Maladaptation/ (Increased risks)	A business-as-usual development which by overlooking climate change impacts, inadvertently increases exposure and/or vulnerability to climate change. Maladaptation could also include actions undertaken to adapt to climate impacts that do not succeed in reducing vulnerability but increase it instead (OECD 2009).
Mitigation (DRR)	The lessening or limitation of the adverse impacts of hazards and related disasters (structural and non-structural measures) (UN ISDR. CEDRIG applies the definition of climate change mitigation.
Mitigation (Climate change)	Human intervention aimed at reducing the emission of GHG at the source or at enhancing carbon sinks (IPCC 2001).
No regrets	Measures that will provide benefits regardless of climate change.
Preparedness	The knowledge and capacities developed by governments, professional response and recovery organisations, communities and individuals to effectively anticipate, respond to, and recover from, the impacts of likely, imminent or current hazard events or conditions (UN ISDR).
Prevention	The outright avoidance of adverse impacts of hazards and related disasters (UN ISDR).
Resilience	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 (UN ISDR).
Risk	The combination of the probability of an event and its negative consequences (UN ISDR).
Vulnerability	The characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard. The vulnerability is lower when there are positive factors, which increase the ability of people to cope with hazards (coping capacity or adaptive capacity) (SDC 2008).

Abbreviations and acronyms

CAS	Country Assistance Assessment
CCA	Common Country Assessment
CEA	Country Environmental Analysis
CEDRIG	Climate, Environment and Disaster Risk Reduction Integration Guidance
COOF	Coordination Office
DAC	Development and Co-operation Directorate
DRR	Disaster Risk Reduction
FAO	Food and Agriculture Organization
GEF	Global Environment Facility
GFDRR	Global Facility for Disaster Risk Reduction and Recovery
GHG	Greenhouse Gas
GPCC	Global Programme Climate Change
HFA	Hyogo Framework for Action
ICT	Information and Communication Technologies
IPCC	Intergovernmental Panel on Climate Change
LDC	Least Developed Countries
NAP	National Adaptation Plans
NAPA	National Adaptation Programmes of Action
OECD	Organisation for Economic Co-operation and Development
PCM	Project Cycle Management
SDC	Swiss Agency for Development and Cooperation
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCC	United Nations Framework Convention on Climate Change
UN ISDR	United Nations International Strategy for Disaster Reduction

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