Global Environment Facility

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WORKING DRAFT ON THE DEVELOPMENT OF A RESULTS FRAMEWORK FOR ADAPTATION PROGRAMMING

1. At the first meeting of the LDCF/SCCF Council in December 2006, Council Members called for the development of indicators to measure progress in achieving results from adaptation projects.

2. Because adaptation to the adverse effects of climate change is a new area for programming, there has been little past work to draw upon to develop indicators for measuring results. Efforts at indicator development are further complicated by the fact that by its very nature, adaptation is cross-cutting in orientation: i.e., adaptation projects may be developed for agriculture, coastal zones, forestry, infrastructure, and other sectors frequently supported through development projects.

3. The GEF and the GEF Agencies participating in the GEF's adaptation task force have been working to develop results indicators for adaptation for over a year. The attached document is a working draft on the development of a results framework prepared by UNDP with GEF support and input from the GEF adaptation task force.

4. The framework in the paper suggests a set of general impact indicators for the adaptation portfolio under the LDCF and the SCCF Adaptation Program. The indicators are also placed within the context of the Millennium Development Goals. The paper then links these portfolio level indicators to a set of project-level outcome indicators across five general categories of project outcomes: coverage, efficacy, sustainability, replicability and acceptability. In addition, it proposes specific outcome indicators related to projects in five of the sectors eligible for support: agriculture and food security; water supply and quality; public health; disaster risk management; coastal zone development; and natural resources.

5. The working draft of the proposed results framework is being presented to the LDCF/SCCF Council for its information. Written comments on the paper are welcome to assist UNDP and the adaptation task force in the further development of this indicator framework.

United Nations Development Programme

DRAFT

Monitoring and Evaluation Framework for Adaptation

First Draft for Comments
May 2007

Introduction

The Global Environment Facility's (GEF) priority for programming through the Special Climate Change Fund (SCCF) and Least Developed Countries Fund (LDCF) is adaptation. The LDCF is designed to support projects addressing **urgent and immediate adaptation needs** in the least developed countries (LDCs) as identified by their National Adaptation Plans of Action (NAPAs). The SCCF is designed to finance adaptation activities that **increase the resilience of national development sectors** to the impacts of climate change, through a focus on long-term planned responses particularly in water resources, land, agriculture, health, infrastructure development, disaster preparedness, and in fragile ecosystems and coastal zones. These areas of emphasis align with core development needs that are likely to be adversely affected by climate change.

To achieve these goals, the M&E framework for adaptation is organized according to seven "Thematic Areas" (TAs) representing key climate change-sensitive development objectives, priorities that have emerged from over 130 country assessments[1] and the scientific consensus of the International Panel on Climate Change (IPCC):

- Agriculture/food security
- Water resources and quality
- Public health
- Disaster risk management
- Coastal development
- Natural resources
- Infrastructure[2]

UNDP-GEF has developed this draft framework for discussion, based on initial experiences in programming adaptation projects, and all comments and suggestions are welcomed (adaptation@undp.org).

Purpose

The M&E framework described here is designed to support the overarching adaptation goal, which the GEF portfolio, taken in sum, will demonstrate:

Changes in existing policies, practices and investments or the adoption of new policies, practices and investments that support progress toward MDGs and economic growth in the face of climate change and its associated impacts

Building on this foundation, each TA is associated with one or more of the MDGs and/or MDG targets (identified alongside each TA goal in Table 5 at the end of this note), indicating the MDGs most relevant to the TA goals. Considerable overlap exists among the various TAs, and the mechanisms that link climate change impacts with developmental outcomes are complex, meaning that the impacts of activities under a particular TA are unlikely to be restricted to a single MDG or a narrow range of associated targets. For example, activities supporting disaster risk management or coastal development will in many cases have implications for food security, health and water resources. Mapping TAs onto MDGs should be viewed as an approximate guide for project development, aligning adaptation progress with broader development targets, rather than a strict framework.

[1] Non-Annex I National Communications and National Adaptation Programmes of Action for Least Developed Countries

[2] Indicators related to infrastructure to be completed with input from the World Bank

Evaluating adaptation success

The ultimate aim of the climate change adaptation portfolio is to improve adaptive capacity and reduce vulnerability of human populations and the natural and economic systems on which they depend to climate change and its impacts, and therefore to minimize the costs and damages associated with climate change.

What do improved adaptive capacity and reduced vulnerability consist of? While adaptation to climate change is not a new concept, climate pressures are increasing in intensity and pace, and in some cases, new risks are emerging. Adaptation is not an outcome, but rather a process involving social, institutional, technical and environmental components that underpin the achievement of development objectives. Accordingly, adaptation interventions are considered to fall into the following general categories of processes across scales (e.g. national, local, etc.):

- policymaking and planning,
- decision-making for investment,
- resource management, and
- community practices.

A wide range of adjustments will be necessary within these processes to improve adaptive capacity and/or reduce vulnerability to climate change. Some of these adjustments are included in Table 5 of the M&E Framework for Adaptation in each of the 7 TAs previously identified, although appropriate interventions will vary extensively depending on the specific context and objective of a project. Successful adaptation will be measured, ultimately, by the achievement of development objectives that are sensitive to climate change over the long term. This is not a feasible approach to monitoring and evaluating the SCCF and LDCF portfolios for a number of reasons, including the short timescale of projects and the multiple factors that interact with climate change stresses on development. The structure of the M&E framework for adaptation has attempted to tackle the following three fundamental issues:

1. Attribution

Climate change risks and impacts compound risks and impacts associated with other factors such as natural geologic and climatic variability and anthropogenic environmental damage. In practice it is often difficult to decouple climate change risks and impacts from those associated with other stresses or drivers. For example, a climate-related disaster such as a flood or landslide will have variable impacts depending on settlement patterns, housing materials and land management practices. This complexity is highly challenging for monitoring and evaluation of adaptation projects. This problem is not unique to climate change adaptation projects, and lessons learned from other areas suggest that a combination of quantitative and qualitative indicators as well as narrative information be used to identify the contribution of projects to improvements in target areas of project interventions.

2. Relevance

While the impacts of climate change are already being felt around the world, climate change is a long-term problem. Adaptation projects may include some short-term interventions, but will be designed to incorporate long-term components; the balance between long- and short-term interventions will depend to a large extent on the funding source, with LDCF projects addressing “urgent and immediate” needs, and SCCF focusing on long term planning. Ultimately the success of the portfolio will hinge on whether people are better able to cope with climate change and its impacts than they would otherwise be without project interventions. In many cases however, particularly for projects focusing on long-term

interventions, the success of projects will not be apparent for years after the end of the project lifetime, meaning that quantitative impact indicators cannot be meaningfully employed. Instead, interventions designed to deliver long-term benefits must be based on assessments of proxy measures or markers of progress toward vulnerability reduction and increased adaptive capacity. The most effective way of approaching the development of such indicators is to assess the factors that drive vulnerability and the ability to respond to change within the specific contexts in which the projects operate, based on a combination of historical experience, stakeholder engagement, considerations of the local and regional implications of a range of plausible climate change scenarios, and attention to the social, political, economic, environmental and cultural constraints within which adaptation must take place.

3. Calibration

The adaptation baseline is moving. Adaptation will take place against a backdrop of evolving climate hazards, which may become more frequent and severe, resulting in climate-related losses, or become less pronounced over the timescale of a project. The impacts of adaptation projects must be assessed against changing hazard profiles, meaning that it is not sufficient to compare losses or damages before and after the adaptation intervention. Where trends in climate hazards occur over periods during which assessment of project impacts are taking place, indicators of loss or damage must be "normalized" to account for changing hazards. For example, a project to improve crop yields that results in no increase in yield might actually have prevented a fall in yield that would otherwise have occurred due to changes in temperature, rainfall, or climatic variability. In such a case, the impact of the project will only become apparent once the underlying changes in key climatic variables are taken into account. In some cases it may be possible to assess the difference between the baseline scenario (expected outcome without the adaptation intervention) and the actual outcome. However, in many instances assessment of the difference made by the adaptation intervention should be performed in a qualitative and narrative fashion.

Portfolio and Project structure

Adaptation projects are designed to support adaptation in the 7 Thematic Areas (TAs) through changes in existing policies, investments or practices, and/or the development of new policies, investments or practices. The suite of specific outputs that makes up a project is intended to deliver specific project outcomes. These outcomes in turn contribute to portfolio-wide development objectives to reduce vulnerability or enhance adaptive capacity in support of the goal of each TA (Figure 1 and Table 5).

Portfolio level

- **Goals** Each Thematic Area is associated with a single broad goal (Table 5), which relates to a development issue addressed by the MDGs. TA Goals reflect the fundamental motivation for adaptation: to secure development in the face of climate change which might otherwise undermine it.
- **Objectives** Each TA is associated with two complementary Objectives (Table 5), which address (i) vulnerability reduction and (ii) development of adaptive capacity. These objectives contribute to the realisation of the TA Goal and cover the range of adaptation that GEF projects support. Each project will operate within the framework of one of these objectives (although they are not intended to rigidly define what a project should do).

Project level

- **Outcomes** Projects will be associated with approximately 2 – 4 Outcomes designed to support the objective(s) of the TA (or TAs) in which the project is focused. A project may use the Outcomes in Table 5 to select from or develop its own Outcomes (e.g. by combining elements of certain of the different Outcomes listed in Table 5, or by

creating them from scratch). Outcomes span the four adaptation approaches outlined in the APF: reducing exposure to climate-related hazards, reducing vulnerability to the impacts associated with these hazards, enhancing adaptive capacity, and ensuring that development policies are robust under climate change.

- **Outputs** Each outcome will be associated with a number of project outputs, the tangible deliverables of project activities related to policy change, technical assistance, resource management, infrastructure and capacity building. Outputs are highly project-specific.

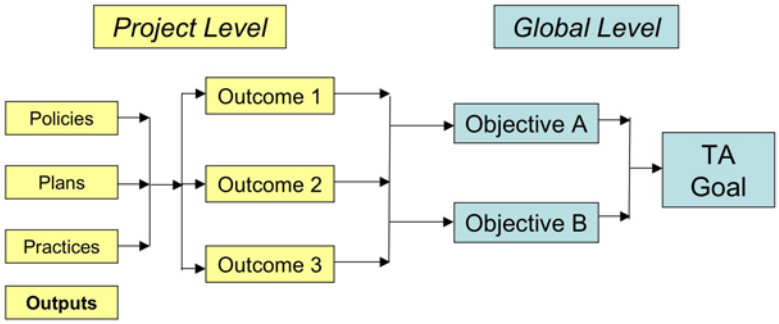

Figure 1 Relationship between project-level outputs and outcomes, and the wider objectives and goals of the Thematic Areas for the Adaptation portfolio.

Indicators

Monitoring and Evaluation (M&E) of portfolio and project effectiveness will be achieved through the use of indicators at three levels (Table 1).

Portfolio level

Evaluation will be performed at the portfolio level using **Impact Indicators** designed to assess the contribution of projects to the realisation of the Objectives associated with the TAs. These indicators will be constructed by aggregating Outcome Indicators at the project level. Impact Indicators are listed in Tables 2-4.

Project level

Project success will be evaluated through the use of **Outcome Indicators**, defined at the project scale. Outcome indicators will assess the extent to which a project has effected the intended changes in the systems targeted by the project to reduce vulnerability or enhance adaptive capacity. Given the long timescales involved in the evolution of certain climate change hazards and the realization of adaptation benefits, and the difficulty of directly measuring these benefits over relatively short project lifetimes, Outcome Indicators will assess proxies or markers for progress toward reduced vulnerability and enhanced adaptive capacity.

Projects will also be monitored using **Output Indicators**, defined at the sub-project level according to specific activities undertaken. Indicators at this level will be largely process-oriented and should be developed according to planned project activities.

Table 1. Illustrative logframe mapping goal and objectives (Portfolio level) to outcomes and outputs (Project level) with associated indicators in one Thematic Area

Portfolio Level			***Project Level***			
Goal	**Objectives**	**Impact √ Indicators**	**Outcomes**	**Outcome √ Indicators**	***Outputs***	**Output √ Indicators**
Single goal associated with each TA	Objective 1 – vulnerability reduction	Impact indicator(s)	Outcome 1.1 . Outcome 1.x	Indicator 1.1.1 Indicator 1.1.2 . Indicator 1.x.x	Strategies	…
					Policies	…
					Measures	…
	Objective 2 – adaptive capacity enhancement	Impact indicator(s)	Outcome 2.1 . Outcome 2.x	Indicator 2.1.1 Indicator 2.1.2 . Indicator 2.x.x	Strategies	…
					Policies	…
					Measures	…

Impact Indicators – Portfolio Level

As indicated above, projects are designed to *contribute towards* the realisation of the TA Objectives. In other words, they have an *impact* on the wider social environment, in terms of progress toward ameliorating vulnerability and/or enhancing adaptive capacity. Impact Indicators are constructed by aggregating project level Outcome Indicators. Not all indicators will be relevant to every project, so Impact level indicators will not aggregate every project in the portfolio.

Impact Indicators will address the success of a project using indicators designed to measure the following factors:

I. **Coverage:** the extent to which the project engages with and benefits its target population.

II. **Efficacy:** the extent to which the project delivers intended results, or brings about changes in behaviour that support the project's objective.

III. **Sustainability:** the ability of stakeholders to continue to implement adaptive interventions after the end of the project lifetime.

IV. **Replicability:** the extent to which the project generates results and lessons that are potentially useful in other, comparable contexts, and the extent to which these lessons are disseminated and acted upon.

Each of the above factors will be represented by a small number of indicators, which may be derived quantitatively and/or qualitatively. Qualitative indicators will be derived largely from questionnaire-based surveys (QBS), and will often be based on the perceptions of stakeholders, for example regarding the efficacy of particular interventions or outcomes. QBS can be based on the H-form, in which stakeholders are asked to rate different aspects of a project or relevant conditions from 1 to 10 at the beginning and throughout the project.

Indicator scores will be aggregated using project results from a subset of the portfolio; in other words, projects will address one or more of the processes captured by indicators, but not all of them. Generic impact indicators for aggregation at the portfolio level are listed in Table 2 and can be complemented by supplemental indicators relevant to specific TAs where possible and appropriate (see Table 4). Generic

impact indicators will gather the same information in each TA, employing more precise wording to become operational at the project level.

Both Portfolio and Outcome indicators cover the categories of adaptation processes that are necessary for GEF projects to deliver:

- policymaking and planning,
- decision-making for investment,
- resource management, and
- community practices.

Table 2. Generic Impact Indicators for M&E at the portfolio level, across all TAs

I. Coverage

ii. Number of stakeholders (communities, households, individuals, agencies, etc.) engaged in vulnerability reduction or improved adaptive capacity activities. (Aggregate Outcome Indicator I.i)

iii. Number of policies introduced to address climate change risks or adjusted to incorporate climate change risks (normalised by number of countries hosting policy-relevant projects).

iv. Number of investment decisions revised or made to incorporate climate change risks (normalised by number of countries hosting infrastructure projects).

v. Number of stakeholders (individuals, households, communities, etc.) served by new or expanded climate information management systems (e.g. early warning systems, forecasting, etc.) (normalised by number of countries hosting climate information projects). (Aggregate Outcome Indicator I.ii)

II. Efficacy

i. Percent change in stakeholders' behaviours utilizing adjusted practices or resources for managing climate change risks, assessed via QBS. (Aggregate Outcome Indicator III.i)

ii. Percent improvement in stakeholders' capacities to manage climate change (e.g. communicate climate change risks, disseminate information, or make decisions based on high quality information), as relevant, assessed via QBS. (Aggregate Outcome Indicator III.ii)

iii. Percent reduction in perceived vulnerability:

   a. Percent improvement in stakeholder perceptions of system vulnerability to a recurrence of primary climate change-related threat(s), assessed via QBS. (Aggregate Outcome Indicator III.iii)

   combined with

   b. Perceived success of project interventions in delivering mechanisms to reduce vulnerability, assessed via QBS. (Aggregate Outcome Indicator III.iv)

iv. Percent improvement in perceived adaptive capacity:

   a. Percent improvement in stakeholder perceptions of the range or robustness of options available to cope with recurrence of primary climate change-related threat(s), assessed via QBS. (Aggregate Outcome Indicator III.v)

   combined with

   b. Perceived success of project interventions in delivering improvements in options to cope with climate change-related threat(s), assessed via QBS. (Aggregate Outcome Indicator III.vi)

III. Sustainability

i. Number of project beneficiaries receiving training in implementation of specific adaptation measures or decision-support tools. (Aggregate Outcome Indicator IV.i)

ii. Local or spatially-appropriate availability of skills and resources necessary to continue adaptation after conclusion of project, assessed via QBS. (Aggregate Outcome Indicator IV.ii)

IV. Replicability

i. Number of lessons learned as a result of the programme. (Aggregate Outcome Indicator V.i)

ii. Number of outside programmes, policies or projects incorporating project outcomes.

Outcome Indicators – Project Level

Outcome Indicators are defined at the project level and will address the results of projects in terms of changed conditions or behavior at the scale of systems targeted by project activities. The same four factors will be tracked, as well as another:

V. Buy-in and acceptability: the extent to which the project has the support of relevant individuals, groups and institutions.

Generic Outcome Indicators representing all five factors are listed in Table 3. Table 5 provides a more detailed list of Outcome Indicators representing Category V, Efficacy, tailored to the specific outcomes listed in the Table 4 outcome "menu" for each TA. The M&E framework for an individual project should employ the generic indicators in Table 3 that are appropriate to the project type; the indicator "menu" in Table 5 may be used in order to ensure that indicators of efficacy are tailored to the specific project Outcomes. Where projects design their own outcomes they should develop their own associated, specific indicators.

Table 3. Generic Outcome Indicators for use in M&E at the project level

I. Coverage

i. Number of households, businesses (or other appropriate units) engaged in vulnerability reduction or adaptive capacity development activities, as a proportion of households or other units in the community or region targeted by the project.
ii. Number of stakeholders (individuals, households, communities, etc.) served by new or expanded climate information management systems (e.g. early warning systems, forecasting, etc.).

II. Efficacy

i. Percent change in stakeholders' behaviours utilizing adjusted practices or resources for managing climate change risks, assessed via QBS.
ii. Percent improvement in stakeholders' capacities to manage climate change (e.g. communicate climate change risks, disseminate information, or make decisions based on high quality information), as relevant, assessed via QBS.
iii. Percent reduction in perceived vulnerability:
    a. Percent improvement in stakeholder perceptions of system vulnerability to a recurrence of primary climate change-related threat(s), assessed via QBS.

    combined with

    b. Perceived success of project interventions in delivering mechanisms to reduce vulnerability, assessed via QBS.
iv. Percent improvement in perceived adaptive capacity:
    a. Percent improvement in stakeholder perceptions of the range or robustness of options available to cope with recurrence of primary climate change-related threat(s), assessed via QBS.

    combined with

    b. Perceived success of project interventions in delivering improvements in options to cope with climate change-related threat(s), assessed via QBS.

These indicators can be supplemented by indicators specific to TA(s) addressed by project.

III. Sustainability

i. Number of beneficiaries of project receiving training in implementation of specific adaptation measures or decision-support tools.
ii. Local (or spatially appropriate) availability of skills and resources necessary to continue

adaptation after conclusion of project, assessed via QBS.
IV. Replicability i. Number of "lessons learned" from the project.
V. Buy-in / acceptability i. Support for project activities among participating communities as assessed by QBS. ii. Number of outside programmes, policies or projects incorporating project outcomes into their processes.

Supplemental Indicators

In addition to standard indicators listed in Tables 2 and 3, additional indicators may be used where measurement is possible. These are somewhat opportunistic and may pose difficulty in determining attribution, but they should be considered.

Table 4 Supplemental Indicators

TA1. Agriculture/Food Security • Extent to which climate change scenarios and adaptation are incorporated into agricultural and rural development policies. Assessed using QBS of regional bodies working on adaptation. • Number of people classed as food insecure in region where climate change is associated with potential food supply problems. Attribution to programme intervention to be addressed.
TA2. Water Resources & Quality • Proportion of population classed as water stressed relative to projected baseline without adaptation interventions. • Water saving capacity for managing supply during times of stress.
TA3. Public Health • People infected with, incapacitated by or dying from climate-sensitive diseases relative to baseline projections and/or normalised with respect to climatic trends or variations. • Preventive measures employed for controlling climate-sensitive disease at household/community level.
TA4. Disaster Risk Management • Population affected by climate-related disasters, normalized with respect to frequency of extreme climatic events or hazards. • Proportion of population living in high-risk areas (where climate-related risk is increasing or predicted to increase), with respect to projected baseline. • Households with improved infrastructure/response mechanisms for coping in the event of disaster.
TA5. Coastal Zone Development • Damages/losses/mortality/displacement associated with climate-related coastal hazards, normalized with respect to frequency and severity of hazard events.
TA6. Natural Resources Management • Rate of loss of natural resource base for livelihoods determined to be negatively impacted by climate change. • Livelihoods options better suited to climate change available to target community.

Output indicators

Output Indicators are used to track the success of the various project activities, and will vary widely in nature depending on the type of project outputs. Qualitative Output Indicators are likely to be used in assessing activities such as the development of adaptation strategies and policies, awareness-raising, and capacity building. Quantitative indicators may be used to assess more direct and practical adaptation activities such as the introduction of new animals, crops and technologies. Such indicators might assess the number of households with access to such innovations, or the percentage of existing systems upgraded to increase capacity to cope with new climatic conditions. Output indicators will be highly specific to project contexts, and project developers will formulate their own outputs and associated indicators appropriate to the context and purpose of a project. Output indicators will be used throughout the lifetime of a project in order to monitor its progress and will be particularly useful in final project evaluation.

Table 5. Portfolio level Objectives as applied to TAs and project Outcomes, with associated *specific* indicators to supplement generic indicators. *Only TA1 has been completed.* (Acronyms: VRA - vulnerability reduction assessment; QBS - questionnaire based surveys; EWS - early warning systems)

PORTFOLIO LEVEL		PROJECT LEVEL	
Objectives	**Impact Indicators**	**Outcomes**	**Outcome Indicators**
TA1. Agriculture and Food Security[3]			
GOAL: Food insecurity resulting from climate change minimized or reversed, and new opportunities for food production resulting from changes in climate exploited. cf. **MDG Goal 1**: Eradicate extreme poverty and hunger			
1. Vulnerability to Impacts of Climate Change Reduced: Resilience of communities and food-production systems threatened by changes in mean climatic conditions and climatic variability enhanced.	See Table 2 for standard indicators to adapt to TA1. *Supplemental Indicators* • Number of people classed as food insecure in region where climate change is associated with potential food supply problems. Attribution to programme intervention to be addressed.	*Decoupling food production from rainfall variations (c.f. APF Vuln. Approach)* 1.1 Rainfall capture and storage systems introduced or improved where rainfall is declining or becoming more variable. 1.2 Irrigation introduced or expanded where feasible in areas where rainfall is declining or becoming more variable. 1.3 Food production methods that are effectively insensitive to emerging climate hazards piloted (e.g. oasis agriculture based on groundwater instead of rain-fed agriculture). 1.4 Improved communication of and wider use of forecast information on seasonal and shorter timescales where temporal distribution of rainfall is changing. *Reducing exposure to climate change hazards (c.f. APF Hazards Approach)* 1.5 Non-agricultural livelihood options piloted and non-farm income sources developed where agriculture is becoming less viable. 1.6 Land provided in lower-risk or newly productive areas for those living in locations	*Outcome-specific indicators (relevant to outcomes as numbered)* 1.1 Amount of water collected using capture and storage systems (as proportion of realistic target) 1.2 Crop area under irrigation (proportion of total) 1.3 Proportion of food requirements or participating population supplied by “low climate sensitivity” methods. 1.4 Proportion of population (farmers/ pastoralists) receiving forecast information. 1.5 Average increase in income of participating households 1.6 Number of food producing households with access to new land resources 1.7 Success of new strains (criteria to be developed) 1.8 Understanding of distribution and nature of vulnerability & risk by policymakers (QBS) 1.9.1 Number of new or revised policies resulting from project 1.9.2 Impact of policy changes on food security(QBS of affected stakeholders)

[3] TA1 focuses on agriculture and pastoralism. Aquatic and wild food resources are included in Coastal Management (TA5) and Natural Resource Management (TA6).

PORTFOLIO LEVEL		PROJECT LEVEL	
Objectives	**Impact Indicators**	**Outcomes**	**Outcome Indicators**
		where food production faces severe threats from climate change (NB this may involve permanent voluntary relocation OR use of lower risk areas, for example on an occasional or seasonal basis). *Reconfiguring food production systems for new conditions (c.f. APF Vuln. Approach)* 1.7 Piloting of new crop and animal strains (e.g. drought tolerant) more suited to emerging climatic conditions. *Changing policies to increase resilience (c.f. APF Policy Approach)* 1.8 VRA to identify where policy changes could have immediate impact on vulnerability (e.g. by providing access to key resources). 1.9 Policy changes to deliver immediate vulnerability-reduction benefits in context of emerging climate risks implemented.	*Supplementary indicators* • Attributable changes yield resulting from project interventions (attribution based on chain of qualitative reasoning). • Attributable changes in general food security (predictability, ability to purchase food) among those participating in project. *"Opportunistic" Indicators* • Food production deficits (crop and/ or livestock losses) during years characterised by climate extremes (e.g. drought or false start to wet season), compared with deficits in previous years characterised by similar extremes (attribution must be addressed by discounting other factors).
2. Capacity to Adapt to Climate Change and its Impacts Enhanced: Ability of individuals, communities and institutions to plan for and respond to impacts of climate change enhanced.	See Table 2 for standard indicators to adapt to TA1. *Supplemental indicators* • Extent to which climate change scenarios and adaptation are incorporated into agricultural and rural development policies in a region comprising multiple countries that have participated in adaptation projects. Assessed using QBS of regional bodies working on adaptation.	*Capacity to assess climate change-related risks enhanced (c.f. APF AC Approach)* 2.1 Medium to long-term climate change risks communicated to policymakers and public. 2.2 Training in use of medium to long-range climate projections for scenario-planning provided at different levels of society. 2.3 Capacity to monitor key climate-related variables important for early-warning systems strengthened. *Food production systems made more flexible and responsive to climate change and variability on multiple timescales (c.f. APF AC Approach)* 2.4 Forums for development of adaptation strategies established at different levels of society (e.g. government, local communities).	*Outcome-specific indicators (relevant to outcomes as numbered)* 2.1 Awareness of climate change risks assessed at different levels of society using QBS. 2.2 Number of people trained and number of groups represented. 2.3 Availability of data on trends in climate change relevant variables (assessed using QBS of scientific bodies e.g. met. Services) 2.4.1 Number of forums created 2.4.2 People and communities represented by forums. 2.5.1 Improvements in conditions for pastoralists (e.g. access to grazing lands), assessed using QBS. 2.5.2 Perceptions of pastoralism among non-pastoralists (from community to government

PORTFOLIO LEVEL		PROJECT LEVEL	
Objectives	**Impact Indicators**	**Outcomes**	**Outcome Indicators**
		2.5 Mobile pastoralism supported and promoted in agriculturally marginal areas where climatic variability is increasing. 2.6 Reciprocal arrangements between farmers and pastoralists strengthened or rehabilitated to enhance resilience where climatic variability is increasing. *Changing policies to increase long-term adaptive potential* 2.7 Agricultural and rural development policies updated on the basis of climate change scenario planning.	level) assessed using QBS. 2.6 Relations between settled agriculturalists and mobile pastoralists, assessed using QBS. 2.7.1 Number of policies implemented or updated on the basis of scenario planning. 2.7.2 Perceptions of policy impact on potentially vulnerable groups, assessed using QBS with these groups.
TA2. Water Resources and Quality			
GOAL: Water stress and scarcity of clean water resulting from climate change reduced/minimized. cf. **MDG Goal 7, Target 10**: Halve, by 2015, the proportion of people without sustainable access to safe drinking water			
1. Vulnerability to Impacts of Climate Change Reduced: Vulnerability to water stress and/or scarcity of clean water reduced.	See Table 2 for standard indicators to adapt to TA2. *Supplemental indicators* • Proportion of population classed as water stressed relative to projected baseline without adaptation interventions. • VRA based on interviews with members of vulnerable communities.	1. Development plans/specifications informed by or revised to account for potential impact of climate change on future water resources. 2. Water saving measures (e.g. rainwater harvesting, micro dams, efficient technologies) introduced ***3. To be expanded***	• Number of households, communities implementing water saving measures • Additional available freshwater per capita/ household resulting from these measures, against projected baseline. • Success of pilots (QBS), water saved as a result. • ***To be expanded***
2. Capacity to Adapt to Climate Change and its Impacts Enhanced: Institutional capacity of water sector	See Table 2 for standard indicators to adapt to TA2. *Supplemental indicators* • Water saving capacity for managing supply during	3. Demand side management measures piloted, e.g. targeted pricing to reduce wastage. 3.1 Generation and dissemination of information on climate change and impacts and water resources generated and disseminated among water planners.	• QBS on extent to which development of water-sensitive sectors include considerations of CC. • ***To be expanded***

PORTFOLIO LEVEL		PROJECT LEVEL	
Objectives	**Impact Indicators**	**Outcomes**	**Outcome Indicators**
including supply and demand management to respond to long-term climate variability and change enhanced.	times of stress • QBS based on information gathered from key stakeholders	4.1 New plans and policies based on plausible climate change impacts on water availability and use developed and piloted. ***5.1 To be expanded***	
TA3. Public Health			
GOAL: Increased burden of disease resulting from climate change minimized. cf. **MDG Goal 4**: Reduce by two thirds, between 1990 and 2015, the under-five mortality ratio; **MDG Goal 5**: Reduce, by three quarters, between 1990 and 2015, the maternal mortality ratio; **MDG Goal 6, Target 7**: Have halted by 2015, and begun to reverse, the incidence of malaria and other diseases			
1. Vulnerability to Impacts of Climate Change Reduced: Factors contributing to infection and negative health outcomes caused by climate-sensitive diseases, including exposure to disease vectors, mitigated.	See Table 2 for standard indicators to adapt to TA3. *Supplemental indicators* • People infected with, incapacitated by or dying from climate-sensitive diseases relative to baseline projections and/or normalised with respect to climatic trends or variations. • VRA based on interviews with members of vulnerable communities. • Preventive measures employed for controlling climate-sensitive disease at household/community level.	1. Eradication and prevention measures piloted in emerging and epidemic risk areas. 2. Awareness of emerging health risks and potential risk reduction measures is raised among health workers and the public. 3. Monitoring systems implemented in emerging and epidemic risk areas 4. Policies and practices that increase health risks are identified and addressed. 5. Health policies, plans and/or decisionmaking tools systematically integrate climate change information. ***6. To be expanded***	• QBS relating to use of climate change information in health sector • QBS of policymakers, health practitioners, public on awareness of emerging climate change-related health risks. • Number of exposure/risk reduction measures piloted; households, communities participating. • Policies identified as maladaptive from health perspective (number). • Maladaptive health policies or practices addressed (number of measures, changes in legislation, QBS). • ***To be expanded***
2. Capacity to Adapt to Climate Change and its	See Table 2 for standard indicators to adapt to TA3.		

PORTFOLIO LEVEL		PROJECT LEVEL	
Objectives	**Impact Indicators**	**Outcomes**	**Outcome Indicators**
Impacts Enhanced: Capacity for surveillance of and prevention/ response to climate-sensitive diseases improved and/or expanded.	*Supplemental indicators* • QBS based on information gathered from key stakeholders.		
TA4. Disaster Risk Management			
GOAL: Mortality, morbidity and economic losses resulting from climate-related extreme events reduced with respect to projected baseline in the face of increasingly frequent and/or severe climate extremes. cf. **MDG Goal 7, Target 10**: Halve proportion of people without access to safe drinking water; **MDG Goal 7, Target 11**: By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers; **MDG Goal 8, Target 14**: Address the special needs of landlocked countries and small island developing States; **MDG Goal 8, Target 18**: In cooperation with the private sector, make available the benefits of new technologies, especially information and communication			
1. Vulnerability to Impacts of Climate Change Reduced: Resilience of populations, settlements, infrastructure and ecosystems in areas exposed to climate extremes enhanced.	See Table 2 for standard indicators to adapt to TA4. **Supplemental indicators** • Population affected by climate-related disasters, normalized with respect to frequency of extreme climatic events or hazards. • VRA based on interviews with members of vulnerable communities.	1. Shift in zoning toward (preferential) development in low-risk areas. 1.1 Phased (voluntary) relocation from areas at highest risk from climate-related disasters. 2. Information on risk reduction disseminated among population. 2.1 Risk reduction interventions implemented (e.g. more robust infrastructure, drainage of high flood risk water body). 3. Coverage (area, population) of early warning systems increased. 3.1 Information on new, emerging and anticipated risks disseminated among disaster response/emergency services. 4. Existing/proposed development policies revised to increase robustness under anticipated climate change risk environment. 5. Disaster risk management policies, plans and/or decisionmaking tools systematically	• QBS of disaster risk managers/responders on success of project in “mainstreaming” CC information. • Expansion of EWSs (in terms of population covered) as result of project • Numbers and extent of vulnerability reduction measures piloted. • QBS of policymakers on how project has influenced planning in disaster-prone areas. • ***To be expanded***

PORTFOLIO LEVEL		PROJECT LEVEL	
Objectives	**Impact Indicators**	**Outcomes**	**Outcome Indicators**
		integrate climate change information ***6. To be expanded***	
2. Capacity to Adapt to Climate Change and its Impacts Enhanced: Institutional capacity to mitigate, prevent and respond to disasters associated with climatic extremes enhanced.	See Table 2 for standard indicators to adapt to TA4.		
TA5. Coastal Zone Development			
GOAL: Mortality, morbidity, economic losses and existential threats to ecosystems arising from enhanced, climate-related coastal hazards reduced. cf. **MDG Goal 7, Target 9**: Integrate the principles of sustainable development into country policies and programmes; reverse loss of environmental resources; **MDG Goal 7, Target 11**: By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers; **MDG Goal 8, Target 14**. Address the special needs of landlocked countries and small island developing States			
1. Vulnerability to Impacts of Climate Change Reduced: Resilience of coastal populations, settlements, infrastructure and ecosystems in areas exposed to coastal hazards enhanced.	See Table 2 for standard indicators to adapt to TA5. *Supplemental indicators* • Damages/losses/mortality/ displacement associated with climate-related coastal hazards, normalized with respect to frequency and severity of hazard events. • VRA based on interviews with members of vulnerable communities.	1. Disincentives for/prohibition of development of high-risk (e.g. low-lying) areas. 1.1 Phased (voluntary) relocation from areas at highest risk from sea-level rise and associated hazards. 2. Information on emerging hazards and risk reduction disseminated among target population. 2.1 Risk reduction interventions implemented (e.g. flood corridors, strengthening of infrastructure, domestic residences etc.). 3. Coverage (area, population) of early warning systems increased and information on new, emerging and anticipated risks disseminated among disaster services. 4. Existing and proposed policies revised to increase robustness under sea-level rise	• QBS of coastal planners on extent to which climate change considerations included. • Additional population covered by EWS as result of project activities. • Numbers of impact/vulnerability reduction measures piloted and population covered. • Policies revised as result of climate change considerations. • ***To be expanded***

PORTFOLIO LEVEL		PROJECT LEVEL	
Objectives	**Impact Indicators**	**Outcomes**	**Outcome Indicators**
		and climate change impacts on coastal risk. 5. Coastal zone management policies, plans and/or decisionmaking tools systematically integrate climate change information. ***6. To be expanded***	
2. Capacity to Adapt to Climate Change and its Impacts Enhanced: Institutional capacity to mitigate, prevent and respond to the impacts of coastal hazards enhanced.	See Table 2 for standard indicators to adapt to TA5. *Supplemental indicators*		
TA6: Natural Resources			
GOAL: Loss of natural resources and associated damage to livelihoods, ecosystems and economy reduced. cf. **MDG Goal 7, Target 9**: Integrate the principles of sustainable development into country policies and programmes; reverse loss of environmental resources			
1. Vulnerability to Impacts of Climate Change Reduced: Resilience of natural resources and natural resource-dependent livelihoods threatened by CC enhanced	See Table 2 for standard indicators to adapt to TA6. SUPPLEMENTAL INDICATORS • Rate of loss of natural resource base for livelihoods determined to be negatively impacted by climate change. • VRA based on interviews with members of vulnerable communities. • Livelihoods options better suited to climate change available to target community.	1. Livelihoods that reduce or remove dependence on threatened natural resources developed and piloted. 2. Stresses on resources demonstrated to be at risk from climate change reduced. 1. Sustainable resource management developed through new institutional frameworks and regulations. 2. Information on potential long-term changes in climate and impacts on natural resources incorporated into resource management policies. ***3. To be expanded***	• Awareness of potential impacts of climate change on natural resources in their countries/regions: QBS of resource managers/planners. • Number of people relying on resources at risk to climate change impacts. • Number of pilots of alternative livelihood activities to threatened resources/area or population participating. • ***To be expanded***

PORTFOLIO LEVEL		PROJECT LEVEL	
Objectives	**Impact Indicators**	**Outcomes**	**Outcome Indicators**
2. Capacity to Adapt to Climate Change and its Impacts Enhanced: Institutional capacity to manage natural resources sustainably in the face of climate change enhanced.	See Table 2 for standard indicators to adapt to TA6. SUPPLEMENTAL INDICATORS		