

INTEGRATING CLIMATE CHANGE ADAPTATION  
INTO DEVELOPMENT CO-OPERATION

# A User Guide for Practitioners Working at the Sectoral Level



## **Integrating Climate Change Adaptation into Development Co-operation**

The document can be downloaded at:  
[www.oecd.org/dataoecd/0/9/43652123.pdf](http://www.oecd.org/dataoecd/0/9/43652123.pdf)

In 2009, OECD published the ***Policy Guidance on Integrating Climate Change Adaptation into Development Co-operation***<sup>1</sup>. 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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<sup>1</sup> [www.oecd.org/env/cc/adaptation/guidance](http://www.oecd.org/env/cc/adaptation/guidance)

## Introduction

This user guide addresses how practitioners at the sectoral level in developing countries can address climate change adaptation. It examines integrating adaptation within the sectoral policy cycle – at the policy formulation stage, the planning stage, the resource allocation stage and the sector programming stage. It looks at the role of donors in supporting the integration of adaptation at the sectoral level and concludes with a discussion of the challenges and priorities for action.

For the purposes of the policy guidance, the “sector level” includes bodies with policy-making and planning authority and functions within a given sector at the level of an entire nation (or, in a decentralised system, within a given sector at the level of an entire state or province). This user guide uses a generic governance architecture to describe the various stages of the policy cycle.

### 1. Why the sectoral level matters for adaptation

Integrating adaptation at the sectoral level is important because vulnerability and response options are highly sector-specific. Adaptation tools and methods therefore vary significantly between sectors. Important steps and decisions on adaptation therefore have to be taken. Some sectors are particularly vulnerable –including agriculture, forestry, water and health. Although not a sector itself, long-life infrastructures (e.g. port, roads, dams, bridges) deserve particular attention, as it is very costly to reverse decisions (e.g. location, choice of technology).

Continuing development as usual without giving due consideration to climate-associated risks can actually increase vulnerability. For example, large-scale planting of drought-sensitive crops can backfire if climate change increases the frequency of droughts. This is referred to as “maladaptation”. In order to avoid maladaptation, development policies must be designed with consideration of how they may be affected by climate change.

Sectoral ministries therefore need to recognise and assess the risks of climate change and undertake necessary measures in their respective sector. In addition, inter-ministerial co-ordination is the key because climate change poses risks to multiple sectors and requires co-ordination to avoid conflicting or duplicative measures. Establishing a high-level co-ordination mechanism, such as by the office of the president, can facilitate effective climate change adaptation on a whole-of-government scale.

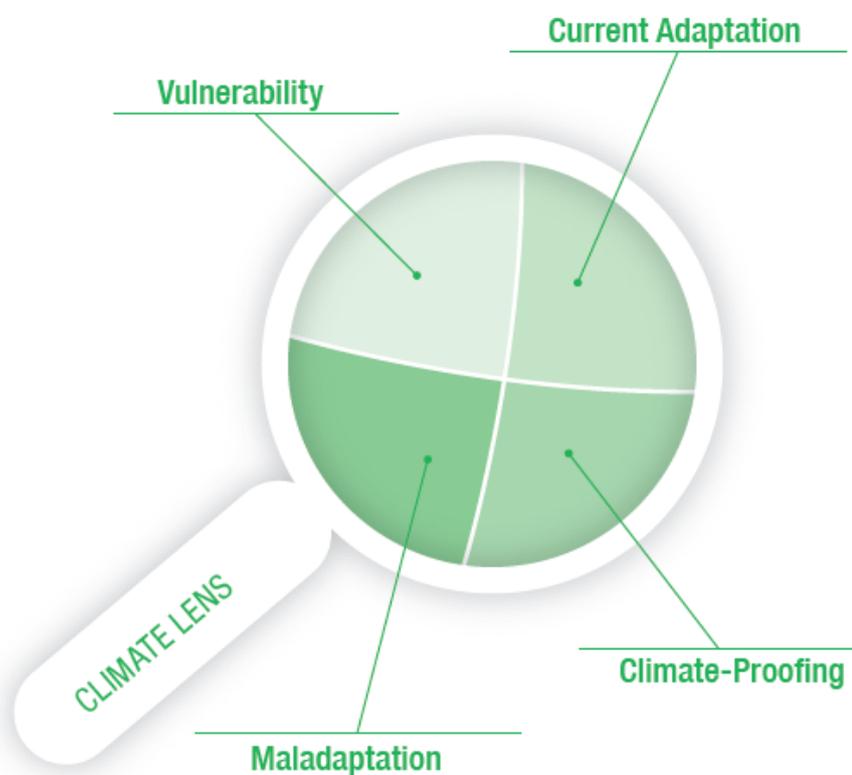
**Table 1. Examples of possible adaptation measures**

<b>Sector</b>	<b>Type/Category of Adaptation</b>	<b>Example of adaptation options</b>
<b>Agriculture</b>	<i>Share the loss</i>	Crop insurance
	<i>Prevent the loss</i> (structural, technological)	Investment in new capital (e.g. irrigation)
	<i>Prevent the loss</i> (market-based)	Removal of market distortions (e.g. water pricing); Liberalisation of agricultural trade to buffer regionalised losses
	<i>Change use</i>	Change crops, promote crop diversification Alter planting dates Alter farming practices
	<i>Research</i>	Development of heat and drought resistant crops Monitoring temperature averages and extremes
<b>Water</b>	<i>Prevent the loss</i> (structural, technological)	Loss reduction (leakage control; conservation plumbing) Capacity increase (new reservoirs, desalination facilities)
	<i>Prevent the loss</i> (institutional/administrative)	Water allocation (e.g. municipal vs. agricultural) Risk management to deal with rainfall variability
	<i>Prevent the loss</i> (market-based)	Water permits Water pricing
	<i>Education/behavioural</i>	Rational water use Rainwater collection
<b>Health</b>	<i>Prevent the loss</i> (structural, technological)	Air conditioning Building standards
	<i>Prevent the loss</i> (institutional, administrative)	Improvements in public health Vector control programmes Disease eradication programmes Monitoring the incidence of diseases in areas where they were not previously present.
	<i>Research</i>	R&D on vector control Vaccines Disease eradication

### Applying the climate lens

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

**Figure 1: Applying the climate lens**

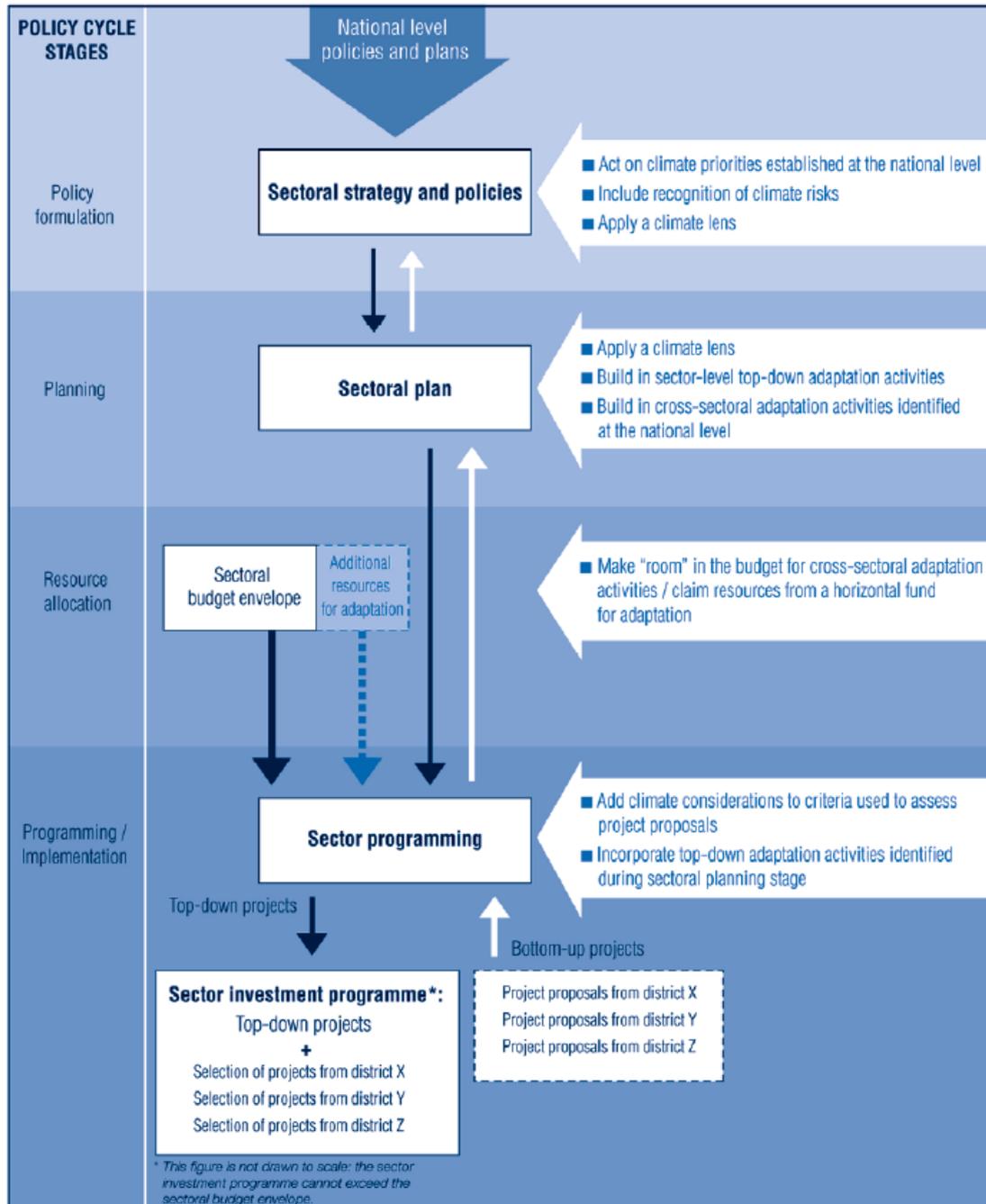


<i>Using the climate lens</i>	
<b>Q1: VULNERABILITY</b>	How vulnerable is the decision to climate change?
<b>Q2: CURRENT ADAPTATION</b>	To what extent have climate change risks already been taken into account?
<b>Q3 MALADAPTATION</b>	Does the decision increase vulnerability to climate change or overlook opportunities for adaptation?
<b>Q4: CLIMATE-PROOFING</b>	Can the decision be amended to take into account the risks posed by climate change?

## 2. How to integrate climate change adaptation at sectoral level

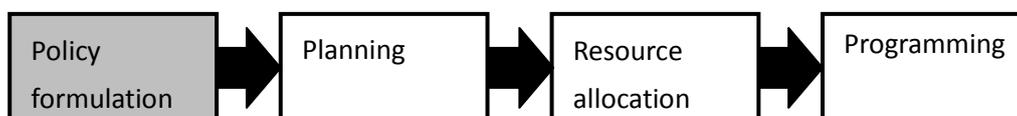
There are four stages in a sectoral policy cycle: (i) policy formulation, (ii) planning, (iii) resource allocation and (iv) programming. The core of integrating adaptation at the sectoral level is to conduct climate-lens analysis at all design stages, as each stage has a distinct role to play. The following sections describe how climate change adaptation can be integrated at each level.

**Figure 2: Sectoral level governance architecture with key interventions for adaptation**



Source: OECD (2009) *Integrating Climate Change Adaptation into Development Co-operation: Policy Guidance*

## 2.1. Policy formulation stage



The policy formulation stage sets out the broad objectives for a given sector. This is the stage where national policy directions are translated into sector-specific policy options, which then provides the basis for designing operational plans and mobilising resources to implement them.

A common approach to integrate adaptation at the sectoral level is to create an “action plan” or a “roadmap”. These serve as strategies to address adaptation in respective sectors. Such sectoral strategies for adaptation should:

- **Elaborate key actions identified the national level.** Sectoral ministries should follow the action framework set at the national level. For example, an application of climate lens to Poverty Reduction Strategy Paper may have identified vulnerability in agriculture and health sector. These identified risks needs to be assessed further by ministries in charge.
- **Fill the gap of national-level strategies.** In addition to elaborating the findings from national level, each sectoral ministry should assess the risk of climate change in their respective sector. This would help the sector to identify sector-specific risks and opportunities not identified at the national level.

Box 1 provides a case of integrating adaptation in the agricultural sector in Viet Nam. It is a good example to connect policies at national and sectoral levels.

### Box 1: Viet Nam’s action plan on adaptation in agricultural sector

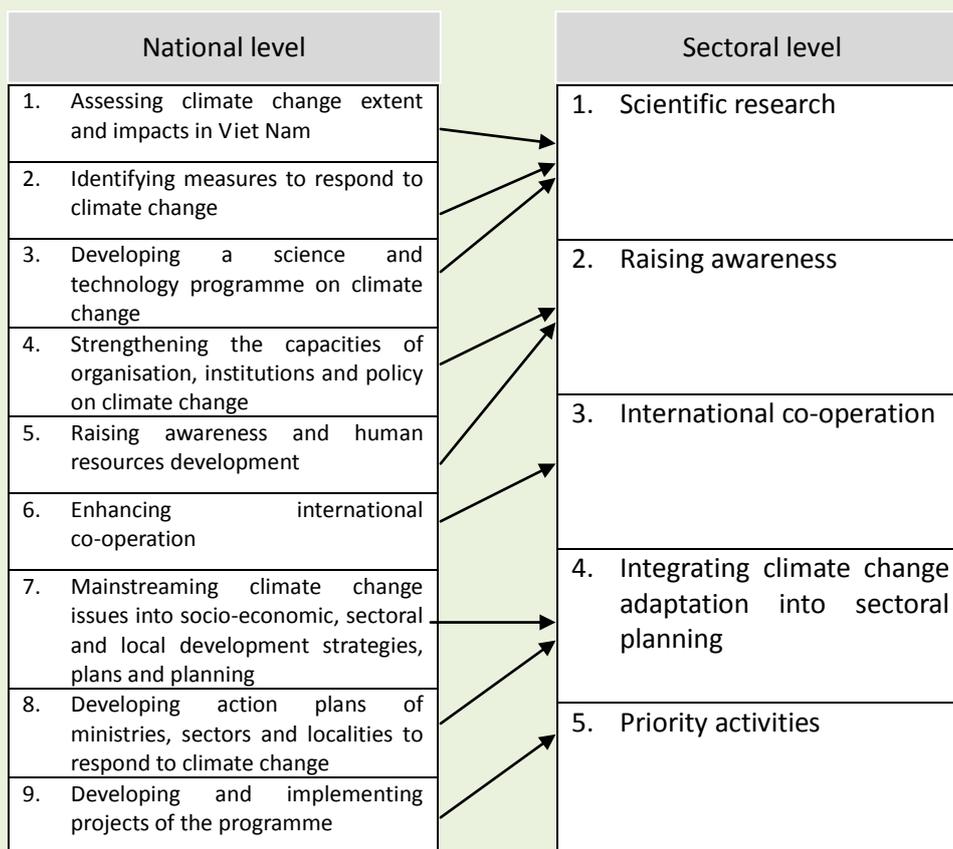
The agricultural sector in Viet Nam provides a good example how a sector can address climate change adaptation. The Vietnamese Ministry of Agriculture and Rural Development adopted the “Action Plan Framework for Adaptation and Mitigation of Climate Change in the Agriculture and Rural Development Sector Period 2008-2020”. This framework is structured around five key themes:

- 1. Scientific research:** establishing a database of mitigation/adaptation activities, assessing climate change impacts in the sector, proposing mitigation and adaptation measures, training human resources for scientific research.
- 2. Raising awareness:** disseminating information, designing training courses and a dedicated website, providing climate forecasts.
- 3. Integrating climate change adaptation into sectoral planning:** developing a strategic vision for adaptation, reviewing existing legal documents with a view to enhancing adaptation, developing collaboration mechanisms with other ministries and local governments.
- 4. International co-operation:** seeking donor funding, sharing information, building a network of donors, benefiting from international training and experience sharing, establishing a dedicated fund for international assistance, co-operating with other programmes that

implement multilateral commitments.

**5. Priority activities:** building capacity, developing planning methodology, conducting scientific research.

This sectoral framework reflects a key set of policies at the national level, the “National Target Program (NTP) to Respond to Climate Change”, approved in December 2008. Similar exercises have been undertaken in other sectors as well. The following figure illustrates the links between national and sectoral policies.



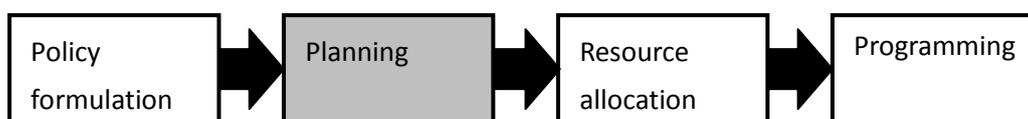
Furthermore, it makes use of the climate lens by explicitly addressing the need to review the existing legislations in the view of enhancing adaptation. It states: “Screen and review current legal documents and sectoral policies and recommend amendments and issuance of new legal documents on climate change adaptation and mitigation as necessary.” This is a key element of integrating adaptation at the sectoral level.

*Sources:*

Government of Viet Nam (2008). *National Target Program to Respond to Climate Change*.

Government of Viet Nam (2008). *Action Plan Framework for Adaptation to Climate Change in the Agriculture and Rural Development Sector Period 2008-2020*.

## 2.2. Planning stage



The planning stage is where the sectoral strategy is translated into a set of concrete actions. This often includes specifying the number, type and location of investments to be undertaken. Adaptation planning should be based on the best available climate information and specialist knowledge in the sector.

Generally, plans at the sector level result from negotiations among sectoral authorities at the national level (typically ministries), local authorities and decentralised agents of the sectoral authorities. Therefore, the key at the planning stage is to blend the national top-down and bottom-up elements from the regional/local level in a balanced way. Planning also needs to take into account activities that require collaboration with other sectoral authorities.

For the purpose of climate adaptation, planning should recognise the following two key considerations:

- **Develop public goods with spill-over effects to sub-national levels.** Activities with high positive spill-over effects should be planned at the sectoral level. For example, knowledge to model future water flows, assess health risk and develop drought-resilience crops are all public goods that can be used at regional and local level. Such activities can be developed more efficiently at the sectoral level than at the local level.
- **Build in cross-sectoral adaptation activities identified at the national level.** Responses to the impacts of climate change cut across sectors. Examples include disaster risk management and water management. Such cross-sectoral climate change responses will then have to be translated into programmes and projects at the sectoral level and built into the sectoral plan.

### Box 2: Indonesia: adaptation plans in four sectors

Indonesia developed the “Indonesia Climate Change Sectoral Roadmap” in 2009. This plan was designed to strengthen national-level commitment on climate change outlined in the “National Action Plan on Climate Change” and “National Development Planning: Indonesia Responses to Climate Change”.

The sectoral roadmap includes adaptation plans in four sectors: water, marine and fishery, health and agriculture. These four plans are designed under three pillars:

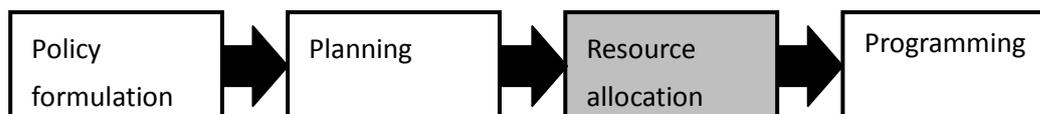
1. Data, information and knowledge management
2. Planning and policy, regulation and institutional development
3. Plans and programmes implementation and control with monitoring and evaluation

The plan also provides long-term direction by specifying activities in 2010-14, 2015-19, 2020-24, 2025-29. An example from the health sector is provided below.

<b>Activities planned in 2010-14 in the health sector</b>	
<b>Data, information and knowledge management</b>	Analysing climate change hazard, vulnerability, risk and impact to health on province and regency/city levels
	Arranging and modernising databases, information systems and community health profiles
<b>Planning and policy, regulation and institutional development</b>	Strengthening policy and regulation based on community health
	Training and networking in climate change adaptation strategy at central, province and regency/city level
	Campaigning for early warning systems for climate-change impact areas
	Strengthening health service systems as a response to climate change
<b>Implementation and control with monitoring and evaluation</b>	Improving financial support, equipment and infrastructure to support disease control programmes, for instance through international co-operation
	Improving public access to health services in several regencies/cities
	Strengthening monitoring systems, surveillance and health information systems in climate change
	Involving the community through communication, information, and education, campaigning and promoting health
	Developing appropriate adaptation technology

*Source: Government of Indonesia (2009): Indonesia Climate Change Sectoral Roadmap Synthesis Report.*

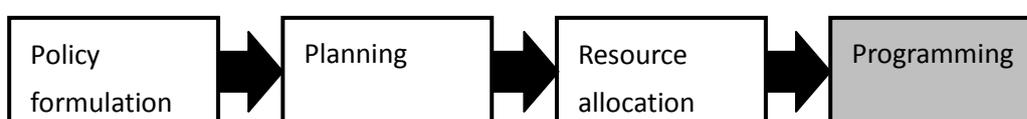
### 2.3. Resource allocation stage



At the resource allocation stage, funding is allocated to each sector from the national budget. Key interventions at this stage involve planning expenditures not only for the implementation of the agreed sector plan, but also for monitoring, evaluation and cross-sectoral activities. These key interventions involve:

- **Secure sufficient funding for cross-sectoral activities.** Applying the climate lens at the national level may have identified the need for cross-sectoral activities (e.g. disaster risk reduction). At the budget allocation stage, the authority should allocate funding to these activities from the sectoral budget or tap onto a national horizontal fund for adaptation. Funding arrangements needs to be made through a consultative process with respective ministries.
- **Ensure necessary financial and human resources to conduct strengthen monitoring and evaluation systems (M&E).** M&E systems cannot be established overnight. Financial and specialised human resources are required to establish any effective system. Therefore, sectoral budget or multi-year budgetary frameworks (such as Medium-Term Expenditure Framework) should explicitly allocate funding for M&E as well as human resource development for M&E.
- **Devise indicators to track performance against adaptation.** Since climate change adaptation is a relatively new policy area, it is a challenge to devise outcome-oriented indicators. Adaptation concerns complex human and natural systems, so the causal chain between inputs, outputs, outcomes and impacts is by nature complex. Hence, early emphasis can be given to input and process indicators to measure the uptake of policy measures in a comprehensive way. Over time, these indicators can change and more outcome-related measures can be assessed.

### 2.4. Sector programming stage



The sector programming stage involves the precise identification and costing of a specific set of investments, activities or “projects” (which may have varying scales) to be implemented within a given time horizon (say five years), as well as implementation arrangements and responsibilities, time-lines and estimated costs. The key considerations are:

- **Systematically add a climate lens as a criterion to screen projects.** In general, project proposals are routinely subjected to a range of screening criteria, such as social impact analysis, environmental impact assessment and cost-benefit analysis. Climate lens analysis can be added to these existing criteria. By doing so, the sector programme can (i) avoid excessively risky projects, (ii) build in appropriate climate-proofing measures

and financing for vulnerable projects selected for implementation, and (iii) include in the sectoral programme activities that can actively contribute to reducing climate vulnerability.

- **Incorporate top-down activities identified at the planning stage.** The body responsible for allocating the sectoral budget to different regions or districts should take into account top-down project proposals identified during the sectoral planning stage. Such top-down projects can be combined with bottom-up projects from regions and districts.

### Box 3: Cambodia: designing a programme for adaptation through scoring

Cambodia’s “National Adaptation Programmes of Action (NAPA)” provides an example of how an adaptation programme can blend both top-down and bottom-up elements. Cambodia submitted its NAPA to the United National Framework Convention on Climate Change in 2006. This is a programme with a set of priority projects from various sectors to climate-proof the country.

In the health sector, the selection of NAPA priority projects was based on a simple qualitative assessment with nine criteria. These criteria are based on Cambodia’s existing development priorities as articulated in its “Rectangular Strategy for Growth”, “Employment, Equity and Efficiency”, and the “Cambodian Millennium Development Goals (CMDG)” among other laws and regulations. Each project was labelled as either “negative”, “neutral” or “positive” against these criteria through various stakeholder meetings and workshops. Projects with the highest aggregate scores were listed in the NAPA.

#### Example activity : production of biopesticides

Criteria	Score +=positive, -=negative, 0=neutral
1. Death and casualty	+
2. Human health	+
3. Biodiversity and other environmental goods and services	+
4. Appropriate and environmentally friendly technology	+
5. Protection, rehabilitation or construction of infrastructure	0
6. Responsiveness to immediate needs of affected communities	+
7. Capacity building	+
8. Synergy and complementarity with other projects	+
9. Sustainability	+
<b>Total</b>	<b>8</b>

Through the selection process, the NAPA identified four priority projects in the health sector: i) producing biopesticides, ii) developing healthcare centres and posts, iii) providing safe water in high-risk malaria regions and iv) conducting malaria education and mosquito habitat clearance campaigns.

Source: Government of Cambodia (2006), *National Adaptation Plan of Action to Climate Change*

### 3. What donors can do at the sectoral level

Development co-operation is often earmarked for specific sectors. Donors' country assistance strategies typically specify the sectoral domains benefiting from development assistance. Assistance to the selected sectors is planned and implemented on the basis of a donor's own sector-specific policies or programmes that set the objectives and overall guidance for their co-operation programmes.

First and foremost, donors need to apply the climate lens to their own sector-specific policies and programmes. A substantial amount of climate-related information is available in the public domain to facilitate the application of a climate lens.

Once donors have applied the climate lens at its own sectoral activities, they may need to modify the aid modality to the sector they are supporting in developing countries. Aid to the beneficiary sectors can be channelled through a variety of modalities, including sector budget support, sector-wide approaches (SWAp), basket funding, project funding ) and technical assistance:

- **Sector budget support<sup>2</sup>.** Sector budget support provides an important platform for high-level policy dialogue with senior government officials from the sectoral ministries as well as the Ministry of Finance. This provides an opportunity for donors to raise government attention to climate risks in sector development. Adaptation strategies can in principle be integrated into performance assessment frameworks (PAFs) of sector budget support to help keep adaptation high on the policy agenda. Furthermore, additional discretionary donor funds for sectoral development can ease financial constraints in the sector so that adaptation-related expenditures can be covered and priority activities for adaptation can be implemented.
- **Basket funding.** Financial assistance to specific sectors can also be provided through basket funding (also called pooled funding) whereby a group of donors pools funding in support of specific sub-sectoral areas (e.g. a basket fund for the procurement of essential drugs in the health sector, a basket fund for government capacity building). In countries where budget support is not an option (e.g. because of high fiduciary risk), basket funding could be a useful instrument to bring aid resources together in support of adaptation in a particular sectoral or cross-sectoral area. However, the use of basket funding is not recommended in countries where budget support is already in use, as it creates a new mechanism in addition to the national budgetary system. Such a new mechanism can be costly and burdensome for the recipient countries to manage.
- **Sector-wide approach (SWAp).** Sector-wide approaches are another important entry point in development co-operation at the sector level. In essence, SWAp aims to bring together a broad range of stakeholders – including government, donors, businesses and civil societies – to come up with a single sectoral strategy as well as monitoring

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<sup>2</sup> Sector budget support is a modality for funding government policy in a specific sector through the state budget. In essence, donors provide untied funds for the respective sector and hold dialogue with partner governments on sector policies and performance. Sector budget support is often accompanied by PAFs which serve as a mechanism to monitor and review government progress and include sector policy indicators and targets.

framework and medium-term expenditure plan. A SWAp provides a good opportunity to ensure the ownership of the partner government, as well as systematic and harmonised activity by donors. In addition, its innate encouragement to design medium-term expenditure plans suits climate adaptation, which also requires medium- to long-term planning. However, SWAPs has a tendency to put excessive focus on the process itself (for example, creating common funding mechanisms and policy dialogue forums between the donor community and government). This tendency from experience should be kept in mind to promote more outcome-oriented SWAp.

#### Box 4. Cameroon: The Forest and Environment Sector Programme

The “Forest and Environment Sector Programme” in Cameroon provides a notable example of a SWAp to be used to integrate adaptation concerns into the sector. Though activities under the Forest and Environment Sector Programme are not specifically designed as climate change adaptation strategies, they build the capacities of communities and institutions to cope with and respond to threats and opportunities associated with various climate change scenarios.

The “Forest and Environment Sector Programme” was developed by the government of Cameroon and led by the Ministries of Forests and Environment. Supporting donors include Canada, the European Union, FAO, France, Germany, the Netherlands, UNDP, the United Kingdom, and the World Bank. It was adopted in June 2004 as a ten-year programme. In January 2006, 13 donors signed a Code of Conduct in support of the country’s first SWAp in the forest and environment sectors. The programme created the Forest Governance Facility as a fund to receive and disburse donor funding. Though not designed with the objective of climate change adaptation, this facility could play an important role in raising awareness and ensuring local participation in sector decision-making processes.

Source:

OECD (2009) *Integrating Climate Change Adaptation into Development Co-operation: Policy Guidance*

### Challenges and priority actions for donors

Meaningful integration of adaptation considerations, however, is still at a very early stage. Key challenges include the lack of information, awareness and capacity. Priority actions include:

- **Conduct a needs assessment for sector-level climate information.** There is a general lack of detailed information on climate change impacts, vulnerabilities and adaptation priorities at the sectoral level. Needs assessment for such information and studies to fill in the information gap are required. Furthermore, there is often limited access to centralised sources of climate expertise in the Ministries of Environment or the Department of Meteorology. Consequently, decision-makers may not have adequate information on the specific implications of climate change on their specific sectors. Access to existing information needs to be enhanced.
- **Raise further awareness.** Adaptation to climate change is still not high enough on the agenda of most sectoral ministries and donor agencies. Even in cases where consideration of climate variability is part of established practice (as in water resource management), the established regulations and procedures frequently rely upon

historical climate as a baseline and do not adequately reflect how the baseline itself might change as a result of the changing climate. Therefore, further awareness raising may be needed.

- **Develop capacity to evaluate climate risks for specific sectors.** There is a need to boost in-house capacity within sectoral ministries and donor agencies to better evaluate the implications of climate change for specific sectors. There is also a need for better cross-sectoral co-ordination to conduct linked assessments of the implications of climate change (e.g. water and agriculture).
- **Provide better information on the costs and benefits of adaptation action.** Even when there is information available on specific adaptation actions that could be undertaken at the sectoral level, there is typically little or no information on how much such measures might cost. Lack of information on cost is an obstacle to allocate sufficient resources (such as through sectoral investment plans). Studies on cost estimate, as well as the benefits the investments bring, are needed.

