INTEGRATING CLIMATE CHANGE ADAPTATION INTO DEVELOPMENT CO-OPERATION

A User Guide for Practitioners Working at the Project Level
Integrating Climate Change Adaptation into Development Co-operation

The document can be downloaded at: www.oecd.org/dataoecd/0/9/43652123.pdf
In 2009, OECD published the *Policy Guidance on Integrating Climate Change Adaptation into Development Co-operation*\(^1\). This guidance is based on a whole-of-government approach to integration, addressing four levels of decision making: national, sectoral, local and project. This is one of a series of brief user guides for practitioners that have been developed to accompany the guidance and guide climate-resilient decision-making at all levels.

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\(^1\) [www.oecd.org/env/cc/adaptation/guidance](http://www.oecd.org/env/cc/adaptation/guidance)
Introduction

Climate-proofing at the project level is important, since development projects may be vulnerable to climate change and the design of these projects can affect the vulnerability of human and natural systems. This user-guide provides guidance on how climate change adaptation can be integrated at the project level.

The term “project” can have different meanings. In this policy guidance it is used to refer to a discrete activity in a predetermined location. Projects come in a wide variety of types and scales, ranging from a rural school or a large hydroelectric dam to the resettlement of a group of population.

1. Why the project level matters for adaptation

The project level matters for adaptation for two reasons.

First, projects may be vulnerable to the impacts of climate change (e.g. floods or sea-level rise damaging infrastructure). The vulnerability of a project activity to the impacts of climate change may be direct (e.g. irrigation facilities are affected by changes in runoff as well as changes in demand for irrigation) or indirect if the area in which a project is established undergoes significant socio-economic modifications as a result of climate change.

Second, projects may increase or decrease the vulnerability of natural and human systems to climate change. A project may also affect the vulnerability of natural and human systems to climate change and could therefore lead to maladaptation. For instance, new roads might be weather-proofed from an engineering standpoint, 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. These considerations need to be taken into account to avoid maladaptation.
2. How to integrate climate change adaptation at project level

Applying the climate lens

The OECD DAC developed the “climate lens” as a simple analytical tool to reveal the climate risk and possible countermeasures. It is a set of four questions regarding vulnerability, current adaptation, maladaptation and climate-proofing. The use of the climate lens should enable a policy maker to determine whether a policy, plan or programme faces climate change risks.

Figure 1: Applying the climate lens

<table>
<thead>
<tr>
<th>Question</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1: VULNERABILITY</td>
<td>How vulnerable is the decision to climate change?</td>
</tr>
<tr>
<td>Q2: CURRENT ADAPTATION</td>
<td>To what extent have climate change risks already been taken into account?</td>
</tr>
<tr>
<td>Q3 MALADAPTATION</td>
<td>Does the decision increase vulnerability to climate change or overlook opportunities for adaptation?</td>
</tr>
<tr>
<td>Q4: CLIMATE-PROOFING</td>
<td>Can the decision be amended to take into account the risks posed by climate change?</td>
</tr>
</tbody>
</table>
Four stages

There are four stages in a project cycle: i) project identification, ii) project appraisal and detailed design, iii) project implementation and iv) monitoring and evaluation. The core of integrating adaptation at the project level is to conduct climate-lens analysis at all design stages, as each stage has a distinct role to play. The following sections describe how climate change adaptation can be integrated at each level.

![Figure 2: The project cycle](source: OECD (2009) Integrating Climate Change Adaptation into Development Co-operation: Policy Guidance, OECD Publishing, Paris.)
2.1. Project identification

The project identification stage defines the point of departure for the project cycle. It consists of establishing indicative objectives, and general guidelines and principles for the project, according to policies and strategies set at the sectoral, national or even international levels. This type of exercise is often best done by involving stakeholders who will be affected by the project. The key output of this stage is normally a programme framework (or logical framework) that outlines a set of interventions to be implemented within a specific time frame and within an allocated budget.

At the project identification stage, practitioners should briefly assess the projects to see whether 1) the project itself is directly vulnerable to the climate change and 2) the project indirectly increases the vulnerability of associated human and natural systems. In this brief assessment, two factors need to be considered.

- **Timing:** climate risks emerge in various time scales. For example, irrigation infrastructure and construction in coastal areas may be vulnerable in several decades, but power plants may not be vulnerable until much longer. Priority should be given to risks arising in the shorter term.

- **Certainty:** some climate risks are more certain than others. For example, a sea level rise is virtually certain to happen, while a precipitation change in a specific area is less certain. Practitioners should prioritise risks that are more certain to happen.

Through the screening process, practitioners can either remove high-risk projects from the programme or incorporate climate risk management measures.

**Box 1: Identifying pilot projects**

Piloting a small set of projects to demonstrate the effectiveness and relevance of the adaptation is a good way to raise awareness in the local community and gain political momentum. Such pilot adaptation projects should ideally have the following features.

1. **A low hurdle for implementation:** this increases the likelihood of success and provides opportunities for practitioners to gain experience.
2. **High visibility:** this is the key for local awareness raising and future scale-up.
3. **Low regret:** the project should increase the climate resilience of the targeted area, but should also bring development benefits irrespective of climate conditions. This will ensure that benefits of the projects become visible even when the climatic conditions remain unchanged for a few years.

To scale-up pilot projects, raising awareness among local communities and other stakeholders is critical before, during and after project implementation. Some practical methods to raise awareness are suggested by the World Bank:
- Establishing confidence and dialogue with communities with the help of trusted local intermediaries (e.g. non-governmental organizations, community groups, extension workers or government bodies) to avoid conflicting information on climate change issues from “non-trusted” sources.
- Educational activities for youth through open discussions, peer learning and training.
- Village-level “knowledge centres” targeting community-based organisations.
- Cultural activities, such as drama, singing and the use of visual media (movies, short videos, documentaries etc.).
- “Exhibition farms” that successfully demonstrate the use and adoption of innovative techniques and adaptation options (i.e. improved soil management and introduction of new stress-resistant breeding varieties).
- Orientation programmes and workshops addressing climate change impacts on specific activities (e.g. water management).
- Field visits and guided tours as experiential learning opportunities.

Source:
OECD 2009.

2.2. Project appraisal and detailed design

Project appraisal is the stage when each selected discrete project proposal is formulated and analysed in more detail and when the viability of the project is evaluated against multiple criteria. Detailed design takes place when findings from the appraisal are reflected in the project design, and the bulk of the project parameters is finalised before implementation.

At the project appraisal and detailed design stage, an in-depth climate risk assessment, followed by the identification and selection of adaptation options should be conducted to pinpoint the most appropriate adaptation measures:

In-depth climate risk assessment: As projects generally have a detailed timeline, location and components, climate risk assessment at the project level can be much more detailed and precise than at the national or sectoral levels. A range of tools to assess climate risks exist, such as Assessment and Design for Adaptation (ADAPT) to climate change, developed by the World Bank, and CRISTAL developed by a group of NGOs.

Box 2: Environmental impact assessment (EIA) as an entry point to integrate adaptation

Environmental impact assessment (EIA) aims to identify the impacts of a project may have on the environment and ensure that mitigation measures are built in. Since EIA of investment
proposals is mandatory in most countries, it provides an entry point for establishing routine climate change considerations at the project level.

However, EIA has some key limitations. First, EIA is designed to identify the impact of projects on the environment, but not the impact of environmental change on the projects. Second, EIA is often implemented too late to make fundamental changes to the project, as an EIA is normally conducted once a project has been selected for implementation and most parameters have been set. Third, it is often difficult to modify EIA procedures as they are codified in legal obligations.

*Source: OECD 2009.*

**Identifying adaptation options**

After the climate risks assessment, possible adaptation measures should be identified. The practitioners should ideally come up with the following key information for each option:

- **Cost**: costs could consist of a one-off expenditure for capital investments or recurrent cost, including operational costs. The cost should ideally be expressed in monetary terms.
- **Benefits**: the positive impacts should be described in terms of their contribution to the objectives or criteria (e.g. equity). Again, the benefits should ideally be described in monetary terms although benefits are often difficult to monetise.
- **Feasibility**: technical and institutional obstacles should be assessed to examine feasibility. Obstacles may include lack of capacity, lack of technology and legal and cultural conflicts.

Ideally, “no-regrets” options (options that would be justified even in the absence of climate change) should be prioritised. This is because the benefits of climate change adaptation often occur only in a long-run with a degree of uncertainty. Hence, no-regrets options, having immediate and certain benefits, are preferable.
Selecting adaptation options

Once the options have been identified, they can be ranked and prioritised using common methods. They include cost-benefit analysis, cost-effectiveness analysis and multi-criteria analysis:

- **Cost-benefit analysis (CBA):** CBA monetises both costs and benefits of all options and calculates net benefits. Timing of costs and benefits is taken into account by applying a discount rate (e.g. benefits occurring in the long run are given less monetary value than those occurring in the short run). It provides an absolute measure of desirability, albeit judged by only one criterion: economic efficiency. As CBA has comparatively heavy data requirements, the analysis can be time-consuming. In particular, monetising benefits is often a methodological challenge.

- **Cost-effectiveness analysis (CEA):** CEA is somewhat similar to CBA, but does not attempt to monetise benefits. Instead, CEA uses subjective judgements on a range of benefits that the project will provide and calculates the “effectiveness” per cost. CEA is a method that falls somewhere between CBA and multi-criteria analysis.

- **Multi-criteria analysis (MCA):** MCA essentially sets a range of criteria (e.g. financial cost, equity, effect on vulnerability, cultural barriers etc.) to measure different costs and benefits of the project. This is in contrast to CBA, in which the criterion is limited to economic efficiency. Also, including a “do-nothing” case as an option is desirable to clarify whether taking the measure is better than simply “bearing with the situation”. MCA is suitable when more criteria are thought to be relevant and when quantification and valuation in monetary terms is not possible. As subjective judgement plays an important role in this method, there is a risk that it can make outcomes more arbitrary than CBA.

Designing the framework

A project document normally contains a framework with a list of objectives, activities and monitoring indicators, typically called a “logframe” or “results framework”. This framework serves as a basis of implementation, monitoring and evaluation.

The framework is normally presented in the form of a table that consists of key components of the projects, indicators, means of verifications and underlying assumptions for goals, outcomes, outputs and activities.

Table 1 provides an example of a logframe by the Swiss Agency for Development and Co-operation (SDC). Although the specifications of the framework vary from agency to agency, they have common elements such as the breakdown of specific activities and indicators to measure progress.
Table 1. An excerpt from a logframe of the SDC

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
<th>Indicator</th>
<th>Means of verification</th>
<th>Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Output 2.2</strong></td>
<td>Community aware of localised climate change information and have access to advisory services</td>
<td>Activity 2.2.1 Test and establish agromet stations (incl. soil moisture, hydrological parameters, etc) and water budgeting tools</td>
<td>1. Optimal number of agro-met stations established to service project villages 2. Protocols and tools for water-budgeting developed</td>
<td>1. Monitoring reports 2. Agromet data 3. Documented Protocols and Tools</td>
</tr>
<tr>
<td><strong>Activity 2.2.2</strong></td>
<td>Risk reduction strategies and measures for slow and rapid disaster events developed and advisories generated</td>
<td></td>
<td>1. Local disaster management plans exist and put in place 2. Disaster Management Committees at village level are in place 3. No. of advisories on water use, crop planning and management; pest management, etc. issued</td>
<td>Monitoring reports Advisories Insurance companies are willing to partner Watershed Organisation Trust (WOTR) and develop suitable products</td>
</tr>
<tr>
<td><strong>Activity 2.2.3</strong></td>
<td>Integrate indigenous knowledge and scientific knowledge towards climate change preparedness (disaster preparedness; early warning systems, etc.)</td>
<td>Methodology and mechanisms developed for integration of [indigenous knowledge] with scientific knowledge</td>
<td>Relevant documents</td>
<td>Various experts appreciate the need of [indigenous knowledge] integration and agree on methodology</td>
</tr>
<tr>
<td><strong>Activity 2.2.4</strong></td>
<td>Continuously monitor emerging data from national and international studies and collaborate with NDMA and others</td>
<td></td>
<td></td>
<td>Meaningful disaggregated data and studies available and accessible</td>
</tr>
</tbody>
</table>


2.3. **Project implementation**

Following the completion of project appraisal and detailed design, the project can then move to the implementation stage. If the concerned project is new, the implementation stage is simply about executing adaptation measures selected at the detailed design stage. If a practitioner is aiming to integrate adaptation into ongoing projects, he/she should undertake key actions at the previous stages – climate risk assessment, identifying adaptation options and selecting the most suitable option.
2.4. Monitoring and evaluation

Monitoring and evaluation consist of different processes. Monitoring consists of identifying what constitutes a project’s success, as well as problems during project implementation – a process that enables practitioners to take necessary actions if serious problems arise. In contrast, evaluation seeks to evaluate whether the right objectives and strategies were chosen, and results are often used by project planners or policy-makers for future consideration. In addition, evaluation is often undertaken by an external expert and is less frequent compared to monitoring.

**Monitoring**

In the context of integrating adaptation at the project level, monitoring would involve assessing:

- whether the identified adaptation options were actually put in place
- what unexpected problems arose in the implementation process
- whether the adaptation options had any adverse or positive impacts on other sectors or regions
- whether cost of adaptation exceeded those anticipated.

**Evaluation**

Evaluation should assess:

- whether the project delivered intended benefits;
- whether the project caused any unanticipated adverse outcomes.

As experience with integrating adaptation is currently limited, evaluations provide a valuable source of knowledge to be applied in the future.

Measuring the effectiveness of adaptation options can be a challenge due to its long-term nature. For example, the real effectiveness of measures to adapt to anticipated drought and flooding can be assessed only if these events occur. In such cases, the evaluation can be done through an indicator that provides a sign of some progress towards the achievement of project objectives (Box 3).

Some indicators require careful attention as the measured outcome may have negative consequences. For example, rising flood-plain land prices may help capture the benefits of a flood control project. But rising land prices can also force poor households into marginal lands. In such a case, a secondary indicator to measure population movement in different income groups may be required.

**Box 3: Indicators for adaptation**

Indicators play central role to monitor and evaluate the result of the project. Two sets of indicators should be distinguished:
1. **Outcome indicators** measure the extent to which activities financed by the project contribute to climate change adaptation. For example, “Percent of farmers with increased trust in weather data and climate projections in making farming decisions” and “Number of farmers adopting new technologies/ improved farming practices to better cope with climate variability and extremes.

2. **Impact indicators** measure the long-term effects of project outcomes and capture the change in adaptive capacity and resilience to climate shocks of both natural systems and human communities, such as “diminished variability in yields over a multi-year period” and “diminished income variability over a multi-year period”.

Project design documents and logframes contain a range of outcome indicators for each component of the project. Impact indicators are measurable only at the evaluation stage after the completion of the project, but they are important to generate lessons for other adaptation projects.

A common list of indicators is provided in Annex A (no distinction between outcome and impact indicators are made).

3. What donors can do at the project level

The key recommendations made in this user guide are:

- Incorporate consideration of climate risks and adaptation throughout the project cycle
- Develop, pilot test and implement climate risk assessment tools that might be relevant for different categories of projects
- Develop appropriate metrics and indicators to assess whether any efforts at better integrating climate risks and adaptation considerations have proved effective
- Engage a variety of stakeholders (e.g. scientists, local government officials, NGO staff) to identify adaptation options and indicators to monitor progress and success.

When a donor is directly supporting projects in partner countries, donors can integrate climate change adaptation by going through the above key recommendations.

A number of tools have been developed to integrate adaptation at the project level. See Annex B for a list of tools that practitioners may want to refer to.

However, a number of challenges remain:

- While many climate risk assessment tools are currently being piloted (primarily by various donors), they are yet to be tested or implemented in a wide range of contexts.
- As climate risk assessment is still relatively new, there is currently a diversity of approaches, and harmonisation is lacking.
- There are also significant limitations in terms of the availability and reliability of projections of future climate which could serve as a guide for the integration of adaptation considerations. These limitations include:
  - lack of reliable climate projections scaled down at the spatial scale, relevant for most projects;
  - significant uncertainties associated with many climate variables, important in project design, particularly with regard to extreme events.
- From an administrative point of view, project managers may not have sufficient flexibility to implement many adaptation measures. This is because once a project has been selected at the sectoral programming level, project managers are constrained in terms of the changes they can make.
- Any modifications to established practice and guidelines might also incur resistance, as well as additional costs.

Throughout the project cycle, these general challenges should be kept in mind as likely obstacles.

As the donor experience of integrating adaptation at the project level is still relatively limited, donors are encouraged to share their knowledge and experience with other donor agencies. Sharing evaluation reports is particularly helpful to inform future decisions.
Annex A: Examples of indicators for adaptation projects

1 Indicators on risk reduction
- No. of households/communities participating in afforestation/improved agricultural practices/watershed management
- Area of afforestation (m2/ha)
- Impact of flood (no. of people affected, inundation depth, duration, value of flood damage)
- No. and type of Disaster Risk Reduction (DRR) instruments e.g. insurance instruments promoted
- Early warning system in place
- Construction of climate-proof infrastructure
- Percentage of population with improved and sustainable access to water sources
- No. of (people benefitting from) water, livestock and natural risk management projects
- No. of households that seek out, test, adapt and adopt ideas and practices that strengthen their livelihoods

2. Indicators on policy and administrative management (mostly relevant to national and sectoral levels)
- Incorporation of adaptation in regulatory measures and advisories
- No. of (villages, communities, countries, regions) with adaptation/ resource management/ environmentally sustainable strategies/plans
- Inclusion of climate change in policy frameworks (e.g. PRSP, agricultural policies, development policy frameworks)
- Evidence of climate change mainstreaming in development plans
- No. of policy submissions per year (to e.g. Hyogo Framework for Action, COP)
- Reference to climate change as an important factor in understanding risk reduction (in x no. of policy documents)
- A percentage of DRR plans reflect potential climate change impacts
- Resources/no. of projected allocated to climate change adaptation

3. Indicators on environmental education and training
- No. and quality of publications, articles, TV programmes
- No. of training sessions/workshops conducted/no. of people trained
- Development of knowledge platforms/ website
- No. of training modules/materials published and disseminated
- No. of hits on web-based platform
- No. of stakeholders participating in knowledge sharing/training
- No. of policy reviews
- Advocacy campaign developed
- Extent of use and outreach of education material/training facilities
- Increased community capacity through implementation of pilot projects
- No. of trained committees that developed and adopted risk reduction plans
- Adaptation in government staff training curricula

• No. of knowledge communication centres/dialogue platforms

4. **Indicators on research**
   • Development of models and tools produced
   • Availability of relevant data
   • Production of climate predictions under different scenarios (indicators, projections, maps, desertification indices)
   • Studies identify risk and benefits of managing environmental resource(s)
   • Increased capacity to assess vulnerabilities and risks of climate change
   • Vulnerability profile developed
   • No. of stakeholders requesting and accessing knowledge products
   • Extent of research dissemination
   • No. of organisations engaging with knowledge network

5. **Indicators on co-ordination**
   • Linkages developed between institutions
   • Level of stakeholder participation in dialogue, planning and decision making
   • Level of incorporation of research in climate change strategies
   • Extent of participation in networks
   • Strengthened community of practice on climate change
   • A comprehensive strategy on climate change awareness, outreach, communication, and public learning accompanied by supporting mechanisms
   • Establishment of peoples/ producer collectives/ working groups
   • Establishment of institutions/committees addressing adaptation related issues (e.g. watershed management)
   • No. of proposals by civil society and communities incorporated by the government
   • No. of actors that have initiated follow-up programmes on climate risk reduction
### Annex B: Climate risk management and adaptation tools

<table>
<thead>
<tr>
<th>Type/characteristics</th>
<th>Notes</th>
<th>Examples from the development community</th>
</tr>
</thead>
</table>
| **1. Process guidance tools** | These tools can guide users through the entire CRM/adaptation process (e.g. from awareness-raising to monitoring and evaluation), or just one or several steps in the process (e.g. assessing current and future climate risk). The majority are available as documents (e.g. booklets, reports), although some are available as computer programs. | • Adapting to Coastal Climate Change: A Guidebook for Development Planners: [www.crc.uri.edu/index.php?actid=366](http://www.crc.uri.edu/index.php?actid=366)
• BMZ Environment and Climate Assessment: [www.gtz.de/climate-check](http://www.gtz.de/climate-check)
• CEDRA: [http://tilz.tearfund.org/Topics/Environmental+Sustainability/CEDRA.htm](http://tilz.tearfund.org/Topics/Environmental+Sustainability/CEDRA.htm)
• CRISTAL: [www.cristaltool.org](http://www.cristaltool.org)
• ORCHID: [www.ids.ac.uk/climatechange/orchid](http://www.ids.ac.uk/climatechange/orchid)
| **2. Data and information provision tools** | These tools tend to depend on some computer capacity, and a growing number on Internet access. They tend to be databases, modelling programs, mapping and visualisation tools. | • CI-Grasp: [www.ci-grasp.org](http://www.ci-grasp.org)
• Climate Wizard: [www.climatewizard.org](http://www.climatewizard.org)
• Climate Change Explorer Tool: [www.weadapt.org/wiki/The_Climate_Change_Explorer_Tool](http://www.weadapt.org/wiki/The_Climate_Change_Explorer_Tool)
• PRECIS: [www.precis.metoffice.com](http://www.precis.metoffice.com)
• SERVIR: [www.servir.net](http://www.servir.net)
| **3. Knowledge-sharing tools** | Typically knowledge platforms, increasingly reliant on Web 2.0 functionality and user-generated content. They can be important for validation of Type 1 and Type 2 tools, as these platforms can offer a space for user feedback and offer some sort of quality control mechanism. They also help to build a community of practice around climate change adaptation. | • Adaptation Learning Mechanism: [www.adaptationlearning.net](http://www.adaptationlearning.net)
• AfricaAdapt: [www.africa-adapt.net](http://www.africa-adapt.net)
• Climate Adaptation Knowledge Exchange: [www.cakex.org](http://www.cakex.org)
• Climate One Stop: [http://arcserver4.iagt.org/climate1stop/](http://arcserver4.iagt.org/climate1stop/)
• ELDIS resource guide on Adaptation: [www.eldis.org/go/topics/dossiers/climate-change-adaptation](http://www.eldis.org/go/topics/dossiers/climate-change-adaptation)
• weADAPT platform: [www.weadapt.org](http://www.weadapt.org)

**Source:**