Tools and Methods Series

Guidelines N° 4

EuropeAid

Guidelines on the Integration of Environment and Climate Change in Development Cooperation

Revised Version

December 2011

European Commission

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The original document was prepared following consultations with EC staff from the Directorates General of Development, Environment and External Relations, as well as staff in EU Delegations. Environment focal persons from EU Members States' development agencies also participated. The work was supported by consultants from the company ADE.

In order to ensure that this guide always reflects the most recent developments and requirements in this field, it is planned to modify and adapt as and when necessary.

This latest version includes a review of the Project Environmental Screening procedures (Annex 7) and two new annexes on Climate Risk Analysis (Annexes 11 and 12).

To help us meet needs and requirements of end users, comments, questions, and suggestions on this guide are welcomed and should be sent to: EUROPEAID-C2 @ec.europa.eu.

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ACRONYMS

AF	Action Fiche
CEP	Country Environmental Profile
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CSP	Country Strategy Paper
DCI	Development Cooperation Instrument
DFID	(UK) Department for International Development
EC	European Commission
EFR	Environmental Fiscal Reform
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EU	European Union
FLEGT	Forest Law Enforcement, Governance and Trade
FSC	Forest Stewardship Council
GBS	General Budget Support
GCCA	Global Climate Change Alliance, an initiative of the European Commission
GHG	Greenhouse gas
GMO	Genetically modified organism
IF	Identification Fiche
IPCC	Intergovernmental Panel on Climate Change
ITTA	International Tropical Timber Agreement
MDG	Millennium Development Goal
MEA	Multilateral Environmental Agreement
MSC	Marine Stewardship Council
MTEF	Medium-Term Expenditure Framework
NAP	National Action Plan
NGO	Non-governmental organisation
NIP	National Indicative Programme
OECD	Organisation for Economic Cooperation and Development
OECD-DAC	Development Assistance Committee of the OECD
PPP	Policy, plan, programme
PRSP	Poverty Reduction Strategy Paper
REP	Regional Environmental Profile
RIP	Regional Indicative Programme
RSP	Regional Strategy Paper
SDS	Sustainable Development Strategy
SEA	Strategic Environmental Assessment
SIDA	Swedish International Development Agency
SPSP	Sector Policy Support Programme
TAPs	Technical and Administrative Provisions (annex to a financing agreement)
ToR	Terms of Reference
UNCBD	United Nations Convention on Biological Diversity
UNCDD	United Nations Convention to Combat Desertification
UNECE	United Nations Economic Commission for Europe
UNDP	United Nations Development Programme

UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
WB	World Bank
WMO	World Meteorological Organization

GLOSSARY OF CLIMATE CHANGE TERMS

Adaptation (to climate change) aims to reduce sensitivity to climate change, both in the short and in the long terms. It involves adjustments in practices, processes and infrastructure but also changes in social and institutional structures and decision-making processes. It is widely accepted that developed countries, which have been historically responsible for the bulk of anthropogenic Greenhouse Gas (GHG) emissions and are still a major contributor, have a duty to help developing countries cope with effects that can no longer be avoided. This may be addressed through the "mainstreaming" of climate change adaptation into conventional Official Development Assistance (ODA), and/or through dedicated adaptation funding such as provided under the United Nations Framework Convention on Climate Change (UNFCCC) through various mechanisms: the Global Environment Facility (GEF), the Adaptation Fund, and the proposed Copenhagen "Green Fund," the management of which is yet to be decided.

Adaptive capacity is defined by the Intergovernmental Panel on Climate Change (IPCC) as the ability of a system to adjust to climate change (including climate variability and extremes) to moderate potential damages, to take advantage of opportunities, or to cope with the consequences."[1] Where one is concerned with vulnerability to hazards that evolve over time (e.g. rather than the immediate vulnerability of a population to a sudden-onset hazard that might occur in the very near future), adaptive capacity may be viewed as a component of *vulnerability*.

Climate change refers to shifts in average climatic parameters and/or in the magnitude of climate variability that are observed and persist over extended periods of time (typically decades or longer). Like climate variability, it can be induced by both natural and anthropogenic factors. In these guidelines, 'climate change' is used to refer to the long-term changes in climate directly and indirectly caused by human activities combined with those originating from natural climate evolution and variability. This is in line with the definition provided by the IPCC [2].

Climate variability refers to short-term variations in the mean state and other statistics of the climate (e.g. amplitude of variations, extreme values, frequency of occurrence of extremes). Climate variability is an inherent feature of climate. It is generated by natural processes within climatic systems – but can also be enhanced by anthropogenic factors such as the accumulation of GHGs in the atmosphere. It can be measured on various time scales beyond the scale of individual weather events. In these guidelines, 'climate variability' is used primarily to refer to variations in climate observed over relatively short periods (typically less than a decade), and 'increasing climate variability' is taken to be one of the consequences of the ongoing climate change process.

Climate hazards are physical manifestation of climate change or variability that have the potential to adversely affect a project or to amplify its negative impacts. Hazards (like the disasters that they can trigger) are often divided into *sudden-onset* and *slow-onset* hazards. In a given region, climate change may intensify existing hazards or result in new hazards. New hazards may be extreme events not previously experienced in a specific area (e.g. due to changes in storm tracks or wider changes that mean previously humid areas are exposed to periodic drought). However, new hazards may also include what might be called "singular" hazards that may be sudden-onset or slow-onset, including the collapse of ecosystems, glacial lake outbursts, changes in monsoon systems, shifts in climatic zones, etc. These singular hazards represent qualitative changes in climatic and/or environmental conditions that are effectively irreversible (at least on the timescales of concern to development planners).

- Sudden-onset climate hazards are typically short-lived, recurrent extremes such as extreme precipitation, storms, high winds, and extreme temperatures. These can result in impacts such as flooding, extreme sea-levels and storm surges, landslides and wildfires. Sudden-onset

[1] IPCC (2007) *Climate Change 2007: Impacts, Adaptation and Vulnerability*. *Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, p. 883. Cambridge University Press, pp. 869.
[2] IPCC (2007) *Climate Change 2007: Synthesis Report*, Intergovernmental Panel on Climate Change, Fourth Assessment Report; see: www.ipcc.ch. Note however that the UNFCCC makes a distinction between climate change attributable to human activities altering the atmospheric composition and climate variability attributable to natural causes.

hazards are associated with climate variability, but climate change will change the frequency and severity of these hazards in many areas.

- Slow onset hazards include recurrent phenomena such as droughts, as well as longer-term changes such as changes in rainfall and temperature. Droughts are associated with climate variability, but the frequency, severity and duration of droughts can change as a result of climate change. Longer-term changes in temperature and rainfall (including changes in mean, minimum and maximum values and variability on seasonal timescales and longer) are associated with climate change, as are long-term changes in sea levels and ocean acidity. These longer-term changes can drive secondary processes such as environmental degradation and desertification.

'Climate-related' aspects, issues, concerns, risks etc. as used in these guidelines include climate change and climate variability, separately or together.

Maladaptation is "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".[3] Maladaptation can be associated with "lock-in" to patterns of development that are unsustainable under future climatic conditions, increasing the risk of economic and wider societal disruption. Typically, maladaptation occurs when longer term climatic and environmental change and variability is ignored in development planning. This may result in development strategies being developed under erroneous (implicit or explicit) assumptions that climatic and environmental conditions in the future (including the availability of key resources such as water) will resemble those of today.

Mitigation (of climate change) refers to efforts to reduce emissions of GHGs, (principally but not only carbon dioxide or CO_2) or increase the rate at which they are removed from the atmosphere (e.g. absorption of CO_2 by biological systems), and ultimately stabilising their atmospheric concentrations. Although most developed countries, which have the largest GHG emissions per capita, accept that they should contribute most to the mitigation effort, the stabilisation of GHG levels can only be achieved with the support of all countries and sectors; it is therefore important that development cooperation interventions, as well as other initiatives such as the Kyoto Protocol's Clean Development Mechanism (CDM), help partner countries opt for "low-carbon" development pathways that seek to minimise emissions while delivering development – and provide access to the technical and financial resources required for this purpose.

Resilience refers to the "ability of a social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organisation, and the capacity to adapt to stress and change."[4]

Risk results from the interactions of *hazards* with the *vulnerabilities* of systems or populations exposed to those hazards, and is sometimes described as a function of *hazard* and *vulnerability*[5].

Vulnerability is a common term that is used to mean different things in different contexts, and the following two types of vulnerability are sometimes defined:

- **Biophysical vulnerability** is "a function of the character, magnitude and rate of climate change or variation to which a system is exposed, its sensitivity, and its *adaptive capacity*", and corresponds to the definition of vulnerability in the glossary of the IPCC Fourth Assessment Report[6]. This definition is very similar to long-established definitions of risk.[7]
- **Social vulnerability** may be seen something that is inherent or internal to a population or social system, that arises from a variety of processes and factors that make a population or

[3] OECD (2009) Policy Guidance on Integrating Climate Change Adaptation into Development Co-operation. 28-29 May 2009, p.49. OECD, Paris.
[4] IPCC (2007, p. 880)
[5] Brooks, N. (2003) *Vulnerability, risk and adaptation: A conceptual framework*. Tyndall Centre Working Paper No. 38.
[6] IPCC (2007, p. 883)
[7] Brooks, N. (2003).

system more or less sensitive to a hazard and more or less likely to experience negative impacts when exposed to a *hazard*. This definition reflects the concept of vulnerability widely used in the natural hazards literature, in the field of disaster risk reduction, and in the social sciences in general.[8] An analogous formulation of ecological vulnerability may be used to describe the sensitivity of natural systems to climate-related hazards.

[8] This definition is similar to a definition given in Chapter 18 of the IPCC Third Assessment Report, in which vulnerability is defined as the "degree to which a system is susceptible to injury, damage or harm (one part – the problematic or detrimental part – of sensitivity". Viewing vulnerability as arising from the internal properties of a system enables the factors that drive vulnerability to climate change-related hazards and associated outcomes to be addressed even in the absence of detailed information about the "character, magnitude and rate of climate change", provided we have a general grasp of what sort of hazards a system may be exposed to. For this reason, this definition is generally preferred by social scientists who study the societal factors that mediate hazard outcomes and impacts, for example on livelihoods.

EXECUTIVE SUMMARY

These guidelines define a comprehensive reference framework for integrating the environment and climate change into the different stages of the cycle of operations for EC development cooperation covering the three aid delivery approaches. They are intended for EC staff and their partners and are an update of the guidelines published in 2009 and now contain new guidance on climate risk assessment.

The guidelines are presented in 6 chapters: Chapters 1-2 provide an introduction and the rationale and main concepts along with the policy framework. Chapters 3-6 focus on programming and aid delivery modalities and illustrate the use of the tools, methods and environmental integration entry points. The Annexes contain sector fiches, screening questionnaires and model terms of reference for Country Environmental Profiles and environmental assessments including Environmental Impact Assessments, Strategic Environmental Assessments, and Climate Risk Assessments.

Chapter 1 – Introduction

This chapter outlines why the guidelines are an important instrument in support of the EC's obligation to mainstream the environment, including climate change, into development cooperation, and defines key terms.

In the EC context, mainstreaming is defined as 'the process of systematically integrating a selected value/theme/idea into all domains of development cooperation…' and requires changes both in ideas and practices. The integration of the environment and climate change serves four main objectives:

- Identifying and avoiding harmful direct and indirect environmental and climate impacts of strategies and programmes in the different co-operation sectors, which can undermine sustainability.
- Recognising and realising opportunities for enhancing environmental conditions, thereby bringing additional benefits to development and economic activities and advancing environmental issues that are a priority for the EC.
- Promoting improved environmental and climate change dialogue with partner countries, based on the technical, economic and social arguments in favour of a more environmental approach to policies and programmes.
- Identifying potential risks of a project or programme by assessing its exposure and sensitivity as well as response capacities in place to deal with existing or anticipated climate variability and change.

'The environment' is considered to include those bio-physical resources and conditions on which human lives and activities depend. Climate is a critical component of the environment, and human-induced climate change represents an additional development challenge which needs to be addressed.

Chapter 2 – Why mainstream the environment, including climate change?

The rationale for mainstreaming the environment including climate variability and change is based on a number of arguments. These include the concept of environmental services and the increasing realisation of external environmental costs.

Sustainable development based on approaches that not only address economic objectives, but also social and environmental ones, is established and emphasised in EU development cooperation objectives. However actually achieving sustainable development remains both a local and global challenge.

Climate change represents an additional and formidable challenge to sustainable development, interacting with existing negative environmental trends and intensifying pressures. It also represents extraordinary opportunities to stimulate new thinking and promote sustainable development trajectories. More needs to be learnt about the precise effects and location of the challenges, and during this learning process responses based on a 'robust' approach are advocated. Notions of climate change *mitigation (*reducing greenhouse gas emissions) and *adaptation* (reducing sensitivity to the consequences) are introduced in this chapter, and examples of

actions that address these concerns are provided.

Increasingly, environmental conditions are also linked to security and potential conflict; in particular access to and the management of natural resources. Climate change is already considered one driver in the creation of 'environmental migrations' and the social and political challenges they pose.

The eradication of poverty in the context of sustainable development is the fundamental objective of EU development policy, and as environmental goods and services play a key role in the livelihoods of the poorest, effective environmental integration is crucial.

Gender needs to be considered in the context of environmental integration as different gender roles may result in different needs, activities and practices that produce different pressures on the environment, and gender-based roles may be affected in different ways by environmental change.

The arguments providing the basis for the integration of environment and climate change considerations in development cooperation are strongly underpinned by the high-level commitment of the EU to environmental sustainability.

This commitment is expressed in the Treaties that provide the legal basis for Community policies and activities. It is reflected in the EU development policy set out in the European Consensus on Development. Building on the Consensus, the 2007 Instrument for Development Cooperation includes environmental protection and sustainable management of natural resources among its objectives and general principles, and considers environment both as a cross-cutting issue and a specific area of cooperation. The Cotonou Agreement (and subsequent revisions) addressing the EU's partnership with Africa, the Caribbean and Pacific (ACP) includes the principle of mainstreaming environmental sustainability into its objectives.

Globally, the commitment is demonstrated by the EC's active participation in and support for the implementation of Multilateral Environmental Agreements such as the Rio conventions, and in its support for the achievement of the Millennium Development Goals – including MDG7 on environmental sustainability.

Chapter 3 – Environment, including climate, in programming

Integration in multi-annual programming is considered particularly critical as it sets the parameters for subsequent phases in the cycle of operations. During programming, key steps are taken to identify and avoid any harmful impacts of cooperation; to realise opportunities for enhancing environmental conditions; and to address risks, constraints and opportunities including those resulting from climate variability and change.

The main environmental integration tool during programming is the Country Environmental Profile (CEP). The CEP provides the necessary information to integrate environmental concerns into the country analysis and response strategy and inform policy dialogue on environment and natural resource management.

The CEP contains information on the state of the environment, including environmental trends and pressures; on environmental policy, the legislative and institutional framework and on efforts to integrate environmental concerns in other sectors and policies; it provides an overview of past and ongoing development cooperation from an environmental perspective. A dedicated section in the CEP provides an overall estimation of vulnerability to and capacity to respond to the consequences of climate variability and change . Importantly, based on the above, the CEP provides conclusions and recommendations for programming. The CEP can also be used as a reference for environmental integration in programmes and projects by EC staff and cooperation partners. A summary of the CEP is annexed to the Country Strategy Paper (CSP).

Regional Environmental Profiles focus on environmental issues that are best addressed via a regional approach and should be prepared to inform regional cooperation strategies (Regional Strategy Papers).

In line with the *Paris Declaration and* the *Accra Agenda*, efforts towards increased harmonisation for country-level environmental analytical work are underway. As an essential part of the CEP preparation process, coordination with national and international development partners should be sought, leading to joint analytical work and where possible alignment on nationally-led exercises,

such as in the framework of joint assistance strategies. In the definition of a response strategy and multi-annual programming, the environment should be considered as a cross-cutting issue influencing the specific interventions for different focal and non-focal sectors, and may also be considered as a possible sector of intervention which merits consideration in itself.

Taking into account the relationships between the main sectors and the environment in designing the strategy does not mean that only sectors with less negative environmental impacts should be supported. It means that cooperation objectives, approaches and strategies should be adapted, as relevant, to mitigate possible negative impacts and enhance positive impacts, thereby ensuring the sustainability of support. Effective integration of environmental aspects may also translate into the adaptation of work schedules to accommodate the necessary environmental assessments; the allocation of financial resources for the implementation of environmental measures; and the choice of an adequate set of performance indicators, reflecting environmental and sustainability concerns, in the proposed intervention framework.

Chapter 4 – Environment, including climate, in sector policy support programmes

Although the impact of sector programmes on the environment and also the influence of the environment on sectors may not be as immediate and apparent as for some projects, they can be very significant. Sector approaches are encouraged as an aid delivery method wherever possible and, as the delivery is different from the project approach, the entry points are different too.

During **identification**, sector policies or programmes are screened for environmental and climate implications. Screening supports the identification of those policies and programmes that have the potential to cause significant environmental impacts and/or are significantly dependent upon environmental and climatic constraints. Importantly, screening can also identify opportunities for the sector policy or programme to make positive contributions to environmental sustainability. The screening process also examines the overall context and process, including for example questions on existing analytical work, the policy context and the institutional setting with regard to environmental and natural resource management.

One outcome of screening could be a decision to proceed with a Strategic Environmental Assessment (SEA). An SEA is a systematic process for evaluating the environmental consequences of proposed policies, plans or programmes in order to ensure they are fully included and appropriately addressed at the earliest stage of decision making. Understanding the links between environmental, social, economic and cultural factors is essential. The engagement of stakeholders and the inclusion of their concerns into the process in order to identify appropriate responses is another key element. Lastly, it should be stressed that SEA approaches are particularly appropriate for assessing the influence of climate change on policies and programmes, as well as the way in which they might contribute to both adaptation and mitigation requirements.

The outcome of the screening process is summarised in an annex to the SPSP identification fiche. During SPSP **formulation**, the environmental aspects associated with the 'seven key assessment areas' should be considered; entry points may exist in particular in relation to the sector policy/programme; the sector budget; sector and donor coordination mechanisms; institutional and capacity-related aspects; and performance monitoring. Where an SEA is not undertaken, guidance is provided on how to integrate environmental considerations in formulation studies. Where a decision is made to undertake an SEA, guidance is provided in the form of model terms of reference.

During SPSP **implementation**, any environmental indicators associated with the supported sector policy or programme must be regularly monitored and negative results addressed. Policy dialogue, central to sector approaches, provides a platform to discuss outstanding environmental concerns.
The **evaluation** of SPSPs should focus on determining if the efforts to integrate environment and climate change concerns in the supported policy or programme were adequate and successful, and what lessons can be learnt for the future.

Chapter 5 – Environment, including climate, in General Budget Support

Chapter 5 follows a similar format to Chapter 4, providing guidance on environmental integration for General Budget Support (GBS) programmes, from identification to evaluation. A major distinction being that although an SEA of national development policies may be considered useful and encouraged in policy dialogue, there is no screening undertaken during identification.

For GBS, much of the environmental integration effort is during the initial phases, focussing on assessments and analysis of linkages and institutional capacities. These legislative and institutional aspects are particularly relevant for environmental integration in GBS and specific supporting measures may be required in some cases.

Entry points for environmental integration during **identification** include: the analysis of consistency with EC policy; the analysis of the national development policy or poverty reduction strategy in relation to the associated environmental stakes; the analysis of the budget and expenditure frameworks in the light of the government's declared priorities with regard to environmental governance, natural resource management and the response to climate change; the choice of performance measurement indicators from an environmental and climate change perspective; and any environmental and climate-related risks and assumptions that could critically influence national development or poverty reduction efforts.

Donor coordination is particularly important for GBS, and partners' environmental requirements should be considered focusing on how environmental and climate-related concerns are addressed within a working group context. It may be necessary to strengthen coordination mechanisms in some cases.

During **formulation**, a comprehensive evaluation of the 'seven assessment areas' is under-taken, and guidance is provided on where environmental considerations may be particularly relevant, including: performance monitoring indicators; donor coordination on the environment; and the institutional setting and capacity analysis in relation to environment and climate change.

At the **implementation** stage, performance monitoring and policy dialogue from an environmental perspective are the main activities. Enhanced policy dialogue is central to this aid delivery method and the CEP, as well as specific assessments and studies, can prove useful in supporting this. As GBS is still a relatively new aid delivery method and experience is limited, the **evaluation** of GBS from an environmental perspective is of considerable interest in designing future support.

Chapter 6 – Environment, including climate, in Projects

This final chapter gives guidance on opportunities to integrate climate change and environmental issues during the identification, formulation, implementation and evaluation of projects. Projects may differ from the other aid delivery methods in that there are typically a larger number of environmental integration entry points in (donor supported) project procedures.

The first opportunity for integration at the **identification** stage is in the logical framework approach, in particular to ensure that environmental problems are included in the problem tree analysis. When the critical parameters of a project have been identified, it should be screened from an environmental perspective to identify the influence of climate change on the project and the impact of the project on the environment.

Screening for environmental impact is accomplished using a list of project types and selectively by answering targeted questions.

Screening for climate change risks is also based on a categorisation according to lists of types of projects and questions on the timescale, existing conditions; dependence on ecological resources, vulnerability and risk of maladaptation.

The screening process informs decisions during the subsequent stages, and the outcome is recorded in an annex to the project identification fiche. Key outcomes include whether the project is considered at significant risk from climate change and in such cases a dedicated Climate Risk Assessment (CRA) is recommended. Where significant environmental impacts are identified an environmental impact assessment (EIA) is required. However, for the majority of projects

the screening process will not result in recommendations for dedicated assessments but will more likely highlight specific issues that need to be followed-up during formulation.

CRA provides recommendations concerning measures to reduce a variety of climate-related risks and optimise opportunities for promoting resilience in the face of climate change. While, EIA is a systematic assessment of the potential environmental impacts of a project and its alternatives, carried out to identify and mitigate negative impacts and optimise positive effects.

During **formulation**, for projects not requiring an EIA or CRA any significant issues identified during screening should be addressed in the formulation study as appropriate. For projects requiring an EIA or CRA guidance on preparing terms of reference is provided. In circumstances where an EIA and further climate change assessment are required, guidance on combining these is also given. In recognition of a degree of uncertainly concerning the precise nature of climate change consequences for specific locations, 'robust' measures are emphasised that address the underlying causes and drivers of vulnerability and strengthen project partners' capacities to deal with climate risks.

In project **implementation**, if an environmental or climate risk management plan has been prepared, this should be implemented, as should any other recommendations on environmental sustainability developed during formulation. Environmental indicators design should be monitored, triggering adjustments in project management in case of need. It is also possible to undertake an environmental review of an ongoing project to identify areas where environmental performance can be improved, although the scope for doing so is less than where integration starts at identification.

Projects can be **evaluated** from an environmental perspective by applying an environmental and climate change 'lens' to the five standard evaluation criteria. It will be particularly important to conduct comprehensive evaluations in relation to the integration of climate aspects, as methods and under-standing in this area are still under development. *Ex post* evaluations of projects subjected to an *ex ante* EIA may also be undertaken to provide insights for future EIAs. Evaluations in general will contribute to building the knowledge base and practical experience required to enhance the quality of future environmental assessments, and the relevance, effectiveness, efficiency, impact and sustainability of environmental integration measures in future response strategies and interventions.

CHAPTER 1: INTRODUCTION

1.1 Why these guidelines?

Human impact on the environment has increased dramatically over the past century as a result of population growth, rapid technological development, industrialisation and agricultural expansion. Unless we change our relationship with the environment, these increasing pressures will limit the planet's capacity to supply the world's economies with sufficient water, energy and other basic resources, and bring about substantial change that will create uncertainty and instability. We are being made increasingly aware of our impact on the environment notably by the challenge of climate change, considered the ultimate political test for our generation.

The undesirable environmental consequences of our activities can no longer be compensated for by the benefits of growth. Instead of increasing wealth, economic activities now risk creating a progressively less habitable planet, with diminishing natural resources, rising environmental management costs and climatic instability. These threats are global, but the impacts are most severe in the developing world. Any development model which ignores these consequences will fail to ensure continuing prosperity particularly for the poorest communities.

This is especially relevant for the European Union's external policies and assistance programmes as the EU is the most important donor worldwide[9]. For these reasons, the EC has long undertaken an obligation to mainstream the environment into its development cooperation activities.

These **guidelines**[10] are intended to facilitate the implementation of this obligation, by providing those in charge of planning and delivering external aid with a coherent operational framework and a set of tools to be applied in the different phases of the *cycle of operations* and in relation to the three main aid delivery methods.

Chapter 2 contains an introduction to environmental integration concepts and rationale, policy and legal background and linkages with main development issues. Chapter 3 focuses on environmental integration in the multiannual programming phase, Chapter 4-6 on the three main aid delivery methods: Sector Policy Support Programmes (SPSP), General Budget Support (GBS) and projects respectively, building on the most recent guidelines for these methods. Annexes provide a set of model Terms of Reference (ToR) for environmental assessments, screening guides and checklists to address environmental aspects as relevant at the identification and formulation stages. While opportunities to incorporate environmental concerns exist throughout the various phases of the cycle of operations, emphasis is put on the *upstream* stages of identification and formulation, which is where key decisions are made.

1.2 What is environmental mainstreaming?

In the EC, **mainstreaming** is '*the process of systematically integrating a selected value/idea/theme into all domains of the EC development cooperation to promote specific (transposing ideas, influencing policies) as well as general development outcomes*[11]'.

In these guidelines, the **environment** is considered to include those bio-physical resources and conditions on which human lives and activities depend, and which in turn they influence. Mainstreaming involves an iterative process of change in the culture and practices of institutions. The result of a successful process of mainstreaming the environment in EC

[9] Including Member States responsible for some 55% of global development assistance.
[10] These guidelines are an update of the 2009 edition and replace the Environmental Integration Handbook for EC Development Cooperation (2007).
[11] European Commission – iQSG (2004) *Putting Mainstreaming into Practice*.

development cooperation is the *integration* of environmental approaches and tools in the cycle of operations in order to bring about a more appropriate balance of environmental, economic and social concerns. Further environmental integration is essential to address the increasingly recognised challenges to development posed by climate change.

1.3 Environmental mainstreaming and climate change

Climate constitutes a critical aspect of 'the environment', which must be taken into account alongside other issues. Some degree of year-on-year climate variability has always existed, and must be taken into account in 'normal' development planning. Climate change, a change in average climatic parameters measured over decades rather than years, has the potential to interact with and potentially magnify other environmental phenomena of concern to development, such as desertification, biodiversity loss, air pollution, or the increasing scarcity of freshwater.

Responding effectively to human-induced climate change does represent a new development challenge, but it also means that most existing environmental issues take on a new urgency. Dealing with climate variability and climate change separately from other environmental integration aspects makes little sense from a theoretical or practical perspective. In these guidelines, climate-related issues are addressed building on the approach developed for environment mainstreaming.

Where approaches specific to a climate change context are necessary, these are identified. In situations where an overarching environmental integration approach is advocated then climate-related issues are included as appropriate. Additional information and new skills and approaches are necessary to respond to these challenges, many of which we are only beginning to deal with but must now urgently develop. Climate-related concepts and terminology are covered in more detail in Chapter 2.

CHAPTER 2: WHY MAINSTREAM THE ENVIRONMENT AND CLIMATE CHANGE?

2.1 The environment and sustainable development

2.1.1 Environmental services and external costs

Policies for development have generally concentrated on production and economic growth, without taking heed of the environment and the hidden functional services it provides. The result has mostly been severe environmental damage, with some of the poorest countries being worst affected. Amongst the poorest communities, natural resources such as fuelwood and water are essential to life. The irony is that these common-property resources can be depleted, annexed, or subject to over-exploitation, even while a country's economy appears to be growing vigorously. This helps explain the resilience of poverty in the face of demonstrable economic growth[12].

The Millennium Ecosystem Assessment[13] highlights, for the first time on a global scale, that the environment – through the goods and services it provides to society and the economy – plays a critical role in our livelihoods. The natural environment provides four categories of services: provisioning (e.g. food, water, and fibre), regulating (e.g. climate, water and disease), cultural (e.g. spiritual, aesthetic, recreation and education) and supporting (e.g. primary production and soil formation).

Changes to these services as part of a development process appear as 'invisible transactions' or 'externalities' in economic jargon, because they generate benefits or (more often) costs without financial compensation, and thus fail to be reflected in the market prices of goods and services. In the development process, an externality is an unintentional effect of an aid intervention that is external to the intervention logic, as defined by the logical framework approach. In other words, it is a consequence of activities other than the expected results or the objectives (see Annex 6). Undesirable external environmental effects such as pollution or a diminished stock of natural resources have adverse social and economic effects on third parties or on future generations. They tend to be the rule rather than the exception.

The Rio declaration signed at the Earth Summit in 1992 states that: '*National authorities should endeavour to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution...*' The principle of internalisation should encourage macroeconomic and institutional reforms in developing countries, such as environmental fiscal reform[14]. It influences the way cooperation is conducted by explicitly focusing attention on development-induced environmental impacts. It also leads to the idea that environmental concerns should be integrated with economic and social concerns, as defined in the concept of sustainable development.

Environmental mainstreaming, including the mainstreaming of climate change considerations, is not considered as a goal in itself, but rather as a means of ensuring that development is

[12] Dasgupta, P. (2004) *Human Well-being and the Natural Environment*, Oxford University Press: Oxford.
[13] See for instance Millennium Ecosystem Assessment (2005) *Ecosystems and Human Well-being: Synthesis*, Island Press: Washington, DC; this and several other reports are available on line at: http://www.millenniumassessment.org.
[14] Environmental Fiscal Reforms are promoted by the OECD's Development Assistance Committee. See OECD (2005) *Environmental Fiscal Reform for Poverty Reduction*, OECD DAC: Paris (available on line at: http://www.oecd.org/dataoecd/14/25/34996292.pdf). Also: EEA (2006) *Using the market for cost-effective environmental policy: Market-based instruments in Europe*, EEA Report 1/2006, European Environmental Agency: Copenhagen; WB (2005) *Environmental fiscal reform: What should be done and how to achieve it*, World Bank: Washington, DC; and UNEP (2004) *The Use of Economic Instruments in Environmental Policy: Opportunities and Challenges*, United Nations Environment Programme: Geneva.

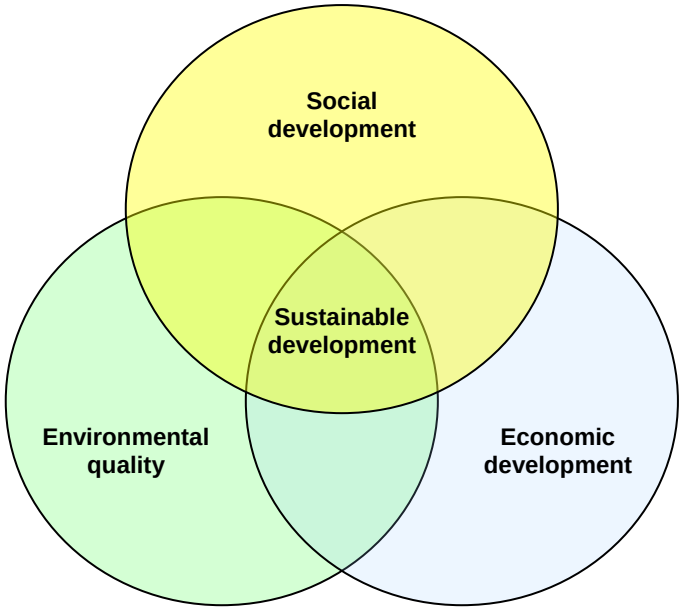
sustainable and successful and thus delivers the intended benefits. Environmental mainstreaming achieves this by ensuring the development is not undermined by a failure to address the potential negative impacts of development on the resources on which people depend, or risks associated with climate change and variability that might change the contexts in which development occurs, making development strategies and measures irrelevant or even harmful.

2.1.2 Sustainable development

The principles of sustainable development, one of the EU development cooperation objectives[15], have arisen from a growing recognition that the needs of current generations must be reconciled with those of the future[16], and that this requires dealing with economic, environmental and social policies in a mutually reinforcing way[17]. Respect for future needs means safeguarding the natural resource base (or 'natural capital') likely to be required to sustain them. In this sense, the environment plays a central role since the question of sustainability arises as a direct response to concerns about issues of pollution, irreversible changes to ecosystems and climate, and the degradation of forests, fisheries, water supplies, biodiversity and other natural resources. Sustaining these resources into the future is also necessary to underpin social reforms that respect the rights of women, children and indigenous peoples, and provide a more equitable distribution of wealth.

The three dimensions of sustainable development (environmental, economic and social) (see Fig. 2.1) are referred to as the 'pillars' of sustainable development. The pillars are distinct but closely interdependent. This means that the environmental pillar has links with the economic and social pillars, as explained hereafter.

Figure 2.1 The three dimensions of sustainable development



[15] Article 177 of the European Community Treaty as modified by the Amsterdam Treaty in 1997.
[16] Sustainable development is commonly defined, following the Brundtland report (World Commission on Environment and Development (1987) *Our Common Future*, transmitted to UN General Assembly as an Annex to document A/42/427), as '*development that meets the needs of the present without compromising the ability of future generations to meet their own needs*'; see: http://www.un-documents.net/wced-ocf.htm.
[17] Presidency conclusions to the Gothenburg European Council of 15-16 June 2001.

Environment and the economic pillar

Environmental services and economic goods can be interchanged to a certain degree, which can justify limited environmental losses in exchange for economic growth. But it is important to remember that these substitutions have their limits; neither aspect should outweigh the other. Environmental services are not less valuable than economic goods. Breathing clean air, finding firewood for cooking, drinking clean water and being safe from floods… all provide for essential human needs. So, despite the fact that the environment has suffered from unbalanced economic growth, the economic and environmental pillars play a complementary role in satisfying human needs. They are also interrelated. For instance, economic development can reduce our direct dependence on nature, and yet depends on the environment in several ways:

- Raw materials used in the production of goods come from nature, as does the energy needed for production and transport.
- The cost of extracting raw materials tends to increase when natural resources become scarce or degraded.
- Environmental services have a crucial importance but are not included in national accounts because they are difficult to value in monetary terms.
- Adverse environmental effects (e.g. pollution, floods or fires) can damage or destroy economic goods and equipment.
- Labour productivity is linked to the nutrition and health of workers, two variables which are directly influenced by the environment.
- Sound environmental management and mainstreaming can reduce costs, through increased efficiency or through prevention, with an important potential for further development in this field.
- A high-quality environment is an important asset for tourism (as shown e.g. by the growth in ecotourism); it is also the basis for some indigenous peoples' livelihoods, and for an important share of pharmaceutical production.

Environment and the social pillar

The environment affects people and especially the poor, who are particularly vulnerable to natural disasters (including the 'semi-natural' disasters made more frequent by climate change), and to reduced availability of resources such as clean water, fertile soils, fuelwood, wild foods, medicinal plants and other natural products. People are also vulnerable to unhealthy or unsafe environmental conditions. For example, people exposed to indoor air pollution in rural areas and to atmospheric air pollution in urban areas suffer chronic respiratory diseases; people can also be affected by diseases resulting from the consumption of contaminated water, and by poisoning due to the consumption of contaminated fish and shellfish (e.g. bioaccumulation of heavy metals). The impact can also be indirect. For example, soil erosion may lead to reduced land productivity, and thus to a decrease in nutrient intake by the population which weakens their immune systems; similar effects may be derived from the depletion of sources of protein (e.g. fish stocks, game) or medicinal plants. Just as a degraded environment will impact negatively on health, safety and livelihoods, opportunities to enhance the environment will result in a positive impact.

Because social groups (e.g. women, minorities) may be affected differently by the environment, environmental changes may also have an impact on social relationships. For instance, mercury used in gold washing pollutes rivers and may generate conflicts with fishermen. Moreover the depletion of shared resources, and the disruptions brought about by significant changes in climatic conditions, may exacerbate conflicts, as mentioned in Section 2.3. On the other hand, successful transboundary environmental programmes can provide opportunities to contribute to peace and security. Sound environmental management is strongly dependent on institutional and social factors, such as legislation, decentralisation, good governance, land tenure, property rights, participation, conflicts, gender equity and empowerment of traditionally less represented groups.

Because of their particular importance in respect with EC cooperation, poverty, security issues, human rights and gender-related issues are further developed in Sections 2.2, 2.3, 2.4 and 2.5.of these guidelines.
Culture can be considered as a particular, but important, component of the social pillar. Human cultures are often deeply rooted in a relationship with their environment, built on a particular vision of nature. Sacred sites and emblematic or totemic species often have strong cultural importance, providing the local communities with vital social continuity. This is especially true for indigenous peoples, who have a long history of co-adaptation with their local environment and participation in the functioning of the ecosystem. These peoples have usually achieved a sustainable use of their natural resources, based on a deep and specialised knowledge of their environment and its biodiversity. They are particularly vulnerable in all aspects of their economic, cultural and social life to external pressures on their environment, including the stresses generated by climate change. Development cooperation should be aware of the exceptional value that indigenous peoples have invested in their environment, and recognise their rights regarding land use, natural resources use, and intellectual property.

EU Sustainable Development Strategy and development cooperation

In June 2006, the European Council adopted a Renewed EU Sustainable Development Strategy[18] (SDS) that calls, among other key objectives, for the EU to actively promote sustainable development worldwide, and ensure that the EU's internal and external policies are consistent with global sustainable development. The strategy's policy-guiding principles include the promotion and protection of fundamental rights; intra- and intergenerational equity; an open and democratic society; the involvement of citizens; the involvement of business and social partners; policy coherence and governance; policy integration (i.e. the integration of economic, social and environmental considerations so that they are coherent and mutually reinforce each other); the use of best available knowledge; the precautionary principle[19]; and the 'polluter pays principle'.

The new SDS identifies seven key challenges to be addressed by the EU, including '*global poverty and sustainable development challenges*'. In this regard, the first progress report on the implementation of the new strategy notes that '*pressures on environmental sustainability remain high*', and access to key natural resources such as water, wood and arable land is problematic in many regions of the world – with impacts on poverty and the potential to cause conflicts. Among a series of outstanding issues to be addressed, the Commission's report identifies the need to tackle the growing challenge of environmental migrants (both within and across borders) caused by environmental degradation, to ensure that the environmental component of sustainable development is given sufficient consideration in the allocation of aid, and to design trade policies so that they effectively contribute to sustainable development[20]. These priorities stem in particular from the scale of the problem posed by global warming for developing countries, from the tensions that exist between developmental goals[21], and from the emergence of complex new challenges such as the social and environmental impacts of the growing demand for biofuels[22].

The new EU SDS, as well as the findings of the first progress report, clearly call for better integration of environmental considerations into the planning, implementation and evaluation of development interventions. In so doing, several important lessons on sustainability that have emerged from experience in development cooperation should be considered, as follows.

[18] *Review of the EU Sustainable Development Strategy (EU SDS) – Renewed Strategy*, Council of the European Union, note no. 10917/06 of 26 June 2006.
[19] Principle contained in the Rio declaration but debated in Europe following a series of food crises: refer to the *Communication from the Commission on the precautionary principle*, COM(2000) 1 final (02.02.2000); see: http://eur-lex.europa.eu/LexUriServ/site/en/com/2000/com2000_0001en01.pdf.
[20] *Progress Report on the Sustainable Development Strategy 2007*, COM(2007)642 final (22.10.2007).
[21] The level of economic development needed to alleviate poverty notably requires an increase in industrial production, in food and raw materials consumption and in mobility.
[22] Ecorys (2008) *Progress on EU Sustainable Development Strategy – Final Report*, Brussels/Rotterdam; see: http://ec.europa.eu/sustainable/docs/sds_progress_report.pdf.

Prevention and upstream decision making

Prevention is usually better than cure, and reducing future damage is an inherent objective of sustainable development. With regard to climate change, for instance, it has been shown that the benefits of early global action to reduce greenhouse gas emissions significantly outweigh the costs; the earlier effective measures are implemented, the lower the ultimate cost to society[23]. With respect to development cooperation, this principle implies a duty to take action in the face of unfavourable trends, and to integrate environmental considerations (including those related to climate change) at an early stage of decision making, i.e. at the policy making and programming stage and in the first phases of the cycle of operations. Of course, monitoring, strategy refinement and, if needed, the adoption of corrective measures remain necessary in the subsequent phases.

Local resource ownership

The management and harvest of natural resources implies some mixture of traditional, private or government involvement. A key lesson from studies of natural resource use is that sustainability requires long-term secure control and ownership of the resource[24]. A user only has the incentive to conserve a resource if they feel that they or their descendants will reap the benefits of this moderation in the future[25]. An example of this may be provided by community forestry, where forest land previously managed by State services is allocated to communities or decentralised institutions, creating incentives for sustainable management practices. Similarly studies suggest that secure property rights over land can be considered a pre-condition for pro-poor and sustainable economic growth[26].

Participation

Sustainable development also advocates clear principles relating to transparency, participation and accountability in decision making. Participation of stakeholders is recognised as a key sustainability factor in development cooperation. This should involve not only target beneficiaries (men and women), but also stakeholders potentially affected by environmental impacts, including traditionally less represented groups. The EC has also particular obligations under the Aarhus Convention[27], which requires it to allow the public and stakeholders to have a say in the decision-making process with respect to environmental issues, including in development cooperation.

An ecosystem perspective

The ecosystem perspective takes a broader view of natural resources to look at the effects of their use on the complex functional relationships within ecosystems, on broader supporting processes (e.g. nutrient and hydrological cycles and soil formation) and downstream on non-target species or neighbouring ecosystems. For instance, accidental harvesting of non-target species can be sufficiently great to cause concern over their conservation; this is particularly true of the by-catch in fisheries. Or land-based activities, such as agriculture and the resulting fertiliser run-off or sewage disposal, can impact on neighbouring bodies of water, with adverse consequences on local and downstream natural systems and production activities; frequently the whole watershed and river system is the appropriate ecological unit for assessment. An 'ecosystem approach' to natural resource management calls for the involvement of stakeholders from many sectors because different sector policies and activities impact on the same ecosystems and policies need to be coherent; it also calls for management actions to be taken at the level appropriate for the issue being addressed[28].

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[23] Stern, N. (2007) *The Economics of Climate Change: Stern Review*, Cambridge University Press: Cambridge
[24] Murray, M.G. (2003) Overkill and sustainable use, *Science* 299: 1851-1853.
[25] Millner-Gulland, E.J. & Mace, R. (1998) *Conservation of Biological Resources*, Blackwell Science: Oxford.
[26] Cotula, L., Toulmin, C. and Hesse, C. (2004) *Land tenure and administration in Africa*, IIED: London.
[27] UNECE (1998) *Convention on access to environmental information, public participation in environmental decision making and access to justice in environmental matters*; see www.unece.org/env/pp/.
[28] Biodiversity in Development Project (2001) *Guiding Principles for Biodiversity in Development*, *lessons from field projects*, EC/DFID/IUCN. See also: the Ecosystem Approach page on the website of the Convention on Biological Diversity: http://www.cbd.int/ecosystem; and the website of the Millennium Ecosystem Assessment, from which various reports can be downloaded: http://www.millenniumassessment.org/en/index.aspx.

2.1.3 Climate change and sustainable development

It is essential that EC development strategies and specific interventions take climate change into account in order to design and implement strategies, programmes and projects that are resilient to the effects of climate change and contribute to global mitigation efforts.

Climate change represents an additional and formidable challenge to sustainable development. By interacting with other environmental trends and the intensification of the existing pressures (from industrialisation, globalisation, rapid urbanisation and demographic growth) on natural resources, it poses a significant and increasingly well-documented threat, not only to the environment, but also to the economic and social pillars of sustainable development. Climate change should be taken into account in development interventions because it has the potential to slow down or even halt and reverse progress towards sustainable development and the achievement of the Millennium Development Goals (MDGs). Box 1 provides working definitions of climate variability and climate change, two related but different concepts that will be used further in these guidelines. It also explains which of these concepts is most relevant to a development intervention, given its lifetime and nature.

Box 1 Climate change and climate variability in development programming

When assessing the climate exposure and sensitivity of *development projects with a lifetime or significant consequences not exceeding ten years*, the focus should be on climate variability, based on statistics available for the past decade or longer. Climatic trends based on the recent past may provide sufficient information to build scenarios for the coming decade, and devise climate risk management strategies accordingly. However, extreme climate events of unprecedented magnitude (at least over the period of observational records and/or historical experience) are increasingly common, and the potential for such events to occur even over short timescales should be considered.

When assessing the climate exposure and vulnerability of *development projects with a longer lifetime* (e.g. infrastructure projects), as well as the exposure and sensitivity of supported *policies, programmes and strategic plans*, both climate variability (short- and medium-term perspective) and climate change (longer-term perspective) should in principle be taken into account. Taking a long view is more complicated however. For many areas of the globe, climate models still produce significantly different and sometimes contradictory long-term forecasts of the direction and amplitude of climate change. There is a general agreement that temperatures will globally increase (with a warming of around 4º C likely by the 2060s or 2070s based on current greenhouse gas emissions trajectories) and that sea levels will rise (latest figures suggest a rise in global mean sea-levels of between 1 and 2 m by 2100) but for many regions of the world, models still disagree on the direction as well as the amplitude of long-term changes in rainfall. Furthermore, climate models produce forecasts that are averaged over territorial 'cells' that may in fact encompass very different climatic zones (e.g. low-lying coastal zones and mountainous areas). These forecasts cannot be 'downscaled' to a useful level of resolution (e.g. the area covered by a given project) without further *ad hoc* processing, using local climatic data to complement the inputs of global models.

According to climatologists, higher concentrations of GHGs in the atmosphere are already causing and will increasingly contribute to changes in wind, temperature and rainfall patterns, a higher frequency of extreme weather events, widespread melting of snow and ice, a rise in sea levels, the acidification of oceans, changes in ocean circulation and seasonal patterns, and generally greater climate variability. These changes will in turn have significant effects on ecosystems as well as on human activities. For example, the increasing scarcity of freshwater, the expected reduction in crop yields, livestock and forest productivity in many regions of the world, as well as the possible collapse of fish stocks as a result of ocean acidification, are likely to have adverse impacts on food security and severely threaten rural but also urban livelihoods. The destruction of infrastructure (transport, energy, industry, human settlements etc.) by extreme weather events, the rise in sea levels, coastal erosion etc. can lead to severe disruptions of economic activity as well as major social and humanitarian catastrophes. Health impacts resulting from the changed distribution of disease vectors, malnutrition, heat stress, floods, droughts, declining water and air quality, and large-scale displacement of populations, may place a substantial additional burden on already over-stretched health services[29].

[29] IPCC (2007) *op. cit.*

While climate change poses a threat to development, sustainable development is also the key to reducing vulnerability and, ultimately, exposure to climate change. In the context of climate change, sustainable development is development that delivers both *mitigation* to reduce the magnitude of climate change, and *adaptation* to help societies and natural systems to cope with unavoidable changes (Box 2). The capacity of human societies to mitigate and adapt to climate change depends on a host of societal factors closely linked with development pathways. Different development choices can result in pathways of development that can contribute to mitigation and adaptation, or make mitigation and adaptation more difficult. Weak mitigation at the global level will make adaptation at regional and local scales more challenging, as it will result in more rapid and severe changes in climate. .

Box 2 Responding to climate change

The implications of climate change for a country, population or system will depend on extent to which it is exposed to the physical manifestations of climate change (climate change hazards), and also on its sensitivity or vulnerability to these effects. Exposure will vary geographically, with different parts of the world experiencing different manifestations of climate change. Vulnerability will also vary according to a host of factors that make countries, populations and systems more or less able to resist, absorb, recover from, and adapt to the effects of climate change. Global, exposure to climate change is addressed through mitigation, which seeks to reduce the magnitude of climate change. Adaptation focuses on regional and local scales, and seeks to reduce the risks and impacts associated with climate change that has not been prevented through mitigation.

Adaptation is typically the primary concern in developing countries; mitigation is also relevant as these responses are not mutually exclusive and there are synergies to be realised between them. By focusing both on the environmental **impacts** generated by development activities, and on the environmental **risks and constraints** to which development programmes and projects are subject, the tools and methods proposed in these guidelines address both dimensions of the response to the climate change challenge. It is important to note that an analysis of environmental risks and constraints also highlights development opportunities to be considered in the formulation of policies, programmes and projects (see Box 5).

Adaptation to increasing climate variability and climate change should ideally rest on a combination of 'top-down' and 'bottom-up' approaches to develop appropriate solutions:

- The **top-down approach** is model- and scenario-driven; it uses the information provided by climatic models, downscaled (to the extent possible) to the appropriate territory, to determine expected physical impacts and 'bio-physical vulnerability'.
- The **bottom-up approach** is based on an assessment of 'social vulnerability' to climate change and variability (see Annex 11); it uses a stakeholder approach, and information on prevailing socio-economic and environmental conditions (e.g. income and livelihoods, consumption, health, education, inequalities in access to infrastructure, services and resources, including environmental services and natural resources, …), on existing infrastructure, available technologies, institutions, etc. to assess the main vulnerabilities and the adaptive capacity of the society or group(s) concerned by a given policy or development intervention.

Within the context of EC development cooperation, climate change may threaten the success of development projects, programmes, and strategic plans. For example, the implementation of projects may be delayed or disrupted by climate extremes. Such extremes may be more frequent or severe than expected as a result of climate change, and so may not be accounted for in project formulation. Climate change may also result in future climatic and environmental (and by extension, social an economic) conditions being different to those pertaining today, changing the contexts in which development initiatives play out. This may mean that many of the assumptions behind such initiatives are wrong, making them irrelevant or meaning that their intended outcomes are not realised, or are offset or undermined by climate change effects (Box 3). In some instances this may mean that development initiatives are *maladaptive*, encouraging patterns of development that increase exposure and vulnerability to climate change on a large scale, for example by increasing dependency on resources that are threatened by climate change

(Box 4)[30]. Some development initiatives may deliver the intended benefits while inadvertently increasing the vulnerability of certain groups to climate variability and change (e.g. projects to expand agriculture that result in the exclusion of pastoralists from dry-period grazing lands – see Box 4)

Box 3 Climate change and water resources in Jordan

Climate change may mean that some assumptions behind national development strategies are unrealistic, meaning that such strategies will need to be rethought. This may be the case in some countries already facing water stress, where climate change will further deplete water resources. For example, Jordan currently uses some 296 million cubic metres per year (MCM/yr) of its estimated supply of 575 MCM/yr of surface water, resulting from rainfall and runoff, and plans to increase the proportion of surface water captured in order to meet increasing water demands and address water scarcity.[31]

Climate change has potentially serious implications for Jordan's plans to develop its surface water resources further. Current projections based on a "medium-emissions" scenario (that may significantly underestimate future warming) used by the IPCC suggest declines in runoff in the Middle East of 10-20% for the 2040s-2060s, and 30-50% for the period 2070s-2090s.[32] . As changes in runoff will be strongly dependent on warming, declines in surface runoff may be greater than suggested in this study. If the decline in runoff was at the upper end of this simulated range over Jordan, total surface water availability would decline below current usage, making any further development of surface water resources unsustainable in the long-term. Climate change therefore may require plans for the further development of surface water in Jordan to be re-examined, and other strategies developed for the longer term.

Similar climate change impacts on water resources are likely throughout the Middle East, North Africa and many other arid and semi-arid parts of the world. Such impacts on water resources will have far-reaching implications for multiple sectors.

In order for development to be sustainable in the face of climate change and variability, considerations of climate change and variability must be fully integrated into development initiatives. This means that such initiatives need to be screened to identify climate change issues (Annex 7) and, where such initiatives are likely to be associated with significant climate-related risks, these risks should be examined through a Climate Risk Assessment (Annexes 11 and 12).

Guidance for Climate Risk Screening ► **Annex 7**
Guidance for Climate Risk Assessment ► **Annexes 11 & 12**

Box 4 Lessons from the African Sahel: adaptation, maladaptation, and good practice

One of the most striking examples of historical maladaptation comes from the semi-arid Sahel region of Africa, where rainfall is highly variable and conditions for agriculture in marginal. As a result, livelihoods in the Sahel historically have been based on risk spreading practices, for example involving mobility and the exploitation of landscape diversity in subsistence agriculture. During the 1950s and 1960s the region experienced very high rainfall, and development policies in this period sought to deliver economic growth though agricultural expansion and intensification. However, this strategy resulted in the expansion of agriculture into areas that were temporarily wet but historically marginal. When rainfall declined in the 1970s agriculture in many of these areas collapsed, or required the introduction of large-scale irrigation. Many of the lands opened to agriculture in the 1950s and 1960s were used by herders for grazing during drought periods, and the expansion of agriculture resulted in the marginalisation on herders and conflict between herders and farmers over access to land. Restricted access to grazing land as it is converted to farmland has made mobile herders more

[30] The nature of climate-related risks, vulnerability and maladaptation are discussed in more detail in Annex 11.
[31] Hashemite Kingdom of Jordan. (2009) Jordan's Second National Communication to the United Nations Framework Convention on Climate Change (UNFCCC) 2009. Ministry of Environment of Jordan and UNDP.
[32] Christensen J.H, Hewitson B, Busuioc A, et al. (2007) Regional climate projections. In: Solomon S, Hewitson B, Busuioc A et al. (eds) Climate change 2007: The physical science basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, pp 847–940.

vulnerable to drought in the Sahel, and the continued expansion of agriculture into marginal areas has been a significant driver of conflict in the region. Development that has failed to consider the implications of longer-term climate variability (over periods of years to decades) and climate change therefore has undermined livelihoods and driven conflict, while also making the region more dependent on large-scale agriculture that is vulnerable to drought. In the 1970s the collapse of such unsustainable agriculture, coupled with the marginalisation of mobile herders, resulted in widespread famine in the face of extreme drought.

Despite the maladaptive policies pursued in the Sahel, and a long-term decline in rainfall from the 1970s to the 1990s, some communities have adapted to secure livelihoods and food security. This has been achieved through a number of measures, including an emphasis on local and regional markets (rather than more volatile global markets), increased agricultural and income diversity (including non-farm incomes), integrated farm systems using animal fertiliser and mixed cropping systems, and soil and water conservation techniques.

These examples from the Sahel illustrate the importance of development strategies and measures that are relevant and appropriate to local environmental and climatic contexts. In regions where rainfall is marginal and variable (i.e. most semi-arid areas), development needs to be able to accommodate significant changes in rainfall on timescales of years and decades, and should not be based on the assumption that today's climatic and environmental conditions will continue. This might mean avoiding the expansion of development (e.g. agriculture) into areas that are currently or historical areas, or that climate projections indicate might become more marginal in the future. This may involve trading short-term increases in productivity for longer-term sustainability and social and economic stability. Climate change makes such considerations more important, as it is likely to increase climatic and environmental variability and uncertainty on all timescales. Measures to conserve existing resources (e.g. soil, water, pasture) and to support livelihood diversity represent ways of building resilience in the face of uncertain climatic conditions. Where there is competition for resources (e.g. between farmers and mobile herders), mechanisms for resource sharing and conflict resolution might be central to development interventions. Such traditional mechanisms have evolved in many areas, but have been undermined by modern development and land tenure reforms, and might be reinstated or modified under current development strategies.

2.2 The environment and poverty reduction

The eradication of poverty in the context of sustainable development is the fundamental objective of EU development policy, as stipulated in European Consensus on Development[33]. Because the environment plays a key role in the livelihoods of the poorest communities, it should be managed in such a way that it contributes to this overall objective of poverty alleviation.

Poverty can be described as the condition when basic human needs are unsatisfied. The poor lack capital and are usually not covered by wealth redistribution mechanisms; consequently their livelihoods are closely dependent on the productivity of natural resources and their own labour. This makes them vulnerable to any decline in the productivity of natural resources and to any unhealthy conditions (including unclean water, indoor air pollution, and toxic chemicals) that affect their capacity to work. Thus degraded environmental conditions, including those exacerbated by climate change, have a direct and important relationship with poverty. The poor are also the most vulnerable to natural disasters such as storms, floods, droughts, crop pests and environmentally-related conflicts. The poor in developing countries are widely considered to be the human group that will suffer earliest and most from climate change[34], as they tend to live in the geographically most exposed regions of the planet, often remain directly dependent on agriculture (the sector likely to suffer most), and are made more vulnerable by the other stresses that characterise poverty, such as inadequate housing conditions, lack of adequate social services, fragile health and the incapacity to afford insurance or risk management expenditures.

Poor people lack the financial capital needed to invest and often use any available natural capital to survive. For populations that depend on natural resources, this process of consuming them often depletes the natural capital base and thus results in increasing poverty. Managing the

[33] Joint Statement by the Council and the representatives of the governments of the Member States meeting within the Council, the European Parliament and the Commission on European Union Development Policy: "The European Consensus", *Official Journal of the European Union*, 2006/C46/01.
[34] IPCC (2007) *op. cit.*; Stern, N. (2007) *op. cit.*

environment to deliver pro-poor benefits (such as improved water supply and sanitation, improved management of local fisheries, or interventions in forestry and protected areas that involve local people) should be part of poverty alleviation strategies. This does not mean that what is done in the name of the environment is necessarily and by definition good for the poor but it does mean considering the effects of environmental changes on the poor and the factors affecting environment–poverty relationships. These include land tenure, access rights to natural resources, participation in land and resource management, and the share of work between men and women with respect to the collection of basic resources like firewood and water. A paper by major development partners (including the EC) comprehensively addresses the links between poverty reduction and environmental management[35]. A more recent publication of the World Bank addresses poverty–environment linkages at the household level.

In certain cases however the question arises of whether safeguarding environmental services of global significance is compatible with poverty alleviation concerns. For example, choosing solar energy technology over coal or diesel fuel reduces GHG emissions, but may be more costly, at least in the short run, and if one ignores other 'positive externalities' such as reduced air pollution or reduced dependence on imported energy sources. Similarly, protecting natural habitats for the conservation of biodiversity may require regulating access of local communities to natural resources[36] while providing financial support for the poor. As far as possible, conflict should be reduced or avoided, for example by promoting controlled eco-tourism or sustainable harvesting so as to provide revenue and local employment. Some mechanisms, such as the Global Environmental Facility (GEF) grants[37], cover the incremental costs associated with transforming a project with national benefits that may have global environmental costs to one with both national and global benefits.

2.3 The environment and security

Mainstreaming environment including climate-related aspects in development cooperation activities may also contribute to stability and peace. There is a clear link between environment and security, and more precisely between the management of scarce or abundant natural resources and conflict.

Stress and competing demands on scarce environmental resources (e.g. drinking water, fertile soil – essential for food production and basic livelihood for large segments of the population), and the fight for access to and control over abundant and financially valuable environmental resources (e.g. timber, gum arabic) may lead to tensions, instability, and violent conflict. Stress on such resources (brought about for instance by pasture and soil degradation, drought, or population growth and migration) can exacerbate tensions over access and lead to violent conflicts (e.g. second civil war 1983-2004 in Sudan which was fuelled by the dispute between the South and the North over oil and water; tension on water issues between India and Bangladesh).

Migration is a natural consequence of environmental stress: people are forced to leave their homelands because of the degradation or lack of environmental resources needed for their survival. In 2005, it was estimated that up to 50 million people would be displaced by 2010 due to environmental degradation and the effects of global warming (floods, droughts and expansion of desertification)[38]; by 2050, this figure could rise to 250 million people permanently displaced as a result of climate change, as they try to escape extreme weather events or simply the slow but inexorable destruction of their livelihoods by gradual climate change[39]. Environmental refugees can have an important impact on security and on the environment in the host areas. Refugee camps often create environmental problems and disputes between the refugees and the local

[35] DFID, EC, UNDP and WB (2002) *Linking Poverty Reduction and Environmental Management – Policy Challenges and Opportunities*; see: http://ec.europa.eu/development/icenter/repository/brochure_linking_poverty_en.pdf.
[36] For example, cooperation could assist in preventing the illicit traffic of protected species (flora and fauna) which results in important losses of biodiversity.
[37] http://www.gefweb.org/Operational_Policies/Eligibility_Criteria/Incremental_Costs/incremental_costs.html
[38] Myers, N. (2005) *op.cit.*
[39] Christian Aid (2007) *Human tide: the real migration crisis*, London, UK.

population related to access to, control over and management of resources, which can lead to civil disorder, insecurity and violent conflict. It is crucial that environmental considerations are taken into account during post-conflict reconstruction processes, both to ensure that these efforts do not adversely impact the environment and that environmental pressures do not fuel renewed conflict. Conversely, migration and security considerations should be taken into account when weighing the costs and benefits of investing in climate change adaptation and mitigations measures. Mass migration from the worst affected areas, even if it remains primarily internal, may indeed have destabilising consequences for the countries concerned, as well as cross-border implications and effects on more affluent regions of the world[40].

On the other hand, it is important to note that environmental cooperation can be an extraordinary element of stability and peace and even of reconciliation. It is therefore essential to promote sustainable development and sustainable shared management of natural resources with the objective to protect the environment and at the same time to contribute to poverty reduction and stability. An interesting example comes from confidence-building activities where two or more parties seek cooperative solutions to manage shared natural resources (e.g. water) that could otherwise become sources of conflict. Another instrument is the establishment of cross-border conservation areas, sometimes known as 'peace parks', which promote regional cooperation and biodiversity conservation. These usually extend far beyond designated protected areas and can incorporate a wide range of community-based natural resource management programmes.

2.4 Human rights, governance and the environment

The EU is founded on the principles of liberty, democracy, respect for human rights and fundamental freedoms, and the rule of law. These principles underline the objectives for EC cooperation. Human rights are a precondition for sustainable development and proper environmental protection. Rights to life and security, as established by the Universal Declaration of Human Rights, and the right to health, as established by the Convention on the Rights of the Child, cannot be fulfilled or are violated when people become exposed to life-threatening environmental hazards such as toxic wastes, pollutants or hazardous radiations. The rights to have access to a means of subsistence and be free from hunger are also violated when land, water, or other natural resources become highly polluted or degraded.

A violation of a fundamental human right, such as the right to participate in the conduct of public affairs, can also lead to environmental degradation. In a well-functioning democracy where good governance prevails, any plans or programmes that may have adverse environmental impacts will be shared openly with citizens, public government bodies and civil society. By allowing for transparency and participatory processes, citizens can voice their concerns and alternative solutions or remedial actions can be pursued to safeguard the environment and the public interest. It is therefore not surprising that human rights violations, including suppressing information, free media and the participation of people in decision-making processes, are associated with many environmental catastrophes[41].

As a consequence of the broad acceptance of the interdependence between the enjoyment of human rights and a healthy environment[42], the more recent human rights instruments[43] define the right to a healthy environment as a human right in itself. Similarly environmental instruments, such as the aforementioned Aarhus Convention[44], attach importance to essential civil and political human rights principles such as access to information, participation and effective remedies.

[40] DCDC (2007) *The DCDC Global Strategic Trends Programme 2007-2036*, Third Edition, Development, Concepts and Doctrine Centre of the Ministry of Defence, UK; see: www.dcdc-strategictrends.org.uk.
[41] Another archetypical example is unsustainable logging and the ensuing harmful deforestation as a consequence of the non-respect and violation of the rights of forest-dependent people and communities who are often indigenous peoples or ethnic minorities.
[42] For more information on the interrelatedness and interdependence between human rights and the environment, see: www.unhcr.org/environment/.
[43] These instruments are the Convention on the Rights of the Child (1989), ILO Convention No. 169 on Indigenous and Tribal Peoples in Independent Countries (1989), and the following regional instruments: the African Charter on Human and Peoples' Rights (1981) and the Protocol of San Salvador to the American Convention on Human Rights (1988).
[44] The Convention on Biological Diversity (1993) is another such example.

These normative developments are also confirmed in the EC communication on Governance in the European Consensus on Development[45], which identifies the '*sustainable management of natural and energy resources and of the environment*' as one of the multiple facets of governance and promotes a 'holistic' (political, economic, social, cultural, environmental, etc.) approach to democratic governance, in recognition of the fact that these aspects are '*often very tightly interwoven*'.

2.5 Gender and the environment

There are two major reasons why gender should be considered in the context of environmental integration. Firstly, the 'socially constructed' gender roles of women and men are often reflected by different needs, activities and practices. As a result, they may both produce different pressures on the environment, and be affected differently by environmental change. The second reason is derived from the principle of human equality, which asserts that all groups which, in a given context, find themselves at a disadvantage deserve special attention, including in relation to their environmental conditions.

Any project or programme addressing environmental issues should clearly identify its target groups according to their particular linkages with the environment. In situations where men are the community 'leaders', women may be the key stakeholders concerned with activities such as food crop production, adopting fuel-saving stoves, sorting and properly disposing of domestic waste etc., while men may be more involved in hunting or timber harvesting, for example. These kinds of distinctions may be of particular importance when identifying alternatives to the use of natural resources, for example small animal husbandry as a substitute for poaching as a source of meat. If animal husbandry is practiced by women and hunting by men the substitution may fail, especially if hunting is associated with social and cultural status and thus strongly gender role-related.

Even in projects with less direct linkages to the environment and without any environmental objective, gender-differentiated effects may result in important indirect environmental consequences. For example, job creation, which is usually not gender-neutral, and changes in reproductive behaviour, an issue closely related to sex and gender, affect migrations and population growth and thus have considerable indirect impacts on the environment and sustainable development.

Men and women are also affected differently by changes in their environment, thus by the environmental impacts of projects and programmes as well as the prevailing environmental risks and constraints. Wood and clean water scarcity, for example, may increase the time spent by women and girls in collecting fuel and water, which may have long-term consequences if as a result girls are prevented from attending school. Similarly, a decrease in fish stocks may result in more time being spent away from the home by fishermen, with indirect consequences on family life, food security and income. The conflicts and migrations potentially triggered or amplified by the effects of climate change may have particularly negative impacts on the security, health and livelihoods of women, who in many societies are more vulnerable than men to the consequences of social disruption. Generally speaking, natural disasters and rapid changes in environmental conditions amplify existing inequalities, including gender inequalities. When designing a project that will change the environment, or be subject to environmental and climate-related risks or constraints, these kinds of gender-differentiated environmental impacts should be taken into account, in addition to direct impacts. Another example is indoor pollution from cooking fires which disproportionately affects women and young children.

In practical terms it is important to incorporate gender considerations and more generally the social dimension into the scope and design of environmental and climate-related assessments; to ensure that the results of assessments are disaggregated according to gender; and to ensure that the understanding of gender differences is used as appropriate in the design of interventions.

[45] *Governance in the European Consensus on Development: Towards a harmonised approach within the European Union*, COM(2006) 421 final (30.08.2006).

2.6 Environmental sustainability is a high-level commitment and obligation for the EC

2.6.1 Global commitments

Global concerns for linking environment and development already have quite a long history. Key steps include the 1972 United Nations Conference on the Human Environment held in Stockholm[46], the 1987 Brundtland Report[47] ('*Our Common Future*'), and the United Nations Conference on Environment and Development, held in Rio[48] in 1992, which reaffirmed and built on the Stockholm conference with the goal of establishing an equitable global partnership through the creation of new levels of cooperation by working towards international agreements that respect the interests of all and protect the integrity of the global environmental and developmental system. This led in 1996 to the definition by the OECD of international development objectives of 'environmental sustainability and regeneration'[49], and in 2000 to a global commitment to the Millennium Development Goals[50], the seventh of which (MDG 7) is '*to ensure environmental sustainability*' through four specific targets:

- Target 7.A: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources.
- Target 7.B: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss.
- Target 7.C: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation.
- Target 7.D: By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers.

2.6.2 The policy and legal basis

The European Community has a long-standing commitment to address environmental concerns in its development programmes and projects, as part of a wider commitment to sustainable development.

Article 6 of the Amsterdam Treaty stipulates that '*environmental protection requirements must be integrated into the definition and implementation of the Community policies and activities (…) with a view to promoting sustainable development*', as enshrined in the spirit of Agenda 21 of the 1992 Rio Earth Summit[51]. The systematic consideration of environmental aspects into EC development cooperation, as in other policies, is part of the Cardiff process, launched in 1998 by the European Council[52]. Consequently the EC's **development policy**[53] of 24 April 2000 identified the environment as a key cross-cutting issue to be mainstreamed into all priority themes, and on 31 May 2001 the Council endorsed the EC proposed a **Strategy on Integrating the Environment into EC Economic and Development Cooperation**[54]. More recently, at its meeting of 25 June 2009, the Council of the European Union adopted the conclusions on the Commission Staff

[46] Report of the UN Conference on the Human Environment, Stockholm, 1972; see: www.unep.org/Documents.multilingual/Default.asp?DocumentID=97&ArticleID.
[47] World Commission on Environment and Development (1987) *op. cit.*
[48] Rio Declaration on Environment and Development, 1992; see: http://www.unep.org/Documents.Multilingual/Default.asp?documentID=78&articleID=1163.
[49] OECD (1996) *Shaping the 21st Century: The contribution of development cooperation*, Organisation for Economic Cooperation and Development: Paris; see: http://www.oecd.org/dataoecd/23/35/2508761.pdf.
[50] The MDGs were endorsed by world leaders in September 2000 at the UN Millennium Summit; see: www.un.org/millenniumgoals/.
[51] See: http://www.un.org/geninfo/bp/enviro.html.
[52] *Integrating environmental considerations into other policy areas – a stocktaking of the Cardiff Process,* COM(2004) 394 final (01.06.2004), and *Report of the Cardiff process*; see: http://europa.eu/legislation_summaries/environment/sustainable_development/l28075_en.htm.
[53] *The European Community's Development Policy*, COM(2000) 212 final (26.04.2000).
[54] *Integrating the Environment into EC Economic and Development Cooperation, a global strategy*, SEC(2001) 609 (10.04.2001).

Working Paper on Environmental Integration in Development Cooperation[55]. In its conclusions, the Council noted that the European Commission and Member States face similar challenges to address environment in their development assistance, increased by the additional threats posed by climate change. The Council invited the Commission to prepare an ambitious EU-wide environment integration strategy by late 2011, in close collaboration with Member States.

The 2005 **European Consensus on Development** explicitly recognises the links between development and environment, and highlights the need for a '*strengthened approach to mainstreaming of cross-cutting issues*', by making '*systematic and strategic use of all resources*' available to this effect[56]. This is in line with the 2005 **Paris Declaration on Aid Effectiveness**, in which donors commit to work towards harmonised approaches on environmental assessments at the sector and national level. Furthermore, the 2005 development policy identifies environment and sustainable management of natural resources (including management and protection of forests, water, marine resources and biodiversity, access to sustainable energies, climatic change, desertification and soil degradation, management of chemical products and waste, sustainable production and consumption methods) as one of the nine areas for community action.

In this context, the communication on **Policy Coherence for Development**[57], prepared for the 2005 UN summit building on earlier results from the World Summit on Sustainable Development of 2002, contains a number of specific commitments with respect to environment and efforts needed to achieve the MDGs, including MDG 7. The **renewed EU Sustainable Development Strategy**, already mentioned (see Section 2.1.2), emphasizes the importance of the external dimensions of the three pillars of sustainable development, including the environment, in EU policies. The 2005 **EU strategy for Africa**[58] also identifies a '*healthy environment*' as '*one of the most valuable assets for the development of Africa'*. It mentions various types of actions to be supported by EU assistance, including actions to counter the effects of climate change. Accordingly, the First Action Plan of the Joint Africa-EU strategy devised at the Lisbon summit (2007) includes climate change as one of eight topics around which to develop Africa-EU strategic partnerships.

Building on the *European Consensus*, the new **instrument for development cooperation** (DCI, adopted in 2007) makes provisions for environment and natural resources to be addressed both under the geographic programme and under a dedicated thematic programme. In addition to supporting dedicated actions, the latter aims to enhance environmental integration efforts, including through global actions in support of partner countries[59]. Finally but very importantly, the DCI requires environmental screening and impact assessments to be undertaken as appropriate for project- and sector-level interventions.

2.6.3 Multilateral Environmental Agreements

Often referred to as the '**Rio Conventions'**, the three main MEAs are the UN Framework Convention on Climate Change[60] (UNFCCC), the UN Convention to Combat Desertification[61] (UNCCD) and the UN Convention on Biological Diversity[62] (UNCBD). These three Rio Conventions derive directly from the 1992 Earth Summit. Each instrument represents a way of contributing to the sustainable development goals of Agenda 21. The three conventions are intrinsically linked, operating in the same ecosystems and addressing interdependent issues.

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[55] *Improving environmental integration in development cooperation*, SEC(2009) 555 (21.04.2009); and *Council Conclusions on integrating environment in development cooperation*, 2953rd Environment Council meeting, Luxembourg, 29 June 2009.
[56] § 102. The Consensus also includes a reference to carrying out Strategic Environmental Assessments (SEA) on a systematic basis, including in relation to budget and sector aid.
[57] *Policy Coherence for Development: accelerating progress towards attaining the Millennium Development Goals*, COM(2005) 134 final (12.04.2005).
[58] *EU Strategy for Africa: Towards a Euro-African pact to accelerate Africa's development*, COM(2005) 489 final (12.10.2005).
[59] *External Action: Thematic Programme for environment and sustainable management of natural resources including energy*, COM(2006) 20 final (25.01.2006).
[60] See: http://unfccc.int/.
[61] See: http://www.unccd.int/.
[62] See: http://www.biodiv.org/.

Most developing countries are parties to Multilateral Environmental Agreements (MEAs) and have obligations to fulfill under these agreements in which the EC may provide assistance. The EC strongly advocates mainstreaming of MEA National Action Plans of developing countries in their national development strategies.

Climate change

The UNFCCC, its Kyoto Protocol and any agreement due to succeed it from 2012 are key issues at the international level. By the end of 2011, a new framework should have been negotiated (but is looking unlikely) to deliver the stringent emission reductions the Intergovernmental Panel on Climate Change[63] (IPCC) has clearly indicated are needed. Several developing countries (i.e. non-Annex I countries that do not have binding GHG reduction targets under the Kyoto Protocol) are now middle-income countries and their rising economic activity is progressively becoming an important source of GHG emissions. This is especially the case for a few large countries such as China, India and Brazil.

In 2003, the EC put forward the **EU Climate Change Strategy for support to partner countries**[64] and, in 2007 launched the **Global Climate Change Alliance**[65] to support the efforts of developing countries to adapt to climate change.

In accordance with developed countries' commitments under the Copenhagen Accord, the EU and its Member States have mobilised Fast Start finance in 2010 as part of its overall commitment to provide substantial funding for the period 2010 – 2012.[66] The implementation of EU fast start finance is enabling developing countries:

- to better protect themselves against severe weather events and other adverse effects of climate change, including by promoting national adaptation planning, and funding for science and analysis to support decision making;
- to grow and develop on a sustainable low carbon path, including through supporting projects on low carbon energy, energy efficiency and low carbon transport;
- to protect forests while also supporting economic development;
- to prepare for the effective and efficient implementation of a new climate regime and scaled-up financial flows in the longer term.

Desertification

The UNCCD addresses an issue which is affecting mainly developing countries and is directly related to development. Most of the African continent is affected by desertification and land degradation, as are important parts of Latin America and Central Asia.

The UNCCD Conference of the Parties (COP) oversees the implementation of the Convention. It is established by the Convention as the supreme decision-making body, and it comprises all ratifying governments. The first five sessions of the COP were held annually from 1997 to 2001. From 2001 sessions are held on a biennial basis interchanging with the sessions of the Committee for the Review of the Implementation of the Convention (CRIC). The conclusions and recommendations of CRIC 9 (2011) dealt with the country policy frameworks, capacity building, financing and technology, science, technology and knowledge, and advocacy, awareness-raising and education. The recommendations also focus on the best practices and the methodologies and approaches to assess the impact indicators.

[63] "The work of the IPPC is policy-relevant and yet policy-neutral, never policy-prescriptive". http://www.ipcc.ch/organization/organization.shtml
[64] Included in the communication on *Climate Change in the Context of Development Cooperation*, COM(2003) 85 final (11.03.2003).
[65] Building the Global Climate Change Alliance between the European Union and poor developing countries most vulnerable to climate change, COM(2007) 540 final (18.09.2007). www.gcca.eu
[66] Council of the European Union, 15889/1/10 REV

Developing countries parties to the Convention have to develop a National Action Plan (NAP); an important efforts in this direction were made in the period up until 2006 and most affected parties have submitted their NAP, but limited progress has been made towards implementation. A central problem lies in the fact that these NAPs have been drafted as stand-alone strategies, while most of the countries' efforts are geared towards the implementation of National Development Strategies[67]. A key issue is thus to link and integrate the UNCCD NAP and other MEA into the national development strategies, as the synergies between them are increasingly recognised and countries capacity to respond on multiple fronts is limited. The EC is supporting initiatives in this direction and is calling affected parties to mainstream these issues into their national strategies.

Biodiversity

The objectives of the UNCBD are the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits arising from commercial and other utilization of genetic resources. The agreement covers all ecosystems, species, and genetic resources. Loss of biodiversity has increased exponentially during the last decades and it is becoming increasingly urgent to take decisive action in order to halt this loss. The UNCBD has been adopted to address this issue and includes initiatives on related problems (e.g. Cartagena protocol on bio-safety).

In 2010 the *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity* was agreed. This protocol[68] aims at sharing the benefits arising from the utilization of genetic resources in a fair and equitable way, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding, thereby contributing to the conservation of biological diversity and the sustainable use of its components.

There can be a perception that biodiversity loss is not of great importance to development, however increasing scientific evidence that biodiversity is the basis of several economic and social sectors should help revert this thinking. The EC adopted a **Biodiversity Action Plan for Economic and Development Cooperation**[69] with the strategic aim of mainstreaming biodiversity objectives into cooperation strategies, plans and programmes as well as in policy dialogue with developing countries. It also aims to support sustainable use of natural resources, particularly in relation to forests, grasslands and marine/coastal ecosystems, to strengthen the capacity of relevant agencies involved in conservation and sustainable use of biodiversity, and to co-ordinate implementation with third countries', other donors' and international institutions' own biodiversity strategies.

Other MEAs address other important international environmental issues. Amongst these are the Stockholm Convention on Persistent Organic Pollutants[70], the Rotterdam Convention on prior informed consent for international movements of hazardous chemicals[71], and the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal[72].

2.7 All sectors are concerned: environmental opportunities, constraints and impacts

Because the environment plays a key role in human well-being and activities, several sectors are particularly and directly dependent on the environment. These include for example health (as many diseases are caused by pollution or other degraded environmental conditions), and areas directly involved in the use of natural resources, such as fisheries, agriculture and forestry.

[67] The same problem arises with the National Adaptation Programmes of Action that the least developed countries have prepared in the context of the UNFCCC.
[68] http://www.cbd.int/abs/doc/protocol/nagoya-protocol-en.pdf
[69] *Biodiversity action plan for economic and development cooperation*, COM(2001) 162 final (27.03.2001).
[70] See: http://chm.pops.int/.
[71] See: www.pic.int.
[72] See: www.basel.int.

However, because sectors are interdependent, all are influenced in some way by the environment. In these guidelines, environmental conditions (including climate) are referred to as environmental **opportunities** if they are expected to have a positive influence on a sector (or a sector policy), and **risks and constraints** if the influence is expected to be negative.

In turn, human activities in all sectors produce effects or consequences on the environment (e.g. deforestation, biodiversity loss, soil erosion, air pollution, water contamination), which are usually referred to as environmental **impacts**. Impacts may be positive or negative, direct or indirect, visible or not. For example, sectors such as transport, energy, agriculture and industry directly pollute and consume natural resources. Other sectors, such as education, governance or macroeconomic reforms have more indirect impacts, through changing behaviour and practices affecting the environment (both positively and negatively). Depending on their intensity, duration, frequency, reversibility, cumulative or synergic nature and socio-economic consequences, potential impacts can (or not) be considered to be **significant**, i.e. important enough to justify mitigation or enhancement measures. Addressing issues related to these significant impacts may be part of EC support to sector programmes and policies.

Some sectors are more vulnerable to environmental changes (including those resulting from climate change), others produce higher impacts, and all sectors have the potential for environmental integration. Using governance and institutions as an example, potential environmental integration entry points include: environmental institutions and capacities; land use planning institutions and capacities; legislative capacity; environmental law; environmental statistics; participation of civil society; and decentralisation programmes. Issues that many sectors hold in common include institutional environmental management, energy efficiency, waste minimisation, planning, and 'climate-proofing' (i.e. the adoption of measures to build in resilience to the effects of increasing climate variability and climate change). A more comprehensive list of environmental entry points and guidance for a range of sectors/areas is given in Annex 1.

As well as addressing risks and vulnerabilities related to environmental factors, including climate change, environmental and climate change mainstreaming also provides a context in which opportunities to add value to development initiatives may be identified and exploited. These may include opportunities to promote clean, low-carbon energy, or to enhance climate resilience, awareness of climate change risks, and adaptive capacity. Examples of opportunities associated with environmental and climate change mainstreaming re provided in Box 5.

Sector guidance ► Annex 1

When a decision is made to work in a particular focal sector, the specific linkages of this sector with the environment (including climate-related aspects) should thus be identified. These linkages between the environment, climate change and all sectors are the reason why the environment is considered a 'cross-cutting' issue, in addition to being a 'sector' in itself.

Box 5 Opportunities linked to climate change adaptation and mitigation

The need to adopt specific measures to adapt to increasing climate variability and climate change, or contribute to the emissions reduction effort, is often perceived as a constraint and an additional financial and economic burden on the implementation of development programmes and projects. Yet, a closer look indicates that it needs not necessarily be so. While tradeoffs are unavoidable in some instances, there are many cases in which the adoption of adaptation and mitigation measures may actually make a positive contribution to development objectives – and thus generate a net economic benefit, or even short-term net financial gains. For instance:

- *Energy savings* and *energy efficiency measures* at all levels usually pay for themselves: depending on local circumstances, they may reduce energy bills, contribute to a reduction in air pollution and thus improve health, reduce a country's imports of fossil fuels and thus improve its current account balance, or make the adoption of renewable energy sources a more viable option.
- Investments in *renewable energy sources* may initially be more costly than investments in fossil fuel-based infrastructure, but in view of very volatile and on the whole increasing energy prices, they are getting more and more financially attractive for countries that are net importers of fossil fuels; they bring

macroeconomic benefits in terms of balance of payments and foreign exchange reserves and are strategically attractive to the extent that they reduce a country's dependence on imported fuels; and there are also health benefits to be gained from improved air quality.

- *Avoiding deforestation* or *promoting reforestation* whenever possible involves opportunity costs (in the form of foregone profits from timber exploitation and/or foregone agricultural income, either for the local population or for large corporations), but helps sustain biodiversity (for which developed countries may be willing to pay), protects soils against erosion and maintains other essential environmental services (such as water flow regulation); furthermore, the sustainable exploitation of timber and non-timber products, or even non-consumptive uses of the forest, may generate very tangible and possibly substantial monetary and non-monetary benefits for the local population. Promoting the healthy functioning of ecosystems will also help to make them more resilient in the face of climate change.
- *Water efficiency measures* are generally a 'safe bet', as increasing water scarcity is an established trend in many parts of the world regardless of climate change – and water prices, with or without subsidies, can only increase in the coming decades; furthermore, they may contribute to the preservation of important ecosystems, or simply alleviate the water stress on other segments of society. Improved water use efficiency, and more widespread water capture and storage, will provide a foundation for adapting to reductions in absolute water availability, which will be a consequence of climate change in many areas.
- Measures (in particular non-capital-intensive ones) aimed at improving crop yields and *land productivity*, in addition to reducing vulnerability to climate-induced food shortages, generally have positive effects on rural incomes and nutrition (and thus also on health); whether they help stem the flow of migration to urban areas depends on whether they are labour- or capital-intensive; whether they also have positive environmental effects depends on the choice of productivity-enhancing measures.
- More stringent *engineering standards and building norms* are likely to make upfront investment in public infrastructure and housing more costly – but will usually make such investments more durable, less demanding in terms of maintenance, and more resilient to the weather conditions and natural disasters that already prevail (regardless of their potential aggravation in future).
- More responsible *land planning practices*, that take account of well-known risks (e.g. no settlements in areas prone to floods or landslides), would also go a long way towards reducing the vulnerability of populations to existing hazards, not just potential future ones.
- Raising awareness of climate change, its potential impacts, and available or potential adaptation measures, may be something that can be promoted in project contexts, even where the main focus of a project is not on adaptation or even on a sector or activity associated with significant climate change risks.

The more systematic use of financial and economic analysis, combined as appropriate with elements of risk analysis and stakeholder analysis, would enable planners to inform decision makers about the true net costs (or benefits) to society and specific social groups of adopting envisaged adaptation and mitigation measures. This information can guide decision on how far to go with adaptation or mitigation measures, and also provide a rational basis for negotiations between stakeholders.

Environmental mainstreaming brings added value in the following ways:

- Addressing environmental and climate-related aspects across all sectors will improve the relevance, efficiency, effectiveness, sustainability and impact of poverty reduction efforts.
- Because co-management of the environment by all involved stakeholders means peaceful cooperation, peace and security will be strengthened too.
- The risk of environmental disasters and social crises caused by environmental degradation and climate change will be mitigated.
- The need for emergency aid will be reduced, as well as the social, economic and financial costs saved by preventive action.
- Balanced and win-win solutions can be found to accommodate different concerns, including global and local, economic, social and environmental, material and cultural ones. For instance, synergies exist between climate change adaptation and mitigation measures (e.g. avoided deforestation can strengthen ecosystem resilience to the effects of climate variability and change), and some of these measures can make an immediate and positive contribution to other environmental, economic and social objectives (see Box 5).

- Addressing 'externalities', even in cases where this entails a negative impact on financial performance, will increase the economic and social benefits of cooperation programmes and projects – which should be the ultimate objective of development interventions by public sector organisations.
- Environmental awareness and capacity building for environmental management, including the design of appropriate responses to climate-related challenges, can have a tremendous empowerment potential for the poor, for women, for indigenous peoples and for all citizens in general in that they foster a culture of shared democracy, participation and rights-awareness.
- The interest of future generations will be respected resulting in increasingly sustainable development.

These expected benefits should be kept in mind and guide environmental and climate change integration in development cooperation. In order to help achieve them, practical guidance is provided in the following chapters on programming and aid modalities.

CHAPTER 3: ENVIRONMENT, INCLUDING CLIMATE, IN THE MULTI-ANNUAL PROGRAMMING PHASE

The programming phase is crucial for environmental integration because key decisions concerning the overall cooperation process are made that might be difficult to adjust in later phases. Under geographical cooperation instruments, multi-annual programming generally culminates in the production of Country Strategy Papers (CSPs) and National Indicative Programmes (NIPs). The main environmental integration tool that helps inform the strategy process at this stage is the **Country Environmental Profile (CEP)**.

Environmental integration during this phase contributes to the following objectives[73]:

- 'To identify and **avoid** any **harmful direct and indirect environmental impacts** of the cooperation programme which can undermine sustainability and counteract achieving the development cooperation objectives of poverty reduction.'
- 'To recognise and **realise opportunities for enhancing environmental conditions**, thereby bringing additional benefits to development and economic activities and advancing environmental issues which are a priority for the EC'.
- It also aims to identify and **adequately address the environment-related risks, constraints and opportunities** (including those potentially resulting from increasing climate variability and climate change) that may promote or jeopardise the achievement of the stated objectives of cooperation.

3.1 The Country Environmental Profile

A comprehensive country analysis is an initial step in programming. This analysis focuses on the national situation and policies and includes an overview of past and ongoing cooperation with the EC as well as with other donors. Integrating the environment in this analysis provides opportunities to undertake policy dialogue and programming on a better understanding of the challenges posed by sustainable development, which is the long-term objective of EC cooperation. The CEP provides the necessary information to integrate environmental concerns in the country analysis (see typical contents in Table 3.1). More specifically, it provides a foundation for the analysis of the country's environmental situation, and supports the identification of links between the economic, social and environmental situations.

It is of great importance that the findings and recommendations of the CEP are communicated to the full EU Delegation staff and other stakeholders, and discussed within the team involved in developing the country strategy. In addition to supporting the EC country strategy preparation, the CEP can be used as a tool for strengthening the capacities of cooperation partners on environment and climate change. The CEP should notably provide key information on climate-related issues for individual countries and regions[74], and also identify more detailed sources of information, where they exist. An understanding of the risks and challenges faced by different sectors is essential to ensure that the development investments considered during programming are adapted to current and future conditions (to the extent that forecasts are possible), and generally that identified vulnerabilities are addressed and adaptive capacity is strengthened.

[73] Source: iQSG (2005) *Programming Guide for Country Strategy Papers* (update 07/04/05). See also: *Increasing the Impact of EU Aid: A Common Framework for Drafting Country Strategy Papers and Joint Multi annual Programming*, COM(2006) 88 final, 02.03.2006.
[74] Regional Environmental Profiles should be available for regions.

The CEP is based on a compilation of available environmental information, the validity and consistency of which should be determined. It is not expected that 'raw' data should be collected during the preparation of a CEP, but where key data is not available this should be reported. The cost and amount of work involved in preparing a CEP will depend on the existence and the quality of any previous versions or of other (non-EC) profiles such as national *State of the Environment* reports, the *Country Environmental Analysis* of the World Bank[75] and Asian Development Bank[76] (which focus on institutional and governance aspects), and the *Environmental Profiles* of the United Nations Environment Programme[77], the Food and Agriculture Organisation[78] and the World Resources Institute[79]. Information on the environment is also provided in national sustainable development strategies[80], or national environmental strategies.

Table 3.1 Contents of a Country Environmental Profile

Summary	Brief presentation of the main environmental problems, main conclusions and recommendations.
State of the environment, trends and pressures	A presentation of the state and trends of the environment in relation to development, with an identification of the main environmental problems and underlying pressures. This section addresses the relationship between the environment and the social and economic situation, and more particularly between poverty and environment.
Environmental policy, legislative and institutional framework	A presentation of the main features of the institutional, policy and regulatory framework leading to the identification of weaknesses and constraints in the capacity to address main environmental concerns. This section should include a review of the legislation and procedures regarding impact assessments, and a review of the international obligations in the area of environmental protection.
Climate change implications	A review of any existing analysis of climate change implications including climatic trends, increasing climate variability and strategic responses to them. The review should include the identification of key factors of vulnerability with regard to climate variability and climate change, and an assessment of the capacity to respond.
Environment in the main policies and sectors	An identification of links between the main government policies (overall development and reform policies and strategy, such as a poverty reduction strategy, and sector policies) and environmental sustainability issues, providing indications on the extent of existing environmental mainstreaming, with a special attention paid to the 'focal sectors' of EC intervention.
Cooperation from an environmental perspective	A description of past and ongoing aid from the EC and other donors particularly from the point of view of environmental integration, incorporating lessons learned from major evaluations. Assessment of donor coordination mechanisms.
Conclusions and recommendations	Recommendations on how environmental and climate-related issues can be most effectively addressed in EC cooperation, their relative priority and the implementation challenges. These must particularly relate to potential focal sectors and may include measures such as capacity building and institutional strengthening, further analysis and impact assessment, or potential indicators to be used in the NIP. These environmental integration measures may go along with recommendations concerning specific actions targeting the environment as a cooperation sector, i.e. having environmental improvements as the main objective.

In line with the *Paris Declaration,* followed by the *Accra Agenda*, efforts towards greater harmonisation in the area of country-level environmental analytical work are underway. Increased coordination and cooperation with national and international development partners

[75] For the World Bank approach, see the *Country Environmental Analysis (CEA) Concept Note* (April 2008) and Pillai (2008) *Strengthening Policy Dialogue on Environment, Learning from five years of Country Environmental Analysis*, World Bank: Washington, DC, both available on http://www.worldbank.org/reference/.
[76] See: http://www.adb.org/environment/cea.asp.
[77] See: http://gridnairobi.unep.org/chm/roa/Country%20Profiles/.
[78] See: http://www.fao.org/countryprofiles/default.asp?lang=en.
[79] See: www.earthtrends.wri.org/.
[80] See: http://www.un.org/esa/dsd/dsd_aofw_nsds/nsds_index.shtm.

should be sought locally, leading to **joint analytical work** and alignment on nationally-led exercises where possible, such as in the framework of joint assistance strategies.

Table 3.2 provides some practical information with regard to the preparation of a CEP. Model ToRs are provided in Annex 2[81].

Table 3.2 The Country Environmental Profile in practice

What is it?	A description of the country's environmental situation, including the implications of increasing climate variability and climate change, current policies, institutional capacities and environmental cooperation experience including recommendations for the integration of the environment and climate-related aspects during CSP preparation.
What needs to be done by EC staff?	To undertake or contract consultants to carry out the study involving either the preparation of a new CEP or the revision/update of an existing CEP. If consultants are commissioned, the Delegation/desk officers prepare ToR.
Under what conditions?	A CEP is in principle required for all beneficiary countries.
When is it needed?	Typically during the preparation or mid-term review of a Country Strategy Paper (CSP). However, the CEP can also provide useful information to underpin the integration of environmental considerations during the implementation of the CSP.
How long does it take?	The duration and cost of preparing a CEP varies considerably as a function of the data availability, the size of the country and the complexity of the environmental issues. Using consultants from inception to final report typically takes +/- 4 months.
Where is it used?	The CEP is used to inform the preparation of the CSP/NIP. The CEP also informs policy dialogue and can be used as reference for environmental integration in programmes and projects by EC staff and cooperation partners. A summary of the CEP must be annexed to the CSP.

ToR for a Country Environmental Profile ► Annex 2

The Regional Environmental Profile (REP)

Regional Environmental Profiles should be prepared to inform regional cooperation strategies (Regional Strategy Papers). The REP focuses on environmental issues common to a group of neighbouring countries (including transboundary issues) such as those linked to the shared management of ecosystems or water basins, which can be more effectively addressed at the regional level. The REP should also consider issues linked to regional cooperation areas such as regional integration and trade. An existing REP does not mean that individual CEPs for the countries concerned will not be required. Individual CEPs should still be prepared for CSP purposes, using country-specific data required to address environmental issues at the national level.

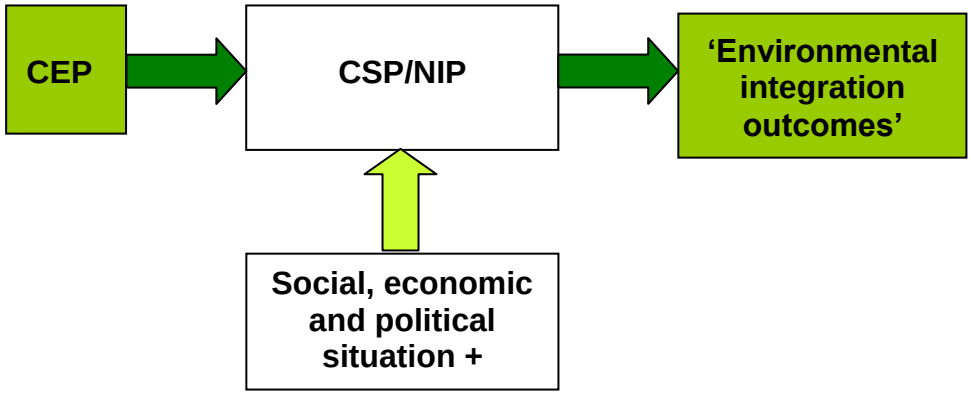
3.2 Integrating the environment, including climate, in the CSP and NIP

The CEP provides the necessary environmental information to prepare a balanced EC country strategy, incorporating social, economic and environmental considerations. The CSP in turn informs the National Indicative Programme. The response strategy of the CSP and the

[81] To aid the preparation of ToRs for a CEP and management of the process, a guide is available citing examples of CEPs that are considered to demonstrate good practice for a number of criteria. Please consult EuropAid Unit E6 for further details.

NIP will include 'environmental integration outcomes' (i.e. elements that testify to the fact that environmental issues were taken into account, and will receive further attention as appropriate) for the subsequent phases of the cycle of operations (see Fig. 3.1). The environment should be considered in the response strategy as a **cross-cutting issue** influencing the specific interventions for different focal and non-focal sectors and may also be considered as a **possible sector of intervention** which merits consideration in itself.

Figure 3.1 The CEP as an input to the CSP-NIP



Various entry points should be considered in the CSP structure for integrating information from the CEP, as shown in Table 3.3.

Taking into account the relationships between the main sectors and the environment in designing the strategy does not mean that only sectors with less negative environmental impacts should be supported by the EC. It means that where possible negative impacts should be mitigated and positive impacts enhanced, thereby ensuring the sustainability of EC support. Possible impacts may be identified as part of the analysis of the risks associated with the strategy and by using Annex 1 for additional guidance[82].

Sector guidance ► Annex 1

Where appropriate, the intention to carry out a **Strategic Environmental Assessment (SEA)**[83] will be foreseen in the CSP. If the CSP foresees sector support, the decision to promote an SEA should be based on the likely environmental impacts of the sector policy and programme considered for support, as established by SEA screening (see Chapter 4). If the CSP includes GBS, the decision to promote an SEA should be based on the extent to which environmental issues are identified as a key concern under national policies/strategies. In this context, an SEA may be particularly useful where these national policies/strategies rely on the promotion of economic growth that is overly dependent on the use of natural resources or potentially polluting activities, as well as those which include macroeconomic or fiscal

[82] Sector-specific guidance in the context of climate change has also been developed for key sectors. 'Climate change sector scripts' are intended to provide inputs for strengthening climate change integration in ongoing and future cooperation programmes and projects; they may also be used to support political dialogue on climate change implications between the EC, partner governments and other national partners; see EuropeAid's intranet: http://www.cc.cec/dgintranet/europeaid/activities/thematic/e6/index_en.htm.

[83] The European Consensus on Development establishes a commitment, which builds on the 2001 Environmental Integration Strategy and Council Conclusions, to prepare SEAs for budget and sectoral aid. Use of SEA is foreseen under the DCI Regulation (1905/2006 of 18.12.2006) in connection with the implementation of sector programmes (art 22.4). It is also foreseen by the Common Format for Country Strategy Papers (COM(2006) 88 final). For ACP countries see also the Note to Delegations of 23.02.2006 and the Programming Guidelines for the 10th EDF. Under the Paris Declaration on Aid Effectiveness, donors have committed to applying common approaches for SEA at the sector and national levels. As a follow-up to the Paris Declaration, *Good Practice Guidance on applying SEA in Development Co-operation* has been finalised by OECD-DAC ENVIRONET in 2006; see: http://www.seataskteam.net/.

reforms, or which include important components in environmentally sensitive sectors[84]. The decision and commitment to prepare an SEA should also take into account government capacities, the legal and regulatory framework and local interest in SEA, as well as other mechanisms already in place to integrate the environment in an appropriate manner into the supported policy/strategy.

Table 3.3 Possible entry points for environmental integration (including climate-related aspects) in the Country Strategy Paper

Description of the EC cooperation objectives	Policy objectives regarding sustainable development, climate change response, environmental protection and the reversal of environmental degradation should be outlined.
Analysis of the (economic, political, social and environmental) situation	Based on the CEP, the analysis of the overall situation of the country should identify the main environmental challenges and articulate their links with social and economic issues. Particular attention should be paid to the poverty–environment linkages. This section could include for example: • vulnerability to natural disasters and expected consequences of increasing climate variability and climate change; • environmental resources (e.g. biodiversity, forests) providing opportunities for sustainable development; • environmental constraints and problems, for instance resource degradation (deforestation, desertification, soil erosion, depletion of fish stocks), air, water and land pollution, contributing to social, economic and political problems (e.g. in relation to food security, health, conflicts, employment, migration, exports, incomes); • the dependency of the country's economy on local natural resources such as forests, water or fisheries, and the sustainability of patterns of natural resource exploitation; • major pressures and impacts on the national, regional and global environment, resulting from social, economic and political trends (e.g. GHG emissions associated with growth; deforestation resulting from population growth or land reform policies).
Policy agenda of the beneficiary country	Environmental policies identified in the CEP should be mentioned, including strategies in response to climate change and commitments under Multilateral Environmental Agreements. The level of environmental mainstreaming in key national planning documents should be indicated.
Outline of EC and other donors' cooperation	Incorporate the results of the CEP regarding the 'analysis of aid', including lessons on environmental integration learned from evaluations of past actions.
Response strategy	The response strategy should identify measures for addressing identified environmental and climate-related issues, challenges, risks and constraints – and for optimising the positive effects of the EC intervention on the environment. These measures may concern: 1) the selection of focal sectors; 2) objectives, approaches and strategies for focal sectors; 3) the selection of non-focal sectors and types of actions to be supported; 4) the work programme and budget; 5) policy dialogue; 6) indicators.

[84] Environmentally-sensitive sectors include: infrastructure, communications and transport; water and energy; natural resources management (including forestry and fisheries); waste management; agriculture, rural development, territorial planning and food security. Please refer to Annex 3 for more details.

	Examples of possible environmental outcomes are provided in Table 3.4.
Annexes	A summary of the CEP[85] should be attached, excluding the recommendations.

The preparation of an SEA (or provision of support to that end) can be complemented by actions to strengthen national capacities (institutional, regulatory) to carry out impact assessments, implement mitigation measures and manage environmental impacts including remediation action, which will allow the government to pursue a higher degree of environmental integration into sector policies in the most effective manner[86], i.e. based on principles of ownership and participation. Table 3.4 provides more guidance on possible environmental integration outcomes.

Table 3.4 Environmental integration outcomes as anticipated in the EC response strategy and the indicative programme

Selection of focal sectors	Because environmental concerns should receive the same attention as social and economic concerns, the country analysis and CEP recommendations should influence the selection of focal sectors, resulting in some circumstances in the selection of 'environment and sustainable management of natural resources' as a specific focal area of intervention[87]. The selection of other focal sectors will still provide opportunities to integrate the environment as a cross-cutting issue. Considerations with regard to adaptation to increasing climate variability and climate change should also be included in the selection of focal sectors.
Objectives, approaches, strategies for focal sectors	Opportunities to integrate the environment, including climate-related aspects, into focal sectors should be developed. Annex 1 provides examples of entry points for each of the main areas of community action under the European Consensus for Development. Measures may include, for instance, a commitment in principle to undertake EIA, SEA or other environmental assessments as part of the formulation of planned interventions in sensitive geographical areas and/or sectors; or complementary actions to build capacities of relevant national institutions with regard to environmental and natural resource management.
Non-focal areas	Specific support to environmental institutions and the building of environmental capacities within non-environmental institutions or civil society organisations may be envisaged here, along with support for the improvement of regulatory frameworks.
Work programme and budget	Adequate flexibility, budget and schedule should be provided for the identification and formulation phases to accommodate further environmental integration steps, including additional environmental assessments and their results (e.g. implementation of environmental mitigation measures).
Policy dialogue	Environment and climate-related issues may be identified in the CEP as a topic for a 'sectoral policy dialogue'. Sometimes, where social or economic dialogue is difficult, environment may provide an opportunity for more constructive dialogue.
Indicators	A key aspect is the selection of an appropriate set of indicators, reflecting the main environmental and sustainability concerns which can be influenced by EC support, especially in the focal areas. The MDG 7[88] indicators and any indicators that may have been identified by the CEP may be appropriate. Annex 10 provides further information with regard to the selection of appropriate indicators.

[85] This summary has been usually referred to as the Country Environmental Profile. It should more correctly be referred to as a summary of the CEP.
[86] Guidance on capacity development for SEA can be found in Chapter 7 of the OECD DAC SEA guidance: OECD-DAC (2006) *op. cit.* (see footnote 72).
[87] Taking into account that other factors intervene in the choice of cooperation sectors, including past cooperation areas and the 'division of labour' between development partners in the context of the Paris Declaration.
[88] See: http://www.undp.org/mdg/.

Regional Strategies and Indicative Programmes

The same principles should be followed while preparing a Regional Strategy Paper (RSP) and a Regional Indicative Programme (RIP), informed by the REP. At this level, regional integration and trade are frequent focal areas, for which entry points on environmental integration can be found in Annex 1, Section 2. In case trade agreements or Economic Partnership Agreements are negotiated, Sustainability Impact Assessment[89] is an appropriate tool for environmental integration – which is applied by DG TRADE. The RSP and RIP also provide an appropriate framework for addressing regional or transboundary environmental issues, which can be considered as opportunities to build regional cooperation.

[89] See: http://ec.europa.eu/trade/wider-agenda/development/sustainability-impact-assessments/index_en.htm.

CHAPTER 4: ENVIRONMENT, INCLUDING CLIMATE, IN SECTOR POLICY SUPPORT PROGRAMMES

Although the consequences of sector programmes on the environment may be less immediately visible than the environmental impacts of an individual project, their influence can nevertheless be very significant. For example, a sector policy on agriculture may include tax incentives that promote the use of more polluting pesticides, or provide subsidies based on production output that may result in incentives to use environmentally degrading practices which provide higher yields in the short term. A sector policy on transport may trigger higher levels of atmospheric pollution in urban centres from increased traffic if incentives make private transport more attractive than public transport, or unintentionally promote deforestation and poaching from road programmes crossing previously inaccessible areas. Support to the health sector is often enhanced by considering links with the environment and ensuring cross-sector coordination. It is thus important that the EC promotes the environmental sustainability of the sector programmes it supports through Sector Policy Support Programmes (SPSPs) [90].

When reviewing/assessing sector policies, attention should be paid to identifying the linkages with the environment and climate-related concerns, and whether policies and measures are in place or are required to address potential vulnerabilities and negative effects. In doing so, use should be made of the information contained in the Country Environmental Profile (see Chapter 3 above), and in key studies and analytical work supported by partner governments, the EC and/or other development agencies, possibly including a Strategic Environmental Assessment.

Strategic Environmental Assessment (see Box 4.1 and Table 4.2) is a key tool to assess the environmental implications of sector policies and programmes, as well as environment-related opportunities, risks and constraints bearing on the implementation of the sector policy and the achievement of its objectives. This analysis provides feedback to the government to enhance the environmental dimension of the sector policy and programme formulation process. It also enables improved integration of the environment, resource- and climate-related considerations into the EC SPSP. In many cases**, the decision and commitment to prepare an SEA have been taken at the programming stage**. Where no such decision or commitment was made, the relevance of undertaking SEA should be considered using the SEA screening procedure highlighted in Annex 3.

4.1 Identification

More specifically, undertaking SEA should be considered at the identification stage for sector policies and programmes in environmentally sensitive sectors (i.e. those that have the potential to bring about significant impacts[91] and/or are significantly dependent on environmental and climatic constraints, e.g. infrastructure and transport, water and energy, natural resource management, rural development, land management, agriculture, food security). In order to determine if a sector policy or programme would require an SEA, a screening questionnaire is provided in Annex 3[92]. The outcome of the screening process should be summarised in an annex to the SPSP Identification Fiche.

[90] This chapter is based on the SPSP process as described in EC (2007) – *Support to Sector Programmes – Covering the three financing modalities: Sector Budget Support, Pool Funding and EC project procedures*, Tools and methods Series, Guidelines no. 2 (long version), European Commission (EuropeAid).
[91] For the concept of 'significant impact', see Section 2.7, §2.
[92] In circumstances where a sector SEA or equivalent assessment already exists, its quality should be assessed using the guidance provided in Section 4.2.2 and, if its quality is acceptable, it should be used to formulate or improve the SPSP. To determine if a sector SEA exists, a useful source of information can be OECD-DAC Network

Screening for SEA ► Annex 3

Box 6 Strategic Environmental Assessment – General concept

A Strategic Environmental Assessment is a '*systematic process for evaluating the environmental consequences of proposed policy, plan or programme (PPP) initiatives in order to ensure they are fully included and appropriately addressed at the earliest stage of decision making, on a par with economic and social considerations*"[93]. The SEA seeks to enhance learning and support the design of more sustainable development strategies. It is an integral part of the planning process to optimise environmental impacts (i.e. minimise negative effects and enhance positive ones) and adequately address the environment-related risks, constraints and opportunities under which the PPP will operate. Compared with the better known Environmental Impact Assessment (EIA), SEA provides for impacts to be taken into consideration at an earlier stage and allows a better control over interactions or cumulative effects. However it is less precise as many of the details of specific actions and locations are possibly not defined.

For SEA to be most effective, it should be integrated into the PPP preparation process from the first stages, and this process should take into consideration its recommendations. The SEA process typically includes the following stages[94]:

SEA screening

Screening refers to the decision to undertake an SEA. In principle, SEAs should be carried out for all PPPs that are likely to produce significant negative impacts on the environment during implementation.

SEA scoping

Scoping refers to the identification and clarification of issues to be addressed by the SEA. Scoping should identify and take into consideration the concerns and values of stakeholders, in order to ensure that these are addressed in the SEA study.

SEA study

The SEA study comprises several aspects. The environmental baseline provides information for a general understanding of the state of the environment and trends in order to be in a position to assess the potential environmental effects of a PPP. The SEA should then identify and assess environment-related risks, constraints and opportunities of the proposed PPP and possible alternatives, including the effects of climate variability and climate change. A consistency analysis identifies any elements of the PPP that may be in conflict with or hinder the achievement of environmental policy objectives. The SEA should produce recommendations for the formulation and implementation of the preferred and improved alternative, as well as monitoring indicators. The results of the SEA should be presented in the form of a concise SEA report.

Public participation

The involvement of stakeholders in the SEA process is a key success factor. Environmental impacts, as well as constraints and opportunities, cannot be dissociated from their relationship to social, economic and cultural factors. Engaging stakeholders in an SEA, including women and other traditionally less represented groups, is important in order to adequately integrate their knowledge and concerns in assessing the impacts' significance and the acceptability of proposed actions and response measures.

Furthermore, environmental considerations should be addressed as relevant in the **preliminary review of the seven key assessment areas**[95] initiated in the identification phase of an SPSP, as shown below:

Sector policy and strategy

Evidence should be provided that a well-defined sector policy and strategy is in place or under implementation (or will be by the end of formulation). In this context, the quality of the policy and strategy is to be assessed from an environmental and climate point of view, among

on Environment and Development Cooperation '*Survey of agencies' country level activities related to environment and development*'; see: http://www.oecd.org/dac/environment.

[93] Sadler, B. and Verheem, R. (1996) *SEA: Status, Challenges and Future Directions*, Report 53, Ministry of Housing, Spatial Planning and the Environment, The Hague, Netherlands.

[94] For measures in force in the EU, please refer to Directive EC/2001/42. The EC is also signatory to the UNECE *Protocol on Strategic Environmental Assessment to the Convention on Environmental Impact Assessment in a Transboundary Context*, which will determine certain obligations with regard to SEA in the context of external cooperation with Neighbourhood countries.

[95] More specifically, in the five assessment areas that are sector-specific.

other aspects. The environmental issues and the relevance of the proposed response should be briefly assessed in view of the environmental and climate-related constraints[96] bearing on policy/strategy implementation, as well as the likely environmental impacts of such implementation[97].

Budget and Medium Term Expenditure Framework (MTEF)

Attention should be paid to '*giving confidence that the budget and MTEF will progressively reflect or continue to reflect declared partner country priorities during programme implementation*'. The extent to which the sector budget reflects declared environmental priorities and sustainability concerns (through provisions for environmental impact mitigation/optimisation measures, institutional strengthening and capacity development for natural resource management and/or responding to climate change at sector level) should be mentioned.

Sector and donor coordination

Other development partners' environmental requirements and activities should be checked and the extent to which sector-specific environmental concerns are addressed within a multi-stakeholder working group – if it exists – should be assessed. Consider if specific institutional coordination mechanisms with regard to environmental issues should be promoted before proceeding to implementation, or in the context of sector policy dialogue.

Institutional setting and capacity issues

The capacities of institutions with environmental responsibilities in the sector should be assessed, along with relevant environmental legislation, and existing environmental monitoring system covering the sector. The Country Environmental Profile may provide useful information in this regard.

Performance monitoring systems

The existence of environmental indicators, or the 'environmental relevance' of performance indicators in the sector policy/programme's performance assessment framework, can be mentioned here – especially if sound environmental and natural resource management are essential to the success of the supported strategy or programme. More guidance on indicators is provided in Annex 10.
This preliminary review, combined with the results of SEA screening, may influence decisions with regard to SPSP implementation modalities as well as the 'next steps' to be undertaken at the formulation stage, as shown in Table 4.1.

The last step of identification consists in completing the Identification Fiche. This document should reflect the initial findings of the environmental integration effort. Table 4.1 identifies possible entry points for doing so.

Table 4.1 Possible entry points for environmental integration in the SPSP IF

Sections in the IF	Possible entry points for environmental integration
Summary description of sector	Mention environment- and climate-related stakes and issues as

[96] The OECD-DAC has recently developed policy guidance with information and advice on how to facilitate the integration of climate change adaptation within development processes: see *Strategic Environmental Assessment and Adaptation to Climate Change* (2008), available on: http://www.oecd.org/dataoecd/0/43/42025733.pdf, and *Integrating Adaptation to Climate Change into Development Co-operation: Policy Guidance*, available on: http://www.oecd.org/document/5/0,3343,en_2649_34361_42471301_1_1_1_1,00.html. Central to the OECD policy guidance is the notion of a *climate lens*, which involves examining: i) the extent to which the policy, plan or project under consideration could be vulnerable to risks arising from climate variability and change; ii) the extent to which climate change risks have already been taken into consideration; iii) the extent to which the policy, plan or project could inadvertently lead to increased vulnerability, leading to maladaptation or, conversely, miss important opportunities arising from climate change; and iv) for pre-existing policies and plans which are being revised, what amendments might be warranted in order to address climate risks and opportunities. While efforts to integrate climate change adaptation will be led by developing country partners, international donors have a critical role to play in supporting such efforts as well as in integrating consideration of adaptation within their own plans and activities.
[97] In addition to the above-mentioned OECD-DAC publications, the Country Environmental Profile and other available analytical work, including any existing SEA of the sector policy/programme, can be used to support this assessment.

Sections in the IF	Possible entry points for environmental integration
policy/ strategy	relevant.
Issues and state of play in the seven key areas of assessment	Assess the sector policy/strategy framework, sector and donor coordination mechanisms, sector budget, institutional setting and capacity issues, and performance monitoring system from an environmental perspective.
Strategic response incl. cross-cutting issues	Explain how the SPSP is expected to contribute to the sustainable development of the sector, including from an environmental perspective.
Implementation issues	Make a short preliminary description of issues such as complementary support, policy dialogue or disbursement conditions related to environment.
Risks and assumptions	Mention any significant assumptions and risks related to environmental and climatic conditions, as well as the availability of natural resources (to the extent that sector activities significantly depend on them).
Next steps	The work plan should reflect the outcome of the SEA screening process[98], which may be one of three options: a) need for an SEA; b) need for environmental integration in the formulation study; c) no need for specific action. Requests for support from headquarters should be specified here.

4.2 Formulation

Based on the preliminary review and SEA screening completed during SPSP identification, there are two major options for environmental integration in the formulation phase:

- sector programmes not requiring an SEA;
- sector programmes requiring an SEA.

4.2.1 Sector programmes not requiring an SEA

In this case, environmental and climate-related concerns can be addressed as relevant in the formulation study using the guidance provided in Annex 4.

The results of the assessment carried out in the context of formulation work should feed into the seven assessment areas and into the SPSP design as appropriate, in the same way as if an SEA had been undertaken (see Tables 4.3 and 4.4) – the main difference being that the scope of the environmental assessment carried out in a formulation study is in principle more limited than the scope of a full-fledged SEA.

Guidance for integrating environmental and climate-related aspects in SPSP formulation ► Annex 4

4.2.2 Sector programmes requiring an SEA

The decision to carry out an SEA should be made in agreement with the partner country and in coordination with development partners, so as to maximise the coherence and efficiency of the proposed approach[99]. Model terms of reference should be adapted to reflect specific conditions (state of development of the sector policy/programme), objectives and issues of concerns.

[98] A summary of SEA screening outcomes (see Part 2 of Annex 3) should be annexed to the SPSP Identification Fiche.
[99] Joint exercises with development partners, particularly from the EU, can be foreseen, for instance in the framework of joint assistance strategies.

ToR for a Strategic Environmental Assessment ► Annex 5

The SEA (practical aspects of which are highlighted in Table 4.2) should provide initial answers to the following questions:

- Is the sector programme consistent with the national and EC environmental policy and objectives, including if appropriate those related to responses to climate change[100]?
- Are the implementation and achievements of the sector programme directly dependent on environmental and/or climatic constraints or the availability of natural resources? If so, does the programme include adequate adaptation and risk management measures?
- What environmental impacts are anticipated from the implementation of the sector programme?
- What are the groups that will be affected and what are their environmental concerns?
- How can adverse impacts be mitigated?
- Can the legal, institutional and policy framework effectively respond to these environmental impacts?
- What opportunities exist to enhance environmental benefits? What kind of policy instruments can be considered to this effect?
- How can the SPSP be formulated to address weaknesses in the policy, legal and institutional framework? (e.g. identifying areas where environmental technical assistance may be required or where a project approach may be appropriate in terms of minimising environmental impacts)
- What indicators should be used in the SPSP to monitor, from an environmental perspective, the implementation of the sector programme?
- What recommendations can be provided to the EC to be addressed in the policy dialogue with the partner government?

Appraising an SEA report

An SEA report should be assessed against the ToR together with guidance from the following check-list[101]:

- Is the environmental baseline complete? Does it allow assessing the environmental effects by comparing the predicted environmental situation with the baseline?
- Is the study balanced? Does it address the main linkages between the sector programme and the environment?
- Is it independent and neutral?
- Are the conclusions clear and understandable?
- Are the expected cumulative impacts of programme-related activities given adequate consideration?
- Have the stakeholders been adequately consulted? Does the study take their interests and concerns into account?
- Are the assumptions, choices, value judgements and uncertainties clearly identified?

[100] The OECD-DAC considers SEA as an important tool to address climate issues in sector policies and programmes. Specific guidance to this effect has been prepared in the form of an advisory note on *SEA and Adaptation to Climate Change* (2008), *op. cit.*

[101] Further guidance for reviewing the quality of an SEA can be found in Chapter 6 of the OECD DAC SEA guidance : OECD-DAC (2006) *op. cit.* (see footnote 72).

- Are all realistic alternatives assessed and compared?
- Are the recommendations an appropriate response to the identified impacts?
- Does the report provide adequate guidance on monitoring (sector performance indicators)?

Table 4.2 Strategic environmental assessment for an SPSP in practice

What is it?	An assessment of the potential environmental impacts of implementing a sector policy/programme with a view to mitigating negative and enhancing positive impacts. The assessment also includes an analysis of the environmental and climate-related opportunities, risks and constraints that may influence the achievement of sector objectives, as well as recommendations for the formulation of the SPSP.
Under what conditions?	An SEA should be prepared when an SPSP is envisaged to support a programme that is likely to have significant environmental impacts. This is determined by means of SEA screening (see Annex 3).
What needs to be done by EC staff?	Advocate the benefits of strategic environmental assessment, in dialogue with the partner government and in close coordination with other donors. Prepare ToR and commission the SEA.
When is it needed?	Typically at the formulation stage of the SPSP, but an SEA can also produce useful results if undertaken at a later stage[102].
How long does it take?	This will depend on the scope of the SEA, but useful results can usually be produced in 6-8 months.
Where is it used?	SEA outputs are used to promote the environmental sustainability of a sector policy and programme (in agreement with the partner government) and to prepare the EC SPSP.

Using the SEA report

Once the report is accepted, its conclusions can be incorporated in the more comprehensive assessment to be carried out in the formulation phase and considered in policy dialogue with the government. Table 4.3 provides guidance on the use of the SEA in the seven assessment areas.

Table 4.3 Using SEA results in the seven key assessment areas

The seven assessment areas	Possible entry points for environmental integration
1. Sector policy and strategic framework	Consider the environmental and climate-related impacts, opportunities, risks and constraints identified by the SEA and the degree to which the policy/strategy framework is (or is expected to be) adapted to the SEA findings and conclusions.
2. Sector budget and its medium-term perspective	Consider potential environmental expenditure in the sector and the availability of resources for implementation of the mitigation/optimisation and other environmental integration measures identified by the SEA.
3. Sector and donor coordination	Indicate if existing donor and stakeholders coordination mechanisms are adequate to ensure follow-up to SEA findings and conclusions.
4. Institutional setting and capacity issues	The assessment will incorporate information from the SEA regarding the institutions with environmental responsibilities in the sector, the relevant environmental legislation, and the existing environmental monitoring system in the sector. Special attention should be paid to the capacity to

[102] For instance during SPSP implementation the SEA should be scheduled in such a way that its results can be exploited in the national cycle of operations (e.g. at the time of reviewing the current multiannual sector programme or preparing the next one).

	address the impacts and implement the mitigation/optimisation measures identified by the SEA.
5. Performance monitoring systems	Environmental relevance of the performance indicators used or proposed to monitor sector progress and/or major environmental concerns should be assessed having regard to SEA conclusions and recommendations.
6. Macroeconomic framework	No specific environmental recommendations.
7. Public financial management	No specific environmental recommendations.

4.2.3 Environmental integration in the final steps of formulation

Whether environmental integration was addressed in the formulation study or by means of an SEA, ultimately the results should be translated into the SPSP's Action Fiche (AF) and the Technical and Administrative Provisions (TAPs) attached to the SPSP financing agreement. Table 4.4 identifies possible entry points for this.

Table 4.4 Possible entry points for environmental integration in the AF and the TAPs of an SPSP financing agreement

Section	Entry points for environmental aspects (including climate-related aspects as appropriate)
Country and sector context / Analysis of the situation	Key sector-related environmental issues, notably in relation to poverty analysis
Objectives and expected results	Objectives in terms of environmental sustainability and natural resource management
Stakeholders	Sector-related institutions and capacities in relation to environmental and natural resource management
Risks and assumptions	Environmental including climatic risks and constraints bearing on the achievement of sector objectives
Cross-cutting issues and sustainability factors	Measures aimed at ensuring environmental sustainability and an adequate response to climate and other environmental related risks and constraints
Performance monitoring and evaluation / Disbursement criteria	Environment-related indicators; compatibility of selected indicators with sustainable development
Complementary measures	Measures aimed at institutional support in relation to environment and natural resource governance

Integrating environmental and climate-related issues in SPSP formulation may lead to the following outcomes:

- Bringing issues related to the environmental sustainability of the sector policy and programme on the agenda of the policy dialogue.
- Addressing specific weaknesses by complementing sector budget support (if this financial modality is chosen) with support for capacity building/institutional strengthening in the area of environmental management (e.g. environmental monitoring system, EIA procedures, etc.) and/or climate risk management.
- Identifying criteria and indicators that can be used for monitoring the environmental performance of the sector policy/programme, for example, indicators addressing institutional development objectives with respect to the environment. Also, the non-environmental indicators selected to assess the sector's overall performance should ideally not be correlated with negative environmental trends. The suggested performance criteria and indicator-based targets may be included as conditions within the budget support component of the SPSP, applicable to the release of tranches.

When environmental aspects are included as disbursement conditions, they may either relate to a fixed tranche or to a variable tranche.

- Recognising that indicators and targets selected as triggers for the disbursement of budget support tranches (when this financing modality is chosen) should be based as much as possible on indicators and targets drawn from national and sectoral policy documents[103]. This underlines the importance of a clear national commitment to and ownership of the SEA process if environmental indicators are to be selected.
- Paying attention to the availability and reliability of the data needed to establish the value of the indicators. In countries with poor environmental monitoring and statistical systems, this may initially be an obstacle to the inclusion of environmental targets in the disbursement schedule. In such cases, a phase of strengthening of environmental monitoring and statistics systems may have to precede the adoption of environmental targets as performance criteria conditioning disbursements.

4.3 Implementation

The identified environmental indicators must be regularly monitored and assessed against agreed benchmarks. The ongoing policy dialogue should also address any outstanding environmental issues identified in the CEP, the SEA or any other assessment conducted during the identification and formulation of the SPSP.

4.4 Evaluation

During evaluation, an assessment should be made of whether the SPSP effectively contributed to sustainable development, and whether the causal links between its inputs and development outcomes/impacts (including environmental impacts) have performed as expected, in order to learn lessons for the future. The evaluation should also assess whether the process of integrating the environment has been successful. It should identify whether an SEA was required and, if so, whether it has been carried out and its recommendations have been successfully implemented. These requirements should be included in the ToR for the evaluation study, which should ideally specify appropriate expertise on the environment–development linkages in the sector.

[103] EC (2007) *Support to Sector Programmes*, *op. cit.*, p. 57.

CHAPTER 5: ENVIRONMENT, INCLUDING CLIMATE, IN GENERAL BUDGET SUPPORT

General Budget Support[104] (GBS) contributes to the delivery of national development policies/strategies (such as poverty reduction strategies). Such policies/strategies may have significant environmental consequences and the sustainable achievement of their development objectives will often depend on environmental conditions (including, increasingly, climatic conditions) or natural resources. It is thus important, at the time of preparing the CSP and then again at the time of identifying and formulating a GBS programme, to consider the extent to which the national policy/strategy to be supported addresses key environmental and sustainability concerns, including those related to climate change and its expected effects. Ideally, analytical support to the government and its various sector working groups will already have been offered by EC (or others) in the process of developing a new national development plan or poverty reduction strategy.

Examples of linkages between national policies/strategies and the environment[105] include:

- The dependence of the country's economy on local natural resources, such as forests, water or fisheries; growth strategies are often based on the development of agricultural production, and/or the exploitation of renewable and non-renewable natural resources (timber, minerals, …).
- The overall impact of economic growth on energy and resource consumption, on pollution (including carbon balances) and waste production, on land use patterns, on sensitive ecosystems.
- The health and economic implications of air and water pollution and poor hygiene.
- The sensitivity of infrastructure investments to natural disasters, notably those the frequency and severity of which may be increasing as a result of climate-change.
- The impact of infrastructure investments on internal migrations and human settlement patterns, and thus on environmental pressures (e.g. urbanisation) and on vulnerability to climate-related risks (e.g. if migration patterns lead to fast demographic growth in 'climate-sensitive' areas such as coastal zones).
- The degree to which reforms reduce environmentally damaging subsidies[106] and address market failures regarding environmental externalities, notably through environmental fiscal reform[107].
- The allocation of resources, in the national budgetary process, for the operation of environmental institutions, and the rate of investment in natural capital;
- The allocation of environmental competences across government levels, in the context of decentralisation policies (e.g. the lack of empowerment of local authorities and communities for the management of local resources may lead to poor management, but an excessive transfer of competences to decentralised levels may also result in the fragmented and inefficient management of wider systems such as watersheds, forests, nature reserves).

[104] This chapter is notably based on the *Guidelines on the Programming, Design & Management of General Budget Support*, Aid Delivery Methods series, European Commission 2007 (AIDCO-DEV-RELEX). Other reference documents include Hanrahan, D. & Green, K. (2007) *Environmental Review of Budget Support Programmes: Guidance for Non-Specialists*, report prepared for DFID/Irish Aid; and ODI (2006) *Addressing environmental objectives in the context of budget support*, Overseas Development Institute, London.
[105] See also Annex 1, Box 1.
[106] For instance subsidies to promote higher agricultural production may also promote environmentally degrading practices such as the uncontrolled clearance of forested areas and reduced fallows.
[107] For instance, EFR is supported by GTZ in the forestry sector in African and Central American countries. See GTZ (2005) *Environmental Fiscal Reform and National Forest Policies.* See footnote 6.

- The effects of promoting exports and competitiveness (e.g. through reducing labour costs, modifying the currency exchange rate, building transport infrastructure) on pollution and pressures upon natural resources.
- The effects of measures aimed at attracting investment on pollution and the degradation of natural resources (e.g. the simplification of administrative procedures for awarding operating permits, if ill-conceived, may make existing provisions less effective with regard to environmental impact assessment and environmental permits).
- The impact of unemployment and poverty on natural resources and on the use of marginal land.
- The vulnerability of the national economy, and of the population, to extreme climatic events or to other impacts of increasing climate variability and climate change.
- The environmental impacts of sector strategies that are incorporated in national development or poverty reduction strategies, such as transport infrastructure development.

Some of these effects will be indirect, for instance through changes in taxation and tariff structures or levels. For example, macroeconomic and tax reforms affecting the price of key inputs may influence the use of fuelwood compared with other energy sources. Shifts in exchange rates may affect the feasibility of recycling products compared with importing low-cost products. Export policies may increase logging and mining activities, with considerable damage to forest biodiversity and water quality. Macroeconomic or tax reforms (e.g. environmental fiscal reform[108]) can provide opportunities for decoupling human well-being from the overuse of natural resources or the emission of pollutants (including greenhouse gases) or for ensuring, e.g. through budget allocation, adequate investment towards sustainability, especially in case growth is predominantly based on the exploitation of natural resources.

It is therefore important, from the preparation of the CSP onwards, to consider the extent to which the national policy/strategy to be supported may lead to detrimental environmental externalities, resource exhaustion or damaging distortions (through e.g. tax, expenditure and regulatory policies) and what measures may be planned to mitigate negative consequences and optimise positive ones. When reviewing/assessing national policies/strategies, attention should therefore be paid to identifying and understanding the linkages with the environment and climate and whether policies and measures are in place or are required to:

- address their potential negative effects;
- adapt to environmental and climate change constraints and reduce vulnerability to them.

The following sections describe good practice for environmental integration in the GBS cycle of operations.

5.1 Identification

Environmental and climate-related considerations may be addressed in the **preliminary review** carried out in the identification phase of a GBS programme, which focuses on assessing the fulfilment of the **'eligibility criteria'** for receiving budget support, as well as the other **'assessment areas'**. To this effect, use should be made of the information contained in the Country Environmental Profile (see Chapter 3), any existing strategic environmental assessments[109], or similar analytical work that might be available from the partner government or from other development partners.

[108] See footnote 6.
[109] One useful source of information is the OECD-DAC Survey of SEAs; see: http://www.oecd.org/dataoecd/54/24/36057013.pdf.

During this preliminary review, environmental issues are to be addressed as follows:

National development or reform policy and strategy

Evidence should be provided that a well-defined national policy and strategy is in place or under implementation (or will be by the end of formulation). In this context, the quality of the policy and strategy is to be assessed from an environmental and climate point of view, among other aspects; the relevance of environmental issues and of the proposed response should be briefly assessed in view of the environmental and climate-related constraints bearing on policy/strategy implementation, as well as the likely environmental impacts of such implementation.

Budget and Medium Term Expenditure Framework (MTEF)

Attention should be paid to '*giving confidence that the budget and MTEF will progressively reflect or continue to reflect declared partner country priorities during programme implementation*'. If environmental governance, natural resource management and/or responding to climate change constitute declared government priorities, the extent to which they are reflected in the budget/MTEF should be mentioned.

Donor coordination

Other development partners' environmental requirements and activities should be checked and the extent to which environmental and climate-related concerns are addressed within a multi-donor or multi-stakeholder working group – if it exists – should be assessed. Consider if specific institutional coordination mechanisms with regard to environmental issues should be promoted before proceeding to implementation, or in the context of policy dialogue.

Performance measurement

The existence of environmental indicators, or the 'environmental relevance' of other indicators in the national programme's performance assessment framework, can be mentioned here – especially if sound environmental and natural resource management are essential for the success of the supported strategy or programme[110]. More guidance on indicators is provided in Annex 10.

Institutional setting and capacity analysis

The capacities of institutions with environmental responsibilities (including those with responsibilities for designing and managing the response to climate change) should be assessed, along with relevant environmental legislation and the existing national environmental monitoring system. The Country Environmental Profile may provide useful information in this regard.

Ideally a dialogue with the government on environmental sustainability should have taken place already at the time of preparation or revision of the poverty reduction strategy or national development plan. An **SEA of the national policy, strategy or plan** may have been undertaken in this context. As a second-best option, such an assessment can be undertaken at a later stage. A government-driven SEA, with the involvement of stakeholders and in close coordination with other donors, may be promoted to this end if it is considered that environmental issues (including climate-related ones) are a key concern for the programme of support to the national policy/strategy. This commitment would normally be made at the programming phase, but may also be agreed at a later date.

This type of SEA, focusing on a forward-looking assessment of the broad national development policy/reform strategy rather than individual sector policies (see Table 5.1), could be seen as a learning process (with strong stakeholder involvement) and seek to answer the following questions:

[110] Information on environmental indicators in relation to the various intervention sectors of EC cooperation is given in Annex 1.

- Is the assessed strategy consistent with the national environmental and sustainable development objectives and principles? What are the linkages between the proposed strategy and the environment?
- What is the best alternative (mix of actions) in environmental terms to achieve the development objectives?
- How sensitive is the proposed strategy to climate-related risks and constraints? What are key vulnerabilities to the current and longer-term effects of climate change?
- To which extent are the country's development and poverty reduction objectives compatible with a 'climate-neutral' development path?
- How can the expected adverse impacts be mitigated and the positive effects optimised? How best can environment- and climate-related opportunities be used in order to improve the sustainable development outcomes?

Table 5.1 SEA of a national policy/strategy in practice

What is it?	A participatory assessment of the key linkages between the environment (including climate-related aspects) and the national policy/strategy (e.g. poverty reduction strategy, national development policy, reform programme), with a view to strengthening awareness and capacities for ensuring adequate consideration of the environmental pillar of sustainable development.
What needs to be done by EC staff?	Advocacy of the benefits of strategic environmental assessments in dialogue with partner governments and in coordination with other donors. Envisage supporting the SEA process, as a particular project or as part of the 'complementary support' measures of the GBS programme.
Under what conditions?	For national policies/strategies supported by the EC under the GBS approach, the EC may require a commitment by the government to prepare an SEA.
When is it needed?	Ideally during the development of the policy/strategy, although it could be carried out during its implementation as long as there are real opportunities to influence it via the results of the SEA. For the EC the best time is before the formulation phase of GBS, but the national schedule has priority.
How long does it take?	Due to the stakeholder engagement process, 10-12 months may be necessary.
Where is it used?	SEA outputs are used to revise the national policy/strategy of the government, and also become inputs for the identification and formulation of the GBS programme.

The preliminary review of eligibility conditions and key assessment areas, combined with the results of any past or current dialogue on the environmental sustainability of national policies and strategies, may influence decisions with regard to GBS implementation modalities as well as the 'next steps' to be undertaken at the formulation stage, as shown in Table 5.2.

The last step of identification consists in completing the Identification Fiche. This document should reflect the initial findings of the environmental integration effort. Table 5.2 identifies possible entry points for doing so.

5.2 Formulation

The formulation of a GBS programme involves a more **comprehensive assessment of the eligibility criteria for budget support, the seven areas of assessment** (see Table 5.3), as well as the practical implementing modalities for the GBS operation.

Attention should be devoted to environmental considerations, developing the following information:

- An overview of major environmental and climate-related challenges and issues that might influence or be influenced by the programme/strategy[111].

Table 5.2 Possible entry points for environmental integration in the GBS IF

Sections in the IF	Possible entry points for environmental integration
Consistency with EC policy, programming framework and the aid effectiveness agenda	Check consistency with CEP analysis and conclusions, as well as any commitments to environmental integration in the CSP/NIP.
National development or reform policy and strategy	Assess the policy/strategy framework from the point of view of environmental sustainability and dependence on environment and natural resources.
Budget and MTEF	Assess consistency with declared government priorities with regard to environmental and natural resource management (e.g. environmental expenditures, environmental fiscal reform).
Performance measurement	Assess the relevance of selected indicators to sustainable development, notably from the perspective of environmental sustainability.
Institutional assessment and capacity development	Assess the capacities of institutions with environmental and climate-related responsibilities to support the implementation of the considered policy, strategy or reform programme.
Risks and assumptions	Mention any significant assumptions and risks related to environmental and climatic conditions, as well as the availability of natural resources (to the extent that the considered policy, strategy or reform programme significantly depends on them).
Implementation issues	As appropriate, make a short preliminary description of issues such as complementary support, policy dialogue or disbursement conditions related to environment.
Next steps	Determine the need for further environmental and/or climate-related assessment work. Requests for support from headquarters should be specified here.

- An overall assessment of how macroeconomic policies may lead to increased pressures on the environment and natural resources, or on the contrary alleviate these pressures and enhance environmental sustainability.
- An overall assessment of how the macroeconomic framework and macroeconomic reforms address: (a) major market failures with regard to environmental externalities (e.g. through the introduction of environmental taxation); (b) environmentally damaging distortions (such as some subsidies); and (c) institutional constraints.
- An assessment of the available indicators, to ensure they reflect the linkages between environment, development and poverty reduction; the indicators should reflect key environmental/sustainability concerns (identified by the CEP or an SEA) and the implementation of mitigation/optimisation measures; as far as possible, they should also be able to track the causal links between the measures taken and the final impacts in order to check that the reforms produce their expected benefits.
- Specific recommendations for the formulation of the EC GBS programme (e.g. selection of environmentally adequate performance indicators from the performance assessment

[111] In case there is no SEA (which will be the majority of cases), the CEP, Annex 1 (Box 1) and any other relevant sources of information should be used. World Bank publications, among others, may be a useful source – see for instance: Mani, M., Markandya, A. & Ipe, V. (2008) *Climate Change Adaptation and Mitigation in Development Programs: A Practical Guide*, World Bank: Washington, DC; and *Assessing the Environmental, Forest, and Other Natural Resource Aspects Of Development Policy Lending: A World Bank Toolkit* (2008) – both available on: http://go.worldbank.org/8PNA0NWT80.

framework, complementary measures in support of environmental governance, such as support for capacity development), for impact monitoring and for the policy dialogue[112].

Table 5.3 Possible entry points for environmental integration in GBS programme formulation

The seven assessment areas	Possible entry points for environmental integration
1. National development or poverty reduction policy and strategy	Assess how the policy or strategy that the EC envisages supporting integrates environmental issues and policies. Consider the environmental impacts of the policy/strategy, its dependence on environmental constraints and how it addresses environmental challenges, including those arising from increasing climate variability and climate change *(use the SEA if it exists)*.
2. Macroeconomic framework	Based on the CEP, the analysis of the environmental situation in the CSP (or the SEA) and any other relevant analytical work, consider the linkages between the environment and the major aspects of the macroeconomic situation and trends *(see examples in the introduction to this chapter and Table 3.3)*[113].
3. Public Financial Management	Find out whether Public Environmental Expenditure Reviews[114] are conducted or envisaged.
4. Budget and Medium Term Expenditure Framework	Consider environmental expenditure, including an assessment of the availability of resources for environmental institutions and for the implementation of environmental and climate change adaptation measures identified by the SEA (if any) or in other strategic documents. Look into the possible distorting or corrective effects of subsidies and taxes on the use of natural resources; refer to environmental fiscal reform[115] and 'green budgeting' if these approaches have been adopted by government.
5. Performance monitoring systems	Assess the monitoring system and the environmental relevance of the performance indicators used, as well as their ability to monitor major environmental concerns. Refer to 'green accounting' if this approach has been adopted or is envisaged by government.
6. Donor coordination	Consider donor coordination in relation to environmental and climate-related issues (use of indicators, support for SEA, environment working group, etc.).
7. Institutional setting and capacity analysis	Attention should be paid to the capacity to monitor and regulate environmental changes, to implement the recommendations of the SEA (if any), to set up adequate climate-related response mechanisms, and to mainstream environmental sustainability across sectors and policies. If appropriate recommend strengthening the environmental monitoring and management systems, and building up capacities for responding to the challenges posed by climate change.

[112] Additional inspiration on environmental integration aspects to consider during GBS formulation may be obtained from Annex 4 which although intended for SPSP formulation overlaps with aspects of GBS.

[113] See also Drakenberg, O. *et al.* (2009) *Greening Development Planning: a Review of Country Case Studies for Making the Economic Case for Improved Management of Environment and Natural Resources*, OECD Environment Working Papers no. 5, OECD Publishing, Organisation for Economic Cooperation and Development: Paris; available on: http://www.oecd.org/dataoecd/1/23/42069446.pdf.

[114] Public Environmental Expenditure Reviews are public expenditure reviews focused specifically on environment-related expenditures incurred not only by the Ministry of Environment and environmental agencies, but also by other branches of government. They are useful notably for the purpose of establishing the true amount of public environmental expenditures (part of which are usually 'hidden' in the budget allocations of non-environmental departments and agencies), and of checking whether expenditures match policy objectives and priorities. See for instance Swanson, A. & Lundethors, L. (2003) *Public Environmental Expenditure Reviews (PEERS): Experience and Emerging Practice*, Environment Strategy Papers no. 7, World Bank: Washington, DC.

[115] See footnote 6.

The indicators selected for monitoring the performance of the GBS programme may reflect institutional development objectives with respect to the environment (e.g. adoption of a law on SEA, environmental fiscal reform, reforms in the forestry sector, establishment of new protected areas, setting up of an environmental fund) as well as any other environment-related objectives adopted in the context of the supported national policy/strategy. From an environmental perspective, it is also important to check that the selected non-environmental indicators are not closely linked to negative environmental trends. Table 5.4 provides examples of environmental outcome and impact indicators, which are mostly suitable for long-term monitoring and can be used in the policy dialogue. More general guidance on indicators is provided in Annex 10.

Table 5.4 Examples of sustainability indicators for national development policies and strategies[116]

Key question	Potential outcome/impact indicators
Does the country save enough resources for its future development?	Adjusted Net Saving (World Bank)[117] Investments in natural capital Rent from unsustainable use of natural resources (component of Adjusted Net Saving)
Does the country conserve its natural assets for future needs?	MDG 7, target 7.A, indicator 7.1 Proportion of land area covered by forest MDG 7, target 7.A, indicator 7.4 Proportion of fish stocks within safe biological limits Envisage adding country-specific indicators, such as area covered by particular ecosystems or proportion of land under risk of erosion or desertification.
How efficient is the country in achieving development with low environmental costs and low consumption of natural resources?	Energy efficiency, e.g. energy use (kg oil equivalent) per $1,000 GDP Envisage adding country-specific indicators, such as efficiency in the use of agricultural inputs.
What are the overall pressures on the environment?	MDG 7, target 7.A, indicator 7.5 Proportion of total water resources used MDG 7, target 7.A, indicator 7.2 CO_2 emissions, total, per capita and per $1 GDP (PPP) MDG 7, target 7.A., indicator 7.3 Consumption of ozone-depleting substances Envisage adding country-specific indicators, such as pollutant emissions, expansion of agricultural land, urbanisation, and other components of the ecological footprint.
Are the living conditions of the population, especially the poor, improving?	MDG 7, target 7.C, indicator 7.8 Proportion of population using an improved drinking water source MDG 7, target 7.C, indicator 7.9 Proportion of population using an improved sanitation facility MDG 7, target 7.D, indicator 7.10 Proportion of urban population living in slums Envisage adding country-specific indicators, such as proportion of population living in polluted or particularly unsafe environments (e.g. %age of the population living in areas at high risk of flood).

[116] See also Annex 1, Box 1.
[117] See: http://go.worldbank.org/EPMTVTZOM0.

Ultimately, the results of environmental integration in formulation work should be translated into the Action Fiche (AF) and the Technical and Administrative Provisions (TAPs) attached to the GBS financing agreement. Table 5.5 identifies possible entry points for this.

Table 5.5 Possible entry points for environmental integration in the AF and the TAPs of a GBS financing agreement

Section	Entry points for environmental aspects (including climate-related aspects as appropriate)
Analysis of the situation	Key environmental issues (including climate-related vulnerabilities)
Objectives and expected results	Objectives in terms of environmental sustainability, natural resource management and responding to climate change
Stakeholder analysis	Institutions and capacities in relation to environmental and natural resource management, and vulnerability to the effects of climate change
Assumptions and risks	Environmental and climatic constraints bearing on the achievement of national and programme-specific objectives
Cross-cutting issues and sustainability factors	Measures aimed at ensuring environmental sustainability and adaptation to the effects of climate change
Performance monitoring and evaluation / Disbursement criteria	Environment-related indicators; compatibility of selected indicators with sustainable development
Complementary supporting measures	Measures aimed at institutional support in relation to environment and natural resource governance

Where the national policy/strategy has identified sustainable natural resource management as an essential condition for success, or the CSP highlights the environment as a key concern for a GBS programme (and this has subsequently been confirmed during identification and formulation), this would normally lead to the inclusion of one or several suitable environment-related performance criteria and indicators. These could be included as general and specific conditions[118] within the GBS programme (alongside other targets and indicators traditionally related to public financial management, health and education). The indicators and targets selected for disbursement should be based as much as possible on indicators and targets drawn from national policy documents. This underlines the importance of a clear national commitment to and ownership of the SEA process, which may include the identification of indicators. *(See Annex 10 for further guidance on indicators)*

In addition, the availability and reliability of the data needed to establish the value of the indicators should be considered. In countries with poor environmental monitoring and statistical systems, this may initially be an obstacle to the inclusion of environmental targets in the disbursement schedule. In such cases, a phase of strengthening of environmental statistics systems may have to precede the adoption of environmental targets as performance criteria conditioning disbursements.

5.3 Implementation

During implementation, environmental and climate-related issues may be considered in the policy dialogue, in the coordination with other donors, in capacity-building activities and in the monitoring of impact indicators in order to verify that the supported macroeconomic reforms and development policy make a positive contribution to sustainable development. In the spirit

[118] General conditions are applicable to all tranche release decisions, whilst specific conditions are applicable to one or more individual tranches. Specific conditions on environment may either relate to a fixed tranche (the tranche is disbursed only upon meeting *all* the conditions for disbursement) or to a variable tranche (all or part of the tranche is disbursed in function of the degree to which the conditions for disbursement have been met, on the principle of partial disbursement for partial performance).

of harmonisation, monitoring will preferably take place in the context of joint missions involving the government, other providers of budget support and possibly other stakeholders. Ad hoc studies, possibly financed from pooled funds, may be commissioned to investigate specific aspects. Donor resources may also be used to strengthen national environmental monitoring systems and to strengthen the capacity of environmental institutions.
As already mentioned, an SEA may be on the agenda for the policy dialogue and donor coordination. The implementation phase may also include the preparation and completion of the SEA. In this case, the results of the SEA should be used to revise the seven assessments (see Table 5.1) as well as the policy/programme being supported. There are at least two opportunities when this may be done, during the review of the CSP or during the review of the poverty reduction strategy paper (PRSP) or equivalent document. In the latter case in particular (SEA linked to PRSP review), co-financing of the study by government and various development partners makes sense as it encourages ownership and harmonisation.

If it was agreed in the financing convention, environmental/sustainable development expertise should be provided to the government and other stakeholders, or any other identified measures should be implemented in support of environmental governance strengthening and capacity building for climate change adaptation and mitigation. The use of experts from countries from the same region with experience of environmental mainstreaming, and the development and dissemination of positive case studies from the country itself or from neighbouring countries, may be particularly effective.

A key part of implementation will be the monitoring of disbursement conditions that may include performance criteria and indicators related to the environment.

5.4 Evaluation

During evaluation, an assessment should be made of whether GBS and the supported policy/strategy effectively contributed to sustainable development. To the extent possible, evaluators should check whether the causal links between the GBS inputs and development outcomes (including environmental impacts) have performed as expected, in order to learn lessons for the future. The impact of the GBS and related policy dialogue on the national policy should thus be assessed. The evaluation should also assess whether the process of integrating the environment, and the implementation of the resulting recommendations, have been successful.

These requirements should be included in the ToR of the evaluation study, which should ideally foresee adequate expertise in the field of environmental economics or environment–development linkages.

CHAPTER 6: ENVIRONMENT AND CLIMATE IN THE PROJECT APPROACH

This chapter[119] provides guidance on integrating the environment (including climate-related aspects) under the 'project approach'. While opportunities exist to address environmental aspects in all the main stages of the cycle of operations, particular emphasis is put on the initial phases of identification and formulation, as this is where key decisions are made on project design, activities, and implementation arrangements.

This guidance has been drafted for the identification and formulation of projects in which the EC plays a direct role. Nonetheless, the approach and the tools illustrated in this chapter (and related annexes) may apply to other actions supported by the EC, such as those under *call for proposals* procedures, where identification and formulation are the main responsibility of applicant organisations.

6.1 Identification

6.1.1 Environmental integration in the logical framework approach

It is important to integrate environmental and climate change dimension in the logical framework (or logframe) approach, particularly during problem and strategy analysis. In the strategy analysis, the identification of objectives and expected results should take into account environment and climate change related opportunities, risks and constraints, as well as possible impacts. **Environment and climate change related opportunities, risks and constraints** are defined here as factors or conditions that affect (positively or negatively) the feasibility of the project. **Environmental impacts** are positive or negative effects on the environment brought about by the project (and usually going beyond the objectives). More detailed guidance on how to integrate environment and climate change in the logframe approach is provided in Annex 6.

Environment in the logframe approach ► Annex 6

6.1.2 Environmental integration in the identification study

In cases where a pre-feasibility or identification study is undertaken, the design of the study offers a key opportunity for ensuring that the project takes environmental and climate change considerations into account. Identification is indeed the main stage where project alternatives are discussed and selected[120]. The environmental and climate-related impacts, opportunities and constraints that differentiate the project alternatives should be subject to a preliminary assessment, taking into account the different characteristics and sensitivity of potential project sites, for instance (where location alternatives are considered). Project identification studies should use the problem tree approach to integrate environmental and climate change aspects as the foundation for developing the project's logical framework (Annex 6). In addition, the integration of environmental and climate-related aspects in project formulation studies can also be applied in the context of identification studies (Annex 9).

[119] Based on the process described in EC (2004) *Project Cycle Management Guidelines, Aid Delivery Methods Vol. 1*.
[120] In general terms 'alternatives' refers to different ways of achieving the same ends. Alternatives will necessarily be of a broader (or more strategic) nature at the pre-feasibility than at the feasibility stage. For example, in the case of an agriculture project the 'alternatives' studied at the pre-feasibility stage may include enhancing paddy production through irrigation and securing of agrochemical inputs, or the introduction of new crops and techniques to enhance production on the hills. If the pre-feasibility study selects the rice production project, then the 'alternatives' studied during formulation are likely to be narrower and could bear, for example, on the irrigation system to be used, the specific agrochemicals (inputs) to be used, or the rice varieties to be grown. Note however that the range of alternatives considered in an EIA (where one is undertaken) should not be too restricted or narrow.

Would have a short sentence at the end of each of these to highlight what the actual output is from this step in the process

6.1.3 Project environmental and climate risk screenings

When the critical parameters of a project have been identified, the project should be screened from an environmental and climate risk perspective. This is particularly important if the environmental dimension has not been adequately considered in the logical framework approach or in the identification study, but each project should be screened with respect to environment and climate-related impacts, risks and constraints. In principle, the more the environmental and climatic dimensions are taken on board at the initial logframe analysis level or during the identification study (particularly in the assessment of project alternatives), the less the need for specific measures to deal with this dimension during subsequent phases.

Project environmental and climate risk screening ► **Annex 7**

Screening for Environmental Impact Assessment

Projects should be screened for their potential impacts on the environment, in order to decide whether an **Environmental Impact Assessment** (EIA) should be carried out or, when an EIA is not required, to identify those environmental aspects that should still be addressed during project formulation. EIA is an *ex ante* assessment of a project resulting in recommendations concerning measures to reduce potential negative project impacts and optimise positive ones.

EIA screening of projects supported by the EC should be based on relevant national legislation and procedures and on EC criteria. Where national legislation is more demanding than EC criteria, national legislation should prevail. Where the opposite is the case, EC criteria should prevail. Under EC criteria individual projects are classified as belonging to one of three categories, according to project type and characteristics, to determine whether an EIA is required (Box 6.1, Annex 7 Part 1). Outcomes and actions of the EIA screening process are summarised graphically in Figure 6.1

Box 7 When is an EIA required?

Category A - projects which have potentially significant negative environmental impacts that always require an EIA.

Category B - projects considered 'intermediate' projects because they have potentially 'non-negligible' impacts which may however not be significant enough in some circumstances to *automatically* justify a full-scale EIA[121]. These projects require further information to decide if an EIA is required or not (i.e. to reclassify them as category A or C). Part 1 of Annex 7 provides detailed guidance on how to assess Category B projects.

Category C - projects, which have minor or no negative environmental impacts and are therefore deemed 'non-threatening', do not require an EIA.

[121] This category includes projects that are not clearly classified, either because of uncertainties with regard to the magnitude or significance of their impacts or because they do not easily 'fit' into one of the identified categories.

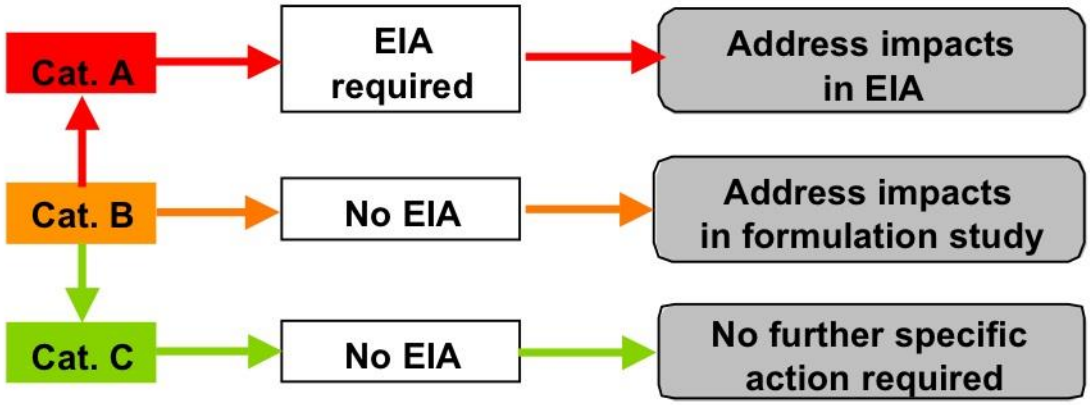


Figure 6.1 Outcomes of screening for environmental impact assessment, and resulting actions.

Screening for climate risk assessment

It is also required that projects are subject to climate risk screening to determine whether a **Climate Risk Assessment (CRA)** should be undertaken or, when a CRA is not required, to identify potential climate-related risks that should be addressed during project formulation over the expected project time span[122]. Like EIA, CRA is an *ex ante* assessment of a project resulting in recommendations concerning measures to reduce a variety of climate-related risks and optimise opportunities for ensuring that a project contributes to environmental and economic stability and sustainability in the face of climate change. Climate risk screening is based on a series of steps that mirror the steps required for environmental impact screening. However, whereas environmental screening is concerned with the impacts of a project on the environment, climate risk screening is concerned *both* the impacts of the project on the environment (including impacts on social and environmental vulnerability to climate change) *and* the impacts of the environment (via climate change and/or variability) on the success and/or sustainability of the project. In addition climate risk screening addresses the possibility that a project may contribute to wider societal maladaptation to climate change.

National legislation relating to the need for CRA is currently not common, and it is unlikely that projects will be required by national legal and regulatory frameworks to undergo climate risk screening or CRA. EC supported projects are therefore subject to climate risk screening based on EC criteria. The outcome of this screening is a decision as to whether a project needs to be subject to a climate risk assessment, Whether or not a project requires a CRA is therefore based on Climate risk screening of EC supported projects supported by the EC in order to establish whether a CRA is required is therefore based on EC criteria (see Box 6.2). Under these criteria individual projects are classified into three categories (Box 6.2 and Annex 7, Part 2). Outcomes and actions of the CRA screening process are summarised graphically in Figure 6.1

Box 8	When is a CRA required?
Category 1 -	projects which a very likely to be affected by climate change and which require a CRA
Category 2 -	projects which may require a CRA depending on factors such as the longevity of their impacts, their potential impacts on groups vulnerable to climate change, and the extent to which climate change is likely to affect activities associated with the projects. Part 2 of Annex 7 provides detailed guidance on how to assess Category B projects.

[122] The project time span or lifetime is defined as the period extending from the start of implementation until the time when it stops delivering benefits – or the time when 'significant new investment' is required if the project is to continue delivering benefits. This time span may well exceed (by several years and even by decades, in the case of large infrastructure projects) the project implementation timeframe.

- **Category 3** - projects which are unlikely to be affected by climate change and which do not require a CRA.

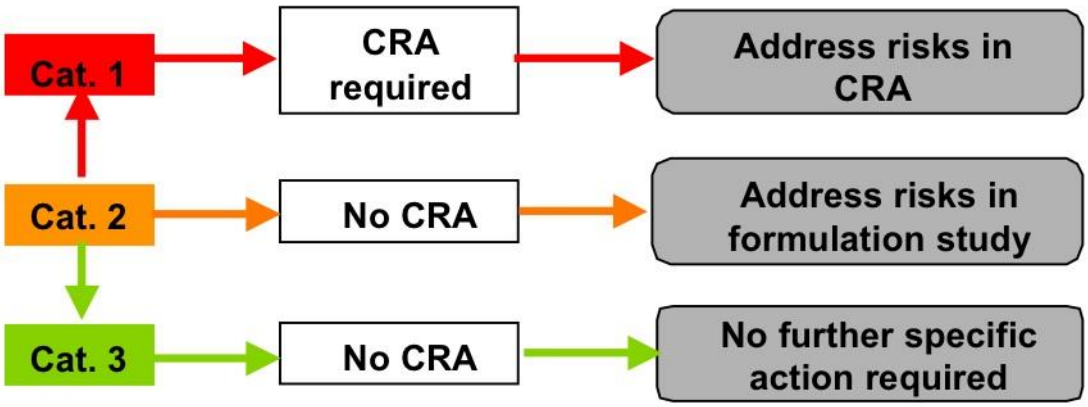


Figure 6.2 Outcomes of screening for climate risk assessment, and resulting actions.

Given the uncertainties still involved in forecasting directions of future change, particularly at a local scale, emphasis should be put on **'no regret'** or **'low regret'** measures to address climate related risks, i.e. measures that already bring benefits under present climate conditions, that are robust under a range of possible future climate scenarios, and that are expected to produce net benefits even if climate change effects fail to materialise or are less severe than predicted: no resources are wasted by implementing them.

Climate risk assessment ► Annex 11

- **Outcomes of screening for EIA and CRA**

- The same screening criteria should be used for single projects included as components of programmes or larger projects[123]. Nevertheless, the process should be adapted as follows:

- In programmes or large projects that include or may include Category A or B [with regards to EIA screening], or 1 or 2 [with regards to CRA screening], projects to be identified after the adoption of a financing decision, EIA/CRA screening and implementation in relation to such projects should be carried out in the implementation phase[124]. Language… can you provide some examples?
- In programmes that include already identified projects which require EIA/CRA, these EIAs/CRAs should be carried out in the programme formulation phase[125].

Based on the environmental and climate risk screening there are two broad options for the formulation phase:

i. projects requiring neither an EIA nor a CRA: environmental and climate-related aspects (if relevant) addressed as required in the formulation study;

[123] Some interventions categorised as 'projects' cover a wide geographical area and consist of a combination of various types of interventions, often not clearly identified until implementation.
[124] This may more likely be the case in the frame of 'decentralised', 'indirect centralised' and 'joint management' implementation modalities. A provision to this effect should be inserted in relevant contractual documents.
[125] Nevertheless, if the same area or ecosystem is expected to be affected by more than one of the projects, the final impact cannot be adequately assessed through individual EIAs. In this case, an SEA of this set of projects is recommended. The ToR for this SEA should be carefully drafted in order to focus on assessing the cumulative impacts of the individual projects and assessing whether that mix of projects is the best option, from an environmental point of view, to achieve the programme objectives. Depending on the level of detail at which the individual projects have been defined, the environmental assessment may integrate elements of the EIA methodology (Annex 8).

ii. projects requiring an EIA and/or a CRA: impacts on the environment addressed in the EIA; climate-related risks, constraints and opportunities addressed in the CRA.

Where both an EIA and a CRA are required, these will usually be conducted separately and in parallel with one another. However, under certain circumstances a CRA might be conducted as part of a EIA, or vice versa (see section 6.2.2. below and Annex 11).

6.1.4. Environmental integration in the Identification Fiche

Based on the preceding steps, the project Identification Fiche (IF) can now be completed. The IF includes a specific section in which the conclusions of the environmental and climate change screening must be recorded. The fiche also includes explicit references to environment and climate change in the sections dedicated to *cross-cutting issues, sustainability* and *next steps,* and this is where the results of early consideration of environmental and climate aspects should be reflected in the first place. However, other sections exist in the IF where environmental and climate change aspects can be referred to alongside other aspects. This particularly applies to *problem/strategy analysis* and *risks and assumptions*. Possible entry points for environmental integration in the IF are shown in Table 6.1.

Table 6.1 Possible entry points for environmental integration in the project IF (or, where appropriate, the project AF)

Sections of the IF	Possible entry points for environmental integration
Partner government policies and strategies	Refer to any environmental, climate-related and/or sustainability-oriented policies and strategies relevant for the project.
Problem analysis/strategic analysis	Take into account major environmental and climate-related linkages (impacts, risks, constraints and opportunities). Refer to environmental considerations in assessing project alternatives.
Lessons learned	Refer as relevant to any lessons learned from past projects with regard to environmental sustainability, climate resilience, etc. (e.g. from the specific country or sectoral context)
Stakeholders analysis	Include groups potentially affected by environmental impacts and climate-related risks, including risks associated with increased vulnerability to climate change or variability arising from the project.
Risks and assumptions	Consider environmental uncertainties, e.g. risks of natural disasters, scarcity of some resources, risks associated with climate change and variability, and assumptions (implicit or explicit) about future climatic conditions and climate-related risks.
Objectives and expected results	Integrate climate and environment-related aspects as relevant in the description of objectives and expected results and in the logical framework *(see Annex 6)*.
Cross-cutting issues	Specify the outcome of the environmental and climate risk screenings and indicate whether an EIA and/or a CRA study is required to properly address relevant environmental and climate aspects.
Sustainability	Consider environmental sustainability. Refer to the attention given at the identification stage to ensuring that the achievement of project objectives, activities and results do not generate increased pressure on fragile ecosystems and scarce natural resources, or drive maladaptation.
Budget	Preliminarily assess costs related to integration of environmental and climate aspects in project design and implementation. Adapt formulation costs according to the results of the screenings (based on the nature, scope and depth of further assessments required).

Next steps	Confirm in the conclusions of the screening whether an EIA and/or a CRA is required, and which environment-, natural resource- and/or climate-related aspects will be the subject of further investigation.[126]

6.2 Formulation

6.2.1 Projects requiring neither an EIA nor an CRA

When neither EIA nor CRA is required (probably the majority of cases), any environmental and climate-related aspects identified as relevant during the screening process should be addressed in the formulation study. The scope and depth of this will depend on the significance of potential environmental impacts and climate-related risks, as well as the extent to which environment- and climate-related risks, constraints and opportunities are important for the achievement of project objectives.

The ToR for the formulation study of these projects should include specific provisions to address any environmental impacts and climate risks, to ensure that:

- Any potential effects of the project on the environment as identified during the EIA screening, and any potential climate-related risks identified during the CRA screening, are assessed.

Appropriate measures are outlined and project design and/or implementation is adjusted as needed to minimise negative environmental effects and climate-related risks, and to enhance positive environmental effects and exploit opportunities to promote development that is sustainable in the face of climate change.

Annex 9 provides guidance for selective incorporation of relevant climate-related and environmental issues into the ToR of formulation studies. Box 6.3 provides some insights into the topic of identifying climate risk adaptation measures in the formulation of a project. Further guidance on CRA is provided in Annex 11 (general description of the CRA process) and Annex 12 (development of ToR for CRA).

Box 9 Climate risk adaptation measures in project formulation

At the project level, **adaptation** refers to measures that if implemented should ensure that increasing climate variability and the expected effects of climate change do not jeopardize the sustained achievement of project objectives and expected results.

For example, a new road and its associated drainage systems may need to be designed taking into account current trends (e.g. more frequent episodes of heavy rainfall) as well as future expected changes in climate. More intense rainfall events will require larger capacity drainage systems to remove the increased volumes of runoff generated; if the capacity is not sufficient then flooding and disruption will occur. If the road was designed without taking future changes into account, the transportation objectives may not be sustained. The pursuit of "business-as-usual" development that fails to take climate change into account through adaptation measures can mean that development is not sustainable in the face of climate change, or that development increases exposure and/or sensitivity/vulnerability to climate change, resulting in **maladaptation** (See also Box 2.4 and Annex 11)**.**

Climate change adaptation measures can aim to offset negative impacts but also to take advantage of positive ones, where they exist. Adaptation should not be seen just as a constraint and an additional financial and economic burden. In almost every sector, climate change intensifies already existing problems. Climate-related concerns may provide the impetus needed to implement many of the environmental and developmental 'best practices' previously neglected and in this way make programmes and projects both more effective and more sustainable.

[126] A summary the outcomes of the preliminary environmental screening (see Part 3 of Annex 7) should be annexed to the Project Identification Fiche.

There are many instances in which 'climate change adaptation measures' may alleviate factors that contribute to chronic vulnerability today, enhance equity, reduce poverty, improve management, and generally make a positive contribution to development objectives – regardless of the extent to which the potential effects of climate change ultimately materialise. In the presence of significant uncertainties, 'adaptive management' based on the adoption of 'no regret' or 'robust'[127] measures is a good starting point.

For projects where significant climate-related risks have been identified, risk reduction measures should be included in the design and implementation arrangements wherever possible, including measures to strengthen resilience and increase adaptive capacity of project stakeholders. Strengthening adaptive capacity is equally relevant at the project, sector, national and regional levels.. Examples of relevant measures at the project level include:

- Avoiding barriers to adaptation in the project design and implementation strategies.
- Facilitating access to accurate and appropriate information on climate change and promoting discussion on climate risk management and adaptation options with stakeholders.
- Ensuring that the project maximizes its potential for positive environmental impacts.
- Improving flexibility and efficiency in the management of climate-sensitive resources, natural resources in the first place.
- Strengthening capacities of the institutions concerned, making them more responsive and accountable.

Examples of adaptation measures drawn from EC projects are given in Annex 11, Appendix III.

Guidance for project formulation	►	**Annex 9**
General guidance on CRA		**Annex 11**
Guidance on developing ToR for a CRA		**Annex 12**

6.2.2 Projects requiring an EIA and or a CRA

When an EIA or CRA (see Box 6.4) is required, it is important (in practical terms) to define how the EIA/CRA and other studies will be incorporated in the different steps of the formulation phase. There are four issues to consider:

- A clear definition of the scope of studies to be carried out at formulation is necessary to ensure complementarities and to avoid overlap between the EIA/CRA and other studies (e.g. 'general' formulation study, financial and economic analysis). Close coordination is therefore required in the preparation of the different ToR for these studies if they are not prepared by the same persons.
- Consistency should be maintained during formulation; this means that the same alternatives[128] are considered in the different assessments (e.g. technical, environmental and economic).
- It should be ensured that the studies are based on sufficient technical information and assess realistic options, and that they can have an influence on the selection of project alternatives and on final project design.
- Ideally the EIA/CRA should precede the economic analysis, which has to incorporate the costs of impact reduction and adaptation measures and possibly also value some residual environmental externalities and costs associated with potential climate change risks.

[127] **Robust measures** are those that produce net benefits across various possible climate change scenarios; they are particularly valuable in the presence of uncertainty about future climate evolution.
[128] See footnote 109.

Box 10 Environmental Impact Assessment and Climate Risk Assessment - General concepts

The main stages in an EIA and a CRA can be distinguished as follows:

Screening

EIA screening refers to the decision to carry out the EIA, based on legislation, the nature of the project and the sensitivity of the environment.

CRA screening refers to the decision to carry out the CRA, based on the potential exposure and sensitivity of the project to climate-related risks.

Scoping

EIA scoping is the operation used to define the aspects that need to be covered in the EIA study: the geographical area to study; the time frame; the level of detail required; the proposed methodology for impact identification and evaluation; the identification of stakeholders and their concerns; the identification of alternatives to be studied.

CRA scoping is the process that determines the parameters and limits of the CRA study: the types of climate-relates risks operating in the project context; the timescales over which these risks need to be considered; key knowledge and information gaps; the appropriate methodologies for assessing risks in the project context; the identification of stakeholders and their concerns; the identification of risk reduction or adaptation measures and alternatives to be studied; the identification of ways of monitoring and evaluation the success of risk reduction/adaptation measures.

Study

The first stage of an EIA study is the **baseline study**, which describes the initial state of the environment within the selected boundaries of the study area. The baseline study also includes the description of the 'no project' scenario, based on assumptions regarding future changes.

The baseline study is followed by the **identification and evaluation of environmental impacts.** The impacts are the differences between the situation *with*, and the situation *without* the project. The identification and evaluation of impacts are necessary for all alternatives[129] under study, in order to compare them and provide recommendations on the selection of the most environmentally sound alternative. It may be decided to undertake a more detailed assessment of a preferred alternative.

The last part of the study provides **recommendations**, including proposals for measures to minimize negative impacts (impact reduction measures) and to optimise positive effects (optimisation measures). The EIA recommendations must be organised in an **Environmental Management Plan (EMP)**, specifying the way the proposed measures should be implemented, and a monitoring plan.

A CRA **baseline study** describes the current climatic baseline/context as relevant to the project, including climate-related risks under current climatic conditions.

The next step is the **identification of potential climate-related risks to the project.** This involves a characterisation of potential future climatic conditions and the identification of key climate-related *hazards* (physical manifestations of climate change or variability - see Annex 11) and their potential *impacts*, as relevant to the project as currently conceived. Impacts will depend on the *vulnerability* of the relevant populations and systems and their ability to respond and adapt to climate change, so CRA often involves the characterisation of hazards, vulnerability, and adaptive capacity.

The **identification of risk reduction or adaptation measures** involves assessment of the potential effects of climate hazards on project outcomes, impacts and viability under different versions of the project including various adaptation measures. **Recommendations** of a CRA will identify the preferred risk reduction/adaptation measures, in a **Climate Risk Management Plan (CRMP)** that specifies how the proposed measures will be implemented and their success evaluated.

Decision

Based on the EIA and or CRA the project, or the preferred alternative, can be approved without changes or conditions; approved with minor changes; subjected to major changes that justify new studies; or judged unacceptable, even with corrective measures, and therefore refused.

Public participation

Participation and consultation of stakeholders must be integrated in this process within the local institutional framework; it is a key success factor. Particular care should be taken to (a) make full use of the experience and know-how of the population living in the environment being studied; (b)

[129] See footnote 109.

adequately integrate the needs, values and interests of the population concerned, including women, marginalised social groups and those particularly vulnerable to climate variability and change. Public participation should be ensured from the earliest stages of the process.

While the environmental impacts of a project are addressed in the EIA, the EIA does not examine the risks posed to the implementation and sustainability of a project by environmental factors, including climate change. Where EIA examines project impacts on the environment, environmental impacts on the project therefore are addressed in the general formulation study or, where screening indicates significant risks climate-related risks, though a CRA.

The CRA examines both the impacts of climate change and variability on the project, and the impacts of the project on the vulnerabilities of key populations and (e.g. natural) systems to climate change and variability. The CRA therefore differs from the EIA, addressing both climate impacts on the project, and project impacts on the climate.

Where an EIA is required but a dedicated CRA is not necessary, any remaining issues associated with climate-related risks may be addressed as part of the EIA. Under such circumstances, an EIA should address any potential impacts of the project on the vulnerability of environmental systems and resources (e.g. ecosystems, coastlines, water resources, other natural resources) to climate variability and change. Where an EIA includes a component examining the social impacts of a project, this component should also address any project impacts on the vulnerability to climate change and variability of populations affected by the project. An EIA that does not consider climate change may miss such impacts. Where the EC supports the EIA process, a team of environmental specialists will be mobilised, and EIA may be combined with the assessment of climate risks and opportunities, including risks associated with increased environmental vulnerability to climate variability and change.

Where a CRA is required but a dedicated EIA is not necessary, the CRA may address the impacts of the project on the vulnerability of environmental systems and resources in conjunction with other stresses – impacts that might otherwise be incorporated into an EIA.

Out?

ToR for an Environmental Impact Assessment	►	**Annex 8**
Relation between EIA and CRA	►	**Annex 11**
ToR for a Climate Risk Assessment	►	**Annex 12**

Box 6.4 shows some practical aspects EIA and CRA processes.

6.2.3 Integrating the environment in the final steps of formulation

At the end of the formulation phase, the drafting of the Action Fiche (AF) and Technical and Administrative Provisions (TAPs) of the financing agreement should be based on a careful review of the results of the environmental mainstreaming process to this point, as well as an appreciation of the acceptability of the project with respect to the negative impacts and climate-related risks that cannot be mitigated (residual impacts and risks), exposure to other environmental risks and constraints, and adaptation requirements. The logical framework should be finalised taking into account the results of the screening process, the results of the EIA and/or CRA (if any), and otherwise the results of environmental integration in the formulation study. Table 6.2 provides a checklist of entry points to consider.

Table 6.2 Possible entry points for environmental integration in the AF and the TAPs of a project financing agreement

Section	Entry points for environmental aspects (including climate-related aspects as appropriate)

Objectives, expected results and main activities	Integrate results of the assessment of possible environmental impacts, climate-related risks, and any other environmental aspects in the project design and logframe. Outline sound environmental practices to be followed during implementation.
Risks and assumptions	Consider environmental (including climate-related) risks and constraints bearing on the achievement of project results and objectives and provide an overview of risk reduction measures and conditions to be met prior to and during implementation.
Cross-cutting issues and sustainability factors	Describe measures aimed at ensuring environmental sustainability and avoiding maladaptation.
Budget	Ensure that resources are allocated as required to carry out environmental integration measures during implementation.
Stakeholders	Consider groups potentially affected by the environmental impacts, or by climatic and other environmental risks, and their involvement.
Performance monitoring and evaluation	Propose environmental sustainability and adaptation indicators as appropriate. Assess the compatibility of other indicators with sustainable development.

Box 11 Environmental Impact Assessments and Climate Risk Assessments for EC-financed projects in practice

1) Preparation of the ToR and contract

The model Terms of Reference provided in Annex 8 (EIA) and Annex 12 (CRA) can be used as a guide to good practice. The model ToR should be adapted taking into account the specific issues identified in the screening as well as available project information (e.g. from the identification or pre-feasibility studies) and previous relevant environmental assessments (e.g. the CEP and any available SEAs in the sector). The study should be commissioned to independent environmental/climate risk management experts or EIA/CRA specialists. Experts should be provided with all relevant documents, and receive adequate explanations on the links with other formulation studies and with the decision-making process.

2) EIA and CRA scoping

The scoping report for an EIA or a CRA should be submitted to the EU Delegation and government. The scoping study allows the calendar and activities for the main EIA or CRA study to be defined in more detail.

3) The EIA and/or CRA study

After approval of the scoping study the main EIA and/or CRA study are/is carried out. The duration of the study is very variable and, depending on its scope (also linked to the project size and intervention sector), may have a duration of between 4 and 18 months. The EIA or CRA conclusions and recommendations should be incorporated in the project's design (as described in the Action Fiche and Technical and Administrative Provisions of the financing agreement). For infrastructure projects, the Environmental Management Plan (EMP) or a similar plan provides clauses to be incorporated in the specifications of the tender documents and the final works contract[130]. An analogue of the EMP for a project requiring measures to address climate-related risks would be a Climate Risk Management Plan (CRMP), and this would operate in a similar manner to the EMP.

[130] For more specific guidance on road projects see the *Operational Handbook for Road Project Managers in Delegations*, available on EuropeAid's Intranet – Thematic expertise – Homepage E7 Infrastructures – Thematic Transport Network.

4) Appraisal of the EIA and/or CRA report

When a draft report is submitted to the EC, a quality assessment should be undertaken based on the following questions:

- Is the study independent and neutral?
- Is it balanced? Does it not omit important aspects of the environment or considerations of climate risk?
- Are the conclusions clear and understandable?
- Have the stakeholders been adequately consulted? Are their views taken into account?
- Are the assumptions, choices, value judgements and uncertainties clearly identified?
- Is the study rigorous and scientifically based?
- Are all realistic alternatives assessed and compared?
- Are the recommendations an appropriate response to the identified impacts, opportunities, risks and constraints?
- Are the recommendations realistic, taking into account the constraints of technical, financial, economic and social feasibility?
- Are the recommendations organised in an operational Environment Management Plan, Climate Risk Management Plan, Adaptation Plan, or similar plan? Do they include clear recommendations for monitoring by the EU Delegation or national partners?
- Are the residual impacts and risks clearly identified and assessed?

6.3 Implementation

These guidelines are targeted principally at EC staff, but are also intended to inform the activities of all those who work on preparing project documents, e.g. government officials and consultants. However, it is also important at this stage to describe the respective roles during implementation of the key stakeholders: the EC, the national partners and the project management/implementation team.

Role of EC staff

EC staff in Delegations have a role to play in checking that the requirements resulting from environmental integration in the previous steps are complied with and that environmental aspects are addressed during implementation as foreseen in the project documents. They will be supported in this task by the EC result-oriented monitoring programme (see below). For infrastructure projects, it is important to see that the provisions to ensure sound environmental and climate risk management stemming from the EIA and CRA are adequately reflected in the tender specifications and in the project's contractual documents (including through the specification of relevant indicators for the monitoring and evaluation of performance of impact and risk reduction measures).

The EC may also promote the idea of an **'environmental performance review'**. Such a review examines an ongoing project with the aim of identifying areas where environmental performance can be improved, independently from the degree and quality of environmental integration in the previous steps. The review can be based on the checklist of good practice provided in Table 6.3. It is relevant to note here that (although not in the context of a project) the concept of environmental performance review is being applied increasingly in Delegations and Brussels headquarters. This 'greening' process is often motivated by individuals taking responsibility for environmental performance in their work space.

For existing projects that were identified and designed without screening for climate risks and vulnerability, it is also possible to conduct a **climate risk review**, applying the climate risk screening and assessment steps described above retrospectively. Such a review may not be required on a routine basis and could be carried out by initially focusing on projects in sectors particularly sensitive and/or related to increasing climate variability and the anticipated effects of climate change. These sectors include health, water, agriculture and rural development, environment, energy and mining, urban development and the transport sector. Projects in

these sectors could be reviewed particularly in those countries or parts of countries where high climate-related risks have been identified.

However, it is recognised that the scope for adjusting key elements of a project such as its location will be limited. Climate risk reviews may identify some adaptation measures that can be added to the project work plan provided they are practically feasible and finance is made available. While a climate risk review may not result in a CRA, such a review (particularly in terms of the identification of specific risks and risk reduction or adaptation measures) may be informed by the CRA guidance in Annex 11.

Climate risk reviews may also be conducted in a manner analogous to environmental performance reviews, i.e. independently of any integration of climate risk considerations in previous steps.

Role of national partners

The national government has a major role to play in project monitoring and management, particularly under the European Development Fund. Environmental authorities and civil society representatives may also be involved in environmental monitoring and control and the evaluation of measures to address climate-related risks, especially when an EIA or CRA has been carried out.

Role of the project management/implementation team

The project management team is responsible for:

- Implementing project activities, including those mentioned in the EMP or Adaptation Plan, or influenced by the formulation study recommendations (e.g. generalised measures aimed at reducing vulnerability to the effects of climate change and strengthening adaptive capacities).
- Monitoring the environmental objectively verifiable indicators of the logical framework and EMP, adjusting project management accordingly, and reporting on the monitoring process.
- Monitoring indicators relating to climate risk management and adaptation and reporting on the monitoring process.
- Complying with applicable environmental legislation, as an obligation and a minimum condition.
- Ensuring best practice or improving practice (based on Table 6.3 and possibly on an environmental performance review or climate risk review).

Table 6.3 Good practice in project implementation[131]

Land and location	Minimise land use Avoid disturbing sensitive areas
Energy and transport	Purchase and use energy-efficient appliances (incl. electric and electronic appliances) Use appropriate renewable sources of energy Design or select energy-efficient buildings (e.g. in relation to insulation, orientation, use of solar energy for heating space and water) Use passive designs for cooling buildings Purchase vehicles with low fuel consumption, promote alternatives Promote car pooling for transport related to the project

[131] Useful ideas on good environmental practices can be found on the EC's web page dedicated to 'green public procurement': http://ec.europa.eu/environment/gpp/index_en.htm.

Paper use	Use recycled paper Promote two-sided printing of documents Promote policy to print only the necessary documents
Water	Promote efficient water consumption Install toilets with low water consumption Capture and use rainfall Ensure proper treatment of wastewater Consider implications of project for water resources
Chemicals	Reduce the consumption of chemicals or other polluting substances Use biodegradable cleaning products
Waste management and recycling	Reduce waste production, use products with less or recyclable packaging, use washable dishware and cutlery in offices and canteens Use recycled or environmentally preferred products Increase waste separation and recycling, ensure all wastes generated by the project can receive adequate treatment and disposal
Project management	Implement carefully the EMP, CRMP or environmental and risk reduction measures identified in the project design Use all opportunities to enhance local environmental conditions and adaptive capacity at low cost and to reduce pollution or negative impacts Use the project for environmental and climate change training/awareness raising Select sub-contractors with an environmental management system Offset project-related GHG emissions through the purchase of Clean Development Mechanism Gold Standard certified emission reductions.

6.4. Evaluation

Evaluation is normally commissioned to independent consultants. When commissioning an evaluation study, the EC should ensure, through adequate ToR, that:

- The evaluation examines how environment and climate have been integrated (or mainstreamed) in the previous steps of the project cycle, especially in Category A and B[132] and Category 1 and 2 projects (even if an EIA or CRA has not been undertaken in the case of Categories B and 2 projects where issues are address in formulation), and in projects associated with some climate-related risks addressed in formaluation rather than through a dedicated CRA.
- If an EIA or CRA has been undertaken, the evaluation looks at whether the EIA or CRA predictions regarding residual impacts or risks[133] occurred, and that the EMP or Adaptation Plan and associated monitoring were effective; for large projects a specific *ex-post* EIA or CRA may be beneficial in this context.
- The evaluation also examines the extent to which the environment-related adaptation and mitigation measures recommended were implemented – and if so, how successfully.

[132] See Annex 7.
[133] Residual risks associated with climate change and variability might not be realised (i.e. the effects associated with them might not occur) until after the period of project implementation, so it might be difficult to evaluate these. In such cases an *ex post* CRA might be desirable, particularly where there are doubts about the efficacy of the measures included in the project to reduce these risks.

- More generally, that the environment and climate are taken into account in applying the main evaluation criteria: relevance, effectiveness, efficiency, sustainability and impact as shown in Table 6.4.

Table 6.4 Monitoring and evaluation criteria and related environmental issues

Criteria	Environmental and climate-related issues
Relevance	Were relevant environmental issues and climate-related risks addressed in the problem analysis and project design? If not, were there good reasons for giving priority to other problems? Does the project design incorporate measures to address potential environmental impacts and climate-related risks (e.g. Environmental Management Plan, Adaptation Plan or equivalent)?
Effectiveness	Did the project comply with its environmental requirements and objectives? Did the environmental protection/risk management measures produce the expected results? What capacities exist to deal with environment and climate risks that could affect project effectiveness and the sustained achievement of objectives?
Efficiency	Have sound environmental practices been followed in project implementation? Where environmentally damaging means, or means that involve significant exposure to climate hazards, have been used, have they been used efficiently? Has the amount of resources invested in reducing environmental impacts and climate risks been proportionate to the obtained results?
Sustainability	Are project outcomes threatened by environmental degradation (or resource impoverishment), disasters, or other long term changes in environmental conditions, including those caused by increasing climate variability and climate change? Has project contributed to some of that degradation, e.g. by increasing pressures on fragile/vulnerable ecosystems and scarce natural resources or generating negative environmental impacts, or increased climate-related risks (e.g. by increasing exposure or vulnerability to climate hazards)?
Impact	What are the project's contributions to sustainable development? Could these have been improved? What are the social and environmental effects external to project objectives? Has the project contributed to an increase or decrease in vulnerability to climate change? Has it improved adaptive capacity?

Adequate environmental and climate adaptation expertise may have to be incorporated in the evaluation team, particularly for environmentally sensitive projects.

As usual, results of mid-term evaluations should feed back into the project so as to enhance its quality, and lessons learned from final and *ex post* evaluations should be used to inform the design and formulation of future interventions. They should also contribute to building the knowledge base and the practical experience required to enhance, on a larger scale, the quality of environmental and climate risk assessments, and associated response strategies.

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ANNEXES

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ANNEX 1: General environmental issues in cooperation focal areas

This annex provides an indicative and non-exhaustive list of general environmental issues in relation to the nine current EC development cooperation areas, as identified in the European Consensus on Development. The guidance relating to each cooperation area is broken down into:

1. Possible environmental pressures and impacts[134] stemming from activities in the area (can also be used for the scoping of SEAs).
2. Environmental factors affecting the effectiveness, efficiency or sustainability of activities in the area.
3. Entry points for environmental integration, i.e. opportunities to include environmental considerations within activities in the area.
4. Examples of indicators.
5. Additional sources of information.

1. Governance, democracy, human rights and support for economic and institutional reforms

1.1. Environmental pressures and impacts from the area (to be mitigate or enhanced)[135]

Cooperation aimed at improving governance, democracy, human rights and support for economic and institutional reforms, especially if managed to balance the three pillars of sustainable development, would normally be positive for the environment. On the other hand, poor performance in these areas may have important indirect consequences on human activities affecting the environment, for example:

- Pressures on natural resources (including mining, land clearing, illegal logging and poaching) and associated impacts (e.g. pollution from mining, soil erosion, resource depletion, biodiversity losses).
- Energy consumption and GHG emissions (impact on climate change).
- Changes in land use, urbanisation, and poorly managed agricultural intensification.
- Pollution and wastes.

1.2. Environmental factors affecting the area

Availability, exploitation costs and sustainability of natural resources that are important for the national economy, including soils, water, forests, tourism assets (e.g. landscape, recreational water, scenic features, national parks).

Environmental factors affecting migration, health, labour productivity, gender division of labour (e.g. depletion of natural resources generating competition for their access, water and atmospheric pollution affecting health and labour productivity, water scarcity obliging women to fetch water from distant places).

Natural disasters, effects of increasing climate variability and climate change, environmental damage causing economic costs and affecting human life.

1.3. Entry points for the area

Consideration of environmental concerns in PRSPs, development policies, macro-economic reforms.

Strengthening of environmental institutions and capacities (centralised, decentralised).

Decentralisation and community participation (including usually less-represented groups) in natural resource management and land use planning; adequacy of the allocation of environmental competences across government levels with the size and geographical extent of the environmental assets to be managed.

Consistency in sector policies and environmental mainstreaming as a cross-cutting issue in different sectors.

Promotion of environmental fiscal reform (EFR) and market-based mechanisms of environmental

[134] **Environmental pressures** are human actions affecting the environment (e.g. logging); **impacts** are the result of pressures (e.g. deforestation).
[135] Negative pressures and impacts should be mitigated, positive ones enhanced.

1. Governance, democracy, human rights and support for economic and institutional reforms

management (e.g. removal of environmentally damaging subsidies, introduction or adaptation of environmental taxes).

Strengthening of environmental monitoring and information systems.

Adoption of green accounting (i.e. using environmental and sustainability indicators in the overall macro-economic accounting framework).

Legislative reform and law enforcement: environmental legislation, EIA and SEA procedures; FLEGT (Forest Law Enforcement, Governance and Trade) initiative; Multilateral Environmental Agreements (ratification, implementation).

Support for access rights to natural resources and environmental rights for men and women (especially for vulnerable groups, including ethnic minorities and indigenous peoples); development of land tenure systems.

Tackling corruption (including in the natural resources sector).

Support for civil society participation and access to environmental information.

Support for the development of policies that foster sustainable consumption and production.

1.4. Examples of environmental indicators

Adjusted Net Saving[136] and natural resource rents.

Investment as a % of GDP in environmental sector/institutions.

GHG emissions per $ 1,000 GDP; GHG emissions per capita divided by the HDI (Human Development Index).

Waste generation per $ 1,000 GDP (or in kg/capita/year).

Land use (proportion of urban/agricultural/forest land).

Monetary valuation of pollution damage.

State of key natural resources (e.g. forest).

Efficiency in natural resources use (e.g. water use (m^3) per hectare irrigated, water use (m^3) per unit of a given production).

Energy use (kg oil equivalent) per $1,000 GDP.

See also Chapter 5, Table 5.4.

1.5. Additional guidance

The UNEP Economics and Trade Branch (www.unep.ch/etb/index.php) provides guidance on green accounting, environmental fiscal reform and the use of economic instruments.

OECD (2005) *Environmental Fiscal Reform for Poverty Reduction*, OECD DAC: Paris. See: http://www.oecd.org/dataoecd/14/25/34996292.pdf.

DFID (2003) *Environment Guide: A guide to environmental screening*.
See: http://www.dfid.gov.uk/Documents/publications/environment-guide-2003.pdf. Provides checklists of opportunities and constraints for national development plans (pp. 27-29), economic growth (pp. 30-33) and governance (pp. 37-41).

2. Trade and regional integration

2.1. Environmental pressures and impacts from the area (to be mitigate or enhanced)

Pressures on shared or exported resources (e.g. timber, species, minerals, water, fish), risk of exhaustion.

Pollution from imported commodities (e.g. cars, agricultural inputs) and wastes.

Indirect impacts due to economic changes (e.g. crop substitution, agricultural intensification, changes in land use patterns, deforestation, changes in industrial and mining sectors, human migrations, urbanisation, waste production, employment rate, export diversification).

[136] See: http://go.worldbank.org/EPMTVTZOM0.

2. Trade and regional integration
Impacts from processing and transport.
Risk of environmental dumping; impacts from harmonisation of the regulatory framework.
Improved management of shared resources.
2.2. Environmental factors affecting the area
Transboundary pollution or impacts resulting in regional disputes (e.g. impacts of dams or water extraction on downstream flows).
Illegal transboundary exploitation of natural resources and illegal trade.
Distributional pattern of natural resources (affecting trade or migrations).
State of shared resources (e.g. fisheries, water).
Environmental damage caused to transport and communication systems (e.g. by storms, floods).
State of natural resources producing export goods (e.g. state of fish stocks and forests).
2.3. Entry points for the area
Carrying out Sustainability Impact Assessments of economic partnership and trade agreements[137] and implementing their recommendations.
Harmonisation of environmental legislation and quality standards (e.g. sanitary and phytosanitary standards).
Support for eco-labelling and certification (e.g. organic farming, forest certification[138], marine certification[139]).
Consideration of environmental aspects in Economic Partnership Agreements, in relation with the product coverage and calendar/rhythm of liberalisation (for instance an agreement in fisheries can be linked to a regional policy for the sustainable use of the resource).
Using EFR principles while developing new budgetary resources where export taxes and import duties must be reduced.
Exchanges of clean technologies, know-how and experience in common environmental issues.
Promoting import of clean technologies.
Regulating the trade of environmentally sensitive commodities (e.g. timber, wildlife).
Promoting local transformation of raw materials.
Promoting local patents on biodiversity resources.
Regulating the private sector and supporting environmental management capacities of the private sector.
Co-management of shared resources, transboundary protected areas or watershed management.
Regional or transboundary cooperation in environmental law enforcement.
SEA of regional programmes and EIA of regional infrastructure.
Regulating the transport or export of hazardous wastes or materials.
Management of transboundary impacts.
Regional environmental agreements and fishing agreements.
Support for the implementation of international environmental agreements, e.g. CITES, ITTA, Bamako, Basel, and Rotterdam Conventions.
2.4. Examples of environmental indicators
Trends in shared resources (e.g. fish stocks).
Exports of environmentally sensitive commodities (e.g. timber): physical flows.
Transboundary protected areas (total area, proportion of the border line, quality of the management).
Rate of local transformation of raw materials (e.g. timber).

[137] See: http://ec.europa.eu/trade/wider-agenda/development/sustainability-impact-assessments/index_en.htm.
[138] See: Forest Stewardship Council (FSC): http://www.fsc.org/.
[139] See: Marine Stewardship Council (MSC): http://www.msc.org/.

2. Trade and regional integration

Proportion of enterprises certified ISO 14001:2004.

Proportion of organic agricultural products.

Proportion of certified forest or marine products.

Indicators of transboundary pollution.

2.5. Additional guidance

SIDA (2002) *Sustainable Development? Guidelines for the Review of Environmental Impact Assessments*. Available via on-line SIDA publications: http://www.sida.se/English/About-us/Sidas-Publications/. Provides a checklist for trade and commerce (pp. 83-85).

DFID (2003) *Environment Guide: A guide to environmental screening*.
See: http://www.dfid.gov.uk/Documents/publications/environment-guide-2003.pdf. Provides a checklist of opportunities and constraints for trade and foreign direct investment (p. 33).

3. Infrastructure, communications and transport

3.1. Environmental pressures and impacts from the area (to be mitigate or enhanced)

Direct impacts of infrastructure, such as soil erosion, changes in water regime, pollution, ecosystem fragmentation, access to vulnerable resources (e.g. forest roads).

Impacts of traffic and transport, such as energy consumption, air pollution (e.g. GHG, toxic fumes, dust), noise, vibration, accidents, accidental pollution.

Impacts of physical flows, such as transfers (e.g. loss of natural resources, transfer of soil nutrients, accumulation of wastes), introduction of alien species.

Indirect impacts through social and economic changes, including concentration of economic activities (e.g. harbours) and impacts of induced economic activities (e.g. mining, industry).

3.2. Environmental factors affecting the area

Variability in water level and streams affecting river transport.

Indirect impacts from land use patterns and distribution of natural resources.

Floods, erosion and soil instability affecting road viability.

Effects of increasing climate variability and climate change on infrastructure.

3.3. Entry points for the area

Combined use of SEA and EIA and implementation of their Environmental Management Plans (EMPs).

Consideration of alternative transport modalities and routes.

Consideration of environmental externalities in economic analysis of infrastructure projects.

Use of environmental audits and environmental management systems in the private sector.

Inter-modality; development of rail or water transport; reduction of road traffic and related impacts; promotion of public transport.

Reduced need to travel through improved land use planning.

Spatial planning of the infrastructure network.

Legislation.

Technical control of vehicles; security, speed control, regulations for the transport of hazardous materials.

Fuel taxes; transport pricing.

3.4. Examples of environmental indicators

Energy efficiency of transport (T.km/energy consumption)

GHG efficiency (T.km/CO_2 emitted).

Fragmentation of vulnerable habitats (forests, protected areas) (km crossed).

Proportion of railway and water transport versus road or air transport.

Percentage of less polluting vehicles.

3. Infrastructure, communications and transport

Use of unleaded petrol.

3.5. Additional guidance

SIDA (2002) *Sustainable Development? Guidelines for the Review of Environmental Impact Assessments*. Available via SIDA on-line publications: http://www.sida.se/English/About-us/Sidas-Publications/. Provides checklists for transport and communications (pp. 63-66) and building and construction works (pp. 67-70).

DFID (2003) *Environment Guide: A guide to environmental screening*.
See: http://www.dfid.gov.uk/Documents/publications/environment-guide-2003.pdf. Provides checklists of opportunities and constraints for infrastructure (pp. 46-47) and urban development (p. 48).

World Bank (1995) *Environmental Assessment Sourcebook, Volume II. Sectoral Guidelines*. Provides guidance on transport (pp. 168-195).

4. Water and Energy

4.1. Environmental pressures and impacts from the area (to be mitigate or enhanced)

Water pollution; eutrophication, salinisation.

Wetland drainage.

Biodiversity losses in (and around) wetlands.

Changes in surface water regime, in groundwater resources, depletion of water resources.

Direct and indirect impacts from dam building, including transboundary impacts.

Pollution from oil, gas or coal industry.

GHG emissions; air pollution (indoor and ambient) and acid rain.

Deforestation resulting from excessive consumption of fuelwood.

4.2. Environmental factors affecting this area

Depletion of water or energy resources, e.g. fuelwood, freshwater, dam siltation resulting from soil erosion.

Changes in water quality.

Flooding affecting (notably) clean water supply.

Effects of increasing climate variability and climate change on water quality and availability.

Climate variability affecting energy services and infrastructure.

4.3. Entry points for this area

Referring to the Dublin principles on sustainable water management[140].

Combined use of SEA for water/energy programmes and EIA for infrastructure.

Taxes and tariffs, economic incentives, fuel pricing policies; taxes on GHG emissions; differentiated taxes according to the energy source; lower import tariffs for appropriate equipments.

Regulation framework for private sector.

Integrated water management; watershed management.

Regional cooperation in water management.

Development of infrastructure with environmental benefits (e.g. for water treatment, sanitation, clean energy supply).

Use of project financing from the Clean Development Mechanism (under the climate change convention and Kyoto Protocol).

Implementation of the Ramsar Convention on wetlands.

Promotion of fuelwood savings, energy-efficient stoves.

Use of renewable energy sources (e.g. wind, solar, hydro-electric, fuelwood from sustainable forestry).

Energy production from wastes.

[140] http://www.wmo.ch/pages/prog/hwrp/documents/english/icwedece.html.

4. Water and Energy

Research and development on clean technologies.

Energy and water savings in order to reduce the demand for energy (e.g. by adequate urban planning and transport development) or water (e.g. by dry farming or promoting water-efficient irrigation).

4.4. Examples of environmental indicators

Energy efficiency: energy use (kg oil equivalent) per $1,000 GDP; or energy use per capita divided by the HDI (Human Development Index).

CO_2 emissions per capita (MDG 7, ind. 7.2), total.

Share of renewable energy.

Energy intensity of manufacturing industry.

Proportion of population using solid fuels.

Water efficiency (e.g. in irrigated agriculture).

Water abstraction as a percentage of renewable resources.

Proportion of water use from fossil aquifers.

Proportion of total water resources used (MDG 7, ind. 7.5)

Water pollution indicators (e.g. proportion of sample points complying with quality standards).

Proportion of population using an improved drinking water source (MDG 7, ind. 7.8).

Time spent (especially by women) in collecting water and firewood.

Proportion of population and industrial facilities with adequate wastewater treatment systems.

Proportion of population using an improved sanitation facility (MDG 7, ind. 7.9).

4.5. Additional guidance

SIDA (2002) *Sustainable Development? Guidelines for the Review of Environmental Impact Assessments*. Available via SIDA on-line publications: http://www.sida.se/English/About-us/Sidas-Publications/. Provides checklists for energy (pp. 59-62), water-related activities (pp. 44-48) and dams (pp. 54-58).

DFID (2003) *Environment Guide: A guide to environmental screening*.
See: http://www.dfid.gov.uk/Documents/publications/environment-guide-2003.pdf Provides a checklist of opportunities and constraints for water resource management (p. 43).

World Bank (1991) *Environmental Assessment Sourcebook, Volume II. Sectoral Guidelines*. Provides guidance on water (pp. 227-244).

World Bank (1991) *Environmental Assessment Sourcebook, Volume III. Guidelines for Environmental Assessment of Energy and Industry Projects*. Provides guidance on energy projects (pp. 25-89).

5. Social cohesion and employment

5.1. Environmental pressures and impacts from the area (to be mitigate or enhanced)

Indirect impacts from changes in activities resulting from employment policies (e.g. lower pressures on natural resources resulting from higher employment in the formal sector).

Changes in environmental pressures resulting from social conflicts (including fires and illegal activities).

5.2. Environmental factors affecting the area

Resource degradation, externalities affecting particular groups or unequal distribution of resources (these factors may exacerbate social conflicts).

Resource depletion (which may lead to loss of jobs).

5.3. Entry points for the area

Undertaking SEA of policies and strategies in the sector; considering social issues in SEA and EIA undertaken in other sectors; involving public and civil society in all SEA and EIA processes.

Participation of stakeholders in the management of natural resources and the environment; community

5. Social cohesion and employment

forestry (including participation and empowerment of traditionally less-represented groups).

Compliance with labour protection (and non-discrimination) standards (ILO conventions), notably with regard to environmental exposure standards.

Providing decent alternative employment in areas with excessive pressure on natural resources.

Providing decent employment in the environmental and natural resource management sectors.

Promoting transformation of natural resources (i.e. increasing added value per unit of resource use).

Promoting equitable and secure access to land and other natural resources.

Promoting good governance and justice in natural resources and environmental management; fair compensation of victims of environmental damage.

Promotion of 'green jobs', e.g. jobs that help to protect ecosystems and biodiversity; reduce energy, materials, and water consumption through high-efficiency strategies; de-carbonise the economy; and minimise or avoid generating all forms of waste and pollution.

5.4. Examples of environmental indicators

Proportion of households with access to secure tenure.

Proportion of urban population living in slums (MDG 7, ind. 7.10)

Proportion of persons employed in environment and natural resource sectors.

Number of land or natural resource-related disputes.

Proportion of population using an improved drinking water source (MDG 7, ind. 7.8).

Proportion of population using an improved sanitation facility (MDG 7, ind. 7.9).

6. Human development (incl. health, education, culture and gender equality)

6.1. Environmental pressures and impacts from the area (to be mitigate or enhanced)

Indirect impacts due to population growth, migration, environmental education, modified activities and consumption or practices (e.g. construction and operation of schools, hospitals).

Contamination through vector control (pesticides).

Increased resistance of vectors and pathogenic organisms.

Water pollution (chemical, biological) and hazardous waste (including bio-medical wastes).

Over-exploitation (or decreased exploitation) of biodiversity resources for medicinal purposes.

6.2. Environmental factors affecting the area

Environmental quality in human settlements and work places: waste management (including domestic waste) and sanitation; noise; clean water, air quality (ambient and indoor); exposure to chemicals and heavy metals; occupational health hazards; vectors and water-borne diseases; overcrowding.

Idem in health/education facilities.

Stratospheric ozone depletion.

Environmental causes of malnutrition (e.g. poor soils, overfishing, overhunting, poor crop yields).

Biodiversity resources used as medicines.

Environmental components used as a support for education and training.

Environmental disasters (impact on health and safety).

Increasing climate variability and climate change (impact on health and safety).

Environmental constraints on school attendance (e.g. time spent by girls in wood or water collection).

6.3. Entry points for the area

Combined use of SEA and EIA for construction/rehabilitation of education/health facilities.

Considering health (e.g. HIV/AIDS) and social impacts in environmental assessments including those undertaken in other sectors.

6. Human development (incl. health, education, culture and gender equality)

Compliance with labour protection (and non-discrimination) standards (ILO conventions), notably with regard to environmental exposure standards.

Promoting environmental education (of adequate quality, level, relevance to country environmental problems); addressing environmental issues in vocational training; building capacities in environmental management; awareness raising.

Using green construction principles while designing infrastructure.

Supporting research on and training in the use of cleaner technologies.

Managing wastes in education and health facilities; saving and recycling paper at school; hygiene and health conditions in education/health facilities; management of bio-medical wastes.

Collaborating with other sectors for inclusion of environmental issues in health policies and programmes; reducing air pollution; developing access to clean drinking water, sanitation, improved hygiene; promoting health and hygiene education.

Urban environment: urban planning, waste disposal systems, sanitation, urban and peri-urban parks.

Promoting the equitable and sustainable exploitation of biodiversity and local environmental knowledge.

Promoting gender equity and the rights of indigenous peoples; addressing other social issues in relation to environmental and natural resource management (e.g. security of tenure, recognition of traditional rights).

Supporting family planning and reproductive health and rights.

6.4. Examples of environmental indicators

Environment in education curricula.

Proportion of teachers trained in environmental education.

Proportion of population living in unhealthy or polluted environments.

Proportion of population using solid fuels.

Air and water quality indicators.

Proportion of hospitals with an adequate waste management system.

Proportion of bio-medical wastes adequately managed.

Morbidity rate in environmentally-related diseases (e.g. pulmonary diseases, diarrhoea, malaria).

Number of victims of natural disasters.

Proportion of population using an improved drinking water source (MDG 7, ind. 7.8).

Proportion of population using an improved sanitation facility (MDG 7, ind. 7.9).

6.5. Additional guidance

SIDA (2002) *Sustainable Development? Guidelines for the Review of Environmental Impact Assessments*. Available via SIDA on-line publications: http://www.sida.se/English/About-us/Sidas-Publications/. Provides checklists for institutional development and capacity building (pp. 100-101), health and medical care (pp. 90-92) and education (pp. 97-99).

DFID (2003) *Environment Guide: A guide to environmental screening*.
See: http://www.dfid.gov.uk/Documents/publications/environment-guide-2003.pdf. Provides a checklist of opportunities and constraints for human development (pp. 34-36).

World Bank (1991) *Environmental Assessment Sourcebook, Volume II. Sectoral Guidelines*. Provides guidance on Public health and safety (pp 145-152) and Water supply (pp 227-230).

7. Rural development, territorial planning, agriculture and food security

7.1. Environmental pressures and impacts from the area (to be mitigate or enhanced)

Contamination by fertilisers/pesticides.

Water pollution, eutrophication, decreased water availability for other uses, water-borne diseases.

Soil degradation, desertification, erosion, acidification, salinisation, siltation of reservoirs.

Deforestation, re-forestation, land clearance for agriculture and/or cattle breeding, excessive timber or fuelwood harvesting.

Habitat reduction and/or fragmentation.

Water regime changes, floods resulting from changes in land uses.

Fire.

Overgrazing.

GHG emissions (e.g. carbon dioxide, methane from livestock or paddies), carbon sequestration (in vegetation and soil).

Decrease (or increase) in fish stocks, wildlife, non-timber forest products, timber.

Biodiversity decline, introduction of alien species or genetically modified organisms (GMOs).

Increased pest resistance.

7.2. Environmental factors affecting the area

Availability and quality of water resources.

Forest area and production.

Rangeland.

Fire.

Fish stocks.

Hydrological changes.

Biodiversity, agro-biodiversity, pests, weeds.

Land degradation and erosion, desertification; loss of land through urbanisation.

Pollution.

Climate, including increasing climate variability and climate change.

7.3. Entry points for the area

Undertaking SEA of sector programmes and strategies, EIA of sector projects.

Promotion of cross-sector dialogue and integration; links with urban areas and transport/trade/industry sectors.

Promotion of technical approaches: integrated pest management, organic and low-input farming, agro-forestry, efficient irrigation, water conservation techniques, land conservation measures, use of local knowledge and local agro-biodiversity, maintenance of corridors for wild species.

Promoting economic approaches: diversification, access to markets, rural infrastructure, agro-industry and development of transformation activities adding value to natural resources and decreasing losses; reducing damaging subventions, implementing agro-environmental schemes and incentives or taxes (polluter pays principle).

Development of support services (research, training, extension).

Eco-labelling; certification, quality standards, awareness raising among consumers, standards and regulations for the use and handling of pesticides and GMOs.

Land tenure reforms; secure and fair property rights; equal land distribution; property rights on biodiversity; access rights to natural resources.

Supporting community-based and producers' organisations.

Developing payment for environmental services.

Developing policies regarding agro-biodiversity conservation (*in situ, ex situ*).

7. Rural development, territorial planning, agriculture and food security

Developing and adequately managing protected areas; managing buffer zones; developing eco-tourism *(see point 8)*.

Promoting alternatives to excessive exploitation of natural resources (e.g. hunting).

Developing sustainable forestry and other sustainable natural resource management *(see point 8)*.

Implementing conventions on desertification, biodiversity, persistent organic pollutants[141].

7.4. Examples of environmental indicators

Land used by agriculture.

Share of area occupied by organic farming in total utilised agricultural area.

Use of selected pesticides.

Percentage of land area at risk of soil erosion or desertification.

Deforestation rate; proportion of land area covered by forest (MDG 7, ind. 7.1).

Round wood production.

Fish catches; fish stocks; fishing quotas; size of spawning stocks.

Intensity of use of forest resources.

Intensity of use of fish resources.

Fishing capacity and quotas.

Size of fishing fleet.

Intensity of use of land.

Intensity of use of water in agriculture.

Intensity of pesticide and fertiliser use.

Proportion of terrestrial and marine areas protected (MDG 7, ind. 7.5).

Agriculture-related GHG emissions.

7.5. Additional guidance

SIDA (2002) *Sustainable Development? Guidelines for the Review of Environmental Impact Assessments*. Available via SIDA on-line publications: http://www.sida.se/English/About-us/Sidas-Publications/. Provides checklists for agriculture (including livestock farming) and forestry (pp. 40-43) and coastal zone-related activities (pp. 49-53).

DFID (2003) *Environment Guide: A guide to environmental screening*.
See: http://www.dfid.gov.uk/Documents/publications/environment-guide-2003.pdf: Provides checklists of opportunities and constraints for rural development (p. 42), fisheries (p. 44) and forestry (p. 45).

World Bank (1991) *Environmental Assessment Sourcebook, Volume II*. Provides guidance on agriculture and rural development (pp. 1-143).

8. Environment and sustainable management of natural resources

8.1. Environmental pressures and impacts from the area (to be mitigate or enhanced)

While pursuing an environmental objective, side effects should always be taken into account.

Examples:

- Resource use displacement: the establishment of protected areas may increase the pressures on other resources.
- Pollution displacement: waste disposal may pollute the water table; hospital incinerators produce dioxins.
- Competing uses: managing a resource for a particular purpose (e.g. water for human or agricultural uses) may compete with other uses (e.g. wetlands and biodiversity conservation).

[141] See Stockholm Convention: http://chm.pops.int/.

8. Environment and sustainable management of natural resources

8.2. Environmental factors affecting the area

By definition, environmental problems are addressed, but external environmental factors should be taken into account: e.g. impacts from other sectors, impacts from abroad (including climate change and transboundary pollution).

Deforestation, re-forestation, land clearance for agriculture.

Pollution.

Fires.

Overgrazing, overfishing, overhunting, excessive timber or wood harvesting.

Biodiversity decline, introduction of alien species or GMOs.

8.3. Entry points for the area

By definition, all activities in this area are entry points for environmental considerations, including:

- land use planning and urban planning;
- integrated coastal zone management;
- integrated watershed management;
- water resources planning;
- development and management of protected areas (including buffer zones);
- natural resource management plans;
- forest policy and regulatory framework;
- promotion of sustainable (low-impact) forestry/fishing practices;
- Clean Development Mechanism as an opportunity to fund re-forestation;
- International Tropical Timber Organization (ITTO) guidelines for the sustainable management of natural tropical forests and for the establishment and sustainable management of planted tropical forests[142];
- FLEGT;
- forest certification (FSC[143] principles and criteria);
- marine certification (MSC[144] principles and criteria);
- sanitation, waste management, water treatment, recycling;
- environmental disaster prevention measures;
- compliance with Multilateral Environmental Agreements (e.g. UNCBD, UNCCD, Ramsar, CITES, Bonn);
- community participation in natural resource management and decentralisation; capacity building of appropriate institutions;
- environmental legislative and institutional framework;

8.4. Environmental indicators

Specific outcome indicators related to sector or programme objectives.

Specific impact indicators related to the side effects.

Proportion of terrestrial and marine areas protected (MDG 7, ind. 7.6) (to be completed with qualitative indicators/criteria).

Deforestation rate; proportion of land area covered by forest (MDG 7, ind. 7.1).

Round wood production.

Fish catches; fish stocks; fishing quotas; size of spawning stocks.

Intensity of use of forest resources.

Intensity of use of fish resources.

[142] See: http://www.itto.int/.
[143] See: http://www.fsc.org.
[144] See: http://www.msc.org.

8. Environment and sustainable management of natural resources

Fishing capacity (including size of fishing fleet) and quotas.

Proportion of fish stocks within safe biological limits (MDG 7, ind. 7.4)

Intensity of land use.

Proportion of species threatened with extinction (MDG 7, ind. 7.7)

Waste generation (kg and/or volume of waste produced annually per capita, by category of waste)

Waste management (proportion of waste recycled and proportion of waste safely disposed of, by category of waste)

8.5. Additional guidance

SIDA (2002) *Sustainable Development? Guidelines for the Review of Environmental Impact Assessments*. Available via SIDA on-line publications: http://www.sida.se/English/About-us/Sidas-Publications/. Provides checklists for quarrying and underground mining (pp. 75-78) and tourism (pp. 86-89).

World Bank (1991) *Environmental Assessment Sourcebook, Volume II*. Provides guidance on fisheries (pp. 42-56), flood protection (pp. 57-66), forestry (pp. 67-93), solid waste (pp. 208-222) and wastewater (pp. 231-240).

9. Conflict prevention and State fragility

9.1. Environmental pressures and impacts from the area (to be mitigate or enhanced)

Impacts and pressures resulting from conflicts (e.g. fires and forest destruction, pollution, abandonment of environmental and natural resources management, illegal and predatory activities).

Increased pressures on natural resources or vulnerable areas due to population displacements.

Water pollution, wastes, and unhealthy conditions in refugee camps.

Pressures on resources for reconstruction (such as timber or wood used as fuel for the production of bricks).

Risks from efforts to improve security (e.g. secured villages, forest clearance).

Overall positive impact of strengthening state institutions.

9.2. Environmental factors affecting the area

Scarcity or low productivity of shared natural resources.

Unequal availability of (or access to) resources.

Valuable resources in disputed areas (border areas).

Environmental negative impacts with insufficient compensation.

Increasing climate variability and climate change (as a conflict-exacerbating factor).

9.3. Entry points for the area

Conflict prevention in general (usually beneficial to both the local and the global environment).

International and regional cooperation on common environmental management issues.

Establishing and managing ‘peace parks’ (i.e. transboundary protected areas).

Encouraging open access to environmental information and transparency of decision-making processes.

Environmental education programmes for refugees and internally displaced people.

Environmental management of refugees (and internally displaced people) settlements.

Equity, as a contribution to conflict prevention and lower environmental pressures.

Strengthening of state environmental institutions and support from civil society through adequate participation.

9.4. Examples of environmental indicators

Number or density of refugees (or internally displaced people) requiring fuelwood or water.

Proportion of area (protected areas, forests) under the control of appropriate legal institution.

9. Conflict prevention and State fragility

9.5. Additional guidance

SIDA (2002) *Sustainable Development? Guidelines for the Review of Environmental Impact Assessments*. Available via SIDA on-line publications: http://www.sida.se/English/About-us/Sidas-Publications/. Provides a checklist for humanitarian assistance (pp. 93-96).

DFID (2003) *Environment Guide: A guide to environmental screening*.
See: http://www.dfid.gov.uk/Documents/publications/environment-guide-2003.pdf. Provides checklists of opportunities and constraints for conflicts and humanitarian assistance (pp. 49-51).

ANNEX 2: Terms of Reference for a Country Environmental Profile

Note: Explanations or sections to be completed according to individual circumstances are given *in italics*. To aid the preparation of ToRs for a CEP and management of the process, a guide is available citing examples of CEPs that are considered to demonstrate good practice for a number of criteria. Please consult EuropAid Unit E6 for further details.

ToR for the preparation of the Country Environmental Profile of (*name of the country*)

1. Background

(*Give a brief overview of the country, its current socio-political situation, EC cooperation experience on the major environmental concerns and responses by the government and/or other donors, the interest of the EC in integrating the environment in the CSP and the current timetable with respect to the multi-annual programming process.*)

2. Objective

The main objective of the Country Environmental Profile (CEP) is to identify and assess environmental issues to be considered during the preparation of a Country Strategy Paper, which will directly or indirectly influence EC cooperation with the country for several years to come *(please adapt if the CEP is prepared at another stage).* The Country Environmental Profile will provide decision makers in the partner country and in the European Commission with clear information on the key environmental challenges (including those resulting from increasing climate variability and climate change), the current policy, legislative and institutional framework and the strategies and programmes (including those of the EC and other donors) designed to address them. This information will ensure that the EC cooperation strategies systematically integrate environmental considerations into the selection of focal sectors and cooperation objectives/strategies, and also establish the necessary environment safeguards for all cooperation activities undertaken in the country. The Profile will describe the key linkages between the environment, including climate change, and poverty reduction. It will constitute an important source of baseline information and contribute to focusing political dialogue and cooperation with the country on key areas of concern including sustainable development as well as raising awareness among policy makers.

3. Results

The profile will deliver the following results:

- an assessment of the state of the environment and key environmental factors and trends, including those related to climate, influencing the country's sustainable development and stability;
- an assessment of the main links between the environment and human development in its multiple dimensions (income, consumption, health, security, vulnerability, …);
- an assessment of national environmental policy and legislation, institutional structures and capacity, and the involvement of civil society in environmental issues;
- an assessment of available analysis on the impact of increasing climate variability and climate change on different sectors and the strategies and processes in place or under development to respond to them;
- an assessment of the integration of environmental concerns in development policy and sectors with key linkages with environmental issues;
- an overview of past and ongoing international (including EC) cooperation in environment as an area for cooperation and environmental integration;

- recommendations and, as far as possible, guidelines or criteria for mainstreaming environmental concerns including those concerning adaptation to increasing climate variability and climate change in cooperation areas. These recommendations should support the preparation of the Country Strategy Paper/National Indicative Programme and include guidelines or criteria to be used for environmental mainstreaming in subsequent phases of the cycle of operations.

4. Issues to be assessed

The following issues should be assessed using existing sources of information and key stakeholder perspectives. It is not expected that the preparation of the Profile will involve the collection of original environmental data.

(The sub-headings below are the same as the recommended profile format.)

4.1. State of the environment, trends and pressures

This chapter should identify the **state** and **trends** of key environmental resources or components in the country, including (as relevant), but not necessarily limited to:

Themes	Aspects
Land	Soil erosion and degradation Desertification Land use, arable land, losses due to urbanisation or infrastructure building
Water	Water regime Groundwater Water quality
Air quality	Urban air quality Indoor air quality
Forest, vegetation, ecosystems	Forest cover and volume Pastureland State of particular ecosystems (e.g. savannahs, mangroves, coral reefs)
Biodiversity, wildlife	Local status of globally threatened species/habitats Alien invasive species Fish stocks Species with special value
Mineral resources and geology	Mineral resources Geological risks (seismic, volcanic and related risks)
Landscape	Aesthetic and cultural value of landscape
Living conditions in human settlements	Air and water quality Sanitation Slums Health Vulnerability to disasters
Climate trends	Temperature Precipitation Frequency of extreme weather events, natural climate-related disasters

Pressures on the environment explaining the main negative trends should be identified, as well as pressures contributing to global environmental problems, using the following table as a guiding checklist.

Environmental pressure	Possible aspects to consider
Mining, extraction of hydrocarbons	Extraction, processing and transport of minerals and hydrocarbons, and the resulting pollution and waste
Water use and management	Water extraction (surface and groundwater) Wastewater discharges, water treatment Water use
Land use and management	Land use planning including strategic environmental implications
Forest exploitation, hunting, fisheries, biodiversity	Forest product extraction Forest and fisheries management practices Hunting and fishing activities, poaching Use of non-timber forest products Fires

	Introduction of alien species
Livestock	Overgrazing Rangeland management, use of fire, water management Livestock waste and pollution management
Agriculture	Extension of agricultural land Shifting cultivation Intensification Irrigation and water use Pest control Agricultural practices, soil management Agricultural waste and pollution management
Energy supply and use	Sources of energy Supply- and generation-related waste and emissions Energy consumption and associated emissions Energy efficiency
GHG emissions	Emissions of main GHG and sources
Urbanisation, infrastructure and industry	Urban growth and sprawl, urban planning Dams, roads, major infrastructure Polluting industries, tourism
Transport	Transport of goods Transport of people
Waste disposal and management	Waste production Waste management Public behaviour and practices, existing systems Hazardous waste management

As far as possible the **driving forces** influencing these pressures should be identified, such as economic incentives, demographic pressure, access rights to natural resources and land tenure systems.

Environmental trends should be assessed with regard to their social and economic impact, including:

- any decline in economic production or productivity (e.g. agriculture, forestry, fisheries);
- threats to human health;
- human exposure to environmental disasters (e.g. floods, drought);
- conflicts and security issues;
- impact on poverty, differentiated impact on women and men, impact on vulnerable groups (including children and indigenous peoples);
- sustainability of resource use;
- cultural values.

The concluding paragraphs of this section should summarise the main problems identified, described in terms of situations or trends that are undesirable due to their current socio-economic consequences (e.g. falling productivity, health problems, natural risks, social crises, conflicts), their future consequences (e.g. decline in natural resources, cumulative pollution) or their contribution to global environmental problems. The main links between the environment and human development (in its multiple dimensions: income, consumption, health, security, vulnerability …) should be highlighted, possibly in the form of a matrix or 'problem tree'.

As appropriate, the consultant should refer to environmental indicators that could be used for monitoring changes in the studied country. To the extent that data are available, trends in MDG 7[145] indicators should be provided; trends in additional indicators related to country-specific environmental issues can also be provided, as available, to highlight those that are significant.

If appropriate, the information could be organised according to eco-geographical subdivisions with the scale (regional, national, local) of the issues indicated.

[145] See: http://www.undp.org/mdg/.

4.2. Environmental policy, legislation and institutions

A brief description and review should be provided of the main government responses to deal with environmental problems. This section should address the strengths and weaknesses of the following aspects.

Aspects	Examples of issues to consider
Policies[146]	Existence of national policies, strategies and action plans for the environment, including possible National Strategy for Sustainable Development (NSSD) and/or National Environmental Action Plan (NEAP). Policy response to global issues, sustainability issues (depletion of natural resources), and specific environmental issues identified above. Consistency between policies. Policies on gender and environment. Important measures taken by the government to solve environmental concerns and types of policy instruments used for implementation Effectiveness in achieving targets.
Regulatory framework, including Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA) legislation	Ratification status and implementation of Multilateral Environmental Agreements such as those concerning climate change, biodiversity and desertification (with reference to any official plans, programmes, communications or reports issued in the context of these conventions). Adequacy of (current and in preparation) environmental legislation, including land tenure and land reform, access rights to natural resources, management of natural resources, requirements for environmental assessment such as for EIA and SEA, pollution control, development control. Provision and procedures for public participation in environmental issues. Effectiveness of legislation enforcement. Use of other (non-legislative) instruments, e.g. 'green budgeting', environmental fiscal reform and market-based mechanisms, voluntary schemes (e.g. environ-mental management systems, environmental labelling, industry–government agreements). Potential impact of non-environmental legislation.
Institutions with environmental responsibilities	Identity, number and quality of institutions involved in policy making, legislation, planning, environmental protection, monitoring and enforcement. Level of coordination and decentralisation. Strength and capacity of individual institutions. Influence on other institutions. Good governance practices. Capabilities, means, functioning of environmental services. Major NGOs, institutes or other organisations involved in environmental management or policy.
Public participation	Transparency and access to environmental information. Role of NGOs and civil society in environmental decision making. Effective participation. Participation by women and traditionally less represented groups. Access to justice in environmental matters.
Environmental services and infrastructure	Protected areas: number, areas, relevance, effectiveness of protection. Sanitation and waste treatment infrastructure. Disaster risk reduction systems. Emergency response mechanisms.
Environmental monitoring system	Relevance of selected indicators (with reference to MDG7). Measurement of the indicators: periodicity, reliability. Integration in the general development indicators.

4.3. Implications of climate change

The CEP report should include an overall estimation of both vulnerability (identification of vulnerability factors) and capacity to respond to the consequences of climate variability and change.

Policies should be reviewed (e.g. climate-resilient development strategies, national adaptation programmes, low carbon development strategies), together with their institutional components. Sources of information may include National Communications under the United Nations Framework Convention on Climate Change (UNFCCC), and for the least developed countries National

[146] Note that climate-related policies and strategies may be briefly described here but are also covered in more detail in section 4.4.

Adaptation Programmes of Action (NAPAs). Existing national or sub-regional studies on the expected effects of climate change should be considered including proposed responses, which may include technical, policy and institutional components.

This section of the report will highlight the effects of climate change in exacerbating existing pressures or impacts and the linkages between environmental degradation (ecosystem services) and vulnerability, with a focus on the poorest and most exposed social groups. The overall implications of climate change for focal areas of cooperation should be assessed, including any safeguards or need for additional analyses to ensure that investments are adapted to increasing climate variability and predicted climate change effects.

4.4. Integration of environmental and climate change concerns into the main policies and sectors

The assessment should examine the integration of environment and climate change in the overall development policy and in sector policies, particularly those that might be identified for EC support, taking into account the focal areas of the current Country Strategy Paper as well as and any pre-identified options for future cooperation.

This section should examine whether Strategic Environmental Assessments (or similar assessments) are available for the national development strategy or poverty reduction strategy and for the sectors of interest. If such SEAs exist, they should be briefly described including the main recommendations. The main legislation and institutional arrangements and measures of the sector which address environmental issues, especially those identified in section 4.1 above, should be examined.

4.5. EC cooperation with the country from an environmental perspective

This section should briefly review the past and current experience with development cooperation interventions related to environmental and natural resource management including climate change, as well as the steps taken to integrate the environment into other cooperation areas (e.g. SEA or EIA studies conducted in the context of EC-funded programmes/projects). Where information is available, the environmental impacts or potential risks of past or ongoing cooperation should be identified for the benefit of future programmes. The findings and conclusions of existing evaluations/reviews should be summarised.

4.6. Cooperation funded by other donors from an environmental perspective

This section should review the past and current involvement of other donors (in particular EU Member States, but other significant donors should also be included) and their experience in the country, and include a list of recent and planned projects/programmes with an environmental and/or climate-related focus or anticipated impact. Coordination mechanisms between donors and the EC with respect to the environment should be assessed.

5. Conclusions and recommendations

The key aspects of the state and trends of the environment in the country, including policy, regulatory and institutional constraints and challenges, should be identified as clearly as possible. The implications of climate variability and climate change on vulnerability and adaptation strategies should also be included. These key aspects may be presented in a matrix, comparing environmental concerns and the main sectors or policies.

Based on a comprehensive assessment of available information and on consultations with stakeholders, conclusions and recommendations should be formulated on how the Commission and the partner government can best address identified environmental challenges (including climate-related ones) in the Country Strategy Paper, taking into account current cooperation and any pre-identified options for future cooperation. Conclusions and recommendations should feed into the country analysis, response strategy and possibly the identification of focal cooperation sectors[147]. They should address (but not necessarily be limited to) the following aspects:

[147] Taking into account that other factors intervene in the choice of cooperation sectors, including past cooperation areas and the 'division of labour' between development partners in the context of the Paris Declaration.

- Rationale for considering the environment as an area for cooperation, and/or (more frequently) the need to consider safeguards and complementary actions in other areas of cooperation, in order to address environmental constraints and opportunities as appropriate. Measures may include, for example, proposals for institutional strengthening and capacity building (including the enhancement of the regulatory framework and enforcement capacities) particularly in relation to environmentally sensitive sector programmes and budget support programmes. Opportunities may include supporting low-carbon development plans and programmes.
- Recommendations to ensure that environmentally sensitive projects and programmes are adapted to increasing climate variability and the anticipated effects of climate change, and can thus deliver sustained developmental benefits. Information gaps preventing this work from being accomplished should be identified.
- Opportunities for coordination on environmental issues with other donors, seeking to achieve complementarities and synergies in order to more effectively deliver development objectives.
- Proposals for environmentally-relevant indicators to be used in the National Indicative Programme or to be considered during the formulation of cooperation actions. The proposed indicators should be chosen taking account of the availability of data and actual capacity to monitor their evolution. The report should mention whether the proposed indicators are included in the performance assessment framework of national (e.g. poverty reduction strategy) or sectoral strategies/programmes.

Individual recommendations should be clearly articulated and linked to the problems to be solved and grouped according to the sector or institutional stakeholder concerned. The relative priority of the recommendations and an indication of the challenges to their implementation should be given.

Any constraints to preparing the profile resulting from limited information should be described.

6. Work plan

The work plan should include but not necessarily be limited to the following activities:

- Consultations with EC country desk officers and other relevant officials, EU Delegation, the national environmental authority and a selection of national and local authorities, key international donors, plus key national and international civil society actors operating in the environmental field.
- Review of key documents and reports, including (*include here a list of key documents already identified by the EU Delegation)* relevant national documents (e.g. state of the environment reports); previous Country Environmental Profiles and/or Country Environmental Analysis; the current EC Country Strategy Paper(s); evaluation reports; existing environmental assessments of EC-funded projects and/or sector programmes (particularly those related to potential future focal sectors); environmental literature; environmental policies, legislation and regulations; environmental monitoring data; and environmental performance indicators.
- Field visits to sites of key environmental concern and (if possible) the organisation of a national workshop attended by national authorities, development partners, experts and representatives of civil society with the aim of clarifying and validating key environmental concerns.
- On the basis of the outline work plan and time schedule given in these Terms of Reference, a detailed work plan should be proposed.

7. Expertise required

The proposed mission shall be conducted by a team of (typically two) experts who should have the following profile:

- Expert level I or level II with at least 10 years wide experience in environmental issues including institutional aspects; international environmental policies and management; environmental assessment techniques and experience in rapidly assessing information and developing recommendations. He/she would be the team leader.

- Expert level II with 10 years experience and with an environmental background complementary to the team leader.

In addition:

- Previous working experience in the country or the region is requested for at least one team member.
- Experience in undertaking environmental analyses and preparation of development programmes would be an asset.
- Familiarity with Commission guidance on programming, country strategies, project cycle management, policy mix and integration of environmental issues into other policy areas is desirable.
- Experience of participatory planning processes and gender issues would be an advantage.

The experts should have excellent skills in *(specify)* and *(specify)*. (Knowledge of *(specify)* would be an asset.) *(Specify language)* will be the working language; the final report must be presented in *(specify language)*.

8. Reporting

The results of the study should be presented in the Country Environmental Profile in the format given in Section 10 of these ToR. The draft profile, in (*number*) hard copies (double-sided printing) and electronic version (Microsoft Word), should be presented to (*specify*) by (*date*) at the latest. Within (*number*) weeks, comments on the draft report will be received from the relevant authorities and the EC. The consultants will take account of these comments in preparing the final report (maximum 45 pages excluding appendices). The final report in (*language*) and (*number*) copies (double-sided printing) is to be submitted by (*date*).

9. Indicative plan of activities and man-days requirements

	Expert I	Expert II
Desk analysis, including briefing to the team leader in (*place*)	*5*	*2*
Field phase including travel and possible workshop	*20-25*	*20-25*
Report finalisation (draft)	*3*	*2*
Debriefing in (*place*) – not later than (*date*)	*1*	
Final report (*date*)	*1*	*1*
Total days	*30-35*	*25-30*

10. Report format for a Country Environmental Profile

Standard report format for a Country Environmental Profile:

Maximum length (excluding appendices): 45 pages.

The following text appears on the inside front cover of the report:

> This report is financed by the European Commission and is presented by (*name of consultant*) for (*national institution*) and the European Commission. It does not necessarily reflect the opinion of (*national institution*) or the European Commission.

Structure of the report:

1. Summary

The summary should succinctly and clearly present the key issues described in the profile following the order of headings 2 to 6 given below. The summary should not exceed 6 pages.

2. State of the environment, trends and pressures

3. Environmental policy, legislative and institutional framework

3.1. Environmental policy

3.2. Environmental legislation and institutional framework

4. Climate change implications

5. Integration of environmental concerns into the main policies and sectors

6. EU and other donor cooperation with the country from an environmental perspective

7. Conclusions and recommendations

8. Country Strategy Paper environmental annex summary

Comprising the main issues presented in sections 2 to 6 above (excluding section 7) in no more than 4 pages.

9. Technical appendices

I. Environmental maps of the country

II. Reference list of environmental policy documents, statements and action plans, and other relevant technical information.

10. Other appendices

I. Study methodology/work plan (1–2 pages)

II. Consultants' itinerary (1–2 pages)

III. List of persons/organisations consulted with their affiliation and contact details (1–2 pages)

IV. List of participants in workshop (if organised)

V. List of documentation consulted (1–2 pages)

VI. *Curriculum vitae* of the consultants (1 page per person)

VII. Terms of Reference for the Country Environmental Profile

ANNEX 3: Screening for Strategic Environmental Assessment

The Strategic Environmental Assessment (SEA) screening tool is a tool designed to support the preliminary assessment of environmental aspects related to a sector policy/programme and the identification of steps to be taken during the formulation and/or the implementation of a SPSP to address those aspects. SEA screening involves using a screening list and a questionnaire.

It is important that SEA screening and more importantly the SEA study are carried out in close association with the partner government and other cooperation partners, seeking coordination with donors and development partners. Joint SEAs should be supported whenever possible.

Part 1: Screening list and questionnaire

SEA screening list for focal areas

An SEA of sector policies and programmes is particularly appropriate in connection with sector support in environmentally sensitive focal areas. The following areas of cooperation are considered as 'environmentally sensitive'[148]:

- Infrastructure, communications and transport.
- Water and energy.
- Natural resources management (including forestry, fisheries and waste management).
- Rural development, territorial planning, agriculture and food security (including forestry and fisheries).

Other cooperation areas[149] might have significant environmental impacts or be significantly dependent on environmental constraints (including those that result from increasing climate variability and climate change), in which case the need for an SEA should be considered.

SEA screening questionnaire

The SEA questionnaire is composed of two parts: the first looks at possible environmental, constraints, impacts and opportunities related to the sector policy and strategy including climate change risks; the second looks at context and process-related aspects that need to be taken into account when considering the need for an SEA.

[148] There are other 'environmentally sensitive' sectors requiring an SEA, but these are not focal areas in EC cooperation: e.g. urban development; tourism; mining; industry; and telecommunications.
[149] e.g. governance, democracy, human rights and support for economic and institutional reforms; trade and regional integration; social cohesion and employment; human development (including health and education); conflict prevention and fragile States.

SEA screening questionnaire	YES	?	NO
Part I - Possible impacts, constraints and opportunities			
1. Are there any indications at this stage of negative environmental impacts that might be significant and require further study? *The possible environmental impacts of sector policy/programme[150] implementation can be identified using Annex 1 as a guide. The following characteristics can be helpful to provide an idea of the impact's significance: probability, duration, frequency, reversibility, cumulative nature, magnitude and the affected area and/or population.*			
2. Is the sector policy/programme likely to include a large number of Category A or B projects that could interact to produce significant cumulative environmental impacts? *(see Annex 7 Part 1 'Classification of projects')*			
3. Is the sector policy/programme likely to significantly affect valued areas or landscapes with national or international protection status? *e.g. Protected areas, cultural heritage sites*			
4. Is the sector policy/programme likely to significantly affect known vulnerable areas? *e.g. Areas under environmental stress*			
5. Does the sector policy/programme significantly increase the risk of a negative impact on human health or safety? *e.g. Increased vulnerability to natural disasters, significant exposure to hazardous materials*			
6. Are there indications at this stage that the sector policy/programme will have a direct and significant influence on other environmentally sensitive sectors? *e.g. An education programme could target agricultural practices, promoting environmentally damaging practices*			
7. Is the achievement of the sector policy/programme's objectives directly and significantly dependent on the availability of scarce natural resources? *e.g. The achievement of objectives in a rural development programme may be highly dependent on the availability of increasingly scarce water for irrigation*			
8. Are there indications at this stage that the sector policy/programme may contribute to a significant increase in greenhouse gas emissions (relative to the current level of national emissions) or, on the contrary, has the potential to reduce such emissions or fix significant amounts of carbon?			
9. Are there indications at this stage that the sector policy/programme may substantially increase the vulnerability of the population to increasing climate variability and/or the expected effects of climate change? *e.g. Increased vulnerability to natural disasters*			

[150] References to sector policy/programme are meant to include sector policy objectives, sector programmes and individual sector policy instruments as they may be known at the time of the assessment.

SEA screening questionnaire	NO	?	YES
Part II – Context and process			
10. Does analytical work exist that could inform the environmental screening of the sector policy/programme? *The CEP could provide useful information, alongside any SEA or similar assessment that might already be available.*			
11. Do the policy, programme, legal and regulatory framework promote sound environmental management at sector level?			
12. Are partner institutions considering measures to address sector-related environmental concerns and exploit opportunities to contribute to the achievement of environmental and developmental goals?			
13. Do institutional capacities exist to implement those measures?			
14. Are there any local processes to promote harmonisation and alignment (involving multiple stakeholders: partner institutions, donors, development partners, non-governmental organisations and civil society) that may address sector-related environmental concerns?			

Interpreting the answers

If the answer to one or more of the questions under Part I of the screening questionnaire is **YES**, an SEA is in principle recommended. Local context and processes should be taken into account to identify whether action might already be underway or planned to address environmental sustainability concerns.

Should a decision be made not to carry out an SEA, this should be justified in the *summary of SEA screening outcomes* (see below). In this case, issues identified under Part I and II of the screening questionnaire should be considered in the context of the formulation study. The support of the environmental services (in-house or in the country) may be requested to this effect.

Part 2: Summary of SEA screening outcomes

The following information should be provided as an annex to the SPSP Identification Fiche, along with the documentation submitted to the Quality Support Group.

Summary of SEA screening outcomes *(tick as appropriate)*
□ An SEA will be undertaken □ Key environmental aspects will be addressed in the formulation study □ No SEA required, no further action required.
Explain briefly on which basis this decision was reached. If further assessment is to be carried out in the formulation study, briefly describe the main types of aspects that will be the subject of such assessment.

ANNEX 4: Guidance for integrating environmental and climate-related aspects in SPSP formulation studies

This annex provides guidance to address environmental and climate-related issues in the formulation of a Sector Policy Support Programme. Relevant issues should have been identified during the screening process (see Annex 3).

If screening leads to a decision to undertake a dedicated Strategic Environmental Assessment (SEA), no specific effort towards environmental integration is required in the general SPSP formulation study – apart from the requirement, of course, to incorporate the conclusions and recommendations of the SEA in the design of the SPSP.

If no SEA is undertaken, then environmental and climate-related aspects should be addressed as relevant in the formulation study. In this case, the standard ToR for the formulation of SPSPs may have to be enhanced with specific requirements to address identified environment- and climate-related aspects. These requirements may be specified, for instance, in the 'cross-cutting issues' section of the ToR – or in any other place deemed appropriate.

Note that in many cases, adequate integration of environmental and climate-related aspects in formulation work requires the participation of an environmental expert in the formulation team[151].

The checklist below can be used support the identification of issues to be specifically addressed in the formulation study:

Checklist for the identification of environmental and climate-related issues[152]

1. Key environmental issues affecting sector performance

a) Do the problems in the sector have environmental causes, and which are they?

Some weaknesses in sector development or problems to be solved by the sector policy/programme may result from – or be exacerbated by – environmental causes.

e.g. Unhealthy living conditions may affect the productivity of the working force or, in the health sector, the achievement of the overall objectives of the sector programme/policy; climate variability and climate change may exacerbate unemployment problems in rural areas, where many jobs are related to agriculture and food processing.

b) Are sector activities or infrastructure particularly vulnerable to natural disasters or to the effects of increasing climate variability and climate change?

Note that sector-specific guidance in the context of climate change has been developed for key sectors. 'Climate change sector scripts'[153] *identify key potential effects of climate change on sector activities, and propose a range of possible adaptation and mitigation options (the relevance of which to a specific programme must of course be assessed on a case-by-case basis).*

c) Do sector activities depend significantly on the availability of natural resources?

If the sector or the sector programme activities depend on environmental resources (such as water, land, minerals, biodiversity components), it is recommended that the formulation study assesses whether the resources will be sustainably available at a reasonable cost, with the required quality standards. Annex 1 (Section 2 of the boxes) can be used to support this analysis.

[151] To be specified in the section of the ToR on 'expertise required'.
[152] *[When preparing the ToR, some elements may be deleted or specified into more detail, depending on the nature of the programme to be supported, the relevance of the questions to the specific context, and the interest of the national authorities and the EC to investigate some specific issues more thoroughly.]*
[153] Available on EuropeAid's intranet or on: http://www.environment-integration.eu/component/option,com_docman/task,cat_view/gid,109/Itemid,278/lang,en/.

2. Does the sector policy/programme address the environmental issues identified above?

The formulation study should briefly assess whether the sector policy/programme includes adequate responses to the sector–environment linkages identified under Question 1 above and, more specifically, whether:

- it addresses the environmental problems affecting the sector;

  e.g. A programme in the health sector that aims to reduce the incidence of diarrhoea may include actions for increased water quality

- it is adapted to the identified opportunities and constraints, or risks such as environmental disasters and the effects of increasing climate variability and climate change;

  e.g. Infrastructure or human settlements should not be located in flooding areas; disaster risk reduction and emergency response mechanisms may be increasingly necessary

- it includes measures or strategies in order to ensure or enhance resource sustainability.

  e.g. Promotion of improved stoves in order to save wood resources; promotion of water-efficient irrigation schemes

This analysis may suggest recommendations for actions to be included in the SPSP or to be addressed in the policy dialogue with the government.

3. Key environmental pressures or impacts associated with or influenced by the sector

The main environmental pressures or impacts (including greenhouse gas emissions, if they are significant relative to the current level of national emissions) associated with activities in the sector or directly influenced by the sector should be identified. Annex 1 (Section 3 of the boxes), as well as the CEP and the results of the screening process undertaken in the identification phase, can be used to support this analysis.

4. Potential environmental effects of sector policy/programme implementation

a) What environmental consequences are expected from sector policy/programme implementation?

Environmental effects may be direct or indirect. Indirect effects may result from changes in consumptive behaviour, from new incentives to action or inaction, from awareness raising, from the application of new legislation etc.

e.g. A good governance programme may have an impact on illegal logging and timber trade, which will affect the forest environment and, by extension, the country's contribution to greenhouse gas emissions

This analysis is done using the guiding questions **'What changes in behaviours and practices will result from implementing the sector policy/programme?'** and **'What effects is this likely to cause on the environment or on environmental pressures?'** The SEA screening questionnaire (Annex 3) and the checklists in Annex 1 can be used to support this analysis.

For each potential impact associated with an action or programme component, it is important to identify the conditions under which the impact will be produced or will be significant (e.g. due to its duration, irreversibility, etc.). This approach allows the identification of mitigation and/or optimisation measures.

b) How desirable or problematic are these changes?

A brief assessment of these changes should be made taking into account the following criteria:

- effects on the poor and vulnerable groups;
- sustainability and conservation of natural 'capital' or resources;
- consistency with stakeholder concerns;
- consistency with government and EC environmental policies and objectives, including those of the major MEAs;

e.g. A sector policy/programme that promotes polycentric regional development is likely to promote increased travel through commuting, which may conflict with objectives related to the emission of greenhouse gases or the curbing of air pollution from vehicles

- differentiated impact on men and women.

This assessment should lead to the identification of the components and actions in the sector programme that could be enhanced or corrected.

c) Could sector policy/programme implementation directly or indirectly increase vulnerability to climate variability and climate change?

In some cases, measures adopted in the context of a sector policy/programme may lead to increased vulnerability of the population to climate variability and the expected effects of climate change.

e.g. The building of roads and other infrastructure in a coastal area may result in significant migration to this area, and thus end up exposing a larger proportion of the population to sea level rise and coastal storms

5. Opportunities to enhance the environmental performance of the sector

The sector may provide opportunities to enhance the environment, as shown by the examples in Annex 1 (Section 3 in each cooperation area).

e.g. The human development sector (which includes education) may achieve significant positive environmental outcomes by integrating environmental education in school programmes; in productive sectors, different strategic options may lead to significant differences in outcomes in terms of greenhouse gas emissions or carbon fixing

The formulation study may identify opportunities that allow increasing the environmental performance of the sector policy/programme at low cost.

6. What measures are being considered to avoid or mitigate negative consequences and optimise positive effects? Are the institutional capacities and legal framework adequate to address the linkages between the environment and the sector?

The analysis should include a brief assessment of the capacity of the legal and institutional framework to deal with the identified environmental issues and with climate-related vulnerabilities and challenges, as well as the implementation of any measures identified to mitigate negative impacts and optimise positive environmental effects. The analysis will build on the information contained in the CEP and use the following checklist as guidance:

- legal framework *(e.g. regarding environmental standards and assessments)*;

- environmental law enforcement;

- institutional arrangements regarding the response to climate change and environmental integration in the sector: existence of particular programmes or plans, structures, links with other agencies/institutions, level of decentralisation;

- capacities of these institutions to collect and process environmental and climate-related information, and to assess and manage environmental and climate-related risks;

- public participation and role of civil society in environmental decision making and management.

7. Environmental relevance of sector programme performance indicators

Do the sector programme performance indicators reflect adequately the environmental concerns identified above? The analysis should check that the proposed performance indicators are not negatively correlated with environmental performance. Examples of indicators that might be taken into account in focal sectors are provided in Annex 1 (Section 4 of the boxes).

Using the checklist above as a guide, the following elements should be included in the report of the formulation study:

- An assessment of the main environmental risks, constraints and opportunities that may affect the relevance, effectiveness, efficiency, sustainability or developmental impact of the programme.
- An assessment of the sector programme's main potential impacts on the environment (positive and negative ones).
- Where significant environmental and/or climate-related opportunities, risks and constraints are identified, recommendations on possible ways of (better) addressing them in the sector policy/programme as well as in the SPSP supporting them[154].
- Where significant potential impacts on the environment (including climate, in the form of greenhouse gas emissions) are identified, recommendations on possible ways of optimising positive impacts and mitigating negative ones.

Integration of these aspects in the SPSP formulation study should result in concrete recommendations on:

- Issues to be addressed by the EC in its dialogue with the partner government to enhance the sector programme from an environmental point of view.
- Elements to be incorporated in the SPSP to enhance its positive impact or address the identified institutional and legal shortcomings (e.g. support actions for capacity building, technical assistance).
- Possible indicators to be used to monitor the environmental performance of the sector programme and SPSP implementation.

[154] Note that because of the limited resources dedicated to environmental assessment in the context of a formulation study (compared to a dedicated Strategic Environmental Assessment), it is not expected that the recommendations made here have the same depth as those that might be expected from an SEA.

ANNEX 5: Terms of Reference for a Strategic Environmental Assessment

Note: The model Terms of Reference (ToR) provided here are intended for SEAs to be undertaken in connection with the formulation of a sector policy and programme as well as an EC Sector Policy Support Programme. It should be adapted as required depending on the specific context and as a result of the (necessary) consultation of the partner government and of development partners willing to support the exercise. Most elements of these ToR will also be relevant for an SEA undertaken during the implementation of the sector policies and programmes. Indeed, while conceived as an *ex ante* assessment, SEA can also be of value if undertaken in connection with policies and programmes the main elements of which have already been formulated, as long as there is a political will to use SEA findings to improve the sustainability of these policies or programmes.

Explanations or sections to be completed according to individual circumstances are given in *italics*.

ToR for the Strategic Environmental Assessment of (*name of the sector programme*) in (*name of the country)*.

1. Background

A Strategic Environmental Assessment (SEA) is required for the preparation of (*name of the SPSP*) and as support to (*name of the sector programme).*

The major policy/plan/programme documents to consider are (*mention the main documents and their status or stage of preparation).*

(*Mention other pertinent background information, such as key stakeholders, legal requirements, existing Country Environmental Profile).*

(Mention any sector programme alternatives that have been agreed between the EC and the partner government for assessment; if no alternatives have been defined, state this as well).

(*Explain the reasons why an SEA is required and which decisions it might influence*).

2. Objectives

The objective of this SEA is to identify, describe and assess:

- the likely significant effects on the environment of implementing (*name of the sector programme*);
- as well as the most important environmental and natural resource-related constraints bearing on the implementation of this programme;

to be taken into account in its preparation, review or implementation (*delete or change as appropriate*) and in the preparation of the support to be provided by the EC. The SEA will provide decision makers (in the partner country as well as the EC and other donors) with relevant information to assess the environmental challenges and considerations (including climate-related ones) with regard to (*name of the sector programme*) and the envisaged SPSP. This information should help to ensure that environmental concerns are appropriately integrated in the decision-making and implementation processes.

3. Results

The SEA is composed of two parts: a scoping study and an SEA study. The scoping study will define the issues that need to be addressed in the SEA study, considering the specific context in which the

sector programme is being developed and is likely to be implemented. Precise activities and calendar for the SEA study will be determined on the basis of the conclusions of the scoping study.
The SEA scoping study will provide:

- a description of the sector programme concerned and its alternatives;
- a brief description of the institutional and legislative framework of the sector;
- a brief presentation of the relevant environmental policy and objectives in the country (taking into account the information provided in the CEP, including climate-related aspects as appropriate);
- an identification of the key stakeholders and their concerns;
- an identification of the key sector programme-environment interactions (including climate-related aspects);
- a description of the scope of the environmental baseline to be prepared;
- an identification of the impact identification and evaluation methodologies to be used in the SEA study;
- an indication of the time frames, costs and resources needed to carry out the SEA study.

The SEA study will deliver the following results:

- an environmental assessment of the (*name of the sector programme*), taking into account the environment-related risks, constraints and opportunities linked to the programme (including climate- and natural resource-related aspects), the potential environmental impacts of its implementation and its consistency with partner government's and EC's environmental policies and objectives;
- recommendations for SPSP formulation (including performance indicators, use of technical assistance and other aid delivery methods) and for sector programme enhancement.

4. Issues to be studied

4.1. Scoping study

4.1.1 Overview of the sector programme and its institutional and legislative framework

The policy-making and/or planning process relating to the sector under assessment should be presented, including alternative options that may be under discussion. If deemed necessary and with adequate justification, additional options should be suggested for consideration in the SEA study. Where a sector policy/programme already exists, its main features should be described.

The institutional and legislative framework relating to the sector should be described, building on the information already contained in the Country Environmental Profile. Particular attention should be paid to institutions and entities responsible for dealing with environmental aspects involved in the implementation of the sector policy and programme, as well as to the relevant environmental policy and legislation and wider policy framework related to the sector policy and programme.

The links between the policy-making/planning process (i.e. the preparation of the sector policy/programme and/or SPSP) and the SEA must be described, i.e. which outputs of the policy-making/planning process should feed into the SEA process and vice-versa. The specific policy-making/planning decisions and processes that should be influenced by the SEA must be identified, especially aspects of SPSP formulation.

4.1.2 Description of key stakeholders and their concerns

The involvement of stakeholders in the SEA process is a key success factor. Key stakeholders should be identified: key groups and institutions, environmental agencies, non-governmental organisations, representatives of the public and others, including those groups potentially affected by the likely environmental impacts of implementing the sector programme. Particular attention should be paid to involving typically less represented groups such as women, indigenous peoples and minority groups.

Consultants must review records of any national public consultation processes that may have taken place as part of the sector programme preparation process. Based on this review and on additional consultations, they should identify key stakeholders' concerns and values with respect to the sector programme under consideration and propose a stakeholder engagement strategy[155]. This strategy should provide stakeholders an opportunity to influence decisions. If some of the identified stakeholders are not used to being engaged, particularly at the strategic level, and if there are no precedents, it would be important to include an education component in the stakeholder engagement process.

Due to the large geographical areas that may be covered by the sector programme, stakeholder engagement could focus on key stakeholders, especially targeting directly affected and vulnerable groups as well as key stakeholders that may not have been adequately represented in the sector programme preparation. Records must be kept of all consultations and comments received.

4.1.3 Description of key environmental aspects to be addressed in the SEA

On the basis of the policy, institutional and legislative framework analysis, as well as the participation of stakeholders, the key environmental aspects (including climate-related ones) that should be addressed in the SEA study should be identified – that is, the key sector programme–environment interactions that need to be given special consideration and emphasis. Depending on expected impacts on society and the scope of other studies, there is also a need to determine to which extent social impacts should be assessed[156].

4.1.4 Description of the scope of the environmental baseline to be prepared in the SEA study

Also on basis of the information obtained above, the consultants must provide indications on the scope of the environmental baseline needed for the SEA study, ensuring that it will be adequate to examine in more detail the key environmental aspects identified above. This will include a proposal of the geographical units that will need to be addressed. All geographical units identified should be justified.

(The definition of geographical units will be more relevant for more detailed programmes, and less so for national-level policies. Thus this section should be amended to reflect the nature of the sector programme being assessed.)

4.1.5 Recommendations on specific impact identification and evaluation methodologies to be used in the SEA study

Consultants should provide an indication of the impact identification and evaluation methodologies that will be used in the SEA study, with regard to both the sector programme's expected impacts on the environment and the impacts that environmental conditions and natural resource availability may have on the implementation of the programme and achievement of its objectives. Special attention should be given to identifying those environmental interactions that will merit quantitative analyses and those for which qualitative analyses should be carried out.

4.1.6 Indication of the time frames needed to carry out the SEA study

The consultants must assess the time that needs to be allowed for the completion of the SEA study, based on the initial indicative assessment. If at this stage it is considered necessary to integrate other experts with specific skills, this should be proposed for consideration by the EC.

(The EC could give an indication of the maximum budget allocated to the SEA study.)

[155] The stakeholder engagement strategy to be employed should be agreed with the Commission and the partner government before being implemented in order to avoid unnecessary conflicts or raising of expectations.
[156] In this case, impacts on humans should be disaggregated by gender, age, or other relevant social criteria.

4.2. SEA study

The SEA study will be based on the results of the scoping stage (following approval of the scoping study report) and include an environmental baseline study, an identification of environmental and constraints and opportunities, an identification and assessment of the potential environmental impacts, an analysis of performance indicators, an assessment of the institutional capacities to address environmental challenges, and conclusions and recommendations.

4.2.1 Environmental baseline study

A description and appraisal must be made of the current state of the environment, focusing on those key environmental components identified by the scoping study. The trends for, and pressures on, the various environmental components must be identified and a projection must be made of the state of the environment on the short-, medium- and long-term under the assumption of no implementation of the sector programme, taking into account the expected effects of climate change (to the extent they can be predicted with some reliability). External factors must be taken into account, including the influence of other sectoral policies. If the 'no implementation' scenario is unrealistic, the most probable 'business-as-usual' scenario should be selected. The geographical (or mapping) units to be addressed should be described, if relevant.

4.2.2 Identification and evaluation of environment-related risks, constraints and opportunities

The environmental factors that can affect (positively or negatively) the relevance, effectiveness, efficiency and sustainability of the sector programme, including climate[157]- and natural resource-related aspects, should be identified, described and assessed. These factors may include natural resource availability (e.g. water availability for hydropower generation or irrigation), as well as the current and projected effects of climate change. This part of the study should also consider the environmental issues that could potentially be addressed by the assessed programme. The study should assess if the sector programme provides an adequate response to these constraints and opportunities. In particular and as relevant, the study should assess whether the sector programme, in view of identified vulnerabilities, includes an adequate response in terms of adaptation to climate change – or may, on the contrary, lead to an inadequate response ('maladaptation').

4.2.3 Identification and evaluation of impacts

The potential environmental consequences of implementing the sector programme, including the positive or negative contribution to greenhouse gas emissions (if significant relative to national emission levels), must be identified and described for each alternative being studied; their significance should be determined taking into account the characteristics of impacts[158], the views and concerns of stakeholders and the sensitivity of the environment. The potential *cumulative* impacts of the envisaged sector activities should be identified, since they may differ from the sum of individual project impacts. Those impacts which are significant should be assessed in detail taking into account:

- the views and concerns of stakeholders;
- the consistency with international commitments (Multilateral Environmental Agreements);
- the socio-economic consequences (especially on vulnerable groups and ethnic minorities);
- economic externalities;
- compliance with environmental regulations and standards;
- consistency with environmental objectives and policies; and

[157] The DAC ENVIRONET (Network on Environment and Development Cooperation) *Advisory Note on SEA and Adaptation to Climate Change* (2008) (http://www.oecd.org/dataoecd/0/43/42025733.pdf) provides guidance on issues to be addressed to address climate change adaptation within SEA with emphasis on: (i) the identification of gaps in information or capacity to generate and handle information; (ii) institutional capacities and extent and efficacy of systems for monitoring key climate variables and factors that contribute to the vulnerability of natural and human systems; (iii) the assessment of current and potential impacts on development and distribution of impacts over different population groups; (iv) strategies employed to address climate risks and hazards and possible adaptation measures to enhance resilience and improve development outcomes – with particular reference to options that are *robust* to different climate change scenarios (no-regret), climate-resilient policy alternatives and related institutional and regulatory changes.

[158] e.g. duration, probability, magnitude, mitigability, reversibility.

- their implications for sustainable development.

As far as climate change mitigation is concerned, different strategies may lead to different outcomes in terms of greenhouse gas emissions or carbon fixing. If various alternatives are under consideration and involve significant differences in this regard, these differences should be evaluated in the study.

(More information could be provided on how the methodology presented in the scoping study has been used for impact identification and evaluation.)

4.2.4 Identification and evaluation of impacts in terms of vulnerability to climate risks

The direct and indirect impacts of sector programme implementation in terms of increased or reduced vulnerability to climate variability and climate change should be considered as relevant (e.g. the building of new infrastructure in 'climate-sensitive' areas such as coastal zones may lead to population migration to these areas, thus exposing more people to climate risks; on the contrary, sector-wide measures aimed at improving water efficiency may increase the population's resilience to climate change-induced droughts).

4.2.5 Analysis of performance indicators

Performance indicators proposed by the sector programme (or already envisaged by the EC for the SPSP) should be assessed from an environmental perspective, i.e. with regard to their usefulness to identify the environmental effects (positive and negative) of sector programme implementation and to monitor the environmental and climate-related constraints bearing on the programme. Based on this analysis, proposals should be made as appropriate for the improvement of the existing performance assessment framework. Proposals should also be made for the SPSP performance indicators and monitoring system.

The set of indicators may include:

- 'pressure' indicators[159];
- 'state' indicators, for sectors with a direct and major link with key environmental resources (e.g.)[160];
- indicators of other specific issues, such as key institutional weaknesses identified by the SEA[161].

4.2.6 Assessment of the capacities to address environmental and climate-related challenges

The capacity of regulatory institutions to address the identified environmental and climate-related issues, both in terms of adaptation and mitigation, should be assessed.

(Consultants might be requested to incorporate information on budget availability and the medium-term expenditure framework.)

4.2.7 Stakeholder engagement

Stakeholders should be engaged throughout the SEA study according to the stakeholder engagement strategy agreed at the scoping stage.

[159] For example: pesticide use in a given area (e.g. deltamethrin as pour-on for control of the tse-tse fly); hectares of forest cleared for agriculture.
[160] For example: fish stocks for fisheries, soil for agriculture, forest resources for forestry, % of groundwater samples meeting quality standards in the water sector.
[161] For example: number of annual environmental inspections carried out by local authorities in industrial facilities.

4.2.8 Conclusions and recommendations

This chapter will summarise the key environmental issues for the sector involved, including policy and institutional constraints, challenges and main recommendations. Recommendations should be made on how to optimise positive impacts and make the best out of environment- and natural resource-related opportunities, as well as on how to mitigate negative effects, adapt to environmental constraints and manage risks. They should suggest the selection of an alternative (if more than one alternative is envisaged), potential changes in the sector programme design (e.g. adoption of measures to increase adaptive capacity with regard to climate variability and the expected effects of climate change), implementation and monitoring modalities, or cooperation actions.

In view of the preparation of a support programme, recommendations should especially be made to support the overall assessment of the sector programme (referring to the assessment areas described in the EC guidelines for SPSP) as well as for the SPSP formulation.

Recommendations for sector programme enhancement should be distinguished from those for SPSP formulation. The recommendations for sector programme enhancement should be incorporated in the policy dialogue with the partner government.

Recommendations to the EC for SPSP formulation may outline complementary measures to address specific weaknesses in the environmental institutional, legal and policy framework. They should also include proposals for indicators.

The limitations of the SEA and its assumptions should be presented. The recommendations should take into account the views presented by the stakeholders and explain how these were integrated. In the case of concerns that were not integrated in the final recommendations, the reasons thereof should be given.

5. Work plan

The work plan should include but not necessarily be limited to the following activities:

Scoping study

- Fact finding/data collection
- Review of prior public consultations, identification of key stakeholders
- Engagement of stakeholders
- Analysis/preparation of recommendations and scoping report

SEA study

- Fact finding/data collection
- Field trips
- Engagement of stakeholders
- Identification and detailed analysis of the potential environmental impacts and constraints
- Preparation of recommendations to mitigate negative environmental effects, adapt to constraints, optimise positive effects, exploit opportunities, and generally manage and control environmental and climate-related risks
- Preparation of recommendations and draft SEA report
- Preparation of the final SEA report

On the basis of this draft proposal and the time schedule outlined in the ToR, the consultants must provide their detailed work plan.

6. Expertise required

The consulting company must specify the qualifications and experience in environmental assessment of plans, policies and programmes of each specialist to be assigned to the SEA study, as well as their experience in the country and sector concerned.

Knowledge of EC procedures will be an asset.

For each specialist proposed, a *curriculum vitae* must be provided of no more than (*four*) pages setting out the relevant qualifications and experience.

7. Reporting

7.1. Scoping study

The scoping study must be presented in the format given in Appendix 1.

The detailed stakeholder engagement plan must be presented (*two*) weeks after kick-off; (*number*) copies are to be presented to (*names and organisations*) for comments.

The draft scoping report in (*number*) copies (double-sided printing) is to be presented to (*names and organisations*) for comments by (*date*). Comments should be expected by (*date*). The company will take account of those comments in preparing the final scoping report. (*Number*) copies of the final scoping report in (*language*) (double-sided printing) are to be submitted by (*date*).

7.2. SEA study

The Commission will provide feedback on the scoping study no later than (*number*) weeks after its delivery, setting the scope of the SEA study. The SEA study will begin no later than (*number*) weeks after this date.

The conclusions of the study must be presented in the SEA report in the format given in Appendix 2. The underlying analysis is to be presented in appendices to this report.

The draft SEA report in (*number*) copies (double-sided printing) is to be presented to (*names and organisations*) for comments by (*date*). Within (*number*) weeks, comments will received from (*list the authorities*).

The company will take account of these comments in preparing the final report. (*Number*) copies of the final report in (*language*) (double-sided printing) are to be submitted by (*date*).

8. Presentation of the proposal

The proposal must include an understanding of the Terms of Reference and a description of the general approach to the whole SEA in accordance with these ToR, highlighting the following: the proposed methodology for the participation of stakeholders; the proposed approaches for the definition of the environmental baseline; and the proposed methodologies for impact identification and evaluation.

9. Time schedule

(*Insert indicative time schedule*).

The company should respond to this time schedule and indicate in their proposal how they intend to organise the work for this purpose.

10. Appendices

Appendix 1. Standard format for the SEA scoping report

Maximum length of the main report (without appendices): 25 pages.
The following text appears on the inside front cover of the report:

> This report is financed by the European Commission and is presented by the (*name of consultant*) for (*national institution*) and the European Commission. It does not necessarily reflect the opinion of (*national institution*) or the European Commission.

Structure of the report:

1. Executive summary
2. Description of the sector programme under consideration
3. Overview of the policy, institutional and legislation framework
4. Description of key stakeholders and their concerns
5. Description of key environmental aspects to be addressed in the SEA study
6. Description of the scope of the environmental baseline to be prepared in the SEA study
7. Recommendations on specific impact identification and evaluation methodologies to be used in the SEA study
8. Proposal of time frames and resources needed for the SEA study
9. Technical appendices
   - I. Stakeholder engagement methodology
   - II. List of stakeholders engaged or consulted
   - III. Records of stakeholder participation.
   - IV. List of documents consulted

Appendix 2. Standard format for the sector SEA report

The following text appears on the inside front cover of the report:

> This report is financed by the European Commission and is presented by the (*name of consultant*) for (*national institution*) and the European Commission. It does not necessarily reflect the opinion of (*national institution*) or the European Commission.

Maximum length of the main report (without appendices): 100 pages.

Structure of the report:

1. Executive summary
2. Scope
3. Background
   - 3.1 Sector programme justification and purpose
   - 3.2 Alternatives
   - 3.3 Environmental policy, legislative and planning framework
4. Approach and methodology
   - 4.1 General approach
   - 4.2 Geographical or environmental mapping units

4.3 Assumptions, uncertainties and constraints

5. Environmental baseline study

6. Description of the current and expected effects of climate change

7. Identification of environment and climate-related risks, constraints and opportunities

8. Impact identification and evaluation

9. Identification and evaluation of impacts in terms of vulnerability to climate risks

10. Analysis of alternatives

11. Adaptation, mitigation and optimising measures

12. Indicators

13. Institutional capacities

14. Conclusions and recommendations

14.1 General conclusions

14.2 Recommendations for SPSP formulation

14.3 Recommendations for sector programme enhancement

15. Technical appendices

- Maps and other illustrative information not incorporated into the main report
- Other technical information and data, as required
- List of stakeholders consulted/engaged
- Records of stakeholders' participation

16. Other appendices

- Study methodology/work plan (2–4 pages)
- Consultants' itinerary (1–2 pages)
- List of persons/organisations consulted with their affiliation and contact details (1–2 pages)
- Details and main outcomes of the stakeholder engagement strategy
- List of documentation consulted (1–2 pages)
- *Curriculum vitae* of the consultants (1 page per person)
- Terms of Reference for the SEA

ANNEX 6: Integrating the environment in the logical framework approach

The logical framework (or 'logframe') approach includes three major steps where environment should be integrated: problem analysis, strategy analysis and the preparation of the logical framework itself.

1. Problem analysis

Problem analysis includes the identification of problems (unsatisfactory situations) and their graphic representation in a problem tree that shows the cause–effect relationships between individual problems. Existing problems should be identified with stakeholder participation (including those of groups potentially affected by project impacts) for all three dimensions of sustainable development (economic, social and environmental). Though stakeholders often express problems in socio-economic terms from a subjective perspective, equal attention should be paid to environmental problems and to cause–effect relationships.

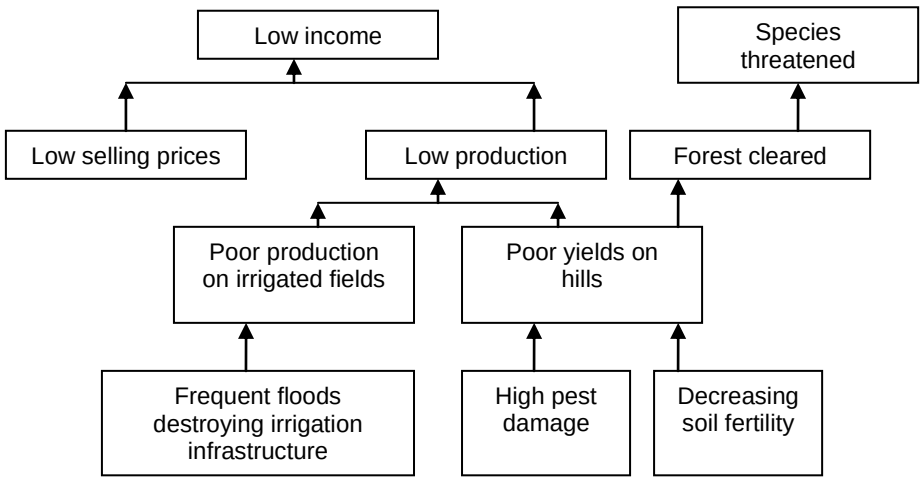
Environmental problems may include:

- Poor environmental conditions affecting the target population (e.g. dependence on unproductive resources or resources that are difficult to access, diseases, vulnerability linked to environmental disasters).
- Current trends which risk compromising the ability to satisfy future needs, or risk creating future difficulties (e.g. increasing climate variability, other undesirable effects of climate change, deforestation, erosion).
- Local contributions to external or global environmental problems (e.g. biodiversity losses, GHG emissions).

Usually the first type of problems described above will appear in the lower part of the problem tree (because they are the causes of local problems) and the other two categories in the upper part (because they are the consequences). Considering the environment at this stage is critical to ensure that subsequent steps – and especially the strategy analysis – will lead to the identification of projects that contribute to sustainable development.

Figure 1 below shows an example of a simple problem tree that integrates environmental problems, including those that have no impact on the main problem. Notice that the environment does not constitute a separate tree and that the term 'environment', which is too vague, is avoided.

Figure 1 – Problem tree including environmental problems



2. Strategy analysis

After the problem tree has been transformed into an objective tree[162], showing an improved situation for all problems, the strategy analysis involves selecting the objectives and expected results that will be part of the project. This selection is usually based on an assessment of both:

- The feasibility of the strategy – depending on external factors (including increasing climate variability and other perceived or anticipated effects of climate change), positive (opportunities) or negative (constraints).
- The desirability of the strategy – which depends on its contribution to the overall development objective(s) but also on side effects, including environmental impacts and possible changes in the vulnerability of populations/ecosystems to increasing climate variability and other effects of climate change.

When a problem tree has incorporated the environmental problems correctly, environmental objectives in the objective tree can be classified in two categories:

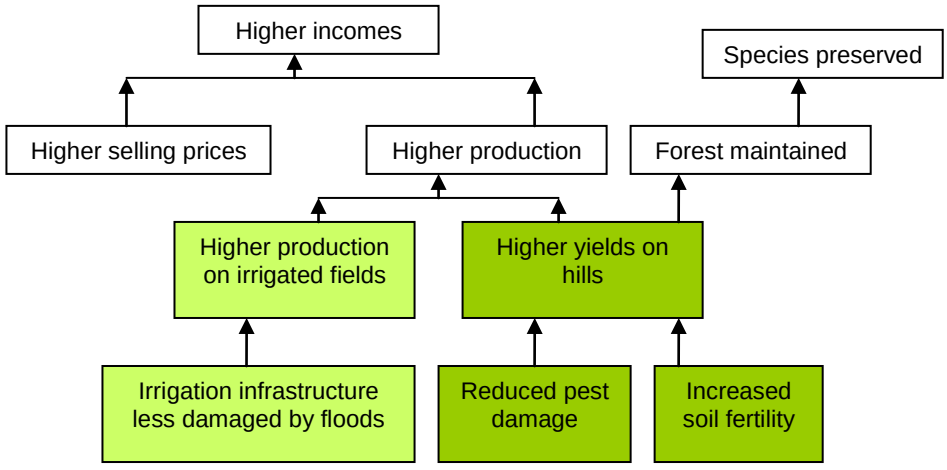
- Some environmental objectives contribute (directly or indirectly) to the overall development objective(s). If this seems possible, these objectives can be selected as the purpose or expected results for the project. If this does not seem feasible, they will be maintained outside of the project and thus will probably remain unachieved, the related problem should then be considered as a constraint to be taken into account in the selection of a strategy.
- Other environmental objectives that do not contribute to the main development objectives. They constitute an additional outcome of a particular strategy and may justify its selection.

As far as possible the strategy analysis should take into consideration the potential environmental 'side effects' (or 'externalities', in economic jargon) of the proposed strategies. These can be either positive (opportunities for improving the environment arising as a 'by-product' of the project) or negative (adverse impacts on the environment), or a mix of both. The assessment of these externalities, and possibly their valuation (if project formulation includes an economic analysis), may influence the choice of the strategy.

Figure 2 below shows an objective tree with two strategies to increase production and income:

- a strategy aimed at increasing yield on hills, which will also contribute to forest and biodiversity conservation; and
- a strategy based on production in irrigated fields, which might suffer from flood damage.

Figure 2 – Objective tree showing two possible strategies



[162] The objective tree is based on the problem tree, each problem (unsatisfactory situation) being replaced with the corresponding improved situation.

In this case, environmental considerations would result in the selection of the first strategy (on the right-hand side of the figure), because of its positive impacts and because of the constraints affecting the alternative. Nevertheless, while designing the project it should be taken into account that some inputs, such as chemicals that can be used to increase yield, may result in adverse environmental impacts.

3. Logical framework

There is no specific box in the logical framework structure to incorporate consequences that are external to the objectives, such as environmental impacts. Ensuring environmental integration in the logical framework is based on the previous steps (problem and strategy analysis) and on using the guidance below for building the logical framework matrix (see also example of logical framework on the last page of this annex).

Table 1 – Structure of the logical framework matrix

	Intervention logic	Objectively verifiable indicators	Sources of verification	Assumptions
Overall objective	a	e	h	
Purpose	b	f	h	k
Results	c	g	h	k
Activities	d	Means: (i)	Costs: (j)	k

a. **Overall objective**: because sustainable development should always be an overall objective (explicit or not), key environmental impacts should be referred to; such impacts should (as all objectives) be stated positively. In our example, if we want to contribute both to higher incomes and to forest conservation, without increasing chemical pollution, these environmental concerns should be stated.

b. **Purpose (or specific objective)**: according to project cycle management rules[163], there should only be one purpose[164], but this allows for incorporating environmental requirements, standards or conditions that will contribute to the overall objective. In our example, the strategy analysis resulted in the selection of 'higher yield on hills' as the purpose and the objective tree shows that this will lead to increased incomes and reduced deforestation rate, but not necessarily to limited chemical pollution: we have thus to revise the purpose, in order to include this environmental concern.

c. **Expected results**: results should always be identified in such a way that they produce the purpose, including its environmental concerns; we may thus revise the wording of the expected results to results to integrate environmental constraints, or add environmental expected results (if they directly contribute to achieving the project purpose). In our example we mention the requirement to limit the use of chemicals, in the form of a constraint bearing on the 'reduced pest damage' expected result.

d. **Activities**: they should be identified in order to reach the stated expected results, without producing negative side effects.

e. **Objectively verifiable indicators (OVI) for the overall objective**: these indicators should usually reflect the state or trends of the environment and are consequently classified as 'state' indicators. They measure the final, usually indirect and delayed impact of the project on the environment as defined in the overall objective. In our example they could include the deforestation rate.

f. **OVI for the purpose**: the environmental concerns incorporated in the statement of this objective should be expressed by the indicators. In our example, the requirement for the

[163] See EC (2004) *Project Cycle Management Guidelines*.
[164] Except in complex projects. As a consequence, the purpose does not have to encompass the three dimensions of sustainable development, but it should be selected from an objective tree combining the three dimensions.

absence of chemical pollution results in the selection of a specific indicator: chemical quality standards for drinking water are met in all wells.

g. **OVI for expected results**: the environmental indicators usually reflect 'pressures' on the environment (instead of final 'state'), this allows for a rapid response in the case of undesirable results. In our example an indicator of the use of chemicals is introduced.

h. **Sources of verification**: there is no specific comment regarding environmental integration; however the lack of available sources may constitute a particular constraint to the identification of environmental OVIs.

i. **Means**: they are based on the activities and expected results, but environmental criteria should be taken into account in the choice of means (e.g. the unnecessary use of 4x4 vehicles should be avoided).

j. **Costs**: they are dependent on the means: no specific comment on environmental integration; note that environmental integration may result in additional costs or in reduced costs.

k. **Assumptions:** they should include uncertain environmental factors, among social, economic or political assumptions. In our example an assumption may be introduced on extreme climatic events.

For further guidance on how to develop indicators, please refer to Annex 10.

In our (fictitious) example, the logical framework would be as follows (see Table 2):

Table 2 – Logical framework matrix for this fictitious example

	Intervention logic	Objectively verifiable indicators	Sources of verification	Assumptions
Overall objective	Higher income, with reduced deforestation and water pollution by chemicals kept within acceptable standards	Average income Deforestation rate Proportion of wells with safe drinking water	Project survey reports Forest service reports	
Purpose	Increased yield on hills (with water pollution control)	Yield (T/ha/year) Number of chemically unpolluted wells	Field survey reports Laboratory analyses	Unchanged market prices
Results	Increased soil fertility Reduced pest damage with limited use of chemicals	Yield (T/ha/year) in fields safe from pest attacks Level of pest attacks Reduction rate in the use of chemicals	Laboratory analyses Field records	No exceptional climatic event *(which increasingly may not be an assumption)*
Activities	Collect local knowledge and adequate technical information on organic farming, pest and soil management Organise participatory research and experiments Organise training sessions, exchange and dissemination	Training and office equipment (incl. buildings) Tools and technical equipment Vehicles (e.g. motorbikes) Staff (2 agricultural engineers, technicians) Operation costs	2 000 000 €	

ANNEX 7: Project environmental screening

This annex describes screening procedures to aid decision making on the requirement for an Environmental Impact Assessment and to guide appropriate responses to climate-related risks and constraints. As well as screening for undesirable effects, the process also provides for the early identification of opportunities. The screening is presented in three parts, with a summary sheet at the end to record the results:

- Part 1: provides a screening list (in appendix) and a questionnaire to determine whether a project requires an Environmental Impact Assessment (EIA) or not.
- Part 2: provides a set of questions to screen the project from a climate risk perspective.
- Part 3: provides a form to summarize the results obtained in Part 1 and 2 to be provided as an annex to the Project Identification Fiche with the documentation submitted to the Quality Support Group.

Part 1: Screening for Environmental Impact Assessment (EIA)

First, please check the EIA screening lists provided in Appendix I to this annex to see to what category (A, B or C) your project belongs. In these lists, projects are categorised on the basis of EC cooperation focal areas.

Please note that:

- If a project cannot be clearly classified as Category A or C, it should be considered as Category B.
- If the project belongs to Category B, a decision must be made on whether or not it will require an EIA. Answering the 'EIA screening questionnaire' below will guide this decision.
- **For all categories of projects (A, B or C), climate risk screening (see Part 2 of this annex) should be undertaken**.

EIA screening questionnaire

This questionnaire provides guidance to decide if a **Category B project** requires an EIA.

STEP 1	**Consider the following questions in order to assess whether the project is likely to have significant impacts.** Reply «? » if you have no clear answer. Tick only one box per question then go to Step 2. Request the support of environmental services/expertise if available.			
		YES	**?**	**NO**
1	Will the project affect a protected area or other areas classified as vulnerable?			
2	Will the project require the acquisition or conversion of significant areas of land that are important for environmental services?			

		YES	?	NO
3	Will the project require (during or after implementation) significant amounts of water, energy, materials or other natural resources? *Note that the availability, productivity or regeneration of these resources may be threatened by the effects of climate change.*			
4	Will the project likely result in the production of significant quantities of wastes? Especially of hazardous or toxic wastes?			
5	Will the project produce significant volumes of effluents or air pollutants, *including greenhouse gases*?			
6	Will the project affect important water bodies or significantly affect water regimes?			
7	Will the project be located in a site where it can significantly affect surface waters or groundwater (in quantity and/or quality)? *Note that this could lead to increased local vulnerability to the possible combined effects of climate change and other pressures.*			
8	Will the project require significant accommodation or service amenities to support the workforce (during or after construction)?			
9	Will the project require significant use of fertilisers, pesticides or other chemicals?			
10	Will the project include the introduction of genetically modified organisms or alien species?			
11	Will the project attract or displace a significant population and economic activities?			
12	Will the project promote new settlements? *Note that these settlements could be located in areas particularly exposed to climate-related natural disasters such as flood-prone areas or coastal areas exposed to sea level rise and related consequences.*			
13	Will the project be located in a densely populated area and likely to produce significant nuisances such as air pollution, noise, vibration and odours?			
14	Is the project likely to cause important soil erosion or degradation, considering its activities and its location on steep slopes or vulnerable soils? *Note that this could lead to increased local vulnerability to the possible combined effects of climate change and other pressures*.			
15	Will the project significantly affect particular ecosystems, such as natural forests, wetlands, coral reefs, mangroves? *Note that this may lead to weakening ecosystems resilience to the effects of climate variability and change*.			

		YES	?	NO
16	Will the project be located in or close to a site of high cultural or scenic value?			

STEP 2	**Have <u>all</u> the right column boxes ("No") been ticked?**	Yes	The project does not require an EIA
		No	Go to Step 3

STEP 3	**At this stage can measures or changes in the project design be identified in order to be able to tick all the right column boxes?** *Consider opportunities to mitigate the project's negative impacts and/or enhance its positive impacts. Note that this may include impacts in terms of greenhouse gas emissions and opportunities with respect to carbon fixing.* *Please also consider project partners' environmental management systems and capacities.*	Yes	The project does not require an EIA but should be adapted
		No	Go to Step 4

STEP 4	Considering the number of ticked boxes in the right and middle column (under Step 1), the scale of the project (how close it is to a typical Category A), and the expected severity of potential negative impacts, **may we consider that addressing these issues in the formulation study will be sufficient?**	Yes	The project does not require an EIA but environmental aspects should be addressed by the formulation study
		No	The project requires an EIA (should be considered as Cat. A)

Part 2: Climate risk screening

The purpose of this screening exercise is to identify potential risks to the project by assessing its exposure and sensitivity as well as response capacities in place to deal with existing and/or anticipated climate variability and change. No detailed scientific assessment is required at this stage.

Please go through the screening questionnaire below.

	PROJECT EXPOSURE	YES	?	NO
1	**Will project activities be located in any of the following types of geographical areas, considered particularly exposed to the effects of climate variability and change?** If yes, select the relevant geographical area(s):			
	• *Arid or semi-arid*			
	• *Tundra*			
	• *Fragile ecosystems including mountainous ecosystems with areas depending on water from glaciers*			
	• *Small island countries*			
	• *Low-lying coastal zones*			
	• *Deltaic areas and flood plains*			
2	**Will the project include activities in at least one of the following areas of cooperation, considered particularly exposed to the effects of climate variability and change?** If yes, select the relevant one(s):			
	• *Environment and sustainable management of natural resources, including forestry and biodiversity*			
	• *Infrastructure and transport, including urban development and waste management*			
	• *Water and energy, including supply and management*			
	• *Rural development, territorial planning, agriculture and food security*			
	• *Disaster risk management*			
	• *Health*			

Direct and indirect effects of climate variability and change that may hinder the implementation of project activities or the achievement of results or objectives can be identified in a more specific manner.

*Examples of possible **changes in climate variables** include:*

- *Extreme weather events, e.g. frequency or severity of droughts, floods, storms, hurricanes.*
- *Temperature anomalies, e.g. changes in mean and extreme temperatures compared with 'normal' patterns, heat spells.*
- *Rainfall pattern anomalies, e.g. changes in the length and intensity of rainfall episodes compared with the usual seasonal patterns, including shifts in dry and rainy seasons.*

*Examples of possible **biophysical impacts** resulting from or exacerbated by altered climate variables include:*

- *Impacts on ecosystems and biodiversity: e.g. loss of habitats, disturbances in ecological conditions of animal and plant species, wildfires, disease and pest outbreaks, spreading of invasive plant and animal species, ocean acidification, bleaching events affecting coral ecosystems.*

- *Impacts on land resources, e.g. landslides, acceleration in desertification and soil erosion processes.*
- *Impacts on coastal areas, e.g. rise in sea level, increased coastal erosion resulting in loss of land (notably on islands), sea surges.*
- *Impacts on freshwater resources: e.g. reduced availability of water, changes in river flows, melting glaciers, salinity intrusions, rapid snowmelt earlier in the spring and summer seasons, decrease in water quality.*
- *Impacts on natural resources and agriculture: e.g. decreases in fish catches, crop yields, forestry yields, in the productivity of livestock breeding activities and fish farming.*

*Biophysical impacts may in turn lead to **socio-economic impacts** affecting local communities and vulnerable groups: e.g. changes in diseases patterns, reduced availability of natural resources and/or loss of assets, population displacement, damage to infrastructure.*

Sources of information on climate vulnerabilities and possible scenarios at country and regional level are available in Appendix II. They provide a description of climate change hazards and constitute basic scientific inputs that can support an initial assessment[165]*.*

Interpreting the initial answers

If the reply to at least one of questions 1-2 is No, please go to the final section of the screening (Part 3).

If the replies to both questions 1–2 is Yes, the project is considered potentially at risk, depending on the degree of exposure of its individual components. For instance, projects spanning multiple sectors, involving several different activities, or implemented in multiple types of geographical areas, may not be exposed to risk in all their components. Furthermore, the level of risk is not only determined by climatic exposure, but also by project design, factors of vulnerability and the risk management capacity of project partners and targeted beneficiaries, as well as the socio-economic context. **Thus questions 3 to 7 below should be answered** to allow an initial appreciation of existing conditions and capacities for risk management, focusing on project design and activities, project partners and project context.

	PROJECT DESIGN (1)	NO	?	YES
3	**Can one reasonably consider that the project will not inadvertently result in barriers to climate risk management?** *Please take into account the direct and indirect implications of both project design and implementation modalities.*			
	Examples of possible barriers include: • *Insufficiently addressed risks and assumptions.* • *Insufficiently developed stakeholders engagement strategy, including vulnerable groups.* • *No planned reviews of risks and assumptions and implementation strategies.* • *No plans in place to ensure access to information and analysis to enable effective risk management.*	*Please explain, if needed.*		

[165] Generic guidance is also available that illustrates the implications of extreme climate variability and change on individual areas of cooperation. – see footnote 71.

	PROJECT DESIGN (2)	NO	?	YES
4	**Can one reasonably consider that the project will not inadvertently result in increased vulnerability of human communities and/or ecosystems to the effects of climate variability and change?** *Please take into account the direct and indirect implications of project activities.*			
	Examples of projects that may increase vulnerability include: • *Infrastructure projects promoting the development of new human settlements in areas particularly exposed to climate-related disasters, such as coastal zones vulnerable to sea level rise, or flood-prone areas.* • *Projects that reduce the availability or accessibility of natural resources (e.g. water) already threatened by climate variability or change.* • *Projects that reduce the availability of ecosystem services (e.g. flood regulation) already threatened by climate variability or change.* *For further guidance on elements that may increase vulnerability, refer to the EIA screening questionnaire (Annex 7, Part 1), questions n° 3, 7, 12, 14 and 15.*	*Please explain, if needed.*		

	PROJECT DESIGN (3)	NO	?	YES
5	**Do the proposed project background documents contain explicit references to climate risks?**			
	For example: • *Problem analysis demonstrates awareness of climate risks.* • *Project description outlines general approach to deal with climate risks.* • *Project description already foresees specific measures to strengthen resilience and reduce vulnerability including by improving knowledge related to climate risks (e.g. capacity building/training/awareness raising, stakeholder engagement) or measures in areas of access to credit and insurance targeting vulnerable groups.* • *Project design already sets aside financial resources to support climate risk management or adaptation measures.*	*Please explain, if needed.*		

	PROJECT PARTNERS	NO	?	YES
6	**Is there evidence that the proposed project partners have the necessary awareness and institutional capacity to address climate risks?**			
	For example, project partners: • *Are building awareness/staff capacities in the area of climate risk management, disaster risk prevention and preparedness.* • *Have established policies and/or plans to deal with climate risks.* • *Have committed resources on implementing those policies and plans (including information gathering, risk management, stakeholder engagement).* • *Have established institutional/organisational arrangements to deal with climate change.*	*Please explain, if needed.*		

	PROJECT CONTEXT	NO	?	YES
7	**Are there any existing/planned risk management programmes or policy instruments that could support the project's climate risk management needs?**			
	For example: • *Disaster prevention and preparedness plans (early warning system, monitoring and analysis) established in the area of intervention and operational .* • *Adaptation projects underway (e.g. NAPA, GCCA).* • *National/regional policy measures / programmes / plans to strengthen resilience and mitigate risks.* • *Financial architecture, such as in the area of access to credit and insurance, targeting vulnerable groups.*	*Please explain, if needed.*		

Analysis of the outcomes and follow-up in the formulation phase

A majority of Yes answers to questions 3-7 can decrease the estimated level of risk, and therefore the extent of additional work required at the formulation stage.

Please indicate the outcome of the screening process in the *summary* below (Part 3, annex to the project Identification Fiche).

Questions 3-7 provide indications on aspects to be addressed/further assessed in the formulation phase and on possible additional measures required, with emphasis on *no regret*[166] measures and measures to address the causes of vulnerability and to strengthen capacities to deal with climate risks. Appendix III to this annex contains examples of types of adaptation measures in relation to main areas of cooperation[167].

[166] '*No regret*' or '*low regret*' measures are measures that turn out to be of benefit no matter how or whether the predicted climate change impacts materialise.

[167] *Information notes ('sector scripts') on climate change and development* are also available that illustrate the implications of climate change on individual areas of cooperation and suggest policy, institutional and technical options that can support *adaptation* and *mitigation* objectives. They concern: agriculture and rural development; education; energy supply; health; infrastructure (including transport); waste management; trade and investment; water supply and sanitation; biodiversity and ecosystems. These notes can be downloaded from the EuropeAid intranet: http://www.cc.cec/dgintranet/europeaid/activities/thematic/e6/index_en.htm.

In the case of a significant confidence of high risks requiring further investigation, a climate risk assessment may be carried out. At this stage, using climate scenarios and downscaled climate models may be useful to enhance the risk assessment and identify the most appropriate adaptation measures, particularly in connection with long-lived investments in infrastructure or land use planning decisions. The option of abandoning high-risk projects may also be considered at this stage if the risk management /adaptation options are not deemed feasible. A number of methods and tools are being developed and tested within the development community which may help project managers making more informed project decisions; a sample of them is presented in Appendix II to this annex.

Part 3: Summary of environmental screening outcomes (annex to the project Identification Fiche)

1. Outcome of EIA screening (Environmental Impact Assessment) *(tick as appropriate)*
□ Category A project: EIA will be undertaken □ Category B project: Environmental aspects will be addressed during formulation □ Category C project: No need for further assessment
Explain briefly on which basis this decision was reached. If further assessment is to be carried out during formulation, briefly describe the main aspects that will be the subject of such assessment.
2. Outcome of climate risk screening *(tick as appropriate)*

□ Project at risk:
  □ Further assessment will be conducted during formulation
  □ Aspects will be addressed as relevant as part of the EIA study (in case an EIA is required)
  □ Consideration will be given to undertaking a detailed climate risk assessment
□ No or low risk: No further consideration of climate-related risks needed

Explain briefly on which basis this decision was reached. If further assessment is to be carried out during formulation, briefly describe the main aspects that will be the subject of such assessment.

Appendix I: EIA screening lists

These lists are mainly derived from information given in the EU EIA Directive[168] and World Bank[169] guidance and should be used in combination with national lists in order to determine whether an EIA is required. Reference can be made to Annexes 1 and 2 in the EU EIA Directive for themes that are not covered here (e.g. industrial projects).

The indicative limits (*) between scale categories (LS: large scale; MS: medium scale; SS: small scale) should be adapted to the local environment and/or may also be defined in the national legislation.

	Category A projects	**Category B projects**	**Category C projects**
	Potentially damaging projects, requiring an EIA	**'Intermediate' projects, which require an EIA if they are likely to have significant environmental impacts *(see screening questionnaire)***	**Non-threatening projects, not generally requiring an EIA**
1. Governance, democracy, human rights and support for economic and institutional reforms			
			Institutional projects
2. Trade and regional integration			
	Regional infrastructure: see 3 below	Management of shared resources	Institutional projects
3. Infrastructure and transport			
Road transport	Construction or paving of roads of 2 or more lanes (10 km or more) (urban or interurban) Widening or realignment of existing roads to 2 or more lanes (10 km or more)	Upgrading or construction of rural roads Construction of roads (< 2 lanes) Widening, realignment or pavement of existing roads (not included in Category A) Bridges	Facilities for pedestrian or non-motorized vehicles New vehicles Road safety
Rail transport	Railway building (10 km or more) (including new large stations)	Rehabilitation	
Water transport and ports	Construction of large ports and waterways (vessels ≥ 1250 T)	Upgrading of large ports and artificial waterways Small ports and waterways (< 1250 T)	Services Safety
Air transport	Airports (runway ≥2100 m)	Airports (runway < 2100 m)	Services Safety
4. Water and energy			
Water	Dams (≥10 Mm^3) LS land drainage (> 500 ha) LS flood protection infrastructure (> 500 ha area to be protected)	LS and MS water supply projects Dams (< 10 Mm^3) MS land drainage MS flood protection MS and SS domestic	

[168] See: http://ec.europa.eu/comm/environment/eia/eia-legalcontext.htm.
[169] World Bank Environmental Source Book and Update, Environmental Screening, Nov 1996.

	Category A projects	Category B projects	Category C projects
	LS wastewater treatment plants (>150 000 population equivalent) Inter-basin transfers (≥100 Mm^3/yr) Groundwater abstraction or artificial groundwater recharge schemes (≥ 100 Mm^3/yr of water abstracted or recharged)	wastewater treatment plants Well boring	
Energy	Laying of pipelines (diameter > 800 mm; length > 40 km) Power lines (≥220 kV and > 15 km) Hydroelectric dams (≥10 Mm^3) Thermal power stations and other combustion installations (≥300 MW)	Laying of pipelines (not included in Category A) Power lines (not included in Category A) Hydroelectric dams (<10 Mm^3) Other generation facilities (< 300 MW) Rural electrification	Energy conservation (including improved stoves)
5. Social cohesion and employment			
			Institutional projects Training
6. Human development			
Education		LS and MS educational facilities (>500* students)	SS facilities Training, schooling, informal education, scholarships, conferences
Health care	LS hospitals and clinics (>500 beds*)	MS hospitals and clinics Vector control activities Medical waste management	SS health centres Training Nutrition Medical supplies Primary health care Immunisation
Population			Family planning Statistics
Social			Social protection Legislation Prevention of crime and drug abuse (except crop destruction) Culture

	Category A projects	Category B projects	Category C projects
7. Rural development, territorial planning, agriculture and food security			
Agriculture	Land clearing, conversion or reclamation (≥ 500* ha)	MS land clearing or conversion or reclamation (50-500 ha) Watershed management Introduction of new crops or new practices Restructuring of rural land holdings Pest control schemes and introduction of agrochemical products	Research and Development (except GMOs, pesticides) Support services Organic farming
Irrigation	LS irrigation (> 500* ha)	MS irrigation (100-500 ha) or SS irrigation in arid zone	
Forest production ***(see also point 8 below)***	LS land conversion or forestation (> 1000* ha) LS Forest management plans (> 10 000* ha)	Introduction of species LS agro-forestry Forest roads Forest management plans (not included under Category A)	Support to producers SS agro-forestry
Livestock	LS intensive rearing (> 750* cattle, 3000 pigs, 900 sows, 60 000 poultry) LS land conversion for range land or pastures (>1000* ha)	MS intensive rearing LS range management (> 500* ha) Pest control (tse tse fly, predators) Fencing Water holes	SS rearing Support services
Fisheries	LS or industrial fleet fishing Aquaculture in mangrove areas Introduction of new alien species	Introduction of new fishing gear or technologies Aquaculture Fishing harbours Introduction of new species	Support services to fishermen, statistics, monitoring and control
8. Environment and sustainable management of natural resources			
Forestry and protected areas	LS land conversion or forestation (> 1000* ha) LS Forest Management Plans (> 10 000* ha)	New protected areas Introduction of alien species Exploitation of new species Forest roads and infrastructure in Protected Areas LS agro-forestry Forest and Protected Areas Management Plans (not included in Cat. A)	Support to producers SS agro-forestry
Waste disposal and treatment	Hazardous waste treatment and disposal facilities	Sewerage systems and wastewater treatment facilities Recycling plants	SS domestic waste treatment Sorting

	Category A projects	Category B projects	Category C projects
	LS domestic waste management (>150 000 population equivalent)	MS domestic waste management Anti-pollution systems	Control and monitoring of pollution, education, awareness raising
9. Conflict prevention and fragile States			
			Institutional projects

Appendix II: Basic sources of information on climate change impacts and adaptation

Sources of information on climate vulnerabilities and possible scenarios are accessible on several websites. They provide a description of climate change hazards and constitute basic scientific input that can support a rapid screening exercise.

1. Intergovernmental Panel on Climate Change (IPCC), WMO-UNEP

The 2007 Fourth Assessment Report (AR4) of the IPCC contains a synthesis report and several working groups reports (WG). They are available on line at: http://www:ipcc.ch.

See in particular:

- The *Synthesis Report*, available in all UN languages.
- *Working Group II Report on Impacts, Adaptation and Vulnerability* which includes thematic chapters on freshwater, ecosystems, food, forest products, coastal systems, and human health; as well as regional chapters on Africa (Chapter 9), Asia (Chapter 10), Latin America (Chapter 13) and Small islands States (Chapter 16).

2. National reports

Under the UNFCCC, all developing countries are required to submit National Communications that include a climate vulnerability and adaptation section; they are available at:
http://unfccc.int/national_reports/non-annex_i_natcom/submitted_natcom/items/653.php.

All Least Developed Countries are required to produce a National Adaptation Programme of Action (NAPA); the reports are available at:
http://unfccc.int/cooperation_support/least_developed_countries_portal/items/4751.php.

3. More detailed sources of information

The information contained in IPCC reports and national documents provides a preliminary orientation about possible regional and national impacts that should be refined with local investigations at project level. A climate change rapid screening should also consider information from sources that are readily available to, and interpretable by EU Delegation staff. For example, reports from national meteorological services, research bodies or key academic papers that can provide good information. In addition, several sources available on line can also provide climate information. For instance:

- The *Climate Change Country Profiles/Adaptation Learning Mechanism platform* (UNDP) provides summaries of initiatives by countries; it also includes details about other adaption programmes/projects. Available on line at: http://www.adaptationlearning.net.

- The *Climate change data portal for development practitioners and policy makers* (World Bank) is intended to provide quick and readily accessible climate and climate-related data; still work in progress, it is already available on line at:
  http://sdwebx.worldbank.org/climateportal/.

Appendix III: Examples of adaptation measures

Adaptation activities can be classified along several dimensions[170]. Here below you will find concrete examples of adaptation measures for the sectors more likely to be affected by climate change in least developed countries and in SIDS. The *Information notes on climate change and development: EC Cooperation: responding to climate change*[171] provide further guidance and examples on possible adaptation measures, alongside options for greenhouse gases emission reductions, that can bring about development benefits.

	Fostering behavioural change	Technological and engineering solutions	Risk management and vulnerability reduction strategies	Research	Capacity building
Fisheries	Diversifying sources of income.	Downscaling fleet size and fishing effort.	Improving mapping and monitoring of fish stocks; adopt ecosystem based approach to fisheries management.	Stepping up research on sustainable aquaculture.	Increase knowledge of climate change impacts at local level, information dissemination, awareness raising, sharing of best practices, and integration of climate change in planning and decision-making.
Coastal zones and marine ecosystems	Promoting settlements and economic activities in less exposed areas.	Building dykes, sea defences and barriers.	Early warning systems; coastal afforestation, restoration of mangroves.	Establishing baselines of mangroves status and trends, using standardized methods, in order to better understand the effects of sea rising on mangroves and reefs.	
Disaster risk reduction, disaster management	Awareness raising on how to respond to warning signals, evacuation,…	Construction of shelters.	Early warning systems.	Improved monitoring and weather forecasts.	
Health	Prevention against malaria in newly exposed population.	Improving the protection of health infrastructure against extreme weather events.	Information systems on climate change related disasters; promotion of healthy environment to reduce breeding grounds for vectors.	Strengthening and developing long-range epidemic forecasting systems.	

[170] In *Weathering the Storm: Options for Framing Adaptation and Development*, the World Resources Institute (2007) for instance classified adaptation along a continuum from activities that address vulnerability – which overlap almost completely with traditional development practice – to highly specialized activities exclusively targeting distinct climate change impacts. The UNFCCC, on the other hand, identifies six categories of adaptation options: behavioural change; technological options; risk management and reduction strategies; promotion of adaptive management strategies; financial schemes; and the promotion of ecosystem management practices.

[171] The information notes cover the following sectors: agriculture and rural development; education; energy supply; health; infrastructure (including transport); solid waste management; trade and investment; water supply and sanitation; biodiversity and ecosystems. They can be downloaded from the EuropeAid intranet: http://www.cc.cec/dgintranet/europeaid/activities/thematic/e6/index_en.htm.

	Fostering behavioural change	Technological and engineering solutions	Risk management and vulnerability reduction strategies	Research	Capacity building
Infrastructure	Raising the awareness of infrastructure managers, both public and private, about climate-related risks and adaptation options.	Enhancing resilience in urban, rural and coastal infrastructure (flood protection dykes, dams, small-scale hydraulic infrastructure).	Adopting appropriate engineering standards and building norms, making new infrastructure more resilient to adverse weather conditions and natural disasters.	Monitoring trends in migrations and population resettlements, so as to anticipate future needs at the time of planning investments in infrastructure.	
Water supply and sanitation	Rainwater harvesting, promoting of water saving techniques.	Adopting new technology for safe water in coastal communities to combat salinity due to sea level rise.	Protection of groundwater recharge areas (e.g. by promoting the kind of vegetation that can maximise water retention and infiltration).	Improving storage capacity by constructing reservoirs at community level.	
Agriculture[172]	Promoting water conservation or soil conservation practices.	New irrigation technologies.	Improving the use of weather forecasts for farmers; insurance to cope with climate risks; creating or strengthening national centres for the conservation and use of diversity in food plant species.	Research on drought, flood and salinity-tolerant varieties of crops.	
Energy supply and use	Promoting the use of improved stoves, energy conservation and renewable energies.	Promoting the use of improved stoves, renewable energies. Introducing new technologies for the use of firewood and for making charcoal.	Promoting better use of weather information and forecasts, as well as information on climate change related disasters; sustainable forest management and biomass production / use.	Supporting R&D for low-carbon, sustainable energy technologies.	

[172] Both agriculture and energy supply and use offer significant opportunities for promoting low-carbon development paths while increasing adaptive capacity.

ANNEX 8: Terms of reference for an Environmental Impact Assessment

Note: This model needs to be adapted according to the specific project. Explanations or sections to be completed according to individual circumstances are given in *italics*.

ToR for the Environmental Assessment of (*name of the project*)

1. Background

[National legislation and] [T][t]he European Commission require[s] an Environmental Impact Assessment (EIA) to be carried out for the formulation of (*state the name/title of the proposed project*). The EIA must examine the potential impacts the project may have on the environment, as well as options for mitigating and/or optimising these impacts.

[Optional[173]] Simultaneously, recognising that the implementation of the project and the achievement of its objectives will also depend on environmental and climate-related risks, constraints and opportunities, it has been decided to also add an assessment of these aspects.

The project is described as follows: (*insert a short description, referring to the current logical framework, to be attached; provide key information, such as objective, rationale for the project, location, duration, technologies to be employed, life-cycle of the project, etc.*)

The following technically feasible alternatives have been identified: (*provide a description of the alternatives already identified*).

Existing information on the project and the environment can be found in (*mention already available studies and information including the results of the identification phase, and indicate where/how these documents may be obtained/consulted).* In addition to this EIA, the following studies are also envisaged (*mention any other studies planned in the formulation phase, including feasibility, economic and financial analyses or social impact assessments*).

(*Mention other pertinent background information, such as potential or known projects envisaged in the same area, key stakeholders, legal requirements and existing SEA in the sector).*

2. Objective

The Environmental Impact Assessment will provide decision makers in the European Commission and the partner country with sufficient information to justify, on environmental grounds, the acceptance, modification or rejection of the project for financing and implementation. It will also provide the basis for guiding subsequent actions, which will ensure that the project is carried out taking into account the environmental issues identified.

3. Results

The EIA is undertaken in two stages: first a scoping study and then the EIA study as such. The scoping study will define the issues that need to be addressed in the EIA study, considering the specific context in which the project will be implemented. The activities, calendar and budget for the EIA study will be determined on the basis of the conclusions of the EIA scoping study.

[173] If not included in the scope of the EIA, environmental and climate-related risks, constraints and opportunities must be addressed, as relevant, in the project's general formulation study.

The **EIA scoping study** will deliver the following results:

- An overview of the project, the applicable legislative and institutional framework.
- An indication of the project alternatives (proposed by the EC or other alternatives) and their variants to be studied.
- A description of the key stakeholders and their concerns.
- A stakeholder engagement plan (to be implemented while the EIA study as such is conducted).
- A description of the key environmental aspects and project-environment interactions that should be addressed in the EIA.
- A description of the geographical area to be considered in the environmental baseline and in the identification of impacts.
- Recommendations on specific impact identification and evaluation methodologies to be used in the EIA.
- *[Optional]* A description of the proposed methodology for identifying and assessing environment-related risks, constraints and opportunities.
- An indication of the time frames, costs and resources needed to carry out the EIA study.

The **EIA study** will deliver the following:

- An identification and assessment of the potential significant environmental impacts of the project in its different alternatives.
- Recommendations, including an Environmental Management Plan (EMP), for the implementation of proposed measures to mitigate negative impacts and optimise positive ones.
- *[Optional]* Recommendations on how to adapt project design (if required) to optimise the exploitation of opportunities, manage risks and operate under the constraints imposed by the natural environment, including climate variability, climate change and the availability or scarcity of natural resources.

4. Issues to be studied

4.1. EIA scoping study

4.1.1 Overview of the project and its alternatives

The consultants must describe the project and major project alternatives, especially those which are significantly different from an environmental perspective (e.g. location alternatives affecting different ecosystems, production alternatives involving sizable differences in GHG emissions and/or carbon fixing). The consultants will also define the constraints to be taken into account in proposing mitigation measures and other changes to the project. They must assess whether variations to the proposed alternatives, or additional alternatives, are worth studying.

4.1.2 Legislative, institutional and planning framework

A description must be made of the institutional and legislative framework relevant to the project and its EIA, including an indication of the key applicable legislation, planning processes (e.g. land use planning), standards and norms that will have to be addressed in the EIA study. Reference should be made to the Country Environmental Profile and to any existing Strategic Environmental Assessment (if relevant).

4.1.3 Description of the key stakeholders and their concerns

The engagement of stakeholders in the EIA process is a key success factor. The consultants should identify key stakeholders (key groups and institutions, environmental agencies, NGOs, representatives of the public and others, including those groups potentially affected by the likely

significant environmental impacts of the project). Particular attention should be paid to typically less represented groups such as women, indigenous peoples and minorities as appropriate. Stakeholders will be engaged in order to identify their concerns and values with respect to the project under consideration. This will contribute to the identification of key project–environment interactions that will need to be addressed in the EIA study. The stakeholder engagement strategy to be employed should be explained in the consultants' proposal and, if necessary, will be revised by the Commission and the partner government before being implemented in order to avoid unnecessary conflicts and raising of expectations.

An effort should be made to involve a wide range of possible interest groups (including local authorities, local and regional NGOs, women, and indigenous peoples) in defining issues to be addressed in the EIA. Records must be kept of all consultations and comments received.

4.1.4 Description of the key environmental aspects and project–environment interactions that should be addressed in the EIA

Particular attention should be paid to the (direct or indirect) impacts that are likely to be the most significant, considering the sensitivity of the environment, the pressures resulting from the project and the expectations of the stakeholders. Based on these considerations and on background information on the local environment as well on other environmental assessments (including SEAs), the consultants should identify environmental issues to be specially considered under the following categories:

- Physical environment, including (micro-) climate, climate variability and climate change, air quality, water resources (surface and groundwater), geology, geomorphology, soil quality and risk of natural disasters.
- Biological conditions: biodiversity (including rare, endangered and endemic biodiversity components), and biological resources of cultural, social, or economic importance.
- Socio-economic conditions: consider the aspects that depend on environmental changes (public health; vulnerability to disasters; vulnerability to increasing climate variability and the expected effects of climate change[174]; access to natural resources and associated conflicts), those that can produce environmental impacts, and, more broadly, the socio-economic conditions that might be affected by the project and are not considered in other studies at the formulation stage[175].

Note that project-related emissions of greenhouse gases are unlikely to be considered 'significant' at the global scale. Nevertheless, at the project scale a project or some project alternatives may offer significant opportunities to reduce emissions, store carbon or implement the principle of a 'climate-neutral development path'. If this is the case, the assessment of such opportunities should be included in the scope of the EIA.

4.1.5 Description of the scope of the environmental baseline

Also on the basis of the information obtained above and on an appreciation of the areas of project influence, the consultants must provide indications on the scope of the environmental baseline needed for the EIA. Distinct geographical units can be proposed according to the type of expected impact (including indirect impacts). All geographical units identified must be justified.

4.1.6 Recommendations on specific impact identification and evaluation methodologies to be used in the EIA

The consultants should provide an indication of the most appropriate impact identification and evaluation methodologies to be used in the EIA. Special attention should be given to those environmental interactions that will merit quantitative analysis and those for which qualitative analyses should be carried out.

[174] The EIA study should assess the extent to which the proposed project may increase or, on the contrary, reduce the population's vulnerability to the effects of climate change. Annex 7 (Part 1) of the guidelines provides examples of this type of indirect impact.
[175] In this case, impacts on humans should be disaggregated according to sex, age, or other relevant social criteria.

4.1.7 [Optional] Proposed methodology for identifying and assessing environmental and climate-related risks, constraints and opportunities

The consultants should provide an indication of the methodology they plan to use to identify and then assess the risks, constraints and opportunities linked to the biophysical environment in which the project will operate, including as relevant the availability or scarcity of natural resources (soils, water, energy, materials, …), increasing climate variability, and (to the extent they can be predicted) the projected effects of climate change.

4.1.8 Indication of the timeframe, costs and resources needed to carry out the EIA

The consultants must assess the time that need to be allowed for the completion of the EIA study, which should include a definition of the environmental baseline, an analysis of alternatives, the identification of impacts, *[optional]* the identification of risks, constraints and opportunities, their evaluation, and the preparation of recommendations (including definition of mitigation/optimisation measures and the Environmental Management Plan).

Practical considerations must be taken into account, such as allowing for the obtaining of samples in different seasons if required.

A description and estimation of the resources required (in terms of budget, person-days) must be provided, including a break-down of costs. If at this stage it is considered necessary to integrate other experts with specific skills, this should be proposed in the scoping report for consideration by the EC.

(The EC could give an indication of the maximum budget allocated to the EIA study.)

4.2. EIA study

The scope of the EIA study will be agreed with the Commission in coordination with the partner government and other international partners, on the basis of the results of the scoping study.

4.2.1 Environmental baseline study

a) Existing environment

The environmental baseline study includes a description of the initial state of the environment in the selected boundaries of the study area, focusing on those aspects that can be influenced by the project. If appropriate, the consultant should also consider those conditions that could influence the efficiency or sustainability of the project. As far as possible, indicators (e.g. environmental quality indices) should be identified for all key environmental variables to be studied and their state (environmental quality) established as a baseline for impact identification and future monitoring. All indicators must be adequately explained and justified. If location alternatives are considered, the study should focus on the differences in the appropriateness and sensitivity of the environment to the pressures resulting from the project.

b) Expected future situation without the project

The consultants should describe the expected trends and situation of environmental variables on the short- medium- and long-term, assuming that the project will not be implemented. This ‘no project’ scenario will be considered as a benchmark for predicting the project’s environmental impacts. Nevertheless if the situation without project seems unrealistic, the most probable alternative should be used as a reference. Assumptions used to predict the future situation and trends should be discussed.

4.2.2 Impact identification and evaluation

The consultants will identify and describe the potential significant environmental impacts of the project alternatives, and evaluate them.

Significant potential environmental impacts (direct and indirect) must be identified, making use of impact identification methodologies proposed by the scoping study. Impact identification should take into consideration factors such as the sensitivity of the environment, the legislative framework, the pressures resulting from the project and the expectations of stakeholders. Impact identification must address the environmental aspects listed in Section 4.1.4 above and identified by the scoping study.

The impact identification should address, but not necessarily be limited to, the following aspects of the project:

- project activities (under construction, operation and decommissioning/abandonment);
- associated activities and structures (e.g. base camps during construction);
- location;
- general layout, size;
- time span of the project;
- means, materials and resources required (e.g. energy and water consumption, hazardous materials);
- polluting discharges and emissions;
- noise and vibration;
- production of odours, luminous emissions;
- solid and hazardous waste production;
- land-take requirements;
- presence of workers;
- access and transport;
- if relevant, effects on the population's vulnerability to increasing climate variability and the expected effects of climate change.

(If the EC, based on the scoping study, has preference for the use of particular methodologies, or would like more attention to be given to specific components, this should be specified and described here.)

The state of the environment resulting in the short, medium and long term from project implementation will be described on the basis of the same indicators or criteria as the baseline study. The impact evaluation must be assessed in comparison with the expected state of the environment under the no-project scenario.

The impacts should be described according to their nature and characteristics (e.g. direct and indirect, temporary or permanent, continuous or intermittent, reversible or irreversible, positive or negative, short- medium- or long-term, their magnitude, their mitigability and compensability, their transboundary nature, accumulation and synergies with other impacts). Impact significance should assigned, taking into account the local context (e.g. sensitivity of the local environment) as well as the views and values of potentially affected groups. Impacts on humans should be disaggregated by sex, age and other relevant social criteria.

Not all impacts need to be quantified. In some circumstances the attempts at quantification may result in meaningless numbers that are of no value to the decision-making process. It is thus important to recognise when a clear description of the impact characteristics and the reasons behind a certain qualification will be more useful (e.g. to propose mitigation measures and base a decision) than attempts to produce less meaningful quantification.

Impacts should be identified for the construction, operation and decommissioning phases of the project, and all associated developments should be taken into account (e.g. power lines associated with a hydroelectric dam, management/disposal of ashes generated by an incinerator, extraction of materials for construction activities).

4.2.3 Measures and recommendations in relation to impacts

Measures must be proposed to enhance positive effects and to eliminate/mitigate/compensate undesired effects. These measures (generally referred to as mitigation measures) must be technically feasible, economically sound and socially acceptable (i.e. they must take into account the views of the main stakeholders). The consultants must seek ways to optimise such measures, such that one mitigation measure does not reduce the effectiveness of another or, worse yet, cause an undesired significant impact itself.

The measures can have several distinct aims:

- Reducing the extent, scale or time-scale of activities that produce negative impacts in favour of less damaging activities or activities producing positive effects.
- Changes in the effects of an activity, without changing the activity itself (for example, adding anti-pollution filters).
- Strengthening the protection of the receiving environment with respect to project impacts or other hazards.
- Rehabilitating or restoring damaged resources.
- Compensating for damage, e.g. by achieving improvements to resources similar to the ones affected.

The residual impacts (i.e. the final environmental impact after the application of the proposed mitigation measures) must be identified and assessed. Based on this assessment the alternatives must be compared and recommendations made on the best alternative. The comparison of alternatives must be summarised in tabular form.

4.2.4 Environmental Management Plan

The Environmental Management Plan (EMP) is a document that identifies the actions needed to implement the EIA recommendations, including environmental monitoring required during the implementation phase of a project. The EMP should clearly translate the recommendations from the EIA into an operational plan.

The EMP of the project should include:

- A table (logical framework type) showing the objectives, expected results, objectively verifiable indicators, activities (mitigation/optimisation measures), and responsibilities for the implementation of those activities.
- Institutional arrangements for its implementation and for environmental monitoring: responsibilities, role of the environmental authorities, participation of stakeholders.
- Suggestions for contracts (environmental clauses: standards, potential requirement to prepare an Environmental Management Plan of the enterprise) and contracting modalities (such as payments linked to results).
- A monitoring and supervision plan (including appropriate indicators, frequency of monitoring, means to gather and analyse the data, reporting system).
- A response plan in case of accidents or unexpected results from the environmental monitoring.
- A proposed schedule for activities (monitoring and mitigation/optimisation measures).
- An indication of means (including personnel, vehicles) and costs of implementing the EMP.

4.2.5 Limitations of the EIA

The consultants should underline all the major limitations, weaknesses and uncertainties of the study. The consultants are required to state any assumptions made in the prediction and assessment of the potential environmental impacts and risks, to highlight areas where information is deficient and to make clear how the assessment of significance has been determined, for example the use of established standards, quality objectives, stakeholder views and professional judgement.

4.2.6 Conclusions on environmental impacts

This section will summarise the key results of the EIA, the recommendations (referring to the draft EMP to be attached) and the assessment of the residual impacts. The consultants are also required to provide any information relevant for further economic and financial analyses or for the general formulation study. The limitations of the EIA and its key assumptions should be articulated.

4.2.7 [Optional] Identification and evaluation of environmental and climate-related risks, constraints and opportunities

The consultants will identify and describe the potentially significant risks, constraints and opportunities associated with the environment in which the project will operate, including (but not necessarily limited to) the following aspects:

- Availability – or scarcity – and quality of the natural resources (e.g. water, land, soils, energy, materials, minerals, plant, animal species, ecosystem services) on which project implementation and the achievement of objectives will depend, taking into account existing pressures, current trends and (to the extent they can be predicted) the projected effects of climate change.
- Exposure to climate-related risks (e.g. resulting from increasing climate variability, expected effects of climate change). This will be done by reviewing relevant national, sub-regional and local studies on the effects of climate variability and climate change, including proposed responses to address those effects by project partners and within the project context as relevant. These responses may include technical, policy and institutional components.
- Exposure to other environmental risks or constraints (e.g. biological conditions, pests, invasive species, wildfires, pollution originating from other human activities outside the scope of the project).
- Exposure to natural disasters, semi-natural disasters and technological accidents, including those that may become more severe or more frequent as a result of climate change.

Although the analysis is likely to point out primarily to risks and constraints, the existence of opportunities associated with the natural environment (e.g. availability of abundant natural resources which if properly used and managed can improve the project's effectiveness, efficiency or sustainability; positive trends resulting from the projected effects of climate change) should also be investigated.

The main environmental and climate-related risks, constraints and opportunities associated with the project must be identified making use of the methodology proposed by the scoping study. In order to determine which of them are 'significant' and may thus require a change in project design or the adoption of specific adaptation measures, it is suggested to characterise and evaluate risks, constraints and opportunities against the following criteria:

- Relevance: are the identified risks, constraints and opportunities somehow relevant to the problems the project aims to address and to its objectives?
- Effectiveness: can the identified risks, constraints and opportunities positively influence the achievement of project results and objectives, or on the contrary jeopardise it?
- Efficiency (i.e. 'value for money' or 'value for resources'): can the identified risks, constraints and opportunities contribute to the production of outputs and results at a 'low' or 'reasonable'

cost in terms of resource use, or on the contrary lead to a disappointing 'ratio' between outputs/results produced and resources employed?

- Sustainability: can the identified risks, constraints and opportunities promote, or on the contrary prevent, the sustainable production of project benefits over the project's planned lifetime, from a financial, economic, environmental and social point of view?
- Impact: can the identified risks, constraints and opportunities contribute to the generation of positive, or on the contrary negative, overall developmental impacts of the project on the wider society in which it operates?

4.2.8 [Optional] Proposed adaptation and risk management measures

Where significant risks, constraints and/or opportunities have emerged from the above evaluation, the consultants should propose measures and formulate recommendations to improve (if necessary) the integration of these factors into project design. Recommendations will take into account any measure already put in place or considered by project partners, as well as their capacity to undertake such measures. Actions may include:

- Measures to strengthen the project's and project partners' adaptive capacity in the face of increasing climate variability and climate change (e.g. building early warning or emergency preparedness and disaster risk reduction mechanisms, diversification of income sources, improved access to financial services including insurance, development of capacities in these areas).
- Measures to control or manage some identified risks (e.g. choice of project location to reduce exposure to natural disasters).
- Measures to improve the project's ability to operate under identified constraints (e.g. choice of most water-efficient or energy-efficient production options).
- Measures to better exploit some opportunities offered by the natural environment (e.g. use of a locally abundant source of renewable energy).

If the proposed adaptation, optimisation or risk management measures involve an additional cost (compared to the options currently considered), the report should include an estimation of these costs. It should also identify who would be in charge of implementing these measures.

4.2.9 [Optional] Limitations of the risk and constraint assessment

The consultants should underline all the major limitations, weaknesses and uncertainties of this part of the study. They are required to highlight areas where information is deficient and to make clear how the assessment of significance has been determined, for example the use of quality objectives, stakeholder views and professional judgement.

4.2.10 [Optional] Conclusions on environmental and climate-related risks, constraints and opportunities

This section will summarise the key results of the second part of the study, the recommendations and a brief description of the residual risks (i.e. those that cannot be controlled or satisfactorily managed within the limited scope of the project). The consultants are also required to provide any information relevant for further economic and financial analysis or for the general formulation study. The limitations of the risk, constraint and opportunity assessment and its key assumptions should be summarised.

5. Work plan

The work plan should include but not necessarily be limited to the following activities:

EIA scoping study

- Fact finding/data collection

- Identification and engagement of stakeholders
- Analysis/preparation of scoping report

EIA study

- Review of documentation (e.g. CEP, relevant existing SEAs, identification and pre-feasibility reports)
- Review of relevant environmental literature, environmental policy and legislation framework (legislation, regulations and standards)
- Field work and analyses, including engagement of stakeholders
- Impact identification and evaluation
- Preparation of mitigation/optimisation measures
- Preparation of the EMP
- Preparation of the final EIA report

On the basis of the proposed work plan and time schedule outlined, the consultants must provide a detailed work plan for the EIA study in their proposal.

6. Expertise required

The proposed mission shall be conducted by a team of (*number*) experts, who should have the following profiles:

- Expert level I or level II with at least 10 years experience in conducting environmental impact assessments. She/He would be the team leader.
- (*Number*) experts level II with (*5*) (*10*) years experience and with a technical background in (specify). (*The number of experts and specialities may be revised or adjusted at a later stage on the basis of the results of the scoping study*).

The team is expected to include experts with local or regional knowledge/expertise. The experts should have excellent skills in (*specify*). (*Specify language*) will be the working language; *the final report must be presented in (specify language).*

For each specialist proposed, a *curriculum vitae* must be provided of no more than (*four*) pages setting out their relevant qualifications and experience.

7. Reporting

7.1. EIA scoping study

The scoping study must be presented in the format given in Appendix 1.

The detailed stakeholder engagement strategy must be presented two weeks after kick-off; (*number*) copies are to be presented to (*names and organisations*) for comments.

The draft scoping report in (*number*) copies (double-sided printing) is to be presented to (*names and organisations*) for comments by (*date*). Comments from the concerned authorities and the Commission should be expected by (*date*). The consultants will take account of these comments in preparing the final scoping report. (*number*) copies of the final scoping report in (*language*) (double-sided printing) are to be submitted by (*date*).

7.2. EIA study

Feedback on the scoping study will be provided no later than (*number*) weeks after its submission, setting the scope of the EIA study. The EIA study will begin no later than (*number*) weeks after this date.

The EIA report must be presented in the format given in Appendix 2. The underlying analyses are to be presented in appendices to this report.

The draft EIA report in (*number*) copies (double-sided printing) is to be presented to (*names and organisations*) for comments by (*date*). Within (*number*) weeks, comments will received from (*list the authorities*).

The consultants will take account of those comments in preparing the final report (maximum…pages excluding appendices). (*Number*) copies of the final report in (*language*) (double-sided printing) are to be submitted by (*date*).

8. Presentation of the proposal

The proposal must include an understanding of the Terms of Reference and a description of the general approach to the whole EIA in accordance with these ToR, highlighting the following: the proposed methodology for the engagement of stakeholders; the proposed approaches for the definition of the environmental baseline; and the proposed methodologies for impact identification and evaluation (including the description of specific tools proposed).

(According to the contracting modality used the EC should indicate the form in which they wish consultants to make their financial proposal, e.g. break-down by categories of costs, as well as indicate the maximum budget for this contract.)

9. Time schedule

(Insert time schedule.)

The consultant should respond to this time schedule and indicate in their proposal how they intend to organise the work for this purpose. The time schedule can be revised according to the results of the scoping study.

10. Appendices

Appendix 1. Standard format for the EIA scoping report

Maximum length of the main report (*without appendices*): 25 pages.

The following text appears on the inside front cover of the report:

> This report is financed by the European Commission and is presented by the (*name of consultant*) for (*national institution*) and the European Commission. It does not necessarily reflect the opinion of (*national institution*) or the European Commission.

Structure of the report

1. Executive summary
2. Description of the project under consideration and its alternatives
3. Applicable environmental legislative and institutional framework
4. Key stakeholders and their concerns
5. Key environmental aspects and project-environment interactions to be addressed in the EIA
6. Scope of the environmental baseline and areas of project influence
7. Recommendations on specific impact identification and evaluation methodologies
8. *[Optional]* Proposed methodology for identifying and assessing environmental and climate-related risks, constraints and opportunities
9. Timeframe and resources needed to carry out the EIA

10. Technical appendices
    I. Stakeholder engagement methodology
    II. List of stakeholders consulted (including contact details)
    III. Records of stakeholder engagement
    IV. List of documents consulted

Appendix 2. Standard format for the EIA report

The following text appears on the inside front cover of the report:

> This report is financed by the European Commission and is presented by the (*name of consultant*) for (*national institution*) and the European Commission. It does not necessarily reflect the opinion of (*national institution*) or the European Commission.

Structure of the report

1. Executive summary
2. Background
    2.1 Project justification and purpose
    2.2 Project location
    2.3 Project description and associated activities
    2.4 Alternatives
    2.5. Environmental policy, legislative and institutional framework
3. Approach and methodology

This chapter must set out the approach and methodology used in the EIA and how the data and information collected has been incorporated in the findings and recommendations.

    3.1 General approach
    3.2 Geographical or mapping units
    3.3 Environmental quality indicators
    3.4 Assumptions, uncertainties and constraints

4. Environmental baseline study
5. Impact identification and evaluation

Cumulative effects and interaction between effects could form additional subject headings to ensure that these aspects are not overlooked. Table and diagrams should be used to summarise and clarify findings in this chapter.

6. Mitigation/optimisation measures and residual impacts
7. Conclusions and recommendations on impact mitigation and optimisation

7.1. Statement of impact

This section must include one of the three 'statements of impact' set out below:

> The alternative(s) (name or number of the concerned alternatives) will not have a significant environmental impact, providing that measures recommended in the EIA are followed through.

or:

> The less damaging alternative(s) identified (name, or number) will have some significant environmental impacts, which cannot be feasibly mitigated. Therefore, it is recommended to identify and assess additional alternatives or to check that the expected social and

economic benefits are sufficiently high in order to justify the project despite its environmental impact.

or:

Each alternative identified will have a significant and unacceptable environmental impact irrespective of proposed mitigation and monitoring measures. Therefore, it is recommended that the project proposal is comprehensively re-worked and alternatives re-assessed.

7.2 Conclusions and recommendations

This section must present a clear statement of the conclusions and recommendations on actions to be taken to ensure that environmental issues are adequately addressed in subsequent project preparation, implementation, monitoring and evaluation phases. These conclusions and recommendations must be complete, yet concisely and clearly formulated, so that this section can be incorporated into the project documentation.

8. *[Optional]* Identification and evaluation of environmental and climate-related risks, constraints and opportunities

9. *[Optional]* Proposed adaptation and risk management measures

10. *[Optional]* Conclusions and recommendations on environmental and climate-related risks, constraints and opportunities

11. Technical appendices

- Input into the logical framework planning matrix of the proposed project design – intervention logic, indicators, assumptions and preconditions
- Maps of the project area and other illustrative information not incorporated into the main report
- Other technical information and data, as required
- Records of stakeholder engagement
- Draft Environmental Management Plan

12. Other appendices

- Study methodology/work plan (2–4 pages)
- Consultants' itinerary (1–2 pages)
- List of stakeholders consulted or engaged (1–2 pages)
- List of documentation consulted (1–2 pages)
- *Curriculum vitae* of the consultants (1 page per person)
- ToR

ANNEX 9: Guidance for integrating environmental and climate-related aspects in project formulation studies

This annex provides guidance to address environmental and climate-related issues during the formulation of a project. Relevant issues should have been identified during the screening process, which may have identified one or a combination of the following:

(a) Likely significant impacts justifying an Environmental Impact Assessment (EIA).

(b) Strong indication that impacts will occur but not sufficient to justify an EIA.

(c) Climate-related risks.

(d) Other related environmental risks and constraints.

(e) Environment-related opportunities.

Depending on the characteristics and context of the particular project, the guidance below should be used to address the relevant issues during the formulation study. Unless a comprehensive EIA (covering not only the project's impacts on the environment, but also environmental and climate-related risks, constraints and opportunities – see Annex 8) is undertaken separately from the general formulation study, the standard ToR for the formulation of projects may have to be enhanced with specific requirements to address identified environment- and climate-related aspects. These requirements may be specified, for instance, in the 'cross-cutting issues (section of the ToR – or in any other place deemed appropriate

Note that in many cases, adequate integration of environmental and climate-related aspects in formulation work requires the participation of an environmental expert in the formulation team[176].

(a) If an environmental impact assessment is required:

Guidance for preparing the ToRs for an EIA is given in Annex 8. The traditional focus of an EIA is the project's impacts on the environment. Its scope may however be extended so that the study also covers the assessment of environmental and climate-related risks, constraints and opportunities.[177]

(b) Environmental impacts, but not sufficiently significant to justify an EIA:

Where specific potential negative or positive impacts are expected but no EIA is undertaken, further investigation should be carried out in the context of the formulation study to identify practical options to modify the project in order to mitigate negative impacts and optimise positive ones. Annex 8, particularly sections 4.2.3 *Measures and recommendations in relation to impacts* and 4.2.4 *Environmental Management Plan*, can be consulted for guidance on responding to impacts.

(c) Climate-related risks:

Where screening identifies these issues as important (projects considered 'at risk'), then the formulation study should include:

- A review of relevant **national or sub-regional studies** on the effects of climate variability and climate change, proposed responses to address those. These responses may include technical, policy and institutional components.

[176] To be specified in the section of the ToR on 'expertise required'.
[177] If for any reason this extension of the scope is not feasible or desirable, the latter aspects (i.e. risks, constraints and opportunities) can be included in the scope of the general formulation study, while the EIA addresses environmental impacts.

- A review of available information on expected climate-related effects relevant to the **context of the project**.
- An assessment of **efforts to address climate variability and climate change** issues, vulnerability and capacity to adapt[178]. This assessment will cover both efforts underway by project partner institutions and stakeholders, and efforts undertaken more generally within the local context relevant to the project.
- A **socially and technically robust assessment** (recognising the constraints imposed by current limitations on agreed methodologies and the availability and reliability of information) **of the climate-related risks to the sustainable achievement of project objectives**. The assessment should address the specific risks and constraints identified during project screening and should either clearly recommend appropriate adaptation options or, if adaptation appears to be impossible or excessively costly, provide a justification for abandoning the project.
- **Adaptation and risk management measures** necessary to ensure the sustainable achievement of the project objectives and measures to minimise vulnerability, with implementation modalities (including possible synergies with efforts underway within the project context) and an estimation of costs.
- In the case of projects that might **build adaptive capacity**, an inventory of relevant project stakeholders who would be able to add specific activities related to climate adaptation (e.g. awareness, education, research, planning and regulation, early warning).

Annex 8, particularly sections 4.2.7 *Identification and evaluation of environmental and climate-related risks, constraints and opportunities* and 4.2.8 *Proposed adaptation and risk management measures*, can be consulted for guidance on evaluating the significance of risks and developing a response.

(d) Other environmental risks and constraints:

Depending on the outcome of the project screening exercise, a range of issues may have been identified under this heading. Depending on the issue, the following points can be used to guide the assessment during the formulation study (unless, of course, they are already included in the EIA):

- **If the project depends on the availability of natural resources,** then it is recommended that the study assesses whether the resources will be sustainably available at reasonable cost and whether the rate of use will not exceed their levels of regeneration (in case of renewable resources), taking into account other pressures on the resource. The risk of conflict with other users should also be taken into account.
- **If the environmental resources required for the project need to meet certain quality criteria,** then the study should assess whether the required quality of environmental resources is and will remain acceptable, taking into account trends and pressures (including the impacts of the project itself).
- **If the project is directly exposed to particular environmental influences,** then the study should assess whether these conditions will permit appropriate project performance, taking into account potential changes caused by the project or by external factors.
- **If the project is vulnerable to natural or environmental disasters,** then the study should ensure that the project design takes these aspects into account, including the specification of the necessary safeguards and protection elements. In these cases there will often be an overlap with climate-related aspects and it is also recommended that the formulation study includes consideration of opportunities to strengthen resilience and adaptive capacity in relation to climate change, with respect to both the communities and institutions concerned.

[178] These are likely to be included in National Communications under the United Nations Framework Convention on Climate Change (UNFCCC) and, for the least developed countries, National Adaptation Programmes of Action (NAPAs).

Annex 8, particularly sections 4.2.7 *Identification and evaluation of environmental and climate-related risks, constraints and opportunities* and 4.2.8 *Proposed adaptation and risk management measures*, can also be consulted for guidance on evaluating the significance of risks and constraints and developing a response.

The project may expose workers and stakeholders to unsafe or unhealthy conditions. These may be from the project itself or from environmental conditions. The following should be assessed:

- Risks associated with the project (e.g. increased exposure to floods or landslides due to clearing of forested areas).
- Health hazards associated with the project (e.g. creation of conditions favourable to the breeding of disease vectors, such as increased surface of stagnant water).
- Exposure to hazardous substances (e.g. certain agrochemicals) introduced by a project.

If such hazards are associated with the project, they should be addressed in the formulation study.

(e) Environment-related opportunities:

Finally, the process of screening, reflection and discussion could have highlighted specific opportunities associated with the environment and natural resources, which if adequately exploited could have a positive influence on the capacity of the project to deliver its objectives. (For instance, a project located in a region with poor connections to the power grid but a sizeable potential for sun power generation could benefit, in terms of effectiveness and impact, from the installation of photovoltaic panels.) In these cases, during formulation further investigation could be made into the possibilities of concretely exploiting such opportunities.

ANNEX 10: Indicators

General

Indicators are variables used to measure the achievement of an objective. In addition to the identification of adequate variables, it is important to define target levels (or states of the variable) in order to assess to what extent the objective has been reached.

Indicators are also helpful in defining in concrete terms what the objective really means. This is particularly true for the environment where vague terms like 'biodiversity', 'natural resources', 'sustainable development' or 'the environment' itself are often used in the formulation of an objective, which limits the understanding of what exactly is behind this objective.

From an environmental perspective it is important both to select adequate environmental indicators and also to **influence the selection of non-environmental indicators**, which otherwise can introduce the risk of encouraging environmentally damaging trends. For instance, if we want to promote transport, traffic (number of vehicles/day) – which is a direct source of pollution - will be less appropriate as an indicator than the number of passengers or the reduction of transport costs. Mixed indicators can also be incorporated, such as energy efficiency in transport. Environmental mainstreaming in a table of indicators is thus more than adding environmental indicators. This is particularly important since it is usually **recommended to limit** the number of monitored indicators.

Classification of indicators

Indicators are usually classified according to their level: input indicators (which measure the resources provided), output indicators (direct results), outcome indicators (benefits for the target group) and impact indicators (long-term consequences).

Independently from the environmental nature of the indicators, the hierarchy between these levels should always be maintained, especially when the inputs or the outputs are a source of environmental impact. For instance, when roads are built (outputs) to allow farmers to sell more and at a higher price (outcome), we should never measure the outcome in terms of 'number of km of road' because this is reflecting a cost, including an environmental cost. Similarly, if we want to protect biodiversity (impact), we should be aware that the area covered by the network of protected areas (MDG 7, target 7.B, indicator 7.6) measures only an institutional input and implies costs that are not necessarily compensated by a positive impact on biodiversity. This is a general rule but it is particularly important for environmental integration because environmental costs are frequently associated with low-level objectives.

Environmental indicators can also be classified according to another system: the DPSIR[179] (Driving forces - Pressure – State – Impact – Response):

- 'Driving forces' relates to drivers, such as population growth, markets, education.
- 'Pressure' refers to the human activities generating impacts, e.g. fishing, logging, emission of pollutants.
- 'State' refers to the situation and trends of environmental resources or parameters, e.g. forest cover or deforestation rate, water quality.
- 'Impacts' refers to the consequences for human beings[180], ecosystems and man-made capital.
- Response refers to the measures taken in order to address environmental issues, e.g. establishing protected areas, preparing new laws.

[179] DPSIR is the causal framework for describing the interactions between society and the environment adopted by the European Environment Agency: driving forces, pressures, states, impacts, responses (extension of the PSR model developed by the OECD). See: http://themes.eea.europa.eu/indicators.
[180] Social indicators should be as far as possible gender-differentiated.

It is important not to mix these classification systems (notably in assessments like the Country Environmental Profile). In logical framework approaches (for NIPs, GBS, SPSPs or projects) the input–output–outcome–impact system is the most adequate.

SMART indicators

Indicators should wherever possible be SMART, that is Specific, Measurable, Accurate, Realistic and Timely. This requirement to be SMART should be understood as follows:

Specific

The indicator should have a strong correlation with the objective that we want to achieve; this means for instance that broad, composite indexes such as the Ecological Footprint[181] or the Environmental Sustainability Index[182] should not be used to monitor the performance of specific sector policies or programmes; or, to give another example, that if we are concerned with following the evolution of fish stocks, we should not monitor the fish catch only, since high fish catches may reflect a high fishing pressure as well as a recovery of fish stocks.

Measurable

The measurement unit or, in case of a ratio, both the numerator and the denominator are to be defined; two different persons measuring the same indicator should find the same result (the indicators are 'objectively verifiable' as specified in project cycle management terminology); the data should be accessible with sources of verification in the logframe. Because environment is a very complex area, defining measurable environmental indicators requires particular attention; for instance, if we want to improve water quality, we have to identify what the quality criteria are, and how to measure them, which units to use, etc.

Accurate

The indicator should be calculated on the basis of reasonably reliable data, obtained by means of adequate sampling approaches, avoiding excessive bias or statistical error.

Realistic

It should be possible to collect the data with available resources, based on the principle of 'proportionate analysis'; when we want to conserve forest biodiversity, for instance, we cannot envisage a census of all species living in the area but we have to identify species or 'objects' (like elephant dung) that are easily detectable; relative census methods should usually be preferred, since they are more cost-effective and usually sufficient to track changes in time.

Timely

To monitor changes it is important to select the indicators according to the time-lag between the action and the expected change; when we monitor environmental impacts, we should be aware that the change should be noticed before it is already too late to adapt the intervention; for this reason it is important not to rely on (a) old data; (b) indicators that, having been developed for comparing countries (such as the ESI) or situations, are not suitable for monitoring changes; (c) variables influenced by long-term impacts; (d) variables that are deeply affected by uncontrolled short term changes hiding the expected long-term changes. For sustainable development, a major challenge is to find timely indicators that indicate current progress towards long-term or future improvements: these indicators include indicators of 'capital' or 'stock' (e.g. of natural resources) and, from an economic perspective, the genuine saving rates (adjusted net saving[183]).

[181] See: Global Footprint Network (http://www.footprintnetwork.org/) and WWF (www.wwf.org).
[182] See: http://www.yale.edu/esi/a_methodology.pdf.
[183] See: http://go.worldbank.org/EPMTVTZOM0.

Specific environmental indicators

Specific environmental indicators are provided and monitored (in Europe) by the European Environmental Agency[184]. Helpful guidance is also provided by OECD[185]. In development cooperation special attention should be paid to the **MDG 7** ('Ensure environmental sustainability') indicators, which are presented and commented in the Table below.[186]

Targets and indicators	Category I–O–O–I	Category D–P–S–I–R	Comment
Target 7.A: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources			
7.1. Proportion of land area covered by forest	Outcome	State	The expected 'optimal' level can only be assessed on a case-by-case basis: forests should not always or by definition be considered as better than other land covers.
7.2. CO_2 emissions, total, per capita and per $1 GDP (PPP)	Output	Pressure	The denominator can be divided by a development index. No target level is defined.
7.3 Consumption of ozone-depleting substances	Output	Pressure	Idem.
7.4. Proportion of fish stocks within safe biological limits	Outcome	State	Requires reliable information on total stock and definition of 'safe'.
7.5. Proportion of total water resources used	Output	State & pressure	
Target 7.B: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss			
7.6. Proportion of terrestrial and marine areas protected	Input	Response	This input indicator should be used in conjunction with (outcome or impact) indicators or with indicators of effectiveness. There is no target level.
7.7. Proportion of species threatened with extinction	Outcome	State	
Target 7.C: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation			
7.8. Proportion of population using an improved drinking water source	Outcome	State	Outcome indicator, more social than environmental.
7.9. Proportion of population using an improved sanitation facility	Outcome	State	Outcome indicator, more social than environmental.

[184] See: http://themes.eea.europa.eu/indicators.
[185] OECD (2004) *OECD Key Environmental Indicators*, OECD Environment Directorate: Paris.
[186] Based on new official list of MDG indicators after the 2007 revision, United Nations, available from http://mdgs.un.org/unsd/mdg/Host.aspx?Content=Indicators/OfficialList.htm.

Targets and indicators	Category I–O–O–I	Category D–P–S–I–R	Comment
Target 7.D: By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers			
7.10. Proportion of urban population living in slums	Outcome	State	Outcome indicator, more social than environmental

Nevertheless, the selection of indicators for EC development cooperation should be made on a case-by-case basis, according to the particular environmental issues of the country (and sector), the availability of timely and accurate data and the cooperation focal areas. Annex 1 suggests indicators in specific cooperation areas. For sustainable development indicators, see also:

http://www.un.org/esa/sustdev/publications/indisd-mg2001.pdf.

ANNEX 11: Climate Risk Assessment

1. 1 Introduction

The main purpose of a Climate Risk Assessment (CRA) is to identify and describe in detail risks related to climate change that may affect the success of a development intervention, to develop appropriate responses.

CRA is increasingly important in development planning, as development agencies, governments and other bodies concerned with development seek to integrate considerations of climate change into their work. Nonetheless, CRA is a relatively new concept and methodologies are still being developed and refined. This annex is included in the new version of the Guidelines (2011) to provide additional information on CRA together with some supporting references. A further new annex (Annex 12) in the 2011 guidelines addresses the development of Terms of Reference (ToR) for a CRA.

CRA encompasses a variety of tools, methods and approaches designed to aid in the identification and assessment of potential climate change-related risks that may be associated with a development initiative. CRA also helps those developing and implementing such initiatives to address these risks through the incorporation of adaptation measures and measures to increase resilience. In principle, CRA may be applied to projects, Sector Policy Support Programmes, and other activities such as strategic planning and even Budget Support. The guidance given in this annex is general, and may be used to complement the existing integration guidance with respect to projects or other activities as appropriate.

CRA represents an important step in the process of integrating or mainstreaming climate change into development. The relationship of CRA to the wider mainstreaming process is illustrated in Figure 1, and the stages in this process as they relate to CRA are described in more detail below. Table 1 specifies who will undertake the work associated with the steps of the mainstreaming process outlined in Figure 1 for the project context.

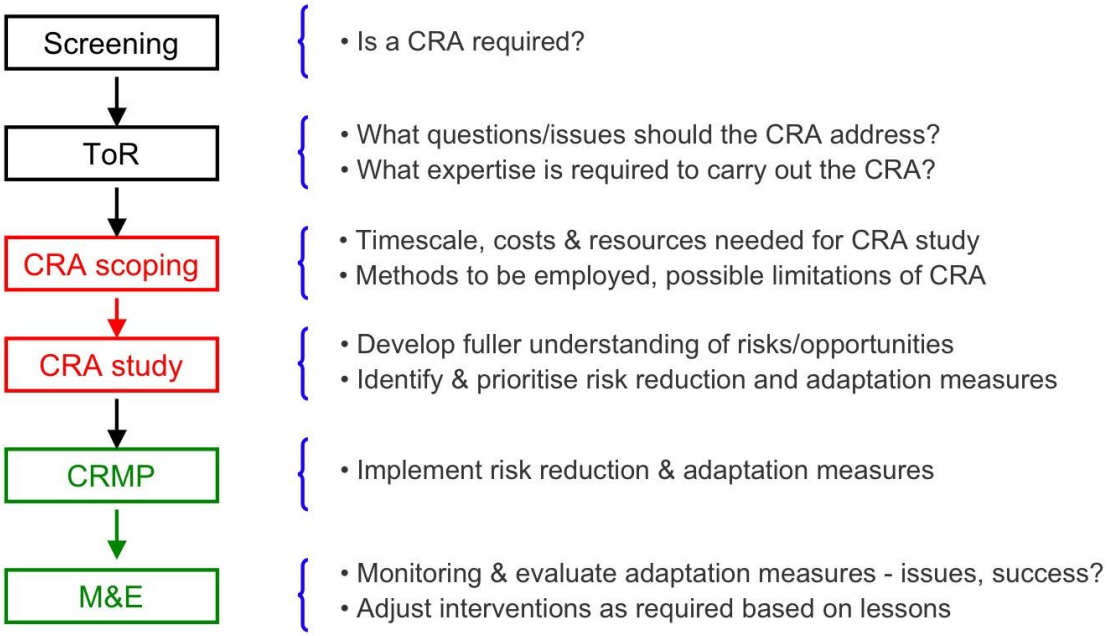


Figure 1. Main steps in the process of integrating climate change into development from a project perspective. Outputs from a CRA study include a Climate Risk Management Plan (CRMP) and Monitoring and Evaluation (M&E) frameworks.

Table 1. Practicalities of climate change mainstreaming in the project context.

	Conducted by	Content	Sources of information
Screening	Project team	Does project require a CRA?	Annex 7 of Integration Guidelines, project documentation
ToR	Project team	Parameters for CRA	Annex 11 & 12 of Integration Guidelines, CEP, other country climate-related information (e.g. NAPAs)
CRA Scoping	External specialists	Baseline information on hazards, vulnerability & risks, possible further refinement of CRA parameters	Project documentation, CEP, NAPAs, IPCC reports, other climate information (see Appendix I), expert judgment,
CRA Study	External specialists	Detailed analysis of risks, including characterisation of potential future hazards, key vulnerabilities, adaptive capacity, potential risk outcomes, responses (CRMP)	Specialist reports, academic literature, bespoke analyses (e.g. vulnerability assessments), climate models, impacts models, expert judgment, etc
CRMP	External specialists	Output of CRA: risk reduction measures, opportunities, M&E plan	NAPAs, consultations, scenario planning exercises, stakeholders, expert judgment, other adaptation resources
M&E	Project team & partners	Based on M&R plan described in CRMP and refined by project team with project partners. Evaluation of success of risk reduction and adaptation measures, tracking of vulnerability and development outcomes.	Driven by desired development & adaptation outcomes, tailored indicators relevant to risks, outcomes & local contexts

2. Climate risk screening

Screening of a project determines whether or not a CRA is required. The questions addressed during the screening process will also allow those performing the screening to identify some of the key aspects of any potential climate risks (e.g. whether these are associated with geographical location, the nature of the project, the timescales involved, or potential impacts on vulnerability).

Climate risk screening ► Annex 7

Where screening results in the classification of a project as Category 1, all the steps in Figure 1 will be followed. Where screening results in a classification of Category 2 or 3, the formal CRA process does not need to be followed. However, where such projects will benefit from some consideration of residual climate-related risks that do not require a full CRA, the principles of CRA as described in this Annex might nonetheless offer some useful guidance to addressing these risks.

3. Development of ToR for a CRA

A project classified as Category 1 in the climate risk screening process will require a CRA. For such projects, the next step in the mainstreaming process will be the development of ToR for the CRA. The ToR will be drawn up by the project development/management team, and will specify what elements of hazard, vulnerability and risk will be addressed in the CRA, and what tools, methods, approaches and information (including climate data) might be employed in the CRA. The ToR will specify the time

and resources to be devoted to the CRA, and what the outputs of the CRA will be. In order to draw up the ToR, those responsible for the project will need to have some understanding of the nature of the climate-related risks to be addressed. However, project developers/managers are not expected to possess any specialist climate change knowledge, meaning that the ToR should be sufficiently flexible to accommodate modifications based on feedback from those submitting proposals for the CRA.

Guidance on developing ToR for a CRA ► Annex 12

4. CRA Scoping study

The CRA, which will be carried out by external specialists, will begin with a scoping study, which will summarise the project, identify key stakeholders, and describe the hazards, vulnerabilities and resulting risks to be assessed in the full CRA study, based on information on current and future hazards and risks already available in key sources of climate information such as IPCC reports, NAPAs, National Communications and other sources (see Appendix I). The scoping study will also specify what approaches, tools and methods (see Appendix II) are to be employed to assess key aspects of risk and vulnerability and key knowledge gaps. The types of risk reduction or adaptation measures to be assessed may be broadly identified during the scoping study, and monitoring and evaluation (M&E) mechanisms proposed. The scoping study may further define the limitations of the CRA based on a further investigation of data availability and the availability of other key resources (e.g. access to climate or impact models), although there will have been discussion about these issues already during the bidding/contracting process, based on the original ToR.

5. CRA study

The CRA study will execute the analyses proposed in the scoping study, which should address the following five type of climate-related risk, as far as these are relevant to the intervention in question:

1. Climate change-related risks to project **outputs**, including risks to the successful implementation of a project or its components. For example, the implementation of a project may be disrupted by the occurrence of climate extremes that are more frequent or severe than anticipated.
2. Climate change-related risks to project **outcomes**, due to confounding factors related to climatic variability and change that mean project results are not realised, or are offset or undermined, meaning that intended outcomes are not achieved. An example is increased poverty due to climate-related crop losses or higher food prices, offsetting other poverty reduction measures, or increased water stress due to lower rainfall and higher temperatures, that offset gains due to improved water use efficiency.
3. Risks that a project may inadvertently increase the **vulnerability** of certain populations or sections of society, for example marginalized groups dependent on climate-sensitive natural resources. An example might be agricultural expansion that encroaches on pastoral grazing lands used in drought years, where drought is becoming more frequent, meaning that pastoralists lose a crucial means of coping with intensifying climate hazards (see box 4 in Chapter 2 of the Guidelines for more information on this specific example).
4. Risks that project environmental impacts might combine with **stresses** on natural systems resulting from climate change, with project impacts acting as a "stress multiplier"[187]. If the effects of climate change on such systems are neglected, the environmental impacts of the project might be underestimated. An example might be coastal construction that inhibits the potential for the inland shifts of coastal ecosystems as sea levels rise.
5. Risks that a project may result in wider societal **maladaptation**, for example by creating or increasing dependence on resources that are threatened by, and whose exploitation may be unsustainable under, climate change. This might involve the expansion of agriculture into areas that are currently productive but in which agriculture could collapse under projected

[187] Where a project is likely to increase stress on natural systems already vulnerable to climate change, this issue might be addressed as part of an environmental impact assessment (EIA). However, if an EIA is not being carried out, this might be addressed as part of a CRA.

declines in rainfall, or the expansion of irrigation in an area where water stress is projected to increase significantly, making irrigation unsustainable.

The risks to a development initiative will be mediated by

i. the hazards operating in the geographic location in which the initiative is implemented, and over the period associated with both implementation and the longer-term outcomes (i.e. intended benefits) of the initiative
ii. the vulnerability to these hazards of the activities, systems, outcomes, and populations associated with, benefiting from, or otherwise affected by, the initiative CRA therefore will often involve
iii. the capacity of the systems and populations associated with or affected by the initiative to respond and adapt to evolving climate hazards.

For these reasons, a CRA will generally involve assessments of hazards, vulnerability and adaptive capacity, as relevant to the development initiative in question. Such assessments may draw on a variety of tools, methods and approaches, which are described in Appendix II of this Annex.

CRA also provides an entry point for the identification and assessment of opportunities for promoting climate resilience, adaptation and low-carbon development (see Box 2.5 in Chapter 2).

6 Risk management and adaptation: the Climate Risk Management Plan

As well as a characterisation of climate-related risks and opportunities, the output of a CRA will include a Climate Risk Management Plan (CRMP) detailing how risks will be addressed and what adaptation measures will be pursued.

Addressing climate-related risks involves an extremely wide range of measures and practices that vary across contexts. Climate-related risks can be reduced by reducing the vulnerability of the populations or systems exposed to climate hazards, and this might be achieved using a number of very general measures that are applicable in different contexts. These measures include livelihood diversification, other risk spreading measures such as insurance, and the use of seasonal forecasts and early warning systems. More targeted adaptation measures (see Appendix III) may also be employed, such as moving or upgrading infrastructure to address intensified extremes or increased exposure (e.g. due to sea-level rise), or the introduction of new crop types in response to changes in temperature, rainfall or growing seasons. Adaptation and climate risk reduction may be promoted more generally through interventions to build “adaptive capacity”, including awareness raising, training, improved access to key resources including information, policy dialogues, and the development of adaptation, risk management, climate mainstreaming/integration and monitoring and evaluation (M&E) frameworks.

While development agencies and governments are currently supporting a large number of projects and initiatives labelled as adaptation interventions, many (and arguably most) of these are focused on generalised vulnerability reduction and capacity building aimed at reducing risks associated with current climate variability, based on past experiences of risk. While climate change is often invoked as a justification for such interventions, and while climate variability is already evolving as a result of climate change, these interventions generally address problems/risks that are as much to do with current (and often unsustainable) development practices and their inadequacy in addressing existing risks as they are with changing climatic conditions. The inadequacy or lack of “resilience” of current development practices in the face of current climate variability has been referred to as the “adaptation deficit”.

Addressing this adaptation deficit, which is the focus of most current “adaptation” projects, is a legitimate adaptation activity. However, while such an approach is important for addressing current climate-related risks to development, it will not necessarily be sufficient for addressing longer-term risks associated with climate change, especially where climate change may make current practices and patterns of development (including settlement, infrastructure location and function, agriculture and other economic and livelihood activities) unviable in the future.

A second approach to adaptation involves identifying how risks may intensify in the future as a result of increases in the frequency or severity of current climate hazards, and “climate proofing” existing

(i.e. "business-as-usual") development practices and infrastructure through additional measures and spending. This approach assumes that "business-as-usual" development can be maintained through adaptation measures that "protect" development from climate change impacts or reduce risks and impacts to an acceptable level.

While climate proofing may be sufficient to address climate change in some instances, there are likely to be circumstances under which existing or planned "business-as-usual" development is not viable or sustainable as a result of climate change. In such circumstances development strategies and policies may need to be rethought along completely new lines, for example involving significant restructuring of regional or national economies as certain key economic activities become less viable and others become more appropriate under climate change. Such "transformational" approaches to adaptation and climate risk management are more likely to be required at the level of strategic planning and programming than at the project level. However, they may be relevant where projects are judged to be impractical or unviable once a CRA has been undertaken, of for projects offering policy support in the context of long-term strategic planning.

The above three categories of adaptation, and the types of risk, adaptation measures, projects and timescales associated with them, are summarised in Table 2. Table 2 and the above discussion are based on material from Brooks et al. (2011). Within a CRMP it may be helpful to specify which types or categories of adaptation are being pursued, and why, within the framework provided by Table 2.

Table 2. Different types of adaptation and the contexts in which they are relevant.

Adaptation category	Types of risk	Timescales	Adaptation measures	Project relevance
Addressing the "adaptation deficit"	Risks associated with existing climate variability	Current and near future (a few years)	General resilience building & vulnerability reduction (e.g. livelihood diversification, insurance, seasonal forecasts)	Projects delivering immediate short-term impacts with few or no longer-term strategic implications
"Climate proofing"	Incremental changes in existing risks	Near term (a few years) onwards	"Climate-proofing" of business-as-usual development (e.g. upgrading infrastructure, increasing tolerances for extremes)	Projects with outcomes associated with timescales of years to one or two decades
"Transformational" change	Risks associated with qualitative changes in climate & climatic/environmental transitions	Most relevant over medium to long-term (1-2 decades +) but may be required earlier	Redesigning or replacing existing systems and practices (e.g. restructuring of economies, rethinking infrastructure needs, anticipating changes in settlement, migration)	Long-lived infrastructure projects and projects/ programmes relevant to long-term strategic planning (e.g. policy support)

6.1 Adaptation decision-making and climate information

Adaptation decisions may be influenced by the quality and availability of climate information, with highly targeted (and perhaps costly) adaptation measures designed to address specific emerging or anticipated risks being favoured where there is a high degree of confidence in climate projections (and where such measures are appropriate, for example for long-lived infrastructure), and more general vulnerability reduction and resilience and capacity building measures being preferred in the face of high uncertainty about the nature of future climate change (and where the focus is on delivering immediate development benefits such as poverty reduction). The latter might also be part of a phased response to climate change in which generalised vulnerability reduction measures that do not commit populations or governments to a particular long-term adaptation trajectory represent a temporary response as better climate information is developed for longer-term planning.

6.2 Criteria for successful adaptation

Like any measures proposed in the context of a development initiative, adaptation measures must be demonstrated to be (i) technically and economically feasible, (ii) effective, in terms of their ability to deliver the intended benefits, and (iii) acceptable to stakeholders, including those groups that may be adversely affected by the proposed measures.

In addition, adaptation measures need to be sustainable, in the sense that shorter-term adaptation measures are compatible with longer-term adaptation needs, and do not result in longer-term maladaptation. It must also be recognised that different types of adaptation measures may be appropriate at different times, as climate-related risks evolve. Adaptation is not a "one-time" intervention, but an ongoing and dynamic process that must be sufficiently flexible to respond to changes in hazards and in the drivers of vulnerability, to accommodate uncertainties about future conditions, and to incorporate new information (e.g. on the nature and likely future evolution of climate hazards) as if becomes available.

7 Monitoring and evaluation (M&E) of climate risk reduction / adaptation

No standard methodologies for adaptation M&E currently exist. One emerging approach to evaluating adaptation is the "twin-track" approach that examines

i. the extent to which climate risk management is integrated into development planning and decision-making at the institutional level, and
ii. assessment of vulnerability and development outcomes "on the ground" to assess whether vulnerability has been reduced and whether development is being kept "on-track".[188]

Assessment of the integration of climate risk management will examine issues such as the existence of processes for climate risk screening, the extent to which policies, practices and projects have been adjusted to address climate-related risks, and so on. Such assessments will be more appropriate in the context of programming or strategic planning than in the project context, unless projects specifically address integration issues.

Assessment of vulnerability and development outcomes will most likely be based on indicators of vulnerability, and on standard development indicators. The use of standard development indicators is complicated by a number of factors. Firstly, the timescales associated with both climate change effects and adaptation may be longer than those associated with the project lifetime, over which M&E is conducted. For example, if a project builds in adaptation measures to address increases in the severity of extreme events, and no such extreme events occur during the M&E phase, the efficacy of such measures cannot be measured empirically in terms of development outcomes. Assessment based on development outcomes associated with extreme events might be conducted in an opportunistic manner, for example by comparing mortality outcomes or damages resulting from two comparable extreme events, one of which occurred before the implementation of adaptation measures and one of which occurs after their implementation but during the period of M&E. However, such assessments cannot be depended upon in the absence of such "opportunities" for comparison. One solution is to put in place M&E frameworks that continue to function after the end of the project, linked with mechanisms for capturing and acting on lessons from such M&E[189].

A further complication for assessment based on standard development outcome indicators is the changing climate risk baseline. For example, adaptation interventions may partially counter the adverse effects of climate change hazards on crop yields, water resources, or poverty, without completely offsetting such impacts. Development outcome indicators therefore may show declining crop yields or increasing poverty or water stress, suggesting that a development intervention incorporating adaptation is failing. However, without the intervention the effects of climate change may have been even greater. In order to determine the real impacts of an intervention, such development indicators therefore need to be adjusted or corrected to take account of evolving climate hazards and associated changing climate risk baselines.

Indicators of vulnerability or adaptive capacity provide a means of directly addressing the impacts of an intervention on key aspects of climate-related risks, and bypass the above problems of timescale and changing hazard and risk baselines. However, vulnerability indicators will be highly context specific, and the development of such indicators will need to be grounded in a sound understanding of the drivers of vulnerability in local contexts, and may require significant data gathering/generation

[188] A full description of this approach is provided in: Brooks, N., Anderson, S., Ayers, J., Burton, I. and Tellam, I. (2011) *Tracking Adaptation and Measuring Development.* IIED Working Paper. IIED, London/Edinburgh. The discussion here is based to a large extent on this work.
[189] This might not satisfy those responsible for assessing project performance at the end of a project's lifetime, but it will be invaluable in terms of ensuring wider learning from adaptation interventions, and for those targeted by the project, provided they have the means to act on these lessons.

in the early stages of a project. This will have cost implications, but for M&E to be meaningful it must be based on a solid empirical footing. The costs of gathering necessary baseline data should therefore be incorporated into project formulation.

A further consideration for M&E is to ensure that the links between integration at the institutional level, and development and vulnerability outcomes on the ground, are understood, so that top-down and bottom-up indicators are complementary. Such linking needs to based on theories of change that are grounded in experience and empirical evidence.

Appendix I: Using and finding climate information

Use of climate information

Understanding the nature of climate hazards and associated climate-related risks needs to be based grounded in climate information, i.e. information on observed and projected variations and trends in key climatic parameters, as well as information on key aspects of vulnerability and adaptive capacity.

Particularly where climate projections are concerned, ranges of uncertainty need to be considered. Levels of uncertainty will vary across regions; or example, while most of the models used by the IPCC in its 2007 Fourth Assessment Report simulate lower rainfall over North Africa and higher rainfall over most of East Africa, there is strong disagreement between models regarding the sign of changes in rainfall over much of the African Sahel, with approximately half of the models simulating higher rainfall and half simulating lower rainfall. Such differences in uncertainty have implications for climate risk management. High confidence about future changes makes long-term planning more straightforward and investment in certain adaptation measures less controversial. Such confidence may be greater where longer-term projections are consistent with emerging changes evident in meteorological observations and day-to-day experience, but tempered where consistent long-term projections across models do not appear to reflect current trends.

In addition to the issue of uncertainty, planners must also confront the issue of data resolution. While climate models are capable of providing broad characterisations of trends in key variables such as rainfall and temperature over large areas, they are generally poor at representing certain elements of climate variability (such as extremes), and are often of too coarse a spatial resolution to tell us much about future changes in climatic conditions at the local scales at which people experience and respond to weather and climate. These issues may be addressed by downscaling, which translates regional scale projected changes into changes at local scales, using observed relationships between climatic variables at different scales. However, downscaling is still associated with considerable uncertainty.

Project managers drawing up ToR for a CRA may find it helpful to have a basic grasp of some of these issues relating to the use of climate information, as well as an awareness of any basic information on observed or projected changes in climate, and associated impacts and vulnerability issues, that might be relevant in the project context. Such basic information can be found in a small number of key resources, including the IPCC reports, NAPAs and National Communications (where these have been prepared). A list of such sources, with additional detail on finding specific regional or sectoral information, is provided in Appendix I of this annex.

The sources detailed in Appendix I also represent a minimum requirement in terms of background material for a CRA study, and information from these sources is likely to form the basis of a CRA scoping study. A full CRA, and perhaps a scoping study, will also make reference to additional information from more specialist sources, including papers in academic journals, technical reports, studies by government agencies, and various databases of social, economic, environmental and other technical data/information.

Sources of climate information

Sources of information on climate vulnerabilities and possible scenarios are accessible on several websites. They provide a description of climate change hazards and constitute basic scientific input that can support a rapid screening exercise. It is recommended that sources under headings 1 and 2 should be consulted as a

minimum required for a scoping study, and that these sources might also be consulted by those responsible for drawing up the ToR for a Climate Risk Assessment.

1. Intergovernmental Panel on Climate Change (IPCC), WMO-UNEP

The 2007 Fourth Assessment Report (AR4) of the IPCC contains a synthesis report and several working groups reports (WG). They are available on line at: http://www.ipcc.ch. The IPCC's Fifth Assessment Report (AR5) will be published in 2013 and 2014. Both Assessment Reports include three publications, on The Physical Science Basis; Impacts, Adaptation and Vulnerability, and Mitigation of Climate Change, as well as a Synthesis Report.

See in particular:

- The *Synthesis Report*, available in all UN languages.
- *Working Group I Report on The Physical Science Basis*, chapters on global and regional impacts (Chapters 10 and 11 respectively in AR4)
- *Working Group II Report on Impacts, Adaptation and Vulnerability* which includes thematic chapters on freshwater, ecosystems, food, forest products, coastal systems, and human health; as well as regional chapters on Africa (Chapter 9 in AR4), Asia (Chapter 10 in AR4), Latin America (Chapter 13 in AR4) and Small islands States (Chapter 16 in AR4).

2. National reports

Under the UNFCCC, all developing countries are required to submit National Communications that include a climate vulnerability and adaptation section; they are available at:
http://unfccc.int/national_reports/non-annex_i_natcom/submitted_natcom/items/653.php.

All Least Developed Countries are required to produce a National Adaptation Programme of Action (NAPA); the reports are available at:
http://unfccc.int/cooperation_support/least_developed_countries_portal/items/4751.php.

3. More detailed sources of information

The information contained in IPCC reports and national documents provides a preliminary orientation about possible regional and national impacts that should be refined with local investigations at project level. A climate change rapid screening should also consider information from sources that are readily available to, and interpretable by EU Delegation staff. For example, reports from national meteorological services, research bodies or key academic papers that can provide good information. In addition, several sources available on line can also provide climate information. For instance:

- The UNDP Country Climate Profiles present climate data (observations and projections) for 52 countries. Each country report contains a set of maps and diagrams illustrating the observed and projected climates of that country as country average timeseries as well as maps depicting changes on a 2.5° grid and summary tables of the data. A narrative summarises the data in the figures, and placing it in the context of the country's general climate: http://country-profiles.geog.ox.ac.uk/
- The *Climate Change Country Profiles/Adaptation Learning Mechanism platform* (UNDP) provides summaries of initiatives by countries; it also includes details about other adaptation programmes/projects. Available on line at: http://www.adaptationlearning.net.
- The *Climate change data portal for development practitioners and policy makers* (World Bank) is intended to provide quick and readily accessible climate and climate-related data; still work in progress, it is already available on line at:
  http://sdwebx.worldbank.org/climateportal/.

- The *IPCC Data Distribution Center* provides climate, socio-economic and environmental data, including both observed and projected climate data, as well as technical guidelines on the selection and use of different types of data and scenarios in research and assessment:
  http://www.ipcc-data.org/

Appendix II: Approaches to, and tools and methods for, CRA

Risk is a function of both hazard and vulnerability. Assessments of risk therefore need to be based on an understanding of both hazards and vulnerabilities, and the interaction between hazards and vulnerabilities to produce adverse outcomes or impacts. Increases in risk may be driven by an intensification of (or the emergence of new) hazards, by an increase in vulnerability driven by a variety of societal and/or environmental factors, or by a combination of worsening hazards *and* vulnerability.

Early approaches to assessing and addressing climate change risks focused on the hazard component of risk, and sought to use climate models and models of particular systems (coastal flooding, agriculture, etc) to "predict" what the impacts of climate change might be. This is often referred to as the hazard-based or impact-based approach.

Hazard/impact-based approaches require credible data on potential future climate change, at scales relevant to the exposed systems or populations. The uncertainty inherent in climate projections (which varies geographically), and the relatively low resolution of climate models, presents problems for hazard/impact-based approaches. The resolution issue may be addressed by *downscaling* of climate data, and uncertainty can be addressed by examining the impacts projected changes from multiple climate models or simulations, spanning a range of possible future conditions. However, such approaches are data and resource intensive, and require specialist expertise. In addition, they are somewhat deterministic and reductionist, and may fail to account for the role of adaptation in mediating outcomes/impacts.

For these reasons, focus shifted to vulnerability-based approaches, which seek identify the drivers of vulnerability, usually to existing hazards associated with climate variability (Box I). These drivers may be represented by indicators, which may be used to map vulnerability geographically or across a population. Vulnerability-based approaches do not require detailed information about future climatic conditions, and use methods familiar to social scientists who are often familiar with development contexts. However, such approaches generally restrict assessment to the short-term, and have severe limitations when it comes to addressing the longer-term evolution of climate-related risks.

Box I Drivers of vulnerability and relation to hazards

Many factors, such as poverty and a lack of access to resources, will make people vulnerable to a range of hazards. However, vulnerability does not map simply onto poverty, and some of the factors that make people vulnerable to one type of hazard may not make them vulnerable to other types of hazard (e.g. poor housing in low-lying areas will make people vulnerable to flooding resulting from heavy precipitation or storm surges, but will not make them vulnerable to drought). Vulnerability is therefore highly contextual, and needs to be assessed in relation to specific types of hazard, even if the future evolution of these hazards is uncertain.

The types of hazards to which people are exposed may change over time. Broadly speaking, risks associated with current climate variability and with changes in the nature of that variability are likely to be of immediate concern to development planners, while risks associated with "singular" hazards involving qualitative changes in climatic behaviour and environmental conditions are likely to become more problematic over time as climate change accelerates. Nonetheless, evolving climate variability will continue to pose challenges to development over time, and these challenges are likely to intensify as climate change accelerates. Conversely, certain regions may face singular hazards in the near future (e.g. glacial lake outbursts in mountain regions, which are already posing challenges in some countries).

Climate risk assessment draws on both hazard/impact-based approaches and vulnerability-based approaches, and seeks to combine these approaches where feasible and appropriate in order to provide a more nuanced and comprehensive picture of risk. Depending on the nature of the assessment, a CRA may emphasise one approach or the other, or draw on or combine both

approaches. The approach(es) chosen will depend on the development context, the hazards and risks that must be addressed, the timescales associated with the project outputs and outcomes, and the availability and quality of climate information (see Appendix I). For an example of how project context might influence the choice of assessment method, see Box II.

Box II Matching CRA methods to project contexts

Different approaches and assessment methodologies will be appropriate in different project contexts. For example, a project concerned with the delivery of short-term benefits, such as emergency assistance with few or no longer-term strategic implications, is likely to focus on assessing and reducing vulnerability, and will have little or no need for longer-term climate projections. In contrast, a project concerned with the construction of long-lived infrastructure in a potentially climate sensitive area will need to incorporate considerations of longer-term changes in climate and their impacts on the infrastructure in question, making climate projections (including ranges of possible future conditions to address the issue of uncertainty) invaluable.

A number of specific tools and methods exist for assessing climate-related risks, including purely vulnerability-based tools and methods, highly deterministic impacts-based tools and methods, and methods that combine both hazard/impact and vulnerability elements. The main tools and methods likely to be employed in a CRA are summarised below.

Tools and methods for assessing climate-related risks

The following tools and methods may be used during the CRA study in order to understand different aspects of climate risk, depending on the nature of the project, the timescales associated with project outputs and outcomes, and the climate change hazards that are of greatest concern. Different tools and methods may be combined. For example, participatory vulnerability assessment may be combined with vulnerability or risk mapping, with the former being used to identify indicators for use in the latter. Impacts or sensitivity studies may provide output that can be used to construct characterisations of future climatic conditions that may be used in the context of scenario planning.

1. Impact assessments

Impacts assessments are usually data and resource intensive assessments that involve a hierarchy of models to simulate the potential impacts of climate change on a specific system. The starting point for an impacts assessment is generally a greenhouse gas emissions scenario or set of such scenarios. These emissions scenarios are used to drive global climate models (GCMs), resulting in global *projections* of future climatic conditions for a given period or periods (e.g. 2020s, 2050s, 2080-90s). These global climate projections are generally of too low a spatial resolution to be useful for assessing specific impacts at the scales of interest to policymakers and planners, so data from global climate projections are often used as input to higher resolution regional climate models (RCMs). Alternatively, observed relationships between large-scale and local climatic conditions may be used to "downscale" output from GCMs, resulting in a set of data representing projected climatic conditions at the local scale. Output from RCMs or downscaling exercises is then used as input to drive a model representing the system on which the potential impacts of climate change are to be assessed. The output of this system model will be a set of projected impacts at the scale of interest. This sequence of modelling is represented graphically in Figure 1. **The time, data, resource and capacity intensive nature of impacts assessments means that they are likely only to be used where such capacity already exists.**

Figure 1. Graphical representation of the steps involved in a typical impact assessment.

Box III Impacts assessment in practice

In practice, impacts assessments tend to use "off the shelf" outputs from GCMs, meaning that the first two

steps do not need to be carried out each time an impact assessment is undertaken. For example, the IPCC assessed projections from a number of different GCMs, driven by a suite of emissions scenarios representing different global development pathways. Global climate projections from different GCMs, representing a variety of global emissions scenarios, are archived at a number of locations globally, from which data may be downloaded (Appendix I).

It is important that impacts assessments examine the potential impacts of a number of plausible sets of future conditions, preferably as represented by different emissions scenarios and output from different models, in order to address the issue of uncertainty. Using multiple scenarios and multiple models means that a range of impacts, associated with an "envelope" of plausible future climatic conditions, may be identified. Impacts assessments based on a single model or scenario may be misleading, giving the impression that future conditions can be predicted with a higher degree of certainty than is justified, and are a poor basis for development planning.[190]

Impacts assessments require the existence of relevant system models (e.g. of crops, coastal systems, flood regimes, etc), which may not be available in many (perhaps most) contexts in which risks associated with climate change are to be assessed. In some instances appropriate models might be acquired or developed by research institutions or government agencies, although this is likely to take a considerable amount to time (months to years) and may be costly.

2. Sensitivity studies

Sensitivity studies are similar to impacts assessments in many respects. However, rather than using output from climate models and/or downscaling studies, sensitivity studies examine the implications of a range of *plausible* changes in key climatic variables on systems or processes of interest. The specified changes may be based on a general understanding of potential climate change pathways informed by wider modelling studies. The first three steps of an impacts assessment are therefore replaced by a single step of identifying plausible changes in relevant variables in a sensitivity study (Figure 2).

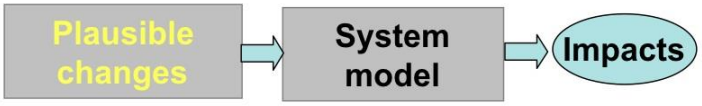


Figure 2. Graphical representation of the steps involved in a typical sensitivity study.

Box IV Illustrative example of a sensitivity study

An example of a sensitivity study might be a study that examines the potential impacts of warmings of 1º, 2º, 3º and 4º C, coupled with changes in rainfall of –20%, –10%, 0%, +10% and +20%, on water resources or agriculture. These changes may be used as input to a model of water resources or crop yield, but the study does not require the use of output from global or regional climate models or downscaling studies.

3. Participatory vulnerability assessments

At the other end of the impacts-vulnerability continuum are assessments based on describing existing vulnerabilities and identifying the factors that make people vulnerable (the drivers of vulnerability), through participatory research. Such participatory vulnerability assessments involve people describing their own vulnerabilities and identifying key drivers of vulnerability, for example through structured interviews or questionnaire-based surveys at the household level. The results of such surveys will then be analysed to assess how vulnerability varies within and between different communities and social groups, and to identify any common or particularly important drivers that can be addressed in the project context. Typically, vulnerability will vary according to factors such as household size, income, age, gender, livelihood basis, mobility, and so on. Where key determinants of vulnerability are identified, these might be used to develop *indicators* of vulnerability that can be used in a predictive manner (see Section 7 of this annex).

[190] It should be noted that current greenhouse gas emissions are near the upper range of emissions represented by the IPCC scenarios, meaning that the "high emissions" IPCC scenarios are likely to be more representative of future conditions than the low and medium emissions scenarios.)

The starting point for participatory vulnerability assessments may be a concern with addressing particular types of risk, e.g. risk associated with drought and food security or with flooding and adverse health outcomes. Alternatively, such assessments might be carried out in the context of more general poverty reduction initiatives that first seek to identify, through participatory methods, the principle climate or environment related risks, before going on to identify the main societal factors that mediate or amplify these risks.

However vulnerability is assessed, it is important that vulnerability is seen as something specific to a particular population, with respect to a particular outcome or set of outcomes, in the context of a particular hazard or set of hazards.

Box V Vulnerability is context-specific

The concept of vulnerability only makes sense when we talk about the vulnerability *of someone/something to a particular hazard, with respect to an (adverse) outcome*. An example is the vulnerability of a specified population to drought, with respect to food insecurity that might be triggered by the drought. While drought might act as the trigger for food insecurity, drought does not "cause" this insecurity in a simple manner – whether or not people experience food insecurity when faced with drought will depend on how the various interacting factors that drive their vulnerability act to amplify or dampen the impacts of the drought on their livelihoods and access to food. An assessment of vulnerability will therefore ask what the factors are that make people more or less vulnerable to food insecurity when they are exposed to drought. Variations in these factors may be used to assess who is more or less vulnerable to drought in this context.

4. Indicator-based vulnerability assessments

Where key factors that determine vulnerability to climate-related hazards (including climate extremes and the wider physical manifestations of climate change) can be identified, these factors can be represented using *indicators*. Examples of indicators of vulnerability to hazards such as drought at the community level, where the unit of interest is the household, might include: household size, household income, measures of health status and education, distance from nearest urban centre (e.g. for access to markets or emergency assistance), number of different income streams, etc. Examples of indicators of vulnerability to climate extremes at the regional level, where the unit of interest is the rural or urban district, might include average household income, proportion of population living in informal housing or slums, topography/elevation (e.g. above sea-level for coastal flooding), economic diversity, proportion of population covered by early warning systems, etc.

Once indicators such as those listed above have been identified, they can be used to map the distribution of vulnerability in space or across different sections of society. In this way, indicators can help project developers and development planners to target assistance at the most vulnerable.

As discussed above, it is important that vulnerability is seen as something specific to a particular population (or system) in the context of specific hazards and outcomes. It makes no sense to talk in isolation about an "indicator of vulnerability". Rather, we should talk about an indicator of vulnerability of a population to a specific adverse outcome when exposed to a specific hazard (e.g. the vulnerability of a community or household to food insecurity when faced with drought, or the vulnerability of members of a population to mortality when exposed to a storm surge).

Indicator-based assessments of vulnerability might be linked with participatory vulnerability assessments, with the latter used to identify key drivers of vulnerability through work with local communities. These indicators can then be used for scaled-up indicator-based vulnerability assessments.

5. Risk mapping

As discussed above, risk is widely viewed as resulting from the combination of hazards and vulnerability. For example, the risk of climate-related food insecurity or famine in a drought-prone region depends on the likelihood and severity of drought, but also on the vulnerability or sensitivity of the population to drought and its consequences (i.e. their ability to cope with and recover from drought).

Just as vulnerability can be mapped using vulnerability indicators, so can the prevalence of, or exposure to, climate *hazards* be mapped using indicators of factors such as hazard frequency and (mean or maximum) severity/intensity. For example, the frequency and severity of recent historical (or projected future) droughts might be mapped using quantities such as return periods and drought magnitudes measured in standard deviations.

Indicators of the prevalence of climate hazards can be combined with indicators of vulnerability to produce maps of risk (e.g. by overlaying maps of hazard and vulnerability or by combining hazard and vulnerability indicators by adding or multiplying them together). In this way, "hot-spots" of risk can be identified, where both hazard and vulnerability are high. It is these hot-spots that will be of most concern, for example in terms of risk to project success, or in terms of the targeting of project interventions aimed at addressing problems such as food security, or risks of displacement associated with flooding.

Risk mapping is a potentially powerful tool, but can require considerable investment in data collection and generation where relevant data do not already exist. It also requires significant technical capacity and time resources, which might not always be available.

6. Scenario planning

Scenario planning involves the use of scenarios of possible future changes to engage stakeholders in discussion and exploration of the implications of these changes, e.g. for their livelihoods or (in the case of governments and other bodies) for development policies and plans. Through the exploration of these scenarios, and their possible implications, stakeholders can develop strategies and identify measures to help them anticipate and adapt to future changes. Scenario planning may employ output from climate models, or from impact or sensitivity studies, but differs from impact and sensitivity studies in that it does not seek simply to model the impacts of climate change on human or natural systems in a deterministic manner. Rather, scenario planning seeks to explore the implications of climate change and its impacts for human populations through engagement with those likely to be affected, based on their livelihood experiences, local or sectoral knowledge, knowledge of existing risks and vulnerabilities, and key concerns. Scenario planning should seek to identify adaptation approaches that are robust under a range of scenarios of future change (Box VI).

Box VI Constructing scenarios for CRA

A scenario is essentially a characterisation of future conditions, based on a set of key parameters. Scenarios might be simple, representing just a small number of key climatic variables such as temperature and precipitation. Alternatively, they may be more complex, incorporating representations of potential future climatic, environmental, economic and social conditions. Crucially, they should represent factors that are of importance to stakeholder. For example, scenarios of future changes in rainfall to be used by farmers and herders should focus on timescales of interest (the near to medium term) and should address potential changes in rainfall variability as well as in average rainfall. Such scenarios might also address the implications of different policy contexts.

Scenarios may be constructed using data generated by from global or regional climate models. Where climate model output is used, this might be subject to downscaling, in order to give a more detailed and "realistic" picture of changes at local scales. Where downscaling is not practical (e.g. due to time, funding or resource/capacity constraints), expert judgment or comparisons with past periods (e.g. of unusual warmth or drought) might be used to identify the possible consequences of warming or drying at local scales.

Alternatively, scenario planning may be based on the examination of the potential consequences of arbitrary but plausible changes in key climatic parameters, using expert judgment and little or no actual model data, but informed by a general understanding of global or regional projections (e.g. based on IPCC projections). For example, a scenario planning exercise to examine how agriculture might adapt up to 2030 might ask what the implications are of a warming of 1º, 2º, or 3º C, combined with changes in precipitation of –10, -5, 0, +5, or +10 %, and prescribed changes in the seasonal distribution of rainfall and the prevalence of drought and periods of extreme heat. While such an exercise does not involve actual projections of future conditions, it would help planners examine the implications of different plausible future, and to design a variety of adaptation measures that could be implemented under different scenarios.

7. Integrated assessment

Integrated assessment (IA) is an approach that combines the modelling of future climatic conditions with the modelling of associated environmental and societal changes. An IA may therefore link climate models with models of key environmental systems (e.g. coastlines, ecosystem), economic models, and models representing human behavioural responses (e.g. agent based models). Such combined modelling can produce representations of future climatic, environmental, economic and behavioral changes, which can be used to examine the impacts of different policies and development trajectories. However, IA requires a very high degree of technical capacity, and is very resource intensive. Its application in the context of development projects is likely to be very limited.

8. Expert judgment and review

In practice, many risk assessments will need to be carried out with limited information, in the context of considerable uncertainty, and with limited technical, financial and human resources. Where there are insufficient data to carry out vulnerability or risk mapping exercises and where modelling studies are impractical, expert review can help project developers to understand and contextualise risks. Such review will generally draw on scientific literature, specialist reports and studies, and consultations with key stakeholders and experts (e.g. local experts on specific topics that are relevant to the assessment but for which dedicated consultancy input is not required or available). It is important to ensure that the experts contracted with such a review have sufficient topical and regional knowledge, and more than one expert may be required to cover all the relevant subject areas.

Appendix III: Examples of adaptation measures

Adaptation activities can be classified along several dimensions[191]. Below you will find concrete examples of adaptation measures for the sectors more likely to be affected by climate change in least developed countries and in SIDS. The *Information notes on climate change and development: EC Cooperation: responding to climate change*[192] provide further guidance and examples on possible adaptation measures, alongside options for greenhouse gases emission reductions, that can bring about development benefits.

	Fostering behavioural change	Technological and engineering solutions	Risk management and vulnerability reduction strategies	Research	Capacity building
Fisheries	Diversifying sources of income.	Downscaling fleet size and fishing effort.	Improving mapping and monitoring of fish stocks; adopt ecosystem based approach to fisheries management.	Stepping up research on sustainable aquaculture.	Increase knowledge of climate change impacts at local level, information dissemination, awareness raising, sharing of best practices, and integration of climate change in planning and decision-making.
Coastal zones and marine ecosystems	Promoting settlements and economic activities in less exposed areas.	Building dykes, sea defences and barriers.	Early warning systems; coastal afforestation, restoration of mangroves.	Establishing baselines of mangroves status and trends, using standardized methods, in order to better understand the effects of sea rising on mangroves and reefs.	
Disaster risk reduction, disaster management	Awareness raising on how to respond to warning signals, evacuation,…	Construction of shelters.	Early warning systems.	Improved monitoring and weather forecasts.	
Health	Prevention against malaria in newly exposed populations.	Improving the protection of health infrastructure against extreme weather events.	Information systems on climate change related disasters; promotion of healthy environment to reduce breeding grounds for vectors.	Strengthening and developing long-range epidemic forecasting systems.	

[191] In *Weathering the Storm: Options for Framing Adaptation and Development*, the World Resources Institute (2007) for instance classified adaptation along a continuum from activities that address vulnerability – which overlap almost completely with traditional development practice – to highly specialized activities exclusively targeting distinct climate change impacts. The UNFCCC, on the other hand, identifies six categories of adaptation options: behavioural change; technological options; risk management and reduction strategies; promotion of adaptive management strategies; financial schemes; and the promotion of ecosystem management practices.

[192] The information notes cover the following sectors: agriculture and rural development; education; energy supply; health; infrastructure (including transport); solid waste management; trade and investment; water supply and sanitation; biodiversity and ecosystems. They can be downloaded from the EuropeAid intranet: http://www.cc.cec/dgintranet/europeaid/activities/thematic/e6/environmental_integration_horizontal_issues/sector_scripts_en.htm.

	Fostering behavioural change	Technological and engineering solutions	Risk management and vulnerability reduction strategies	Research	Capacity building
Infrastructure	Raising the awareness of infrastructure managers, both public and private, about climate-related risks and adaptation options.	Enhancing resilience in urban, rural and coastal infrastructure (flood protection dykes, dams, small-scale hydraulic infrastructure).	Adopting appropriate engineering standards and building norms, making new infrastructure more resilient to adverse weather conditions and natural disasters.	Monitoring trends in migrations and population resettlements, so as to anticipate future needs at the time of planning investments in infrastructure.	
Water supply and sanitation	Rainwater harvesting, promoting of water saving techniques.	Adopting new technology for safe water in coastal communities to combat salinity due to sea level rise.	Protection of groundwater recharge areas (e.g. by promoting the kind of vegetation that can maximise water retention and infiltration).	Improving storage capacity by constructing reservoirs at community level.	
Agriculture[193]	Promoting water conservation or soil conservation practices.	New irrigation technologies.	Improving the use of weather forecasts for farmers; insurance to cope with climate risks; creating or strengthening national centres for the conservation and use of diversity in food plant species.	Research on drought, flood and salinity-tolerant varieties of crops.	
Energy supply and use	Promoting the use of improved stoves, energy conservation and renewable energies.	Promoting the use of improved stoves, renewable energies. Introducing new technologies for the use of firewood and for making charcoal.	Promoting better use of weather information and forecasts, as well as information on climate change related disasters; sustainable forest management and biomass production / use.	Supporting R&D for low-carbon, sustainable energy technologies.	

[193] Both agriculture and energy supply and use offer significant opportunities for promoting low-carbon development paths while increasing adaptive capacity.

ANNEX 12: Terms of reference for a Climate Risk Assessment

Note: This model needs to be adapted according to the specific project. To respond to a variety of circumstances this model includes a range of options. Actual ToRs derived from this model are expected to be shorter documents.

Explanations or sections to be completed according to individual circumstances are given in *italics*.

ToR for the Climate Risk Assessment of (*name of the project*)

1. Background

The European Commission requires a Climate Risk Assessment (CRA) to be carried out for the formulation of (*state the name/title of the proposed project*). The CRA must examine:

- Climate-related risks to the successful realization of the project's intended outputs and outcomes
- Risks that the project will increase the vulnerability of human populations and/or natural systems to climate change and variability
- Risks that the project will contribute to maladaptation
- Measures to reduce climate-related risks and to adapt to climate change, to be described in a Climate Risk Management Plan (CRMP)
- Opportunities for promoting wider resilience and adaptation to climate change, and encouraging low-carbon development.

The project is described as follows: (*insert a short description, referring to the current logical framework, [to be attached]; provide key information, such as objective, rationale for the project, location, duration, key beneficiaries, technologies and practices to be employed, life-cycle of the project, etc.*)

The following technically feasible alternatives have been identified: (*provide a description of any alternatives already identified*).

Existing information on the project and the environment can be found in (*mention any available studies and information including the results of the identification phase, and indicate where/how these documents may be obtained/consulted).* In addition to this CRA, the following studies are also envisaged (*mention any other studies planned in the formulation phase, including feasibility, economic and financial analyses or social impact assessments*).

(*Mention other pertinent background information, such as potential or known projects envisaged in the same area, key stakeholders, legal requirements and existing SEA in the sector).*

2. Objective

The CRA will provide decision makers in the European Commission and the partner country with sufficient information to justify, on the grounds of project sustainability and viability under climate change, the acceptance, modification or rejection of the project for financing and implementation. It will also provide the basis for guiding subsequent actions, which will ensure that the project is carried out taking into account any climate-related risks and adaptation needs.

3. Results

The CRA is undertaken in two stages: firstly a **scoping study** which defines the scope of the CRA, and secondly the **CRA study** itself.

The **CRA scoping study** will deliver the following results:

- An overview of the project, including the timescales associated with project implementation and intended outcomes, and any relevant legislative and institutional frameworks (*if they exist).*
- A description of the geographical, environmental and climatic contexts within which the project will be implemented, including a summary of readily available information on potential future climate changes as far as this is relevant to the timescales associated with the project.
- A description of any project alternatives and their variants.
- A description of the key stakeholders likely to be effected by the project, with specific reference to climate-related risks.
- A stakeholder engagement plan.
- A summary of the key current and expected future climate hazards[194] relevant in the context of the project, and of the associated potential climate-related risks/implications for the project, that should be addressed in the CRA, insofar as these can be identified on the basis of existing and readily available information.
- A summary of key issues relating to vulnerability and adaptive capacity as relevant in the project context[195], as far as possible on the basis of existing and readily available information.
- A description of key knowledge/information gaps relating to current and future climate hazards, recent and potential future climate change impacts, vulnerability and adaptive capacity.
- Recommendations on the methodology for identification and assessment of specific climate-related risks, constraints and opportunities (including treatment of uncertainty) and the basis for the choice of methodologies[196] to be used in the CRA to assess risks and vulnerabilities.
- Recommendations regarding any risk reduction or adaptation measures that might be identified and investigated further, based on the work of the scoping study.
- An indication of the time frames, costs and resources needed to carry out the CRA study.

The **CRA study** will deliver the following:

- The identification and assessment of the potential climate-related risks to project implementation and the successful realization of the project's intended benefits.
- An identification and assessment of the potential risks that the project will increase the vulnerability of human populations and natural systems to climate variability and change, and to contribute to maladaptation.
- Recommendations, including a Climate Risk Management Plan (CRMP) for the implementation of proposed measures to reduce climate-related risks and adapt to climate change. The CRMP may identify and prioritise a number of alternative risk reduction/adaptation measures, detailing the pros and cons (e.g. costs, impacts) of each. The CRMP should also include a framework for monitoring and evaluating the performance/success of the proposed measures.
- Recommendations on how to adapt the project design (if required) to optimise the exploitation of opportunities arising from climate change (if any), to promote wider climate resilience, adaptation and adaptive capacity (e.g. outside the immediate context of necessary measures to reduce risks associated with the project), and to promote low-carbon development.

[194] See Annex 11 on Climate Risk Assessment for a discussion and typology of climate hazards.
[195] See Annex 11 on Climate Risk Assessment for a discussion and definitions of vulnerability and adaptive capacity.
[196] See Annex 11 on Climate Risk Assessment for details on CRA methodologies.

4. Issues to be studied

4.1. CRA scoping study

4.1.1 Overview of the project and its alternatives

Describe the project and any major project alternatives, with a focus on alternatives which are significantly different from the perspective of exposure and vulnerability to climate-related risks. ,

4.1.2 Legislative, institutional and planning framework

A description must be made of any institutional and legislative frameworks relevant to the project and its CRA[197], including an indication of the key applicable legislation, planning processes (e.g. land use planning), standards and norms that will have to be addressed in the CRA study. Reference should be made to the relevant documentation such as the Country Environmental Profile, National Adaptation Plans of Action (NAPAs) or other national adaptation plans/strategies, National Communications to the UNFCCC, any relevant Strategic Environmental Assessments.

4.1.3 Description of the key stakeholders and their concerns

The engagement of stakeholders in the CRA process is a key success factor. Key stakeholders (key groups and institutions intended as beneficiaries of the project or project partners, and any groups potentially affected by any adverse - e.g. environmental or displacement - impacts of the project) should be identified.

Particular attention should be paid to typically less represented groups such as women, indigenous peoples and minorities. In a CRA, the engagement of those stakeholders most likely to be exposed to the climate-related risks to be investigated, and those that are particularly vulnerable to climate variability and change, is especially important (e.g. people who depend on climate-sensitive livelihoods such pastoralists and smallholders, or those living in areas of high exposure). Stakeholders will be engaged in order to identify their concerns with respect to existing and anticipated climate-related risks and vulnerabilities, their perceptions of how these may be affected by the project, and their views about how these risks and vulnerabilities might affect the project results and impacts. This will contribute to the identification of key potential risks, project-climate interactions, and potential risk reduction or adaptation measures that will need to be addressed in the CRA study. The stakeholder engagement strategy to be employed should be explained in the proposal and, if necessary, will be revised by the Commission and the partner government before being implemented in order to avoid unnecessary conflicts and raising of expectations.

An effort should be made to involve a wide range of possible relevant interest groups (including local authorities, local and regional NGOs, women, and indigenous peoples) in defining issues to be addressed in the CRA. Records must be kept of all consultations and comments received.

4.1.4 Description of the key climate-related risks and project–climate interactions that should be addressed in the CRA

Particular attention should be paid to the climate-related risks to, or associated with, the project that are likely to be the most significant, considering the sensitivity of the project and any related / supported activities to climate hazards likely to be encountered over the relevant timescale, the vulnerability of key stakeholders to climate change and variability, the project's potential impacts on vulnerability, and the expectations of the stakeholders. Based on these considerations and on contextual information on current and potential future climate hazards, the consultants should identify climate-related risks to be specially considered under the following categories:

- Risks to the successful or timely implementation of the project,

[197] Whereas legislation relating to environmental impact assessment is generally well developed, legislation relating to CRA is likely to be rare and/or poorly developed. However, in certain contexts there may be some relevant legislation, for example relating to set-back from the shoreline for new construction in certain small island states that have already begun to address risks associated with storm surges, erosion and sea-level rise, in the context of adaptation to climate change.

- Risks to the successful realization of the intended project benefits over timescales that may be significantly longer than the lifetime of the project itself,
- Risks that the project will may increase the vulnerability of certain groups,
- Risks that the project may increase the vulnerability of natural systems or resources
- Risks that the project will contribute to maladaptation, increasing dependency on resources threatened by climate change.

4.1.5 Summary of existing baseline information and scope of any expansion of baseline information

The scoping study should summarise the information currently available, as relevant to the project, relating to (i) current climatic and environmental conditions, (ii) potential future climatic conditions, (iii) relevant current and future climate hazards, impacts, vulnerabilities and related risks. Key information gaps in these areas should be identified, and the extent to which these information gaps may be filled by further study during the CRA study should be specified, as should the nature of any additional information on these baseline issues that will be generated during the CRA study. The temporal and spatial extent of the CRA study should be specified, including the identification of any geographical areas, communities/populations, institutions, natural systems, sectors or systems/infrastructure to be studied.

4.1.6 Recommendations on the assessment methodologies to be used in the CRA

An indication of the most appropriate tools and methods for carrying out the CRA study should be provided, for example model-based impacts or sensitivity studies, participatory vulnerability assessments, scenario planning, indicator-based mapping exercises, or other methods such as expert review[198]. The limitations of such tools and methods should be specified, for example with regard to the spatial resolution of climate model output, the degree of confidence in downscaling studies, the extent to which key indicators capture the most important dimensions of vulnerability, and so on. The ways in which uncertainty will be addressed should be specified, for example by using multiple models or simulations, a range of different scenarios, or a range of different assumptions about the future evolution of vulnerability.

4.1.7 Indication of the timeframe, costs and resources needed to carry out the CRA

An assessment of the time needed for the completion of the CRA study should be provided.

The way in which risks are to be evaluated will be crucial in determining the timescale of the CRA; a CRA based solely on expert review is likely to be relatively short (for example 20-30 days), whereas a CRA involving downscaling and/or the development of computer models to investigate impacts may take many months and perhaps up to 2 or 3 years for large projects. Where modelling is not employed, other practical considerations must be taken into account, such as allowing time for the collection of data (e.g. in the form of household surveys/interviews to assess elements of vulnerability).

A description and estimation of the resources required (in terms of budget, person-days, technical facilities/resources) must be provided, including a break-down of costs. If at this stage it is considered necessary to integrate other experts with specific skills (e.g. social scientists for vulnerability assessments), this should be proposed in the scoping report for consideration by the EC.

(The EC could give an indication of the maximum budget allocated to the CRA study.)

4.2. CRA study

The scope of the CRA study will be agreed with the Commission in coordination with the partner government and other international partners, on the basis of the results of the scoping study.

[198] See Annex 11 for a description of these tools and methods.

4.2.1 Climate risk baseline study

a) Existing climate risk context

This should describe the following existing conditions, *as far as these are relevant in the project context*:

- The geographical and environmental context of the project (e.g. location), and the current climatic conditions pertaining in the area(s) associated with the project. This should include a description of the main climate hazards and their impacts currently experienced in these areas (e.g. heavy rainfall and flooding, drought and food insecurity or interruption to hydro-power, storms or storm surges and mortality/displacement/destruction of property and infrastructure).
- The existing vulnerability context in which hazards are translated into impacts, i.e. which populations, areas, groups, systems or sectors are most affected by climate hazards, and what are the drivers (e.g. social, economic, geographic, policy, etc) of their vulnerability?
- The level(s) of adaptive capacity in the relevant groups, populations, systems, sectors, institutions. What options are there for effective responses to manage and reduce existing risks, and what are the constraints that prevent action to reduce risk being taken?

b) Expected future climate risk context

This should seek to examine how conditions might evolve in the future, with respect to:

- The potential future evolution of climate hazards (both sudden-onset and slow-onset). The characterisation of future climate hazards may be based on data from global and regional climate models, downscaling studies, and/or impact models (e.g. of water resources, crop yields, coastal systems, ecosystems, etc). Alternatively this characterisation may employ expert judgment, past analogues (e.g. of extreme events/conditions), statistical techniques (e.g. to examine the impacts of changing means and variability of the occurrence of extremes using historical data as a baseline).
- The potential future evolution of vulnerability, based on plausible assumptions about how the drivers of vulnerability may change in conjunction with changing economic, demographic, environmental and other conditions.
- The potential future evolution of adaptive capacity, based on changes in access to resources and opportunities, and in constraints on adaptation actions.

4.2.2 Climate-related risk identification and evaluation

Identification and description of the potential climate-related risks associated with the project (and any alternatives), and evaluation, based on combined considerations of the relevant climate hazards and relevant aspects of vulnerability and adaptive capacity.

The identification of risks should address the following (summarised above in 4.1.4):

- Risks to the successful or timely implementation of the project, for example associated with climatic extremes which may be intensifying, and which may damage project infrastructure or otherwise disrupt implementation.
- Risks to the successful and sustained realization of the intended project benefits over timescales that may be significantly longer than the lifetime of the project itself, for example resulting from climate change effects that undermine or offset the project benefits (e.g. impacts on poverty) or that reduce the available of key resources (water, productive land, etc) on which the realization of benefits depend.
- Risks that the project will may increase the vulnerability of certain groups, for example by reducing their access to key resources, constraining their options for coping with or responding to climate hazards and their effects, and compromising their capacity to adapt to climate change.

- Risks that the project may increase the vulnerability of natural systems or resources, amplifying the adverse effects of climate change on these systems/resources, and accelerating environmental degradation.
- Risks that the project will contribute to maladaptation, increasing dependency on resources threatened by climate change or contributing to development trajectories that might be unsustainable under future climatic conditions.

Risks should be described for different elements of the project, and for different stakeholders/groups participating in or affected by the project. Where risks are associated with the potential adverse impacts of the project (e.g. on vulnerability or maladaptation), project and no-project cases should be compared, considering the various project alternatives and including considerations of uncertainty for each case.

The timescales associated with different risks should be specified, as should the degree of confidence in the identification of risks. There may be significant uncertainty regarding some risks, for example those foreseen in the medium to long term, after project completion, which are associated with the uncertain evolution of climate hazards as well as vulnerability. The extent to which risks are associated with particular assumptions about the evolution of future conditions should also be specified, with the CRA study clearly describing how uncertainties about risk are linked with uncertainties about future climate (and socio-economic) scenarios.

Indirect risks should also be addressed. These might arise from climate changes and their impacts outside the areas associated with project activities, which result in changes in the "global" context of the project that affect project outcomes and impacts (e.g. trade relations, commodity prices, etc).

Some attempt should be made to assess the significance of different types of risk, for example by ranking risks according to criteria such as likelihood and potential to undermine intended project benefits. Quantitative analyses and descriptions of risks and the impacts associated with them should be presented where feasible (e.g. in terms of timescales, probabilities, potential damages or losses), although it must be recognised that such an approach will not always be possible, and that precision (e.g. in modelled impacts) does not necessarily indicate accuracy (e.g. if just one model or simulation is used, and/or ranges of uncertainty are not considered).

4.2.3 Identification and evaluation of opportunities

While the emphasis of a CRA is on identifying potential risks and measures to reduce these risks, a CRA study also provides a context in which opportunities may be identified for promoting climate resilience and adaptation, and, if appropriate, low-carbon development. These may include opportunities for piloting new climate resilient practices, technologies or crops; for awareness raising, communication and training; for the promotion of risk spreading measures such as livelihood diversification and including the development of weather-related insurance; for gathering data and information on climate-sensitive systems; for linking with other relevant initiatives to promote resilience and adaptation; for improving policy dialogues. Low-carbon development can be promoted through the use of renewable energy sources and micro-generation, and the selection of project alternatives with lower carbon footprints, where such choices do not have significant negative impacts on the project or on development at large. Consultants should consider where such opportunities or "entry points" exist in the context of the project.

4.2.4 Measures and recommendations in relation to climate-related risks and opportunities

Measures must be proposed to reduce the climate-related risks identified above and, if appropriate, to ensure that any opportunities are exploited effectively. These risk reduction or adaptation measures must be technically feasible, economically sound and socially acceptable (i.e. they must take into account the views of the main stakeholders). The consultants must seek ways to optimise such measures, such that one measure does not reduce the effectiveness of another or, worse yet, cause an undesired significant impact itself. Where the timescales associated with the project are long, different measures might be required at different times, and consideration should be given to how shorter term measures interact with longer term measures. In all circumstances, measures to reduce risks and adapt to climate change in the shorter term must be compatible with any longer term adaptation needs, and it should be ensured that measures to deliver adaptation or reduce risks in the shorter term do not increase vulnerability or contribute to maladaptation in the longer term.

Risk reduction / adaptation measures can have several distinct aims:

- Measures to reduce physical exposure of any project infrastructure to climate hazards and their related impacts (e.g. sudden-onset climate-related hazards and disasters, slow-onset hazards such as sea-level rise)
- Measures to improve the project's ability to operate under identified constraints that may change over the course of the project's lifetime or on timescales over which continued project benefits are anticipated (e.g. choice of most water-efficient or energy-efficient production options, avoiding locating of water-intensive activities in areas where climate change is likely to increase existing water stress).
- Generalised reduction of the vulnerability of key stakeholders in the context of existing and emerging risks associated with climate variability and extremes, in order to ensure project success (e.g. where the focus is on the near term and/or there is high uncertainty about future changes).
- Countering any potential increases in vulnerability resulting from the project among certain groups or of specific systems (e.g. ecosystems, natural resources, landscape systems).
- Targeted measures to address specific impacts of climate change identified during the CRA study (e.g. where there is high confidence in projections of climate change and associated impacts relating to specific aspects of the project such as infrastructure).
- Enhancing of adaptive capacity through measures to increase access to key resources, raise awareness, deliver training on adaptation issues, to ensure that project implementation and the delivery of longer term benefits account for and address climate change issues.
- Development of specific risk reduction / adaptation strategies and frameworks within measures may be identified, implemented and revised over time.
- Significant redesign of the project where it is concluded that the project or elements of the project may contribute to maladaptation.

Residual risks remaining after the application of the proposed risk reduction / adaptation measures must be identified and assessed. Based on this assessment the alternatives must be compared and recommendations made on the best alternative (with attention to uncertainties and the implications of these uncertainties for the identification of the best alternative). The comparison of alternatives must be summarised in tabular form.

If the proposed risk reduction / adaptation measures involve an additional cost (compared to the options currently considered), the CRA should include an estimation of these costs. It should also identify who would be in charge of implementing these measures.

In exceptional circumstances it may be concluded that a project is associated with so many risks, or risks that are so severe, that its prospects for success are extremely small. In such cases it may be recommended that a project does not go ahead, or that it is replaced with one or more alternative projects that can deliver comparable benefits.

4.2.6 Climate Risk Management Plan

The Climate Risk Management Plan (CRMP) is a document that identifies the actions needed to implement the recommendations of the CRA study. The CRMP should clearly translate the recommendations from the CRA into an operational plan.

The CRMP of the project should include:

- A table (logical framework type) showing the objectives, expected results, objectively verifiable indicators, activities (mitigation/optimisation measures), and responsibilities for the implementation of those activities.
- Institutional arrangements for its implementation: responsibilities, role of the key actors, participation of stakeholders.

- Suggestions for contracts (environmental clauses: standards, potential requirement to prepare CRMP of the enterprise) and contracting modalities (such as payments linked to results).
- A monitoring and supervision plan, which outlines how risk reduction and adaptation will be measured/tracked, and which identifies appropriate indicators (e.g. of vulnerability, adaptive capacity, impact of measures in terms of development outcomes) and establishes frequency of monitoring, means to gather and analyse data, reporting systems.
- A response plan in case of unexpected results from the monitoring (e.g. unintended consequences, evidence that measures are not having intended impacts).
- A proposed schedule for activities.
- An indication of means (including personnel, technical resources, other requirements) and costs of implementing the CRMP.

4.2.5 Limitations of the CRA

Identification and assessment of uncertainty should be an integral part of the CRA study. However, the major limitations, weaknesses and uncertainties of the CRA should be explicitly underlined. Areas should be highlighted where significant knowledge and information gaps remain, and where uncertainties cannot realistically be quantified. Where projections and assessments are based on limited data, a small number of models, simulations or scenarios, this should be highlighted, and any deficiencies in representing a reasonable range of possible future scenarios should be identified. Any apparent contradictions between model results and observations should be noted. All assumptions made in the prediction and assessment of the potential climate-related risks should be detailed.

4.2.6 Conclusions on climate-related risks

This section will summarise the key results of the CRA, the recommendations (referring to the CRMP) and an assessment of the residual risks. Any additional information relevant for further economic and financial analyses or for the general formulation study should be provided. The limitations of the CRA and its key assumptions should be articulated.

5. Work plan

The work plan should include but not necessarily be limited to the following activities:

CRA scoping study

- Fact finding/data collection - clarification of ToRs[199]
- Identification and engagement of stakeholders
- Analysis/preparation of scoping report

CRA study

- Review of documentation (e.g. CEP, NAPAs, National Communications, relevant existing SEAs, identification and pre-feasibility reports)
- Review of relevant literature, policy and legislation framework (if these exist)
- Fieldwork, data gathering and analysis, including engagement of stakeholders
- Risk identification and evaluation
- Formulation of climate risk reduction / adaptation measures
- Preparation of the CRMP

[199] As CRA is an emerging area of practice, with which development practitioners are generally unfamiliar, clarification of the ToRs may involve significant revision of the ToRs, particularly with regard to methodologies to be employed and the limitations of the CRA.

- Preparation of the final CRA report

On the basis of the proposed work plan and time schedule outlined, a detailed work plan for the CRA study must be provided in the proposal.

6. Expertise required

The proposed mission shall be conducted by a team of (*number*) experts, who should have the following profiles:

- Expert level I or level II with at least 10 years experience in climate change, with specific expertise in one or more of the following areas: impacts, vulnerability, risk assessment, adaptation and climate change integration/mainstreaming. She/He would be the team leader.
- (*Number*) experts level II with (*5*) (*10*) years experience and with a technical background in (specify). (*The number of experts and specialities may be revised or adjusted at a later stage on the basis of the results of the scoping study*).

The team is expected to include experts with local or regional knowledge/expertise. The experts should have excellent skills in (*specify*). (*Specify language*) will be the working language; *the final report must be presented in (specify language).*

For each specialist proposed, a *curriculum vitae* must be provided of no more than (*four*) pages setting out their relevant qualifications and experience.

7. Reporting

7.1. CRA scoping study

The scoping study must be presented in the format given in Appendix 1.

The detailed stakeholder engagement strategy must be presented two weeks after project initiation; (*number*) copies are to be presented to (*names and organisations*) for comments.

The draft scoping report in (*number*) copies (double-sided printing) is to be presented to (*names and organisations*) for comments by (*date*). Comments from the concerned authorities and the Commission should be expected by (*date*). These comments will be taken into account in preparing the final scoping report. (*number*) copies of the final scoping report in (*language*) (double-sided printing) are to be submitted by (*date*).

7.2. CRA study

Feedback on the scoping study will be provided no later than (*number*) weeks after its submission, setting the scope of the CRA study. The CRA study will begin no later than (*number*) weeks after this date.

The CRA report must be presented in the format given in Appendix 2. The underlying analyses are to be presented in appendices to this report.

The draft CRA report in (*number*) copies (double-sided printing) is to be presented to (*names and organisations*) for comments by (*date*). Within (*number*) weeks, comments will received from (*list the authorities*).

These comments will be taken into account in preparing the final report (maximum…pages excluding appendices). (*Number*) copies of the final report in (*language*) (double-sided printing) are to be submitted by (*date*).

8. Presentation of the proposal

The proposal must include an understanding of the Terms of Reference and a description of the general approach to the whole CRA in accordance with these ToR, highlighting the following: the

proposed methodology for the engagement of stakeholders; the proposed approaches for the establishment of the climate-risk baseline; and the proposed methodologies for identifying and assessing climate-related risks (including the description of specific tools proposed).

(According to the contracting modality used the EC should indicate the form in which they wish consultants to make their financial proposal, e.g. break-down by categories of costs, as well as indicate the maximum budget for this contract.)

9. Time schedule

(Insert time schedule.)

The consultant should respond to this time schedule and indicate in their proposal how they intend to organise the work for this purpose. The time schedule can be revised according to the results of the scoping study.

10. Appendices

Appendix 1. Standard format for the CRA scoping report

Maximum length of the main report (*without appendices*): 25 pages.

The following text appears on the inside front cover of the report:

> This report is financed by the European Commission and is presented by the (*name of consultant*) for (*national institution*) and the European Commission. It does not necessarily reflect the opinion of (*national institution*) or the European Commission.

Structure of the report

1. Executive summary
2. Description of the project under consideration and its alternatives
3. Applicable environmental legislative and institutional framework
4. Key stakeholders and their concerns
5. Key climate-related risks aspects and project-climate interactions to be addressed in the CRA
6. Climate risk baseline and areas of project influence
7. Proposed methodologies for assessing climate related risks
8. Timeframe and resources needed to carry out the CRA
9. Technical appendices
   - I. Stakeholder engagement methodology
   - II. List of stakeholders consulted (including contact details)
   - III. Records of stakeholder engagement
   - IV. List of documents consulted

Appendix 2. Standard format for the CRA report

The following text appears on the inside front cover of the report:

> This report is financed by the European Commission and is presented by the (*name of consultant*) for (*national institution*) and the European Commission. It does not necessarily reflect the opinion of (*national institution*) or the European Commission.

Structure of the report

1. Executive summary

2. Background

    2.1 Project justification and purpose

    2.2 Project location

    2.3 Project description and associated activities

    2.4 Alternatives (if any)

    2.5. Relevant policy, legislative and institutional framework

3. Approach and methodology

This chapter must set out the approach and methodology used in the CRA and how the data and information collected have been incorporated in the findings and recommendations.

    3.1 General approach

    3.2 Tools and methods for identifying and assessing risks

    3.3 Relevant indicators

    3.4 Assumptions, uncertainties and constraints

4. Climate risk baseline study

    4.1 Current climate risk context (hazards, vulnerability, adaptive capacity)

    4.2 Expected future climate risk context

5. Risk identification and assessment

Indirect risks and interactions between (i) different types of risk, and (ii) climate-related and non-climate stresses could form additional subject headings to ensure that these aspects are not overlooked. Table and diagrams should be used to summarise and clarify findings in this chapter.

6. Conclusions and risk statement

This section must present a clear statement of the conclusions and recommendations on actions to be taken to ensure that the climate-related risks are adequately addressed in subsequent project preparation, implementation, monitoring and evaluation phases. These conclusions and recommendations must be complete, yet concisely and clearly formulated.

This section must include one of the three 'risk statements' set out below:

> The project (and any alternatives) are not associated with significant climate-related risks, provided that the measures recommended are followed through.

or:

> The lower risk alternative(s) identified will be associated with some significant climate-related risks, for which adequate risk reduction / adaptation measures cannot feasibly be realised. Therefore, it is recommended to identify and assess additional alternatives or to check that the residual risks are acceptable given the expected benefits of the project.

or:

> Each alternative identified is associated with significant and unacceptable climate-related risks irrespective of proposed risk reduction / adaptation and monitoring measures. Therefore, it is recommended that the project proposal is comprehensively re-worked and alternatives re-assessed.

7. Risk reduction / adaptation measures and residual risks. This section should provide the key points of the Climate Risk Management Plan (CRMP) full details of which should be provided in a Technical Appendix.

8. Technical appendices

- Input into the logical framework planning matrix of the proposed project design – intervention logic, indicators, assumptions and preconditions
- Data, data analysis, background material, figures and maps and other illustrative information not incorporated into the main report
- Other technical information and data, as required
- Records of stakeholder engagement
- Climate Risk Management Plan

9. Other appendices

- Study methodology/work plan (2–4 pages)
- Consultants' itinerary (1–2 pages)
- List of stakeholders consulted or engaged (1–2 pages)
- List of documentation consulted (1–2 pages)
- *Curriculum vitae* of the consultants (1 page per person)
- ToR