AFB/EFC.3/3
December 9, 2010

Ethics and Finance Committee
Third Meeting
Cancun, December 13, 2010

Agenda item 3

PROJECT LEVEL RESULTS FRAMEWORK AND BASELINE GUIDANCE DOCUMENT

Introduction and Background

1. At its tenth meeting, the Adaptation Fund Board adopted the approach to implementing results based management (RBM), outlined in the document AFB/EFC.1/3/Rev.2. The Board also adopted *the Strategic Results Framework* for the Adaptation Fund and the *Adaptation Fund Level Effectiveness and Efficiency Results Framework* of the RBM document.

2. As part of the Board decision on moving forward with RBM, the Board requested the secretariat "to develop a practical guide or manual on how project baselines and project results frameworks may be prepared." The secretariat has engaged a consultant to help develop a guidance document. The document is meant to be a "how to" guide targeting project proponents at the country level.

3. The draft document was presented at the eleventh AFB meeting in September 2010. Feedback from the Board was used to develop a final draft version of the document, which is being presented at the twelfth AFB meeting in December 2010.

4. The current version of the document includes suggested changes to a few of the outcome and output indicators approved under the Adaptation Fund's Strategic Results Framework, during the AFB's tenth meeting. After reviewing the changes, the Ethics and Finance Committee (EFC) may consider recommending that the Board adopt these changes.

5. While developing the guidance document on preparing results frameworks and baselines, it became clear that a major missing piece in the project/programme design process was Knowledge Management. While Knowledge Management is critical for any organization, it is even more so for the Adaptation Fund, not only because Adaptation projects and programmes are still relatively new but also because the Fund is piloting direct access to countries. The experiences gained from the Fund should therefore be kept track of in a systematic way, analyzed on a periodic basis, and distilled in lessons that can be transferred and applied in other contexts. If projects/programmes do not include a robust KM strategy, it will be difficult for the Fund to determine what works in terms of adaptation interventions and experiences obtained from implementing projects through direct access, hindering the possibility to improve the effectiveness of future development interventions.

6. For the above reasons, the revised version of the guide, presented here, includes an additional section on Knowledge Management and how it is integrated in the Adaptation Fund's RBM framework. The section provides a short overview on how to develop a project or program level Knowledge Management strategy and describe standard indicators broadly used to measure the impact of KM activities and processes.

7. The EFC may wish to consider document AFB/EFC.3/3 and to recommend to the Board:

a) approval of the guidance document;

b) request the secretariat to move forward and pilot the document to ensure the guide provides relevant and useful information to the target audience;

c) instruct the secretariat to have the document professionally, edited, formatted and finalized by the fourteenth Board meeting (June 2011); and

d) develop an overall Knowledge Management strategy for the Fund to be presented to the Board at its fourteenth Board meeting (June 2011)

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INTRODUCTION

Adaptation Fund:

1. The Adaptation Fund, established by the Parties to the UN Framework Convention on Climate Change (UNFCCC), is mandated to finance concrete adaptation projects and programmes in developing countries that are Parties to the Kyoto Protocol and to allow direct access to the Fund by those Parties. The total amount of funds to be made available for eligible developing country Parties will depend on the market-based monetization of Certified Emission Reductions (CERs) which are the AF's main source of revenue.

2. As outlined in the Adaptation Fund's Operational Policies and Guidelines,[2] eligible developing country Parties seeking financial resources from the Adaptation Fund must submit proposals either directly through their accredited National Implementing Entity (NIE) or through the use of Multilateral Implementing Entities (MIEs). All project proposals require the endorsement of a designated authority, chosen by the relevant Government.
Each project/programme submission must include a baseline and a results framework/log frame. This requirement is also part of the Results Based Management (RBM) implementation plan.[3]

This document is:
- A guidance document that briefly explains the Adaptation Fund's RBM frameworkthrough its development and analysis for AF projects and programs - Information that clarifies the definitions of AF core indicators, and suggests approaches for their measurement. - A source of methodological and operational suggestions on how to report outputs and outcomes.
This document is not:
- A prescriptive guidebook of steps on the development and analysis of RBM frameworks. - A tool for selecting project specific indicators and how they are measured. - A guide to the setting up or management of project monitoring and evaluation (M&E) activities.

Purpose of this document*:*

3. The purpose of this manual is to guide Adaptation Fund (AF) project proponents on how to develop project or program baselines and results frameworks (including data collection, analysis, and reporting on Adaptation Fund indicators). The guide also lays out how to align project level results frameworks/logframes with the AF's Strategic Results Framework.

How is this guidance document structured?

4. This document is structured in three sections and two annexes. Following this introduction, Section 1 provides an overview of results-based management and details the AF's strategic results framework. Section 2 presents information on the compilation and assessment of contextual and baseline data. Section 3 provides basic concepts on what knowledge management is, and how it is integrated within the Adaptation Fund's RBM framework; it also includes a short overview on

[1] The present guidance document has been developed extracting and adapting information from other guidance documents and documents from different International Organizations and Co-operation Agencies (OECD, UNDP, IFAD, DANIDA, World Bank, USAID, IADB), in addition to other sources included as References (e.g., Measures of Success and How is your MPA doing guidebooks).
[2] http://adaptation-fund.org/system/files/AFB.Operational_Policies_and_Guidelines.pdf
[3] http://adaptation-fund.org/system/files/AFB.EFC_.1.3.An%20Approach%20to%20Implementing%20RBM.pdf

how to develop a KM strategy. Annex 1 presents and describes the standard Adaptation Fund indicators that would be measured and provides guidance on how to define, measure, and collect data.

SECTION 1. THE ADAPTATION FUND and RESULTS BASED MANAGEMENT

Chapter 1: Guiding Principles

5. Results based management provides a sound framework for strategic planning and management by improving learning and accountability.4

6. RBM is based on the idea that a commitment to accomplish planned results should express management's strategy and the implementation of activities.[5]

7. In the context of Adaptation Fund projects, the concept of a results chain is at the core of RBM. The result chain shows the casual relationship between activities, outputs, outcomes, and impact over time.

8. The central questions of the RBM framework include: How do project interventions and other activities contribute to the outcomes sought after? Why should meaningful performance expectations be set? How should results be measured and analyzed? How can learning from evidence help adjust delivery and modify or confirm project and program design? How should performance achieved against expectations be reported? (last sentence needs to be revised?)

1. **Key RBM Terms**

The RBM terms used in this section are the harmonized terms of the UNDG, and are in line with the Organization for Economic Co-operation and Development-Development Assistance Committee (OECD-DAC) definitions.

Results: Changes in a state or condition which derive from a cause-and- effect relationship. There are three types of such changes which can be set in motion by a development intervention – its output, outcome and impact.
Goal: The higher-order objective to which a development intervention is intended to contribute.
Impact: Positive and negative long-term effects on identifiable population groups produced by a development intervention. These effects can be economic, socio-cultural, institutional, environmental, technological or of other types.
Outcome: The intended or achieved short-term and medium-term effects of an intervention's outputs, usually requiring the collective effort of partners. Outcomes represent changes in development conditions which occur between the completion of outputs and the achievement of impact.
Outputs: The products and services which result from the completion of activities within a development intervention.
Assumptions (external factors or risks): Expectations about external factors (or risks) which could affect the progress or success of a development intervention, but over which the management has no direct control.

9. A monitoring and evaluation (M&E) system must therefore be in place that can assess how the project is performing with respect to expected outputs, outcomes and impact.[6]

Adaptation Fund Strategic Results Framework

10. The Adaptation Fund Strategic Results Framework includes the long-term goal, outcomes, outputs and a small set of indicators for the Fund as a whole. The Adaptation Fund has committed itself to work towards the achievement of the overall goal and outcomes. Any project or programme funded through the AF must therefore align with the Fund's results framework and directly contribute to the overall objective and outcomes outlined. The results architecture for the Fund is framed as follows:[7]

[4] OECD 2001
[5] IFAD 2007
[6] IFAD 2007
[7] AFB/EFC.1/3/rev.1 June 16, 2010

Objective: Reduce vulnerability and increase adaptive capacity to respond to the impacts of climate change, including variability at local and national levels.

EXPECTED RESULTS	INDICATORS
Goal: Assist developing country Parties to the Kyoto Protocol that are particularly vulnerable to the adverse effects of climate change in meeting the costs of concrete adaptation projects and programs, in order to implement climate resilient measures.	
Impact: Increased resiliency at the community, national, and regional levels to climate variability and change.	
Outcome 1: Reduced exposure at national level to climate related hazards and threats	1. Relevant threat and hazard information generated and disseminated to stakeholders on a timely basis
Output 1: Risk and vulnerability assessments conducted and updated at a national level	1.1. No. and type of projects that conduct and update risk and vulnerability assessments
	1.2 Early warning systems developed
Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses	2.1 No. of targeted institutions with increased capacity to minimize exposure to climate variability risks
	2.2 Reduced number of people suffering losses from extreme weather events
Output 2.1: Strengthened capacity of national and regional centers and networks to rapidly respond to extreme weather events	2.1.1No. of staff trained to respond to and mitigate impacts of climate related events
Output 2.2: Targeted population groups covered by adequate risk reduction systems	2.1.2. Percentage of population covered by adequate risk reduction systems
	2.1.3. No. of people affected by climate variability
Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	3. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses
Output 3: Targeted population groups participating in adaptation and risk reduction awareness activities	3.1 No. and type of risk reduction actions or strategies introduced at local level
Outcome 4: Increased adaptive capacity within relevant development and natural resource sectors	4.1. Development sectors' services (health and social services) responsive to evolving needs from changing and variable climate
	4.2. Physical infrastructure improved under climate change and variability-induced stress
Output 4: Vulnerable physical, natural and social assets strengthened in response to climate change impacts, including variability	4.1.1. No. and type of health or social infrastructure developed or modified to respond to new conditions resulting from climate variability and change (by type)
	4.1.2. No. of physical assets strengthened or constructed to withstand conditions resulting from climate variability and change (by asset types)
Outcome 5: Increased ecosystem resilience in response to climate change and variability-induced stress	5. Ecosystem services and natural assets maintained or improved under climate change and variability-induced stress
Output 5: Vulnerable physical, natural and social assets strengthened in response to climate change impacts, including variability	5.1. No. and type of natural resource assets created, maintained or improved to withstand conditions resulting from climate variability and change (by type of assets)

Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	6.1 Percentage of households and communities having more secure (increased) access to livelihood assets
	6.2. Percentage of targeted population with sustained climate-resilient livelihoods
Output 6: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	6.1.1.No. and type of adaptation assets (physical as well as in terms of knowledge) created in support of individual or community livelihood strategies
	6.1.2. No. of households with more secure access to livelihood assets
Outcome 7: Improved policies and regulations that promote and enforce resilience measures	7. Climate change priorities are integrated into national development strategy
Output 7: Improved integration of climate resilience strategies into country development plans	7.1. Number of policies introduced to address climate change risks or adjusted to incorporate climate change risks

A Word of Caution

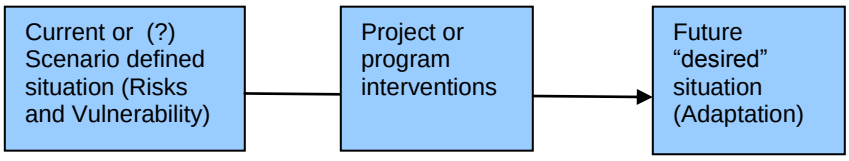
- The Adaptation Fund Strategic Framework should not be used as a blueprint from which the project is developed.
- The AF Framework will enable the AF Board to translate its mandate into tangible results, to support ongoing planning, management and results monitoring, and measurement. Further, it lays out objectives and priorities, supports the measurement of results, and helps demonstrate contributions to higher-level goals, for example the CMP goals. It serves to measure results at the AF level, not project level (alignment between AF level Framework and Project Logical Frameworks should be after, chapter 2, Step 3 provides detail).

Chapter 2: How to Develop a Results Framework for an Adaptation Project[8]

11. Project design and performance assessment can be divided into seven phases or steps, as presented below. These steps should be seen as a guide for strategic planning and specifically for the development of results frameworks. Even though the steps are presented in a specific order for explanation purposes, their implementation may require the iteration[9] of previous steps.[10]

Step 1. Define the intended effect and scale of interventions

Adaptation Projects are designed to address, through a set of interventions, the adverse impacts of, and risks posed, by climate change (see diagram below).



To define the intended effects and scale interventions, project proponents would need to:

- Draft the project's goal, and
- Define the level and timeframe of the intervention (adaptation projects can be implemented at the community, national, and transboundary level).

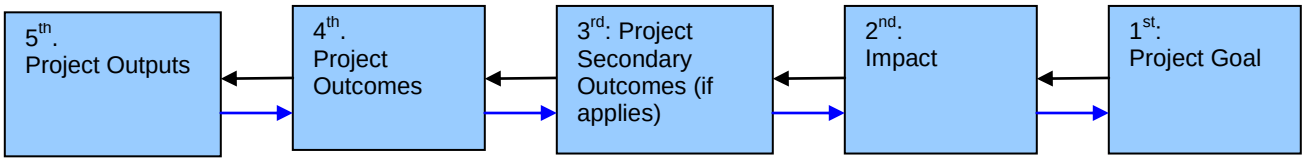
[8] This guidance document assumes there is already a formed project core team to follow the steps.
[9] Repeatedly going through a series of steps in a process (Measures of Success)
[10] Adaptive management

Tools identified for completing Step 1:

- *Stakeholder analysis*:[11] define adaptation partners, actors, donors, communities, etc.
- *Problem analysis or problem tree*: understand the problem at all levels and specifically at the intervention level defined. This is a participatory brainstorming technique in which project planners and stakeholders employ graphic tree diagrams to identify the causes and effects of problems (problem tree) and then structure project objectives or alternative trees to resolve those problems. Problems that the project cannot directly address then become risks/assumptions to the project's success in the absence of actions.
- *Overall contextual assessment*: some knowledge of current and future (scenario) situations need to be identified while defining the draft goal and the level of intervention. Specifically, ***contextual data*** is the data regarding external "risk" factors that may affect the achievement of outcomes and especially impacts, but over which the project has no direct control. These factors – for example other partners' activities, international price changes, armed conflicts or the weather – may significantly affect the achievement or non-achievement of a project's outcome and goal.

Step 2: Analyze and formulate project objectives and analyze alternatives

As part of project planning, the adaptation project's objectives should be clarified by defining precise and measurable statements concerning the achievable results (first goal, second impact, third outcomes-secondary and primary outcomes- and then outputs) and then identifying the strategies or means (activities and corresponding inputs) to meet those objectives. The diagram below illustrates the direction that should be followed when developing results. Conceptual maps as shown in the diagram are helpful to visualize linkages among results.



Blue arrows show how the different elements relate to each other and black arrows show the order in which objectives are defined.

EXAMPLE 1:

For example, referring to an adaptation project whose goal is "sustained improvement of population health in Country X," and impact is "reduced population mortality by extreme weather events", project output and outcomes could include the following:

- Project output: "Staff from Health Care Clinics trained and certified on climate change impacts on health and adaptation responses to extreme weather events," and/or "Procedures from Health Care Clinics include extreme weather event aspects."
- Project outcome (first level) could include: "Improved capacity of Health Care Clinics on response to extreme weather events."
- Project outcome (second level) or secondary outcome: "Quality of health services for population improved and sustained."

Notice the higher level of the secondary outcome (another clear step towards the impact).

[11] How to develop stakeholder analysis, problem and alternative trees, as well as logical framework can be found at Margoluis R. and N. Salafsky. 1998. Measures of Success: Designing, Managing, and Monitoring Conservation and Development Projects.

Tool identified for completing Step 2:

- The project logical framework can be used for conceptualizing a project's strategies and objectives. The Log frame matrix should be adapted during project implementation.

The project log frame

12. The Project Logical Framework is an analytical tool (logic model) used for strategic planning, which graphically conceptualizes the hypothesized cause-and-effect relationships of how project resources and activities will contribute to the achievement of objectives or results. The logic is as follows: *inputs* are used to undertake project *activities* that lead to the delivery of *outputs (goods/services)*, that lead to the achievement of the *project outcomes (*first level or primary outcomes, second level or secondary outcomes, and so on*)* that contribute to a *project impact and goal.* It is then possible to configure indicators, targets, identify data sources and techniques, and assess assumptions for monitoring implementation and results around this structure.[12]

13. The log frame should be prepared using a collaborative process that includes different management levels and project stakeholders.[13] The Adaptation Fund encourages broad participation in log frame development.

Table 1: Project Design Logical Framework Matrix

NARRATIVE SUMMARY	INDICATORS	MEANS OF VERIFICATION[14]	ASSUMPTIONS (external factors or risks)[15]
Goal:			
Impact:			
Secondary Outcome[16]:			
Outcome:			
Outputs:			
Activities:			

A WORD OF CAUTION: Limitations of the Project Log frame Approach[17]

- The preparation of the log frame should not be seen as a mere formality before project design submission. Its development should involve stakeholders and partners in the process to generate agreement on objectives, outcomes, outputs and activities, as well as other log frame elements.
- The analysis of risks or assumptions should include a proper assessment of the context and actors (contextual data), since this will also influence achievement of results (see below).

[12] IADB, OECD 2001
[13] OECD 2001
[14] Described in depth in Step 6 of this Chapter
[15] Described in Step 6 of this Chapter
[16] If needed
[17] OECD 2001

- The resulting log frame and its elements should not be used as a permanent map of interventions and results, but rather a flexible tool for adaptive management.

Table 2: Program Design Logical Framework Matrix[18]

PROGRAM	PROJECT A	PROJECT B	PROJECT C
Goal:			
Impact:			
Secondary Outcome[19]:	Goal of project	Goal of project	Goal of project
Projects comprising the Program:	Secondary outcome or outcome	Secondary Outcome or Outcome	Secondary outcome or outcome
	Outputs/components	Outputs/components	Outputs/components
	Activities	Activities	Activities

Program Log frames:
- The Program has specific outcomes overall
- The Program consists of projects instead of Outputs/components
- The Program's outcome(s) is the Goal of each of its projects.

Step 3. Align project objective(s) with Adaptation Fund Strategic Outcome(s)
To ensure the integration of Adaptation Fund Strategic Outcomes in the project or programme level, M&E system and its contribution to RBM, project objective(s) should be aligned with Adaptation Fund Strategic framework.

How to align project outcomes with AF Strategic Outcomes?
- Review the Adaptation Fund Strategic Framework (See Section 1, Chapter 1 of this guidance document).
- Start aligning outcomes. The main question guiding this step includes: Is there a project outcome that would support or contribute towards the achievement of any Adaptation Fund Strategic outcome(s)? Include all that apply.
- Assess how Adaptation Fund Strategic Outcome(s) align(s) with Project Outcome(s).

EXAMPLE 2:
For Example 1 above, the alignment could result in the following chart (other visual aids could be used):

ADAPTATION FUND	PROJECT OUTCOMES	ALIGNMENT ASSESSMENT

[18] Extracted from IADB
[19] If needed

STRATEGIC OUTCOMES		
Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses	"Improved capacity of Health Care Clinics on response to extreme weather events."	Health care clinics are institutions for which capacity can be strengthened to reduce risks associated with climate change.
Outcome 4: Increased adaptive capacity within relevant development and natural resource sectors	"Improved capacity of Health Care Clinics on response to extreme weather events." And "quality of health services improved and sustained."	Health centres are part of relevant development sectors.

RECOMMENDATION

Through a similar exercise, align project outcomes with other national, regional and/or local strategic framework elements (for example, NAPAs) therefore connecting the project to other identified priorities.

Step 4. Include project indicators and select core Adaptation Fund indicators:

Next, indicators are developed for measuring implementation progress and achievement of results.

How to measure whether progress is being made towards implementing activities and achieving objectives?

The log frame supplies a structure around which the indicators are usually built. Indicators detail what to measure along a range or dimension (e.g., numbers of workshops held or publications produced, percent of producers adopting new technology, ratio of female to male students, etc.).

Process of selecting indicators

When selecting/identifying indicators, remember the following steps:

1. Follow a participatory approach: involve representatives from implementing agencies, government, beneficiaries, and other stakeholders (ensure the inclusion of stakeholders and direct actors that were identified during the stakeholder analysis). This participatory selection of indicators helps, not only by drawing on their experience and knowledge, but their participation can help obtain their consensus and ownership.
2. Brainstorm and develop a general list of possible indicators for each objective and result (activities, outputs, outcomes and so on). This initial list can be inclusive, taking into consideration all stakeholders perspectives, and not considering restrictions for achieving their measurement.
3. Assess each indicator on the general/initial list against a checklist of criteria for judging (see Table 2 below) its suitability and effectiveness.
4. Select the "best" indicators, forming an optimum group that will meet the need for management -- useful information at an affordable cost. The number of indicators selected to track achievement of each objective or result should be limited to just a few -- the minimum needed to characterize the most basic and important measures.

Table 2. Checklist for selecting proper indicators

CRITERIA/ATTRIBUTES[20]	CONSIDER
Validity	Does the indicator measure the result?

[20] Adaptated from CIDA's checklist of good indicators.

Precise meaning	Do stakeholders agree on exactly what the indicator measures?
Practical, affordable, and simple	Is data actually available at reasonable cost and effort? Will it be easy to collect and analyze the information?
Reliability	Is it a consistent measure over time?
Sensitivity	When the result changes, will it be susceptible to those changes?
Clear direction	Are we sure whether an increase is good or bad?
Utility	Will the information be useful for decision-making, accountability, and learning?
Owned	Do stakeholders agree that this indicator makes sense to use?

RECOMMENDATIONS

- There is probably no such thing as an ideal indicator, and no perfect technique for developing them.
- Trade-offs among indicator selection criteria exist and harmonizing pros and cons of any particular indicator should be made. For example, the optimal indicator may not be feasible to collect therefore a more realistic indicator should be accepted; being comprehensive in covering all relevant aspects or dimensions of a result may conflict with the need to limit the number of indicators.
- Both quantitative and qualitative indicators may be useful, and selecting one or the other should depend on the characteristic of the result.

EXAMPLE 3.

For Example 1 above, one possible indicator at the output and outcome level respectively could include:

- Project output: "Staff from Health Care Clinics trained and certified on climate change impacts on health and adaptation responses to extreme weather events."

Output indicator: Number of staff trained and certified (by the X certification program) from each Clinic on climate change impacts on health and adaptation responses to extreme weather events for the population in an area of intervention.

This indicator is practical, affordable and simple as the roster of employees of Health Care Clinics is usually kept and is accessible to project staff (if certain formal procedures to collect the information are followed). The indicator is reliable if baseline and context information to track progress exist. The indicator can be expressed in percentages to understand trends. An increase is beneficial as it is assumed that the more staff trained on responses to extreme weather events, the higher the chances the body of personnel in Clinics to have knowledge of responses. Quality of training could also be included as an indicator in order to have a more complete view of training aspects; specifically to understand if trained staff is applying what was taught.

- Secondary outcome: "Quality of health services for population improved and sustained."

Secondary outcome indicator: Percentage of population in the area of intervention that indicates a high degree of satisfaction with the health services provided after extreme weather events by the end of the project (and after an extreme weather event). A survey would be necessary to measure this indicator. The indicator is reliable if context and baseline information are present. Degree of satisfaction in a population could change also by other factors: how extreme the weather event is, economic crises in country/area of intervention, etc. Therefore, surveys would need to take context information in mind when collecting and analyzing data, as well as to understand estimated frequency of extreme weather events.

Selecting indicators from the Adaptation Fund set of indicators

14. The Adaptation Fund developed a menu of standard indicators to use in measuring and reporting on Fund level outputs, outcomes and impacts.[21] The menu identifies standard performance indicators (mostly at the project output and outcome levels) that will enable comparable data to be aggregated across similar types of projects to the Fund-wide level.

Selecting indicators from the set:

1. Review the menu of core/standard indicators in Annex 1 of this guidance document. The list of indicators is not comprehensive to all outputs that may be used by projects.
2. From the menu, identify at least two of the output and outcome indicators that better adjust to the project's outcome and outputs. Choose only output and outcome indicators that are relevant to the project characteristics and what is set to be achieved.
3. In addition, project specific indicators would also be selected to reflect country specific objectives and reporting requirements. The Board would not aggregate these indicators, but rather track progress on achieving the project targets. Because each project operates in a specific context, there will be other elements of monitoring and evaluation that are important to the project, but that are not included in Fund's Performance and Reporting System. Therefore, each project will need to develop its own set of output and outcome indicators that link directly to the Fund level objectives.
4. Include selected indicators into the project logical framework (and monitoring plan)

RECOMMENDATIONS

- Try not to choose too many indicators to avoid over -burdening monitoring systems.
- The project design (steps 1 and 2) should not be guided with the AF set of indicators in mind.
- Select these few standard indicators through a collaborative process similarly to selecting other project indicators.

EXAMPLE 3.

For Example 1 and 2 above, the alignment would result in the following chart:

ADAPTATION FUND STRATEGIC INDICATORS	PROJECT INDICATORS
2.1 No. of targeted institutions with increased capacity to minimize exposure to climate variability risks	No. of Health Care Clinics with increased capacity to minimize exposure in intervention area
2.1.1No. of staff trained to respond to and mitigate impacts of climate related events	No. of staff from Health Care Clinics trained
2.1.3. No. of people affected by climate variability	No. of people affected by climate variability in the area of intervention / or No. of death after extreme weather events.
4.1. Development sectors' services (health and social services) responsive to evolving needs from changing and variable climate	"Quality of health services for population improved and sustained in the area of intervention."

Step 5. Set targets

[21] Similar as to those provided by the *World Bank's Performance Monitoring Indicators* (1996), DANIDA's *First Guidelines for an Output and Outcome Indicator System*, 1998.

15. Once indicators have been developed, actual baseline values and targets should[22] be collected for each indicator, ideally just before the project gets underway (see Section 2 on Baseline data to collect baseline values). This will be important for estimating whether progress is being made later.

16. Targets help clarify what needs to be achieved and by when. It is a commitment and can assist to direct project staff and mangers to the impending tasks. Final targets are values or conditions to be achieved by the end of the project, while medium term or interim targets are anticipated values at various points-in-time over project implementation. Baseline values, which measure conditions at the beginning of a project, are needed to set realistic targets for accomplishment within the constraints of resources and time available.[23]

Target: A variable that allows the verification of changes in the development intervention or shows results relative to what was planned. A target specifies a particular value for an indicator to be accomplished within a given time frame. (For example, producers rate of adaptation to new technologies increased to 60 percent by 2013).

17. Targets may be useful in numerous respects:

- They help bring the objectives of a project into focus.
- They can help to validate a project by describing in concrete terms what the intervention will produce.
- Targets orient project managers and staff to the desired tasks.
- They may be the foundation that clarifies the results for which managers will be held responsible.
- They serve as guideposts for judging whether progress is being made on schedule and at the level originally envisioned. In other words, targets tell stakeholders how well a project is progressing.[24]

Remember to first understand baseline information before defining realistic targets.

EXAMPLE 4:

EXPECTED RESULTS	INDICATORS	BASELINE DATA	TARGETS
Secondary Outcome:	Quality of service of Health Care Centres in area of intervention.	See below	Target (if baseline is known): At least 80% of the population in the area of intervention that indicates a high degree of satisfaction with the health services provided after extreme weather events by end of project (and after an extreme weather event). Target (if baseline is unknown): An increase by at least 50% from the baseline level of population in the area of intervention that indicates a high degree of satisfaction with the health services provided after extreme weather events by end of project (and after an extreme weather event).

[22] Project level targets should also be included in the project log frame (AFB 2010)
[23] OECD 2001
[24] Margoluis R. and N. Salafsky 1998

Outputs:	Number of staff trained and certified (by the X certification program) from each Clinic addressed on climate change impacts on health and adaptation responses to extreme weather events for population in intervention area.	See below	Target: At least 40 staff trained and certified from each Clinic where project intervenes by end of project.

A WORD OF CAUTION

A common disincentive for fostering an evaluative culture[25] is the level at which targets are set. If targets are unrealistically high and therefore unachievable, integrity and confidence will suffer, and could generate perverse incentives to conceal or alter data. If targets are set low and easily achievable, confidence will also suffer as project managers and staff may ask themselves what they could have accomplished if they had set targets a little higher. Therefore, seek attainable targets that are just out of reach.

Step 6. Monitor (collect) data.

Once indicators and targets are identified, actual data for each indicator is collected at regular periods (monitoring).

18. Project implementation monitoring requires constant documentation of data on project activities and operations – for example, tracking funds and other inputs, and processes. It includes keeping high-quality financial accounts and field records of interventions as well as recurrent checks to assess fulfilment of work plans and budgets. Results monitoring involves the periodic collection of data on the project's actual accomplishment of results (outputs, outcomes, and impacts). Results monitoring measures whether a project is completing its objectives and responds to the question: what results have been accomplished relative to what was planned (targeted)?

19. Data on project outputs are frequently generated by project staff and are central to reporting systems. Data on outcomes are typically compiled from inexpensive consultations with project beneficiaries, short surveys or rapid appraisal methods. Data on impacts involves performing expensive surveys or using existing data sources such as national surveys, censuses, etc.

Data collection approaches and techniques[26]

20. Monitoring project performance at the different levels of the log frame hierarchy typically involves different data sources and methods, frequencies of collection, and assignment of responsibility. Good practices entail the development of ***performance monitoring plans*** at the beginning of the project that explain how, when, and who will collect data.

Table 3 presents a matrix framework tool to record summary information about monitoring plans.

EXPECTED RESULTS	INDICATORS	BASELINE DATA	TARGETS	DATA SOURCES	DATA COLLECTION METHODS	FREQUENCY	RESPONSIBILITY
Goal:							

[25] http://ageconsearch.umn.edu/bitstream/52535/2/ILAC_WorkingPaper_No8_EvaluativeCulture_Mayne.pdf
[26] OECD 2001

Impact:							
Secondary Outcome:							
Outcome:							
Outputs:							
Activities:							

The last four columns are the focus of this section, as the first columns were described above and/or further described in Section 2 of this document.

Activities Data: Used for analysis of performance issues such as economy and efficiency.
- Data Source: Typically comes from project financial accounts and management reports from field sites.
- Data Collection Methods: A good financial accounting system is needed to keep track of expenditures and provide cost data. The higher the level in the log frame hierarchy the more likely it is for data collection efforts to become more expensive and data sources more difficult to find.
- Frequency: Used primarily for day-to-day operations and short-term decisions
- Responsibility: Project staff with frequent inspection to assess fulfilment of work plans and budget. Place data collection responsibility closer to those using the data.

Output Data: Used for short-to-medium term management decisions designed to improve output quality, equitable distribution to beneficiaries, productivity, and efficiency, etc.
- Data Source: Tends to originate from project field reports maintained by project staff
- Data Collection Methods: Project management systems.
- Frequency: The data are combined and reported to higher project management levels at regular periods (for example, bi-annually or annually).
- Responsibility: Project field staff.

Outcome Data: Useful for medium-term management decisions aimed at improving beneficiary satisfaction or changes in behaviour and to evaluate effectiveness in achieving intermediate results.
- Data source: Follow-up surveys with project beneficiaries
- Data Collection Methods: These tend to be affordable surveys, which assemble information on beneficiaries' responses to, and satisfaction with, project outputs as well as changes in their knowledge[27] and behaviours. These methods include informal consultations or mini surveys, market research, rapid appraisal or participatory methods. Data should be divided by beneficiaries' socio-economic characteristics to assist later analysis of equitable distribution of benefits, etc. These methods do involve data collection and social science research skills or training beyond regular record keeping and thus should be planned and budgeted for in project design.
- Frequency: Annually or when feedback is needed.

[27] See Section 3 of this guidance.

- Responsibility: Project staff

Impact data: Recording data (baseline and targets) up to the secondary outcome level, which falls within project mangers responsibility, should give solid insight and linkages towards impacts, and the ability of measuring impact data later down the line – usually during evaluation or an ex- post evaluation.

Criteria for selecting data collection methods and sources

21. The choice of a data collection technique and source can be central for data's quality aspects – for example, how valid and reliable it is, but also on practicality or feasibility aspects when cost and time limitations exist. For example, if information is required on a producer's use of new technologies, this could come from extension agents' reports or from a production survey. Selecting the survey may result in greater statistical validity and reliability of data, however employing the extension agents' report may result in more practical and affordable data collection.

RECOMMENDATION

The selection process should balance the quality of the data (how reliable it is among users) and the cost and time to collect it or retrieve it.

When selecting data collection methods review the following criteria.[28]

CRITERIA/ATTRIBUTES	CONSIDER
Validity:	Does the data mean what we think they mean? Do the measurement techniques indeed measure what they declare to measure?
Reliability:	Is it a consistent measure over time? Does the measure, after applied repeatedly to a given situation, consistently yield the same results if the circumstances remained unchanged between applications?
Timeliness:	Can the data be collected routinely enough and is up-to-date to inform management's decision making processes? Some methods can be implemented more quickly and are therefore better when needed at recurrent intervals or immediately.
Costs:	Is there any budget constraint that would need to be considered before selecting methods? Some complex surveys are expensive.
Formal versus informal methods:	Informal methods include casual conversations or unstructured site visits, which tend to be inexpensive and quick to implement, but sometimes compromise credibility. Formal methods consist of censuses and sample surveys, which have high reliability and validity, but higher cost (including extensive technical skills) and are time consuming. In between the formal and informal methods one can find the rapid appraisal methods, which include focus groups, community interviews, key informant interviews, direct observation, etc.

Quantitative versus Qualitative Methods of Collecting Data: The utility of both types of information should be taken into account and it is necessary to balance both.

- Quantitative methods: Measures that involve continual, equal-interval scales with true zero points (such as GNP per capita, infant mortality rates, school enrolment rates, etc).
- Qualitative methods: Data that can be captured only by descriptive narrative.

[28] Extracted and Adapted from OECD 2001

- Combination: Data for which the frequency of various events can be counted and categorized, and perhaps even rank-ordered. For example, much of the performance data being collected on policy reform, institutional strengthening, and beneficiaries feedback are measured on some type of ranked (ordinal) scale. Such scales, when clearly operationalized, provide an example of how more subjective information can be usefully and effectively quantified.[29]

Risks/Assumptions at different hierarchy levels -- implication for accountability

22. The higher on the project log frame ladder, the more external influences and risks exist and there is less management control of such risks.

23. *Contextual Data:* As presented before, for analyzing performance, it is also important to collect data on the project's context, which will also give light to risks and assumptions at the different hierarchy levels and baseline information. Contextual data can be very useful for explaining project accomplishment or failure, and for attributing performance to various causes. Project proponents should compile contextual information.

Step 7. Review and report data

24. Monitoring can track the progress toward a set of benchmarks, and measure it towards outcomes, while evaluation validates results and can make overall judgments about why and to what extent the intended and unintended results were achieved (e.g., increased resilience, decreased vulnerability, improved cost-effectiveness). Reporting captures progress and results, and is an important accountability tool.

25. The Adaptation Fund requires project proponents to conduct annual reviews assessing and reporting project[30] performance monitoring data.[31] In addition to the reporting through the performance template, project proponents responsibility includes the development of a M&E plan and reporting system at the project level. Review of project performance monitoring data most typically involves simple analysis comparing actual results achieved against planned results or targets (i.e., following information set on the monitoring plan matrix).

26. A means of capturing project level results is through an annual project performance report (PPR). Each project would submit a PPR on an annual basis, once the project is approved and the first funds are allocated to the project. The PPR would capture progress toward achieving objectives and implementation efficiency and effectiveness.

27. MIEs/NIEs are directly responsible for project level monitoring, reporting and evaluation. Monitoring will be carried out on an ongoing basis and results will be reported to the Board through the PPR on an annual basis. A terminal evaluation will be completed for all projects, and projects over 3 years in duration would be required to have a mid-term evaluation as well.

SECTION 2. PROJECT LEVEL BASELINES INFORMATION: GUIDING PRINCIPLES

28. The establishment of baselines is a critical component of the RBM framework. Every project will prepare a baseline and submit it with the project document. Baselines will draw on the information and data captured from the vulnerability assessment and used to design the project. The baseline would be a streamlined document, incorporating information from vulnerability and

[29] OECD 2001
[30] Annual project performance report (PPR).
[31] See AFB/EFC.1/3/rev.1 June 16, 2010

needs assessments, and existing secondary sources. The information would be strictly aligned with each selected indicator that the project would be responsible for tracking. It is important that the baseline is completed by the start of the project in order to be able to accurately measure any change and the contribution to that change during the life of the project.[32]

Why is baseline data and information necessary?

Baseline data: An analysis describing the situation prior to a development intervention, against which progress can be assessed or comparisons made.[33]

Baseline information is important for[34]:
- Characterizing the prevailing conditions under which an intervention functions;
- Describing average conditions, spatial and temporal variability and anomalous events, some of which can cause significant impacts to the intervention;
- Identifying possible ongoing trends or cycles.
- Specifying the reference situation with which to compare future changes.

Chapter 1: An introduction to Climate Change Adaptation and Vulnerability Baseline information

29. Every adaptation project or programme should include a presentation of baselines, in terms of climate, development, vulnerability and adaptive capacity. Projects should explicitly lay out the climate change scenarios they are employing and adaptation targets they are pursuing as well as the linkages between the two. Climate variability should be monitored during the project and adaptation measures tested if scenario–like conditions occur during project implementation.35

30. In adaptation projects, baselines could take two primary forms:
First, there is the ***project baseline.*** Project baselines are generally focused on the priority system, and are therefore site specific and limited to the duration of the project. Depending on the approach used in an adaptation project, a project baseline could be described by a set of quantitative or qualitative indicators (see above), and may take the form of, for example, a vulnerability baseline[36], a climate risk baseline, an adaptive capacity baseline, or an adaptation baseline. The project baseline answers the questions: where is the project starting from? Who is vulnerable? What is vulnerable? And what is currently being done to reduce that vulnerability?

31. Since reducing vulnerability is the foundation of adaptation, it calls for a detailed understanding of who is vulnerable and why. This involves both analysis of current exposure to climate shocks and stresses, and model-based analysis of future climate impacts. With this information, appropriate adaptation strategies can be designed and implemented. Monitoring and evaluating the effectiveness of activities and outputs, as well as sharing knowledge[37] and lessons learnt, are also critical components of the adaptation process.[38]

[32] AFB 2010
[33] OECD 2001
[34] Extracted and adapted from Ebi et al. 2005
[35] Valencia 2009
[36] For example, vulnerability baseline describes information on vulnerability aspects in the area of intervention.
[37] See Section 3 of this guidance.
[38] CARE 2010

32. Project baselines can later be used in the monitoring and evaluation process to measure change (in, for example, vulnerability, adaptive capacity, climate risk) in the priority system, and the effectiveness of adaptation strategies, policies and measures.[39]

33. Second, depending on project needs and design, project proponents may choose to develop ***reference scenarios*** that represent future conditions in the priority system in the absence of climate adaptation. Scenarios may also be developed in which various adaptation measures are applied.

34. Both reference scenarios and adaptation scenarios may be compared with baselines to evaluate the implications of various adaptation strategies, policies and measures. Scenarios differ from project baselines in that they deal with the longer term and are used for informing policy decisions concerned with various development pathways at the strategic planning level.[40]

Chapter 2: Assessment tools to establish baseline information[41]

How to start collecting baseline data?

1. Review and synthesize existing information on current vulnerability, climate risk, and current adaptation measurements based on previous studies, expert opinion, and policy context.
2. Describe adaptation policies and measures in place that influence ? the ability to successfully cope with climate variability.
3. Develop baseline indicators of vulnerability and adaptive capacity. As important as establishing a single baseline value is, understanding the underlying historical trend in the indicator value over time is critical. Is there a pattern of change -- a trend upward or downward -- over the last five or ten years that can be drawn from existing records or statistics?

Data sources

- Baselines may be established using existing secondary data sources or may require a primary data collection effort.
    - Context section of current sectoral, regional, and/or national plans and strategies;
    - Specialized journals;
    - Monitoring programmes, GIS data, aerial photos;
    - Current and historical maps;
    - Context and results of other projects;
    - Interviews with relevant officials; and
    - Information from experts and/or the public; etc.
- Baseline data currently available on the Intergovernmental Panel on Climate Change Data Distribution Centre (IPCC-DDC) website, as well as other sources.
- Historic / baseline data: current vulnerabilities (trend analysis, vulnerability mapping) current adaptation measures (consultations, field interviews, literature review).
- Scenarios: future impacts and vulnerabilities (impact assessment, vulnerability mapping), adaptation to future impacts (multicriteria analysis, cost –benefit analysis, consultations, etc.).

Some data collection methods:

- Trend analysis, vulnerability mapping (food insecurity, poverty mapping, natural disaster losses), multicriteria analysis.
- Cost – benefit analysis, vulnerability reduction assessment.

[39] Ebi, K.L., B. Lim, and Y. Aguilar

[40] Ebi, K.L., B. Lim, and Y. Aguilar

[41] Based on Ebi, K.L., B. Lim, and Y. Aguilar, Ivan Dario, presentation Jose A. Marengo CCST/INPE, Sao Paulo Brazil

Frequency and Responsibility:

35. As discussed in the previous section, baseline data needs to be compiled before project or programme start. If however, major baseline data are not identified, the project or programme proposal should include a component for determining how that will be addressed within one year of implementation. Collection and maintenance of project baseline data is the responsibility of project proponents.

EXAMPLE 5.

For previous examples:

EXPECTED RESULTS	INDICATORS	BASELINE DATA	TARGETS
Secondary Outcome:	Quality of service of Health Care Centres in area of intervention.	10% of the population in the area of intervention that indicates a high degree of satisfaction with the health services provided after last extreme weather event (hurricane X). (Secondary data: Survey applied by Project Team or Institution in 2009 after extreme weather event).	Target (if baseline is known): At least 80% of the population in the area of intervention that indicates a high degree of satisfaction with the health services provided after extreme weather events by end of project (and after an extreme weather event). Target (if baseline is unknown): An increase by at least 50% from the baseline level of population in the area of intervention that indicates a high degree of satisfaction with the health services provided after extreme weather events by end of project (and after an extreme weather event).
Outputs:	Number of staff trained and certified.	Baseline information: 0 staff trained and certified in all Health Centres addressed by project.	Target: At least 40 staff trained and certified from each Clinic (5) where project intervenes by end of project.

RECOMMENDATIONS when baseline is unidentified[42] at project inception:

- Baseline must be collected immediately once the project starts.
- Baseline should be completed before any results for project/programme activity(ies) are obtained in order to be able to accurately measure any change and the contribution to that change during the life of the project.[43]

OVERALL RECOMMENDATION:

- Understand uncertainties and work with “no regrets.”

36. ***Uncertainty*** is “an expression of the degree to which a value (e.g., the future state of the climate system) is unknown. Uncertainty can result from lack of information or from disagreement about what is known or even knowable. It may have many types of sources, from quantifiable errors in the data to ambiguously defined concepts or terminology, or uncertain projections of human behaviour. Uncertainty can therefore be represented by quantitative measures (e.g., a

[42] Because of cost to obtain baseline data, lack of secondary sources or specific information, etc.
[43] AFB 2010

range of values calculated by various models) or by qualitative statements (e.g., reflecting the judgment of a team of experts)."[44]

Typology of uncertainties:[45]

TYPE:	INDICATIVE EXAMPLES OF SOURCES:	TYPICAL APPROACHES OR CONSIDERATIONS:
Unpredictability	Projections of human behaviour not easily amenable to prediction (e.g. evolution of political systems). Chaotic components of complex systems.	Use of scenarios spanning a plausible range, clearly stating assumptions, limits considered, and subjective judgments. Ranges from ensembles of model runs.
Structural uncertainty	Inadequate models, incomplete or competing conceptual frameworks, lack of agreement on model structure, ambiguous system boundaries or definitions, significant processes or relationships wrongly specified or not considered.	Specify assumptions and system definitions clearly, compare models with observations for a range of conditions, and assess maturity of the underlying science and degree to which understanding is based on fundamental concepts tested in other areas.
Value uncertainty	Missing, inaccurate or non-representative data, inappropriate spatial or temporal resolution, poorly known or changing model parameters.	Analysis of statistical properties of sets of values (observations, model ensemble results, etc); bootstrap and hierarchical statistical tests; comparison of models with observations.

37. For example: "how can one deal with the uncertainties associated with climate projections? In view of the uncertainties associated with climate change projections, it is important to identify the range of short- to long-term climate scenarios that may occur in a project's geographical area. The project team should design the project/intervention to address the impacts of current climate variability, while at the same time preparing communities to effectively deal with medium to longer-term climate impacts. Given that climatic conditions might change in ways that cannot be accurately predicted at this time, the team should develop contingency plans that would enable them to adapt the project to other climate scenarios. For example, a project in a drought prone area that could get wetter with climate change could put in place contingency plans to deal with increased rainfall and possible flooding. In this example, the contingency plans should clearly outline activities that the project would implement to take advantage of increased rainfall and deal with floods. In addition, the plans should identify resources that would be required, indicate what resources are currently available, as well as potential sources of additional support that could be leveraged in the event of increased rain and floods."[46]

38. In spite of the existence of significant uncertainty on climate change predictions (specifically at the local level), adaptation should focus on "no regrets" activities that will increase people's capacity to deal with a range of likely climate change scenarios.[47] "No regrets" policy or interventions: A policy [or intervention] that would generate net social and/or economic benefits irrespective of whether or not anthropogenic climate change occurs.[48]

[44] IPCC 2007
[45] http://www.ipcc.ch/pdf/supporting-material/uncertainty-guidance-note.pdf
[46] CARE 2010
[47] CARE 2010
[48] IPCC 2007

SECTION 3: KNOWLEDGE MANAGEMENT

39. Provides basic concepts on what knowledge management is and how it is integrated in the Adaptation Fund's RBM framework; it also includes a short overview on how to develop a KM strategy at the project or program level and describe standard indicators broadly used to measure the impact of KM activities and processes.

Knowledge Management in the Adaptation Fund

40. The Adaptation Fund has included knowledge management as part of its Results Based Management Framework at the fund level. While Knowledge Management is critical for any organization, it is even more so for the Adaptation Fund, not only because Adaptation projects and programs are still relatively new but also because the Fund is piloting direct access to countries. The experiences gained from the Fund must therefore be kept track of in a systematic way and analyzed on a periodic basis in order to enrich the global knowledge on climate change adaptation and to accelerate the process of understanding what works in terms of adaptation interventions.

EXAMPLE: Communication campaigns backed-up by effective knowledge management efforts have been critical to develop and improve pandemic preparedness plans worldwide. The important role played by these two elements is evidenced by the increasing number of national response strategies that include KM and communications as a core element.

BASIC CONCEPTS

41. Knowledge is the understanding of the reality based on people's experience, analysis and exchange. In order to be transmitted knowledge needs to be captured and systematized. For this reason, Knowledge Management (KM) can be defined as the set of actions developed (gathering data, analyzing processes, results and personal experiences, creating lessons learned, disseminating them, etc.) so that the knowledge of an individual or an institution reaches, in a timely manner, the largest number of people able to benefit from it.

Keep in mind that KM and communication are complementary activities; they often use similar instruments and processes and involve the same actors. Both contribute synergistically to increase the effectiveness and impact of projects. The integration of the knowledge management with communication allows a substantial reduction in costs and generates more consistent products, avoiding duplication of efforts and enhancing the effectiveness of both.

42. KM activities can be carried out in a variety of ways that can differ based on the environment and the resources available. However there are two key concepts that should be considered no matter which KM path is followed.

1. **Strategy:** A KM component of projects is effective if it follows a strategy. A KM strategy sets the long-term direction, the scope and the objectives (short and long-term) which are knowingly and systematically pursued and eventually achieved through proper planning of resources. It also includes a plan of actions to achieve the goal of learning from their own experience and share that knowledge with all stakeholders and with the global community as reference for future projects.

2. **Change Management:** To be effective KM activities need the support of the project management and to be carried out with "willing" actors. If the working environment is unprepared to implement KM activities, a change in the "culture", the work mentality of the project team members and key stakeholders, is desirable before starting the design of the strategy. It is essential to build consensus among project team members and key stakeholders on why and how KM can improve the project itself, and raise awareness on the importance of capturing lessons learned to be shared at a local, regional and global level.

KM STRATEGY EXPECTED BENEFITS

1. Project impact increased through learning and access to information.
2. Synergy between local and global knowledge on the subject and the region where the project takes place.
3. Knowledge generated from the project is effectively captured to facilitate its dissemination at a local, regional and global level.
4. The project and its achievements are well positioned among development interventions at a regional, local and country level and towards the AF.
5. Policies and agendas of local, regional, and international institutions are modified to include the project lessons learned based on inputs and evidence from the experience.
6. Stakeholders and users networks are strengthened and/or created so that further generation and dissemination of knowledge can be guaranteed after the completion of the project.
7. The use of resources devoted to knowledge management (and communication) in the project is coordinated to maximize efficiency and effectiveness.

HOW TO DEVELOP A KM STRATEGY FOR AN ADAPTATION PROJECT?

There are a few principals that should be taken into account when developing a KM strategy.

- **Synergy:** The actions taken together by different stakeholders can lead to a multiplication of the expected results and impact;
- **Transparency:** KM contributes to make the management of the project and its evaluation more transparent by facilitating access to data and information on the processes and results obtained;
- **Participation and Inclusion:** Inputs from all stakeholders will help the overall success of the project and contribute to enrich local and global knowledge;
- **Flexibility:** The KM strategy, as any strategy, is a live document that should adapt to the changes and unforeseen events that may occur during the implementation of the project.
- **Relevance:** The KM strategy has to take into account what type of knowledge is relevant and useful for the different stakeholders. The focus should be on capturing and systematizing that experiences and knowledge that can improve the project itself as well as future interventions, processes, projects and policies;
- **Cost-effectiveness:** While creating the action plan, the cost-benefit of each KM activity and product should be evaluated in order to identify a realistic plan of action, prioritizing the activities that could generate the greatest impact for each dollar invested.

To develop a KM Strategy the following step should be followed[49]:

Step 1. Analyze existing knowledge, data and communication products and media
Each country has a unique situation when it comes to creating a capacity and knowledge baseline and for this reason most projects will include preparation work aimed at improving knowledge management, collect and processing missing data, and assessing communication needs and tools.

This stage is crucial for the success of the project and the quality of the assessment has a direct impact on results.

Actions identified for completing Step 1

- Human Resources Assessment
- Financial and Infrastructure Resources Assessment
- Stakeholders Analysis
- Overall Context Assessment
- Knowledge Map

Step 2. Design the KM strategy
The strategy is the framework that regulates the production, management, discussion, dissemination of knowledge and information and its design should involve the entire project team and key stakeholders.

Developing a strategy entails adopting a long-term vision, setting KM goals to be achieved by the end of the project, and identifing annual work plans to operationalize the strategy and help monitor its implementation.

A KM strategy should answer the following questions:

- Who to share knowledge with?
- What type of knowledge to share?
- How to share knowledge (means and actions)?
- What are the expected results?

Trying to answer these questions can help the project team determine what actions are the most effective and what KM results are consistent with the overall objective of the project itself. A KM strategy should be tailored to the project, considering the size, requirements and the overall objectives, while also recognizing its beneficiaries, the government, the Adaptation Fund and other institutions related to the project, as well as the profile of the implementing team, the context, and the resources available.

Actions identified for completing Step 2

1. Define KM and create a consensus about its use in the project
2. Set implementation goals and the scope of the KM strategy

[49] For their similarities, some of the KM steps can be undertaken while developing the RBM framework.

3. Identify and profile target audience
4. Establish strategic alliances
5. Define monitor and evaluation indicators (also see page 7 on this issue)
6. Establish the budget and identify source of financing
7. Identify human resources required and assign responsibilities
8. Develop an action plan
9. Develop a timeline for activities and products

Step 3. KM Strategy Implementation and Monitoring

43. The implementation and monitoring of the KM strategy should begin in conjunction with the start of project implementation. The task of designing the strategy is complex but its implementation represents even greater challenges, since many obstacles that could not be expected require quick adjustments and alternative solutions. For this reason it is important that the implementation is periodically monitored and evaluated.

Results to be expected during the implementation of the KM strategy

- Knowledge demands are met in a timely and effective manner
- Local knowledge is enhanced and steps to ensure sustainability are taken
- Knowledge generated by the project activities collected and codified
- Project management receives useful information that helps the monitoring of the project progress

Actions identified for completing Step 3

1. Develop Internal KM activities focused on internal capacity building and change management
2. Undertake External KM activities aimed at facilitating access to information and dialogue between stakeholders.

Step 4. Evaluate, generate lessons learned and disseminate

44. At project completion, the KM strategy and activities are evaluated along with the rest of the project. During this period the generation of lessons learned and their dissemination should take place.

45. The process of generating lessons learned should begin with the selection of local development experiences that have been most important and represent valuable lessons for other projects.

46. The legacy of the KM in a project should include the creation of knowledge products (lessons learned, data and information on the processes) that are publicly accessible and widely disseminated, as well as an increased capacity/knowledge among all stakeholders.

Actions identified for completing Step 4

1. KM Evaluation
2. Systematization and dissemination of lessons learned

Core KM indicator for the Adaptation Fund

Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level **Indicator 3.1:** Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses **Indicator 3.3:** Modification in targeted population behavior (survey)	**Output 3:** targeted population groups participating in adaptation risk reduction awareness activities **Indicator 3.1:** No. and type of risk reduction actions or strategies introduced at local level **Indicator 3.2:** Degree of understanding of adaptation risk reduction among the beneficiaries (through surveys and/or interviews at a local level) **Indicator 3.2:** No. of news outlets in the local press and media that have covered the topic

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ANNEX 1: ADAPTATION FUND STANDARD/CORE INDICATORS

This annex presents and describes the standard/core Adaptation Fund indicators that would be measured, and provides guidance[50] as to how to define, measure, and collect data. The list of indicators is not comprehensive of all outputs that may be used by projects. Choose only output and outcome indicators that are relevant to the project characteristics and set results.

Chapter 1: An introduction of the Adaptation Fund standard indicators

INDICATORS
1. Relevant threat and hazard information generated and disseminated to stakeholders on a timely basis
1.1. No. and type of projects that conduct and update risk and vulnerability assessments
1.2. Early warning systems developed
2.1 No. of targeted institutions with increased capacity to minimize exposure to climate variability risks
2.2 Reduced number of people suffering losses from extreme weather events
2.1.1. No. of staff trained to respond to and mitigate impacts of climate related events
2.1.2. Percentage of population covered by adequate risk reduction systems
2.1.3. No. of people affected by climate variability
3. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses
3.1 No. and type of risk reduction actions or strategies introduced at local level
4.1. Development sectors' services (health and social services) responsive to evolving needs from changing and variable climate
4.2. Physical infrastructure improved under climate change and variability-induced stress
4.1.1. No. and type of health or social infrastructure developed or modified to respond to new conditions resulting from climate variability and change (by type)
4.1.2. No. of physical assets strengthened or constructed to withstand conditions resulting from climate variability and change (by asset types)
5.1. Ecosystem services maintained or improved under climate change and variability-induced stress
5.2. No. and type of natural resource assets created, maintained or improved to withstand conditions resulting from climate variability and change (by type of assets)
6.1 Percentage of households and communities having more secure (increased) access to livelihood assets
6.2. Percentage of targeted population with sustained climate-resilient livelihoods
6.1.1.No. and type of adaptation assets (physical as well as in terms of knowledge) created in support of individual or community livelihood strategies
6.1.2. No. of households with more secure access to livelihood assets
7. Climate change priorities are integrated into national development strategy
7.1. Number of policies introduced to address climate change risks or adjusted to incorporate climate change risks

[50] Other methods and ways to collect and analyze the data exist; therefore the methods, examples, analysis, data collection techniques and other information are included here with the purpose of assisting project proponents and provide guidance; they are not intended to be prescriptive.

Chapter 2: Outline of Adaptation Fund Indicators

EXPECTED RESULTS	INDICATORS
Outcome 1: Reduced exposure at national level to climate related hazards and threats	1. Relevant threat and hazard information generated and disseminated to stakeholders on a timely basis
Output 1: Risk and vulnerability assessments conducted and updated at a national level	1.1. Number and type of projects that conduct and update risk and vulnerability assessments
	1.2 Early warning systems developed

1. Relevant threat and hazard information generated and disseminated to stakeholders on a timely basis	
Relationship of the indicator to outcomes and outputs:	Relates to Outcome 1 (Reduced exposure at national level to climate related hazards and threats) of the Strategic Results Framework. This indicator would mainly measure the state of enabling conditions.[51]
Definition of indicator:	Existence of relevant threat and hazard information is a measure of how research activities and scientific information and knowledge generated by studies (projects, etc.) feed back into improved adaptation responses. It is the ability of stakeholders to provide and access information and use it for their adaptation interventions at the time needed. Definition of terms used in indicator: "Relevant:" in this case is the threat and hazard information to the sector, or aspect being addressed (see below). "Threats or risks:" defined as the probability of that climate change, including variability, negatively impacting a country, community or household, as the result of the interaction between a hazard and conditions of vulnerability (AF). "Hazard:" the probability of a climate related incident to occur within a given area and timeframe (AF). A climate hazard is a physically defined climate even with the potential to cause harm, such as heavy rainfall, drought, storm, or long-term change in climatic variables such as temperature and precipitation (APF 2005). A hazard maybe a transient, recurrent event with an identifiable onset and termination such as a storm, flood or drought, or a more permanent change such as a trend or transition from one climatic state to another. Hazards may be characterized in terms of climatic variables, and coping range may be defined in terms of the same variables for the various systems on which human populations depend. "Sectors:" Water Resources Management; Agriculture; Land Management; Food Security; Health; Coastal Zone Management; Infrastructure Development; Disaster Risk Reduction; Fragile Ecosystems; Natural Resources Management; Urban Development; Multi-sectoral; Other. "Timely basis:" in time to allow an effective response. It should answer questions as: before and after and for what hazard (e.g., irrigation before draught or insurance after hail) (Webbe et al IN Leary et al. 2008) .
Difficulty of measuring	Moderate

[51] **Enabling conditions:** conditions that increase capacity (empowerment programs), "good governance" (lobby/advocacy), and awareness and develop regulatory frameworks necessary to adapt to climate change. For example: training to farmers on effects of climate variability in agricultural systems, or policy development to regulate access to insurance by poor segments of the population (Lau Schulpen 2007, Paardekoper, 2006 and Bodelier & Vossen, 2007 IN Meerts 2009, GEF EO OPS4 2009).
Demonstration/pilot interventions: new technologies that assist in adapting to climate variability and change (including extreme weather events). For example: new technologies or production systems developed in partnership with local people and researchers (agro-forestry, soil-conservation, farming systems, etc.) (GEF EO OPS4 2009)
Investments and/or tangible result interventions: establishing health clinics, bridges, roads, irrigation systems, water treatment plants, houses that withstand climate variability, small rotating credit schemes or establishment of seed banks (Venooy, Paardekoper, 2006 and Bodelier & Vossen, 2007 IN Meerts 2009, Lau Schulpen, GEF EO OPS4 2009).

the indicator:	
How to measure it (metrics)?	Three parameters should be measured in this indicator: - Generation of relevant data (which is also considered in Output indicator 1.1) - To whom is the information disseminated? (Which is also considered in Output indicator 1.2) - When is the information disseminated? - timely basis (which is also considered in Output indicator 1.2) Summarize overall analysis using the following scale (1-3) 3. All relevant data is generated and disseminated to all stakeholders on a timely basis 2. Partial relevant data is generated and disseminated to some stakeholders on a somewhat timely basis (and all variations of partial aspects) 1. No relevant data is generated or disseminated to stakeholder on a timely basis Describe: short narrative explanation Briefly describe main opportunities and/or challenges encountered: (E.g., Challenges generating data and/or Opportunities generating data; Challenges disseminating information to stakeholders and/or Opportunities disseminating information to stakeholders; Challenges on timeframe of dissemination and/or Opportunities on timeframe of dissemination).
Why measure it?	Effective adaptation measures cannot occur in the absence of threats and hazard information. To develop such measures specific knowledge on the complex nature, extent, and persistence of threats and hazards is needed. In addition, to be useful, threats and hazards information should not merely exist but it must be applicable and accessible to stakeholders developing the adaptation measures. Main questions this indicator tries to answer: Is relevant threat and hazard information generated and disseminated to stakeholders on a timely basis? Other questions that could be considered: What aspects of relevant information are being address or not being addressed? To which stakeholders is the information being disseminated? What is the time related dissemination challenges and opportunities?
When to measure it?	Depends on length of project. Usually for baseline information and end of project. For projects longer than 3 years, also at mid term. Ex-post evaluation recommended for understanding long term results.
How to collect the data?	Compilation and analysis of secondary data on threats and hazards in the area of intervention (see below). Data can be gathered from various sources: direct interviews with institutions or groups managing threats and hazards information. The assessment may also be based on studies and analysis undertaken by these institutions and specialists, etc. The identification of a climate change threat to a system or practice will be based on an assessment of its viability under projected climatic conditions. In order to demonstrate the existence of a climate change threat to a system targeted by project activities, a proposal must provide at least: 1. An assessment of the current viable climatic range (i.e. the coping range) of the system to be targeted by project activities, in terms of key climatic parameters. 2. Evidence that the current coping range under which the system or practice is viable is likely to be exceeded as a result of climate change. This evidence may take the form of information indicating a reasonable likelihood that key climatic parameters will exceed the coping range in question more frequently, or permanently, based on climate model outputs, recent climatic trends or past analogues. 3. A baseline scenario describing the likely consequences of exceeding the coping range in question, assuming no adaptation interventions are undertaken. The development benefits of an adaptation project will be assessed in relation to this baseline. Information on the following key features of natural hazards is needed to identify past, present and potential hazards and their effects: - *Location and extent*. Is the program or project area affected by one or more natural hazards, what types of hazard, and where? - *Frequency and probability of occurrence*. How often are hazard events likely to occur (in both the short and the long term)? - *Intensity/severity*. How severe are the events likely to be (e.g., flood levels; speed of winds and volume/rate of rainfall during hurricanes; magnitude and intensity of an earthquake)?

- *Duration*. How long will the hazard event last (from a few seconds or minutes in the case of an earthquake to months or even years in the case of drought)?
- *Predictability*. How reliably can we predict when and where events will happen?
- Information about the speed of onset of a hazard event is principally relevant to disaster preparedness and early warning systems but may also have a bearing on planning decisions (e.g., planning secure evacuation routes).

Project planners and evaluators should also be aware of:

- Secondary hazards resulting from a hazard event (e.g., landslides triggered by an earthquake or heavy rainfall; fires in buildings set off by earthquakes; dam failure due to floodwaters);
- Hazards outside the project area that could affect it (e.g., by cutting off supplies of power or raw materials, displacing communities); and
- How hazard events occur, including not only natural physical processes but also the impact of human activities that create or exacerbate hazards (e.g., deforestation causing slope instability and hence landslides).

Describe uncertainties associated with each risk factor.

What is required to collect the data?

- Assessment tools: to assess how relevant the threat and hazards information is, to whom the information would/should be disseminated, and definition of what constitutes a timely basis.
- Survey to understand perception of stakeholders on how relevant was the data and timeframe.
- Secondary information (data on existing hazards information, etc.)
- Project document and reports.

How to analyze and interpret the results?

A “3” would be interpreted as relevant information is generated and disseminated to all identified stakeholders on timely basis.
A “2” would be interpreted as the existence of some challenge in any of the three aspects of the indicator (generation of dissemination, stakeholders reached or timeframe managed).
A “1” would be interpreted as the information that has been generated is not relevant and neither the stakeholders reached nor the timeframe managed were achieved.

Further description, through narrative, would allow understanding challenges and/or opportunities supporting any of the three potential responses.

Related indicator: Relevant risk and hazard information is being sustainably generated and effectively used by stakeholders

Strength and limitations of indicator

The indicator by itself does not provide information on whether relevant information generated and disseminated on a timely basis has or would be applied to generate effective adaptation measures. To this extent, additional indicators must be in place (see related indicator)

Outputs of measuring activities: Example:

Narrative report including sector(s) addressed, population/stakeholder covered and timeframe aspects.

Overall, the project intervention has generated partial relevant data (hazard: drought), which was disseminated to 500 stakeholders (farmers from the southern region of the country) on a timely basis (all three episodes during project implementation).

	Sector addressed	Number of targeted stakeholders	Hazards information generated	Timeframe	Overall effectiveness
Baseline	Agriculture	1,000 (x men/boys, x women/girls, x elderly and x disabled)	None	Before and after event	1 (describe)
Target	Agriculture	1,000 (x men/boys, x women/girls, x elderly and x disabled)	Drought and hail	Before and after event	3 (describe)
Actual result	Agriculture	500	Drought	Before	2 (describe)

			(male/female ratio)		event	

References, resources and tools:

- Adaptation Fund. 2010. An Approach to Implementing Results Based Management – RBM. AFB/EFC.1/3/rev.1 June 16, 2010
- Caribbean Hazard Mitigation Capacity Building Programme (CHAMP) http://www.cdera.org/projects/champ/mitiplcy/vulnerb.shtml (Accessed September – November 2010)
- DFID Climate Risk Impacts on Sectors and Programmes (CRISP) at http://tinyurl.com/ccorchid (Accessed September - November 2010).
- Fay, M., R.I. Block, and J. Ebinger (Eds). 2010. Adapting to Climate Change in Eastern Europe and Central Asia. The World Bank. 180pp.
- NOAA/National Ocean Service/IUCN WCPA Marine, WWF. 2004. How is your MPA doing?
- Provention Consortium 2007. Tools for Mainstreaming Disaster Risk Reduction: Collecting and Using Information on Natural Hazards. Guidance Note 2. (Accessed on September – November 2010) http://www.proventionconsortium.org/themes/default/pdfs/tools_for_mainstreaming_GN2.pdf
- Provention Consortium Community Risk Assessment Toolkit. http://www.proventionconsortium.org/?pageid=39 (Accessed on September – November 2010)
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- Yalowitz, K., J.F. Collins, and R. A. Virginia. 2008. The Arctic Climate Change and Security Policy Conference. Final Report and Findings. Dartmouth College, Hanover, New Hampshire. USA. http://www.carnegieendowment.org/files/arctic_climate_change.pdf (Accessed September – November 2010).

Where possible, definitions have been quoted word for word from the source.

1.1. Number and type (sector) of projects/interventions that conduct and update risk and vulnerability assessments	
Relationship of the indicator to outcomes and outputs:	Relates to Output 1(Risk and vulnerability assessments conducted and updated at a national, regional or local level) of the Strategic Results Framework. This indicator would mainly measure the state of enabling conditions.
Definition of indicator:	Development and update of risk and vulnerability assessments is a measure of quantity and type of research activities, scientific information, and knowledge generated in the area of intervention. This indicator assumes that the higher the number of projects and interventions within different sectors

conducting and updating risk and vulnerability assessments the more information on specific risk and vulnerability assessments would be available. This information would form the basis to develop relevant and sector specific adaptation measures and to help a country/sector make risk-based choices to address vulnerabilities, mitigate hazards and prepare for response to and recovery from hazard events. It is mainly a measure of the availability of information.

Definition of terms used in indicator:
"Risk" is defined as the probability of climate change, including variability, negatively impacting a country, community or household, as the result of the interaction between a hazard and conditions of vulnerability (AF).

"Vulnerability:" The degree to which a system is susceptible to and unable to cope with, the adverse affects of climate change, including climate variability and extremes. Vulnerability is a function of the character, magnitude and rate of climate change and variation to which a system is exposed, its sensitivity, and its adaptive capacity (IPCC). (Vulnerability is a function of a country's or community's exposure to climate related hazards, and the capacity to mitigate and cope with the impact of the hazards.)

"Sector:" Water Resources Management; Agriculture; Land Management; Food Security; Health; Coastal Zone Management; Infrastructure Development; Disaster Risk Reduction; Fragile Ecosystems; Natural Resources Management; Urban Development; Multi-sectoral, other.

Define: number of projects if referring to a program or number of interventions, components/ outputs/activities if referring to a project.

Define: level or geographic scale of intervention (national, regional, local).

Difficulty of measuring the indicator: Low.

How to measure it? Number, sector(s) and level(s) of projects or interventions in separate fields of monitoring plan.

Why measure it? Adaptation measures should respond to information obtained through risk and vulnerability assessments. To develop such measures specific knowledge and information on risks and vulnerability is needed and uncertainties assessed and considered.

When to measure it? Depends on length of project. Usually for baseline/context information and end of project. For projects longer than 3 years, also at mid term.

How to collect the data? Compilation and analysis of secondary data on projects or interventions that previously completed or are implementing risks and vulnerability assessments in the area of intervention (baseline). Data can also be gathered from various sources: direct interviews with institutions or groups managing risk and vulnerability information.

What is required to collect the data?
- Project reports and publications.

How to analyze and interpret the results? Table with number, geographic scale, and sector of projects or interventions generating and/or updating risk and vulnerability assessments (or disaggregated by those generating and those updating assessments).

Strength and limitations of indicator: This indicator cannot measure quality of generated or updated risk and vulnerability assessments. For that, other indicators need to be included.

Outputs of measuring activities: Table including number, level, and sector of projects/interventions generating and/or updating risk and vulnerability assessments.

Example:

	Number of interventions	Sector	Scale	Intervention
Baseline	1	Agriculture	Local (community X)	Risk assessment

	None	Coastal Zone Mgmt.	National	None
Target (and actual result)	2	Agriculture	Local (community X)	Updated risk assessment
	1	Coastal Zone Mgmt.	National	Vulnerability assessment

References, resources and tools:

- Adaptation Fund. 2010. An Approach to Implementing Results Based Management – RBM. AFB/EFC.1/3/rev.1 June 16, 2010
- Caribbean Hazard Mitigation Capacity Building Programme (CHAMP) http://www.cdera.org/projects/champ/mitiplcy/vulnerb.shtml (Accessed September – November 2010).
- CRISTAL: Community-based Risk Screening Tool – Adaptation and Livelihoods http://www.cristaltool.org/ (Accessed November 2010).
- DFID Climate Risk Impacts on Sectors and Programmes (CRISP) at http://tinyurl.com/ccorchid
- Knight, C.G. and J. Jager (Eds.). 2009. Integrated Regional Assessment of Global Climate Change. Cambridge University Press. 412pp.
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- Patt, Anthony G.; Schröter, Dagmar; Klein, Richard J. T.; de la Vega-Leinert, Anne Cristina. 2008. Assessing vulnerability to global environmental change: making research useful for adaptation decision making and policy. International Institute for Applied Systems Analysis (IIASA). Earthscan. ISBN/ISSN: 9781844076970; 304pp.
- Provention Consortium Community Risk Assessment Toolkit. http://www.proventionconsortium.org/?pageid=39 (Accessed on September – November 2010). Also:
  - http://www.proventionconsortium.org/themes/default/pdfs/CRA/SPDRP1998_meth.pdf
  - http://www.proventionconsortium.org/themes/default/pdfs/CRA/BC_HRVA_2003_meth.pdf
- UNDP Adaptation to Climate Change Web Page: http://www.undp.org/climatechange/adapt/definitions.html (Accessed September – November 2010).
- UNISDR. Developing Early Warning Systems: A Checklist. 2006. EWC III. Third International Conference on Early Warning. From concept to action. 27-29 March 2006. Bonn, Germany http://www.unisdr.org/ppew/info-resources/ewc3/checklist/English.pdf (Accessed September – November 2010).
  - UNISDR: http://www.unisdr.org/eng/partner-netw/ngos/rd-ngo-eng.htm (Accessed November 2010).

Where possible, definitions have been quoted word for word from the source.

Quality of relevant risk and vulnerability assessments

Relationship: Relates to Output 1(Risk and vulnerability assessments conducted and updated at a national, regional

of the indicator to outcomes and outputs:	and or local level) and Outcome 1 of the Strategic Results Framework. This indicator would mainly measure the state of enabling conditions.
Definition of indicator:	Development and update of risk and vulnerability assessments is a measure of quantity and type of research activities, scientific information, and knowledge generated in the area of intervention. It is assumed that the higher the number of projects and interventions within different sectors conducting and updating risk and vulnerability assessments the more information on specific risk and vulnerability assessments would be available. This information would form the basis to develop relevant and sector specific adaptation measures and to help a country/sector make risk-based choices to address vulnerabilities, mitigate hazards and prepare for response to and recovery from hazard events. It is mainly a measure of the availability of information. Definition of terms used in indicator: "Risk" is defined as the probability of climate change, including variability, negatively impacting a country, community or household, as the result of the interaction between a hazard and conditions of vulnerability (AF). Risk assessments should include: - Organizational arrangements established - Natural hazards identified - Community vulnerability analyzed - Risks assessed - Information stored and accessible - See also DFID Climate Risk Impacts on Sectors and Programmes (CRISP) "Vulnerability:" The degree to which a system is susceptible to and unable to cope with, the adverse affects of climate change, including climate variability and extremes. Vulnerability is a function of the character, magnitude and rate of climate change and variation to which a system is exposed, its sensitivity, and its adaptive capacity (IPCC). (Vulnerability is a function of a country's or community's exposure to climate related hazards, and the capacity to mitigate and cope with the impact of the hazards.) Vulnerability assessments are systematic examinations of building elements, facilities, population groups or components of the economy and environment to identify features that are susceptible to damage from the effects of natural hazards. Vulnerability can be estimated for individual structures, for specific sectors or for selected geographic areas, e.g. areas with the greatest development potential or already developed areas in hazardous zones. The results of a vulnerability assessment can be used to prioritize mitigation activities and can help inform disaster recovery, mitigation and response planning. Examples of Vulnerability Assessment Methodologies: - ECLAC Methodology. - Vulnerability Assessment Techniques and Applications (VATA). - Local Mitigation Strategy. Vulnerability Assessment Supplements. - Risk Control Planning Workbook, Asian *Urban Disaster Mitigation Program.* - Etc. "Sector:" Water Resources Management; Agriculture; Land Management; Food Security; Health; Coastal Zone Management; Infrastructure Development; Disaster Risk Reduction; Fragile Ecosystems; Natural Resources Management; Urban Development; Multi-sectoral, other (specify). Define: number of projects if referring to a program or number of interventions, components/ outputs/activities if referring to a project. Define: level/scale of intervention (national, regional, local).
Difficulty of measuring the indicator:	Moderate. Projects or interventions are quantified and qualified, and separated into sectors.
How to measure it?	Quality (use scale 1-3 to summarize findings): 5: Very high quality (risk and vulnerability assessments include all recommended aspects). 4: High quality (risk and vulnerability assessments include most recommended aspects) 3: Moderate quality (risk and vulnerability assessments include some recommended aspects)

2: Partial quality (risk and vulnerability assessments do not include most recommended aspects).
1: Low quality (risk and vulnerability assessments lack all recommended aspects).

Describe.

Other relevant indicators:
Risk and vulnerability assessments results effectively used to define adaptation measures

Why measure it?

Adaptation measures should respond to information obtained through risk and vulnerability assessments. To develop such measures specific knowledge and information on risks and vulnerability is needed and uncertainties assessed and considered.

When to measure it?

Depends on length of project. Usually for baseline/context information and end of project. For projects longer than 3 years, also at mid term. Ex-post evaluation for understating long-term results is recommended for this indicator.

How to collect the data?

Compilation and analysis of secondary data on risks and vulnerability assessments in the area of intervention. Data can be gathered from various sources: direct interviews with institutions or groups managing risk and vulnerability information. The assessment may also be based on studies and analysis undertaken by these institutions and specialists, etc.

What is required to collect the data?

- Assessment tools: used to evaluate the relevance of the risk and vulnerability information.
- Project reports and publications (baseline information/target).

How to analyze and interpret the results?

Table with number, level/scale, quality and sector of projects or interventions generating and/or updating risk and vulnerability assessments (or disaggregated by those generating and those updating assessments).

Strength and limitations of indicator

This indicator does not measure level of use of information once produced. Further indicators could be defined to understand application of information once generated.

Outputs of measuring activities:

Narrative report including table with number, quality, level, and sector addressed by project/programmes.

Example:

By year 5 of project, 3 (out of 3 planned) risk assessments were completed. Independent analysis on quality of risk assessments is included in the table below…

	Number of interventions	Sector	Scale	Quality of assessment
Baseline	1	Agriculture	Local (community X)	Partial: Risk assessment lacks community vulnerability analysis and information generated has not been stored…
	None	Coastal Zone Mgmt.	National	Does not apply
Target (and actual result at end of project)	2	Agriculture	Local (community X and community Y)	High in both communities: risk assessments include: Organizational Arrangements Established; Natural Hazards Identified; Community Vulnerability Analyzed; Risks Assessed Information Stored and Accessible…
	1	Coastal Zone Mgmt.	National	Partial: describe.

References,

- Adaptation Fund. 2010. An Approach to Implementing Results Based Management – RBM.

resources and tools:	AFB/EFC.1/3/rev.1 June 16, 2010 - Caribbean Hazard Mitigation Capacity Building Programme (CHAMP) http://www.cdera.org/projects/champ/mitiplcy/vulnerb.shtml (Accessed September – November 2010) - DFID Climate Risk Impacts on Sectors and Programmes (CRISP) at http://tinyurl.com/ccorchid - Knight, C.G. and J. Jager (Eds.). 2009. Integrated Regional Assessment of Global Climate Change. Cambridge University Press. 412pp. - NOAA. Vulnerability assessment techniques and Applications (VATA). http://www.csc.noaa.gov/vata/ (Accessed on September – November 2010) - NOAA. Community Vulnerability Assessment Tool. http://www.csc.noaa.gov/products/nchaz/startup.htm (Accessed on September – November 2010) - NOAA/National Ocean Service/IUCN WCPA Marine, WWF. 2004. How is your MPA doing? - Provention Consortium Community Risk Assessment Toolkit. http://www.proventionconsortium.org/?pageid=39 (Accessed on September – November 2010). Also: o http://www.proventionconsortium.org/themes/default/pdfs/CRA/SPDRP1998_meth.pdf o http://www.proventionconsortium.org/themes/default/pdfs/CRA/BC_HRVA_2003_meth.pdf - UNDP Adaptation to Climate Change Web Page: http://www.undp.org/climatechange/adapt/definitions.html (Accessed September – November 2010). - UNISDR. Developing Early Warning Systems: A Checklist. 2006. EWC III. Third International Conference on Early Warning. From concept to action. 27-29 March 2006. Bonn, Germany http://www.unisdr.org/ppew/info-resources/ewc3/checklist/English.pdf (Accessed September – November 2010) Where possible, definitions have been quoted word for word from the source.

1.2. Early warning systems developed	
Relationship of the indicator to outcomes and outputs:	Relates to Output 1(Risk and vulnerability assessments conducted and updated at a national level) of the Strategic Results Framework. This indicator would mainly measure the state of demonstration/pilot interventions or actual investments.
Definition of indicator:	Development of early warning systems is a measure of long-term knowledge generated and disseminated in the area of intervention. It is assumed that the higher the number of early warning systems the more information on specific risk and vulnerability assessments is available. This information would form the basis to develop relevant and sector specific adaptation measures and to help a country/sector make risk-based choices to address vulnerabilities, mitigate hazards, and prepare for response to and recovery from hazard events. It is mainly a measure of the availability of information during the timeframe needed. Definition of terms used in indicator: "Early warning system(s) or EWS:" "A system is a set of interacting component parts that acts as a whole to produce an outcome. Systems thinking and methods have been very influential in improving the design and operation of many elements of modern society. Early warning systems can be likewise examined and improved from this perspective" (UNISDR). "The first step forward calls for the definition of the early warning system – of its desired outcomes, component parts, internal relationships, inputs and outputs – along with measures of its performance, preferably in relation to appropriate benchmarks or norms. The four-element (risk knowledge, monitoring and warning service, dissemination and communication, response capability) framework provides a good

	basis for examining and defining early warning systems" (UNISDR). Define geographic scale and risk covered by EWS(s).
Difficulty of measuring the indicator:	Low
How to measure it?	Number
Why measure it?	Development of early warning systems is an integral aspect of the outcome: Relevant threat and hazard information generated and disseminated to stakeholders on a timely basis. "Early warning is a major element of disaster risk reduction. It prevents loss of life and reduces the economic and material impact of disasters" (UNISDR 2006).
When to measure it?	Depends on length of project. Usually for baseline/context information and end of project. For projects longer than 3 years, also at mid term.
How to collect the data?	Through secondary data with information on early warning system information or primary data (interviews).
What is required to collect the data?	- Secondary data with information on existing early warning system information or primary data (interviews). - Project/programme reports.
How to analyze and interpret the results?	A table or narrative including number of EWS developed, geographic scale covered by EWS (and sector if applicable). Further information in narrative format.
Strength and limitations of indicator	This indicator does not provide information on how operational or effective the EWS is.
Outputs of measuring activities:	Narrative report, which can include number of EWS established and other specific information.
Example from the field:	An Early Warning System (EWS) will be developed integrating meteorological forecasts for the upper X basin (with information generated by the strengthened meteorological network). It will be based on a suite of defined benchmarks, and will be designed to account for both water scarcity and excess. It will also be used as a complementary safeguarding tool for the operations of existing and planned dams. In addition to this, the EWS would help define the appropriate rationing benchmark in times of water stress. All the actions will be developed through a robust community-based approach and using low cost technologies that facilitate replication. These actions will include low cost water storage, stabilized landslide areas, more efficient water use, low-tech community early warning systems (EWS) and rainfall management schemes. Indicator: Number of EWS for floods and landslides operational Baseline: No EWS for flood and landslide are operational at present Target end of project: 4 EWS established that benefit a total estimated population of 13,000 in the most vulnerable areas of City X and the upper X basin by year 3
References, resources, and tools:	- International Strategy for Disaster Reduction. Platform for the Promotion of Early Warning. Ideas for Innovation. http://www.unisdr.org/ppew/ideas-innovation/ideas-innovation.htm (Accessed September- November 2010) - Honduras and UNDP. Addressing Climate Change Risks on Water Resources in Honduras: Increased Systematic Resilience and Reduced Vulnerability of the Urban Poor. Project Proposal 2010. http://www.adaptation-fund.org/projectprogrammeproposals (Accessed September- November 2010) - http://www.climatehotmap.org/ (Accessed September – November 2010) - NOAA/National Ocean Service/IUCN WCPA Marine, WWF. 2004. How is your MPA doing? - UNISDR. Developing Early Warning Systems: A Checklist. 2006. EWC III. Third International

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Where possible, definitions have been quoted word for word from the source.

Effectiveness of early warning systems developed	
Relationship of the indicator to outcomes and outputs:	Relates to Outcome 1and Output 1.2 of the Strategic Results Framework. This indicator would mainly measure the state of demonstration/pilot interventions or actual investments.
Definition of indicator:	Development of early warning systems is a measure of long-term knowledge generated and disseminated in the area of intervention. It is assumed that the higher the number of early warning systems the more information on specific risk and vulnerability assessments is available. This information would form the basis to develop relevant and sector specific adaptation measures and to help a country/sector make risk-based choices to address vulnerabilities, mitigate hazards and prepare for responses to and recovery from hazard events. It is mainly a measure of the availability of information. Definition of terms used in indicator: "A complete, people-centered effective early warning system comprises four inter-related elements" (UNISDR) 1. Risk knowledge: systematically collect data and undertake risk assessments (see indicator output 1.1.) a. Organizational Arrangements Established b. Natural Hazards Identified c. Community Vulnerability Analyzed d. Risks Assessed e. Information Stored and Accessible 2. Monitoring and warning service: develop hazard monitoring and early warning services a. Institutional Mechanisms Established b. Monitoring Systems Developed c. Forecasting and Warning Systems Established 3. Dissemination and communication: communicate risk information and early warning a. Organizational and Decision-making Processes Institutionalized b. Effective Communication Systems and Equipment Installed c. Warning Messages Recognized and Understood 4. Response capability: Build national and community response capabilities. a. Warnings Respected b. Disaster Preparedness and Response Plans Established c. Community Response Capacity Assessed and Strengthened d. Public Awareness and Education Enhanced There is a range of overarching issues that should be taken into account when designing and maintaining effective early warning systems. - Effective governance and institutional arrangements - Involvement of local communities - A multi-hazard approach - Consideration of gender perspectives and cultural diversity "People-centered:" the early warning system is developed for the people (attending gender equity perspectives and vulnerable groups: women/girls, elderly, children/youth, disabled, etc.). Define geographic scale, targeted population, and risk covered by EWS(s).
Difficulty of	Moderate.

measuring the indicator: How to measure it?	Scale 1 – 5 (used to summarize assessment results). 5: Very effective (all elements of an effective EWS are present) 4: Effective (most elements of an effective EWS are present) 3: Moderately effective (some elements of an effective EWS are present) 2: Partially effective (most elements of an effective EWS are not present) 1: Ineffective (all elements of an effective EWS are not present) Describe: (Describe opportunities and/or challenges on effectiveness of EWS(s)).
Why measure it?	Development of early warning systems is an integral aspect of the outcome: Relevant threat and hazard information generated and disseminated to stakeholders on a timely basis. "Early warning is a major element of disaster risk reduction. It prevents loss of life and reduces the economic and material impact of disasters. To be effective, early warning systems need to actively involve the communities at risk, facilitate public education and awareness of risks, effectively disseminate messages and warnings and ensure there is constant state of preparedness" (UNISDR 2006).
When to measure it?	Depends on length of project. Usually for baseline/context information and end of project. For projects longer than 3 years, also at mid term. Ex-post evaluation recommended for understanding long-term results.
How to collect the data?	- The UNISDR document includes a checklist that could be followed with aspects to consider when developing a complete and effective people-centered EWS. - Also, include interviews with relevant stakeholders in the country on level of implementation of existing EWS and a perception survey in the area of intervention to evaluate level of implementation. - Where relevant, focus group discussions can be held with different groups of people in order to assess changes in their perception of level of implementation of EWS. - Narrative (or as a checklist).
What is required to collect the data?	- Secondary data with information on early warning system assessment or assessment tools (for direct analysis). - Survey if perception of targeted population on effectiveness of EWS is sought. - Project reports.
How to analyze and interpret the results?	Further description, through narrative, would allow understanding challenges and/or opportunities supporting any of the five potential responses.
Strength and limitations of indicator	Subjectivity of person performing analysis could be a limitation. It is important for evaluator to understand how EWS are developed, implemented, and evaluated and be familiar with EWS analyses. Unless there is a real need for the use of EWS during the implementation of a project, its effectiveness may be evaluated. Otherwise, effectiveness could be measured through proxy indicators on potential effectiveness of EWS (e.g., effectiveness of response under an informed simulation exercise in targeted pilot areas).
Outputs of measuring activities: Example:	Narrative report, which can include the number of EWS established (previous indicator). The project completed a moderately effective EWS for the agricultural sector in the Upper X basin where 3,000 families live (last census data for 2006 obtained from Bureau of Census). Reasons that the EWS is partially effective include: weak forecasting and warning systems established (fail-safe systems-power back up, on-call personnel, equipment redundancy were not in place…

	Number	Sector	Risk	Estimated population benefited	Geographic area	Effectiveness (results derive from assessment)
Baseline	None	Agriculture	Flood and landslide	0 of 3,000	Upper X basin	1
Target end of project	1	Agriculture	Flood and landslide	3,000	Upper X basin	4

Actual result (at end of project)	1	Agriculture	Flood and landslide	2,000	Upper X basin	3

References, resources, and tools:

- http://www.climatehotmap.org/ (Accessed September – November 2010)
- NOAA/National Ocean Service/IUCN WCPA Marine, WWF. 2004. How is your MPA doing?
- UNISDR. Developing Early Warning Systems: A Checklist. 2006. EWC III. Third International Conference on Early Warning. From concept to action. 27-29 March 2006. Bonn, Germany http://www.unisdr.org/ppew/info-resources/ewc3/checklist/English.pdf (Accessed September – November 2010)

Where possible, definitions have been quoted word for word from the source.

EXPECTED RESULTS	INDICATORS
Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced economic, social and environmental losses	2.1. No. of targeted institutions with increased capacity to minimize exposure to climate variability risks
	2.2. Reduced number of people suffering losses from extreme weather events
Output 2.1: Strengthened capacity of national and regional centres and networks to rapidly respond to extreme weather events	2.1.1. No. of staff trained to respond to and mitigate impacts of climate related events
Output 2.2: Targeted population groups covered by adequate risk reduction systems	2.1.2. Percentage of population covered by adequate risk reduction systems
	2.1.3. No. of people affected by climate variability

2.1. Number and level of capacity of targeted institutions to minimize exposure to climate variability risks

Relationship of the indicator to outcomes and outputs:

Relates to Outcome 2 (Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses) of the Strategic Results Framework.

This indicator would mainly measure the state of enabling conditions.

Definition of indicator:

Number of targeted institutions with increased capacity to minimize exposure to climate variability risks is a measure of capacity developed to provide adaptation measures and reduce vulnerability.

Definition of terms used in indicators:
"Targeted institutions:" including scale of institution: local, regional, national; type: public/government institutions, NGOs, private sector, etc.), and sector of institution (health, education, financial, etc.).

"Climate variability risks:" Risk is defined as the probability of climate change, including variability, negatively impacting a country, community or household, as the result of the interaction between a hazard and conditions of vulnerability (AF).

"Institutional capacity building:" Institutional capacity building is a process, relying on a series of institutional capacity building or skills transfer initiatives, leading to financial, managerial, and technical sustainability, that ensures more effective:

- Resource management (financial, human, technical, community)
- Service delivery
- Staff competencies at all levels
- Planning (including individual or short-term, annual, strategic, and sustainability)

	- Implementation of appropriate, efficient, and cost-effective management systems Also, to understand increasing capacity analysis review theoretical framework by Gupta et al. 2008. This theoretical framework consists of six dimensions, divided in two groups. On the one hand, it distinguishes three central qualities of adaptive institutions (variety, learning capacity, and room for autonomous change), and, on the other hand, it distinguishes three external qualities that influence and contribute to these qualities (leadership, resources, and fair governance) (Termeer et al. 2009)
Difficulty of measuring the indicator:	Moderate
How to measure it?	Number of targeted institutions. Since the indicator includes a quality component: "increased capacity," baseline and target information should also include measures of quality and/or quantity that demonstrate capacity level within targeted institutions. In some cases, the effects of projects or project interventions on institutional capacity can be monitored through quantitative indicators. For example, a decrease in the number of days needed to complete the approval of a climate change resilient water pipeline may be regarded as a proxy of the improved responsiveness of institutions to the needs of targeted populations. Qualitative assessments and in-depth studies may be required to assess whether changes have occurred in terms of responsiveness, awareness and participation of institutions to the needs posed by climate change. Where relevant, focus group discussions can be held with different groups of people (women, youth, ethnic minorities and entrepreneurs) in order to assess changes in their perception of institutions or policies (IFAD 2007).
Why measure it?	Minimizing climate variability risks in a specific area or an entire country requires the existence of vectors of change or entities that implement adaptation measures. This indicator assumes that the higher the number of these institutions with increased capacity the higher the probability of covering the entire area and sectors of intervention. The purpose of this indicator is to ensure that enough institutions from different levels and sectors are supporting the reduction of risks.
When to measure it?	Depends on length of project. Usually for baseline/context information and end of project. For projects longer than 3 years, also at mid term. Ex-post evaluation recommended for understanding long-term results.
How to collect the data?	Compilation and analysis of secondary data on existing number, type and sector of institutions with increased capacity to minimize risks. Data can also be gathered from direct interviews with institutions or groups exposed to capacity building initiatives. The assessment may also be based on studies and analysis undertaken by institutions and specialists implementing capacity building interventions, etc.
What is required to collect the data?	- Secondary data with information on institutions that work on minimizing risks from climate variability in the area of intervention (e.g., reports on mission, vision, strategy of institution, etc.) - Questionnaire for direct interviews with relevant institutions should include questions directed towards understanding the following aspects: Resource management (financial, human, technical, community); Service delivery; Staff competencies at all levels; Planning (including individual or short-term, annual, strategic, and sustainability); and Implementation of appropriate, efficient, and cost-effective management systems. Also see reference below on adaptive capacity scorecard. - Interviewer.
How to analyze and interpret the results?	The higher the number of institutions with increased capacity to minimize risks the higher the capacity in the area of intervention to minimize risks. Further description on quality of increased capacity would depend on type of assessment used. Comparisons can be drawn from previous and post project interventions.
Strength and limitations of indicator	There is a need for good understanding of the existing capacity and gaps to bridge in targeted institutions.
Outputs of measuring activities:	Table including number and type of institution (including sector and coverage) and narrative including perception of level of capacity increased per targeted institution.
Example from the field:	Outcome 4: Continuous monitoring capabilities of coastal stabilization trends established. Indicator 4.1: Coastal Research Institute CoRI has capacity to undertake systematic coastal observation.

Baseline: There are scattered tidal gauge stations along the Mediterranean Sea in Egypt belonging to several institutions but there is no national network for regular monitoring of Sea Level Rise and other physical oceanographic variables
Targets:
- By end of the project there are quality control and assurance procedures designed and approved for SLR monitoring at the Coastal Research Institute of the Ministry of Water and Irrigation
- At least 3 training sessions on quality control and assurance designed and delivered by end of 2012
- At least 40 staff of CoRI and other national and local institutions trained in coastal monitoring quality system by end of 2012

Means of verification:
Project annual reports; model outputs; technical reports, Project mid term evaluation;
Project final evaluation.

Output 4.1: Continuous monitoring program for warning system against sea level rise and climatic change impacts on the sea parameters such as wave height and direction, tide, erosion, storm surges etc. established and relevant software purchased and installed.
Indicator 4.1.1: Climate and sea-level monitoring program infrastructure established and upgraded with additional software

Output 4.2: Quality control and assurance procedures defined
Indicator 4.2.1:Guidelines for quality control and assurance procedures defined

Output 4.3: Training designed and delivered for coastal monitoring and quality control system;
Indicator 4.3.1: Number of training sessions on coastal monitoring and quality control system designed and delivered
Indicator: 4.3.2: Number of staff of CoRI and other national and local institutions trained in coastal monitoring quality system;

References, resources, and tools:

- IFAD. 2007. Results and Impact Management System: RIMS First and Second Level Results Handbook.
- Joyeeta Gupta, Katrien Termeer, Judith Klostermann, Sander Meijerink, Margo van den Brink, Pieter Jong and Sibout Nooteboom (doc and poster: IC12 Institutions for Adaptation: Are Dutch Institutions Capable of Adapting to Climate Change?
- Joyeeta Gupta, Katrien Termeer, Judith Klostermann, Sander Meijerink, Margo van den Brink, Pieter Jong, Sibout Nooteboom, Robbert Biesbroek and Emmy Bergsma (2009) Adaptive capacity scorecard.
- http://www.adaptation-fund.org/system/files/Egypt_8_11_10.pdf
- http://www.pathfind.org/site/PageServer?pagename=Pubs_ICB
- NOAA/National Ocean Service/IUCN WCPA Marine, WWF. 2004. How is your MPA doing?
- Strengthening your organization A Series of Modules and Reference Materials for NGO and CBO Managers and Policy Makers. Pathfinder International. Accessed September – November 2010 http://www.pathfind.org/site/DocServer/complete_intro.pdf?docID=322

Where possible, definitions have been quoted word for word from the source.

2.1.1. Number of staff from targeted institutions trained to respond to and mitigate impacts of climate related events

Relationship of the indicator to outcomes and outputs:	Relates to Output 2.1 (Strengthened capacity of national and regional centres and networks to rapidly respond to extreme weather events) of the Strategic Results Framework. This indicator would mainly measure the state of enabling conditions.
Definition of indicator:	This is the number of staff (males and females[52]) from targeted institutions that participated in training events held during the period defined. Definition of terms used in indicator: "Staff:" personnel from targeted institutions to whom the training is provided/directed "Targeted institutions:" sector (see definition of sectors above), type (private, public, NGO) and geographic coverage (national, regional or local) by institutions.
Difficulty of measuring the indicator:	Low
How to measure it?	Number of staff (male/female) of targeted institutions - Obtain baseline information: total number of staff from targeted institutions and - Define target: needs to be defined by project proponents.
Why measure it?	Staff from targeted institutions needs to be empowered to have greater awareness about the needs to effectively respond and mitigate impacts of climate change. They need to be equipped with knowledge, skills and attitudes, to carry out new tasks and confront new challenges. Capacity building includes technical, managerial and behavioural aspects.
When to measure it?	Depends on length of project. Usually for baseline/context information and end of project. For projects longer than 3 years, also at mid term.
How to collect the data?	For numbers (baseline and target): Use of human resource information and data from targeted institutions and implementation plan of training program.
What is required to collect the data?	Access to training records and list of participants.
How to analyze and interpret the results?	Number of total staff trained from institution, which could also be disaggregated by gender.
Strength and limitations of indicator	Number of trained staff alone does not equate to effective application of knowledge and skills learned. Therefore, the inclusion of a survey to collect further information, mainly changes in behaviour of trainees, would be required to understand quality of training and application of information learned.
Outputs of measuring activities	Narrative report including a table with numbers of trained personnel (disaggregated by females and males).

[52] Women/girls (age bracket as defined by country or internationally - specify); Men/boys (age bracket as defined by country or internationally –specify), youth (age bracket as defined by country or internationally –specify), vulnerable groups as defined by country or internationally (specify).

Example:

	Number of staff trained	Total number of staff in targeted institution	Type of Institution	Institution's sector	Other information, E.g., training theme, geographic scale.
Baseline	0	400 (include male/female ratios)	Government	Health	
Target end of project	100 (at least 50% females)	400 (include male/female ratios)	Government	Health	
Actual result (end of project)	150 (60% females and 40% males)	350 (include male/female ratios)	Government	Health	

References, references, and tools:

- Aguilar, L. 2009. Training Manual on Gender and Climate Change. IUCN, UNDP, GGCA. http://www.generoyambiente.org/archivos-de-usuario/File/ecosistemas_especificos.pdf
- J. van Geene, C.T.H.M. Terwisscha van Scheltinga, F. Gordijn, A.M.J. Jaspers and M. Argaw 1991. Trainer's Manual on Climate Change Adaptation and Development. Integrating Climate Change in Policy Making for Sustainable Development in Agriculture and Natural Resources Management. http://portals.wi.wur.nl/files/docs/file/climate%20change/TrainingManual2009report%201991-fin.pdf
- http://www.unitar.org/ccp/ (Accessed September – November 2010)
- NOAA/National Ocean Service/IUCN WCPA Marine, WWF. 2004. How is your MPA doing?
- WeAdapt. Collaborating on Climate Change. http://www.weadapt.org/ (Accessed September – November 2010)
- WHO. Climate Change and Human Health. Training. http://www.who.int/globalchange/training/en/ (Accessed September – November 2010)

Where possible, definitions have been quoted word for word from the source.

Number and effectiveness of training of staff from targeted institutions trained to respond to and mitigate impacts of climate related events

Relationship of the indicator to outcomes and outputs:

Relates to Output 2.1 and Outcome 2.

This indicator would mainly measure the state of enabling conditions.

Definition of indicator:	This is the number of staff (males and females[53]) from targeted institutions that are effectively trained during the defined period. Definition of terms used in indicator: "Staff:" persons from targeted institutions to whom the training will be provided/directed "Targeted institutions:" sector (see definition of sectors above), type (private, public, NGO) and geographic coverage (national, regional or local) by institutions. "Effectively trained:" reflects the extent to which the training intervention accomplished training objectives.
Difficulty of measuring the indicator:	Moderate
How to measure it?	A. Number of staff (male/female) per sector of targeted institutions - Obtain baseline information needed: total number of staff from targeted institutions and - Define target: needs to be defined by project proponents. B. Effectiveness of training: - Obtain baseline information: quality of past training sessions and knowledge level within targeted institutions. - Quality of present training sessions and knowledge level acquired within targeted institution - Define target: needs to be defined by project proponents. Use scale (1-5) to summarize quality of training sessions 5: Very effective (all elements of an effective training and results are present) 4: Effective (most elements of an effective training and results are present) 3: Moderately effective (some elements of an effective training and results are present) 2: Partially effective (most elements of an effective training and results are not present) 1: Ineffective (all elements of an effective training and results are not present) Describe.
Why measure it?	Staff from targeted institutions needs to be empowered to have greater awareness about the needs to effectively respond and mitigate impacts of climate change. They need to be equipped with knowledge, skills and attitudes, to carry out new tasks and confront new challenges. Capacity building includes technical, managerial and behavioural aspects.
When to measure it?	Depends on length of project. Usually for baseline/context information and end of project. For projects longer than 3 years, also at mid term. Ex-post evaluation for long-term results is recommended.
How to collect the data?	For numbers (baseline and target): Use of human resource information and data from targeted institutions and implementation plan of training program. For effectiveness (baseline and target): can be measured through a survey or questionnaire. Some examples of overall questions that could be assessed: - Does staff understand the potential contribution of their own work to climate change response? - After the training, would they be better equipped with knowledge, attitudes, and skills to effectively respond to climate change impacts?
What is required to collect the data?	- Interviewer to evaluate satisfaction/perception/quality of training as well as level of attendance, etc, - Questionnaire for interviews. - Training manuals and other materials to assess quality of training. - Access training records and list of participants.

[53] Women/girls (age bracket as defined by country or internationally - specify); Men/boys (age bracket as defined by country or internationally –specify), youth (age bracket as defined by country or internationally –specify), vulnerable groups as defined by country or internationally (specify).

How to analyze and interpret the results?

Number of total staff trained (use previous indicator) and quality of training from targeted institution(s), which could also be disaggregated by gender.

Other relevant indicators:
Level of application of information learned by trained staff

Strength and limitations of indicator

Quality of training does not measure level of application of topics by trained staff.
Perception, quality survey should be applied and interpreted by expert.

Outputs of measuring activities

Narrative report explaining effectiveness of training sessions with the help of tables (disaggregated by gender) and numbers of staff trained.

Example:

	Number of staff trained	Total number of staff in targeted institution	Type of Institution/sector	Summarize: perceived quality/analysis of training materials
Baseline	0	400 (male/female ratios)	Government /health	1 (describe, explain)
Target end of project	100 (at least 50% females)	400 (male/female ratios)	Government/health	4 (describe, explain)
Actual result (end of project)	150 (60% females and 40% males)	350 (male/female ratios)	Government /health	4 (describe, explain)

References, resources, and tools:

- Aguilar, L. 2009. Training Manual on Gender and Climate Change. IUCN, UNDP, GGCA. http://www.generoyambiente.org/archivos-de-usuario/File/ecosistemas_especificos.pdf
- J. van Geene, C.T.H.M. Terwisscha van Scheltinga, F. Gordijn, A.M.J. Jaspers and M. Argaw 1991. Trainer's Manual on Climate Change Adaptation and Development. Integrating Climate Change in Policy Making for Sustainable Development in Agriculture and Natural Resources Management. http://portals.wi.wur.nl/files/docs/file/climate%20change/TrainingManual2009report%201991-fin.pdf
- http://www.unitar.org/ccp/ (Accessed September – November 2010)
- NOAA/National Ocean Service/IUCN WCPA Marine, WWF. 2004. How is your MPA doing?
- WeAdapt. Collaborating on Climate Change. http://www.weadapt.org/ (Accessed September – November 2010)
- WHO. Climate Change and Human Health. Training. http://www.who.int/globalchange/training/en/ (Accessed September – November 2010)

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2.2. Number of people suffering losses from extreme weather events

Relationship of the indicator to outcomes and outputs:

Relates to Outcome 2 (Strengthened institutional capacity to reduce risks associated with climate-induced economic, social and/or environmental losses) of the Strategic Results Framework.

This indicator would mainly measure the state of enabling environment.

Definition of indicator:	Number of people suffering losses from extreme weather events is a measure of capacity of institutions and people in general to respond to risks associated with climate variability in a targeted area. The stronger the capacity of an institution the more effective they will be developing appropriate interventions. Definition of terms used in indicator: "Extreme weather event:" An event that is rare within its statistical reference distribution at a particular place. Definitions of 'rare' vary, but an extreme weather event would normally be as rare as or rarer than the 10th or 90th percentile. By definition, the characteristics of what is called 'extreme weather may vary from place to place. Extreme weather events may typically include floods and droughts (IPCC). "Losses from extreme weather events defined as:" loss of life, permanent disruption of long-established lifestyles, and set backs to development processes. Human communities clearly are vulnerable to climate change, especially societies that are heavily dependent on natural resources such as forests, agriculture, and fishing; low-lying regions subject to flooding; water-scarce areas in the subtropics; and communities in areas that are subject to extreme events such as heat episodes and droughts. Define specific potential losses for the project area or programs (specifically those that will be included to understand indicators): - Morbidity: Rate of occurrence of disease or other health disorders within a population, taking account of the age-specific morbidity rates. Morbidity indicators include chronic disease incidence/prevalence, rates of hospitalization, primary care consultations, disability- days (i.e., days of absence from work), and prevalence of symptoms. (IPCC). - Mortality: Rate of occurrence of death within a population; calculation of mortality takes account of age-specific death rates, and can thus yield measures of life expectancy and the extent of premature death. (IPCC). - Under nutrition: The temporary or chronic state resulting from intake of lower than recommended daily dietary energy and/or protein requirements, through either insufficient food intake, poor absorption, and/or poor biological use of nutrients consumed. IPCC - Welfare: An economic term used to describe the state of well-being of humans on an individual or collective basis. The constituents of well-being are commonly considered to include materials to satisfy basic needs, freedom and choice, health, good social relations, and security. (IPCC). - Socio-economic scenarios: Scenarios concerning future conditions in terms of population, Gross Domestic Product and other socio-economic factors relevant to understanding the implications of climate change. See SRES (source: Chapter 6). IPCC - Analysis of effects on socioeconomic aspects: including social, human, physical, natural capitals and livelihoods. Guidelines for the analysis of current and projected socioeconomic conditions are part of the UNDP Adaptation Policy Framework (Malone and La Rovere, 2005). They advocate the use of indicators to characterize socio-economic conditions and prospects. Five categories of indicators are suggested: demographic, economic, natural resource use, governance and policy, and cultural. Most recent studies have focused on the first two of these. Key impacts that may be associated with key vulnerabilities are found in many social, economic, biological and geophysical systems, and various tabulations of risks, impacts and vulnerabilities have been provided in the literature (e.g., Smith et al., 2001; Corfee-Morlot and Höhne, 2003; Hare, 2003; Oppenheimer and Petsonk, 2003, 2005; ECF, 2004; Hitz and Smith, 2004; Leemans and Eickhout, 2004; Schelinhuber et al., 2006). Key vulnerabilities are associated with many climate sensitive systems, including, for example, food supply, infrastructure, health, water resources, coastal systems, ecosystems, global biogeochemical cycles, ice sheets, and modes of oceanic and atmospheric circulation (see Section 19.3). (IPCC) 19.3.2.5 Societal systems (same document) (IPCC).
Difficulty of measuring the indicator:	Moderate to high.
How to measure it?	Number (men and women and other vulnerable groups[54]).

[54] Vulnerable groups: indigenous groups, women, youth (including children) and the elderly, physically impaired, etc. Specific vulnerable groups should be identified and their perspective included, during project design.

Why measure it?	Decreased number of people suffering losses produced by extreme weather events is a measure of increase capacity in institutions (at defined level) implementing or guiding adaptation measures.
When to measure it?	Depends on length of project. Usually for baseline/context information and end of project. For projects longer than 3 years, also at mid term. Ex post evaluation for understanding long-term results is recommended for this indicator.
How to collect the data?	Collect baseline data: through census, surveys, and/or other appropriate means. Define specific targets considering the baseline data.
What is required to collect the data?	- Census provider and tools for analysis. - Systems to maintain data. - Surveys.
How to analyze and interpret the results?	Interpretation is based on results of census and estimates. Total numbers of people suffering losses in the intervention area is compared with total numbers of people suffering losses in the region, or the same intervention area from past events, etc. Depending on extent of census: Age, class structure and/or gender across populations within the intervention area.
Strength and limitations of indicator	The link between decreased number of people suffering losses and strengthened capacity of formal and informal institutions needs careful consideration of context and scenario information on intervention area.
Outputs of measuring activities:	Table presenting numbers and category of losses. Narrative report accompanying table on quality of losses.
Example from the field:	Honduras: Context includes information on: - General vulnerability analysis to extreme events of country (including review of causes to vulnerability). - Financial losses due to disasters (historically) - Specific natural disaster information (hurricanes), rainfall, flash floods, landslides, intense droughts. - Socioeconomic analysis: description of mortality, infrastructure loss, decreases of water supply and crop losses cause by disasters. - General future scenarios. - Analysis of adaptation capacity. Project Objective To increase resilience to climate change risks in the most vulnerable communities in Tegucigalpa and environs, within an overarching intervention that will mainstream climate change considerations into the water sector. Indicator: Increase in allocation of public budget to address climate related risks of the most vulnerable population in Honduras. Baseline: A population of 6,000,000 is highly vulnerable to climate change and no previsions have been done in the planning process to reduce this vulnerability. Public investment has been limited to specific disaster risk reduction. Target: At least 10% of the national budget is allocated to investments and actions to reduce climate risk of the most vulnerable populations in Honduras by Y5. National and sub-national plans Means of verification: Project evaluations: 6 month project reports; annual reports; midterm and terminal evaluation. Indicator: Number of poor households in Tegucigalpa and the upper Choluteca basin experience reduced risk from floods and landslides (projected to increase under climate change scenarios) Baseline: 132,500 poor households in high landslide risk areas Target: At least 13,000 poor households in Tegucigalpa and the upper Choluteca basin report reduced vulnerability to flooding and landslide risks by Y5 Means of verification: Surveys, Project evaluations: 6 month project reports; annual reports; midterm and Terminal evaluation.

	Indicator: Number of poor households in Tegucigalpa and the upper Choluteca basin that have increased access to water all year, thus reducing current vulnerability and increasing their coping range under climate change scenarios. Baseline: An estimated 100,000 poor households currently suffer water scarcity. Target: At least 10,000 of poor households in Tegucigalpa and the upper Choluteca basin increase their access to water by 50% through pilot activities (e.g., water pricing and construction of water storage facilities) by Y5 Means of verification: Surveys, Project evaluations: 6month project reports; annual reports; midterm and terminal evaluation
References, resources, and tools:	- Appendix/Glossary. http://www.ipcc.ch/pdf/glossary/ar4-wg2.pdf (Accessed September – November 2010). - Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2007. M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson (eds). Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.http://www.ipcc.ch/publications_and_data/ar4/wg2/en/contents.html - Confalonieri, U., B. Menne, R. Akhtar, K.L. Ebi, M. Hauengue, R.S. Kovats, B. Revich and A. Woodward, 2007: Human health. Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson, Eds., Cambridge University Press, Cambridge, UK, 391-431.http://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4-wg2-chapter8.pdf - GEF 2006. The Role of Local Benefits in Global Environmental Programs. Washington, D.C. - Adaptation Fund: http://www.adaptation-fund.org/system/files/PIMS%204399%20Honduras%20AdaptationFund_FINAL%20%28submission%29.pdf (Accessed September – November 2010) - NOAA/National Ocean Service/IUCN WCPA Marine, WWF. 2004. How is your MPA doing? - Schneider, S.H., S. Semenov, A. Patwardhan, I. Burton, C.H.D. Magadza, M. Oppenheimer, A.B. Pittock, A. Rahman, J.B. Smith, A. Suarez and F. Yamin, 2007: Assessing key vulnerabilities and the risk from climate change. Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson, Eds., Cambridge University Press, Cambridge, UK, 779-810. http://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4-wg2-chapter19.pdf - The Habitable Planet. http://www.learner.org/courses/envsci/unit/text.php?unit=12&secNum=8 (Accessed September – November 2010) - WHO: http://www.wmo.int/pages/mediacentre/press_releases/pr_871_en.html (Accessed September – November 2010) Where possible, definitions have been quoted word for word from the source.

2.1.2. Percentage of population covered by adequate risk reduction systems	
Relationship of the indicator to outcomes and outputs:	Relates to Output 2.2 (Targeted population groups covered by adequate risk reduction systems) of the Strategic Results Framework. This indicator would mainly measure the state of demonstration/pilot interventions or actual investments if adequate reduction systems were actual investments and not enabling conditions.
Definition of indicator:	This is the assessment of the extent to which the intervention/project or program contributed to improve

	risk reduction at the area of intervention. Definition of terms used in indicator: "Population:" defined by level of project intervention (population at national level, regional, local, etc.) "Adequate risk reduction systems:" according to Hyogo International Strategy for Disaster Reduction (ISDR) and Food and Agriculture Organization (FAO), to attain risk reduction the following strategic goals should be adopted: (a) Mainstreaming disaster risk management (DRM) into development and sectoral planning. The more effective integration of disaster risk considerations into sustainable development policies, planning and programming at all levels, with a special emphasis on disaster prevention, mitigation, preparedness and vulnerability reduction; (b) The development and strengthening of institutions, mechanisms and capacities at all levels, in particular at the community level, that can systematically contribute to building resilience[7] to hazards; and designing and promoting Community-Based Disaster Risk Management (CBDRM); (c) The systematic incorporation of risk reduction approaches into the design and implementation of emergency preparedness, response and recovery programs in the reconstruction of affected communities. Integrating key aspects of DRM in emergency rehabilitation programs; (d) Operationalizing the paradigm shift from reactive emergency relief to pro-active DRM; Disaster risk management can be framed under three main areas: Risk Identification, Risk Reduction and Risk Transfer. These should be supported by effective governance (e.g. legislation, policies, planning, legal frameworks, etc), as well as, institutional capacities at national to local levels, supplemented by effective information and knowledge sharing mechanisms among different stakeholders. (See A Framework for Disaster Risk Management Derived from HFA. The WMO Disaster Risk Reduction (DRR) Programme strategic goals are derived from the Hyogo Framework for Action 2005-2015 (HFA).
Difficulty of measuring the indicator:	Medium
How to measure it (metrics)?	Percentage (includes women –and other vulnerable groups - and men). Adequacy: direct analysis of major areas needs to be included and how adequate or effective these are or analysis of perceptions of populations and institutions.
Why measure it?	It is assumed that the higher the percentage of population covered by adequate risk reduction systems the less likely they will be affected by risks. Therefore understanding the percentage of population adequately covered by risk reduction systems stakeholders can draw lessons learned and gaps on coverage at any level.
When to measure it?	Depends on length of project. Usually for baseline/context information and end of project. For projects longer than 3 years, also at mid term.
How to collect the data?	Census: to understand baseline and target information: total number of people covered in area of intervention; or, Survey: a sample of population to understand perceptions of adequacy of risk reduction systems. Direct analysis: more expensive and time consuming, however more reliable. Secondary data should be used if relevant (consider how current are the data).
What is required to collect the data?	- Census data or estimates using secondary data, if available, on census or estimates of total population in area. - Survey: questionnaire and process for its application and collection of results. - Interviewer.
How to analyze and interpret the results?	The higher the percentage of people from area of intervention covered by adequate risk reduction systems the lower the percentage of people from the area that could potentially be more affected by risks from climate change.
Strength and limitations of indicator	Subjectivity of person performing analysis could be a limitation. Implementation of a census, primarily at the regional and/or national level, tends to be time consuming and expensive, however, it can provide information regarding the quality of the risk reduction system.
Outputs	Narrative report including table with percentage of population disaggregated by gender and vulnerable groups).

Example:

	Percentage of population	Risk reduction systems (describe)
Baseline	10%	Integrating key aspects of DRM in emergency rehabilitation programs
Target (and end of project result)	50%	Integrating key aspects of DRM in emergency rehabilitation programs

References, resources, and tools:

- Baas, S., Selvaraju Ramasamy, Jenny Dey DePryck, and Federica Battista. 2008. Disaster Risk Management Systems Analysis. A guide book. FAO. FAO. 2008. ftp://ftp.fao.org/docrep/fao/010/ai504e/ai504e00.pdf (Accessed September – November 2010)
- Hyogo Framework for Action 2005-2015: Building the resilience of nations and communities to disasters (HFA) http://www.unisdr.org/eng/hfa/hfa.htm (Accessed September – November 2010)
- NOAA/National Ocean Service/IUCN WCPA Marine, WWF. 2004. How is your MPA doing?
- WMO. A Framework for Disaster Risk Management Derived from HFA. http://www.wmo.int/pages/prog/drr/DrmFramework_en.htm# (Accessed September – November 2010)

Where possible, definitions have been quoted word for word from the source.

2.1.3. Number of people affected by climate variability

Relationship of the indicator to outcomes and outputs:

Relates to Output 2.2 (Targeted population groups covered by adequate risk reduction systems) of the Strategic Results Framework

This indicator would mainly measure the state of enabling conditions.

Definition of indicator:

Number of people affected by climate variability is a measure of the number of people suffering losses from extreme weather events (population groups not covered by adequate risk reduction systems).

Definition of terms used in indicator:
"Climate variability:" other statistics (such as standard deviation, statistics of extremes, etc.) of the *climate* on all temporal and spatial scales beyond that of individual weather events. Variability may be due to natural internal processes within the *climate system* (internal variability), or to variations in natural or *anthropogenic* external forcing (external variability). See also *climate change*. IPCC

"Sensitivity is the degree to which a system is affected, either adversely or beneficially by *climate variability* or change. The effect may be direct (e.g., a change in crop yield in response to a change in the mean, range or variability of temperature) or indirect (e.g., damages caused by an increase in the frequency of coastal flooding due to *sea-level rise*)" (IPCC 4to assessment glossary).

Difficulty of measuring the indicator:

Low at local levels; Moderate towards the national level.

How to measure it?

Number (disaggregated by gender and if possible by vulnerable groups defined in the area of intervention) of people.

Why measure it?

Gives information on the number of people by area and helps to develop action and the extent of coverage that risk mitigation actions should follow.

When to measure it?

Depends on length of project. Usually for baseline/context information and end of project. For projects longer than 3 years, also at mid term.

How to collect the data?

Assessment of damage and loss: through secondary and primary data collection.
Primary data: Survey of households (for smaller project intervention areas). Maps on people affected by climate variability. Secondary data mostly recommended at subnational and national levels.

What is required to collect the data?

- Standardized reporting formats and analysis methods in place
- Survey

How to analyze and interpret the results?

The higher the percentage of people from an area of intervention affected by climate variability the higher the needed responses and interventions in the area. However, understanding the degree to which people have been or could be affected should also inform appropriate adaptation responses.

Other relevant indicators:
Degree at which people are being affected by climate variability.
Areas where people are being affected by climate variability.
Comparison of number of people affected by climate variability pre and post intervention.

Strength and limitations of indicator

This indicator cannot measure the degree at which people are being affected by climate variability (unless specific questions are included in the questionnaire/survey), only estimates on numbers affected by any climate variability. Further research and analysis (as well as additional indicators) would be needed if specific maps on the degree in which population is affected by climate variability. At the local level/community level this indicator is easier to measure.

Outputs of measuring activities: Example from the field:

Number of people can be presented in tabulated format, disaggregated by gender.

"CHF 270,984 (USD 259,787 or EURO 195,995) has been allocated from the Federation's Disaster Relief Emergency Fund (DREF) to support the Burkinabe Red Cross Society (BRCS) in delivering immediate assistance to the 1,000 most vulnerable and affected families in addition to the 600 families already assisted with the prepositioned stock provided by the Federation and other Red Cross partners. (DREF 2010)

Number of people affected by climate variability in area of intervention	Area of intervention
1,600 (x women/girls and x men/boys) and x disabled or elderly, etc.	Nationally

References, resources, and tools:

- Appendix I: Glossary. http://www.ipcc-wg2.gov/AR4/website/app.pdf (Accessed September – November 2010).
- Baas, S., Selvaraju Ramasamy, Jenny Dey DePryck, and Federica Battista. 2008. Disaster Risk Management Systems Analysis. A guide book. FAO. ftp://ftp.fao.org/docrep/fao/010/ai504e/ai504e00.pdf (Accessed September – November 2010)
- DREF Operation. 2010. http://www.ifrc.org/docs/appeals/10/MDRBF010do.pdf (Accessed September – November 2010).
- NOAA/National Ocean Service/IUCN WCPA Marine, WWF. 2004. How is your MPA doing?
- Schneider, S.H., S. Semenov, A. Patwardhan, I. Burton, C.H.D. Magadza, M. Oppenheimer, A.B. Pittock, A. Rahman, J.B. Smith, A. Suarez and F. Yamin, 2007: Assessing key vulnerabilities and the risk from climate change. Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson, Eds., Cambridge University Press, Cambridge, UK, 779-810.http://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4-wg2-chapter19.pdf

Where possible, definitions have been quoted word for word from the source.

EXPECTED RESULTS	INDICATORS
Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	3. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses
Output 3: Targeted population groups participating in adaptation and risk reduction awareness activities	3.1 No. and type of risk reduction actions or strategies introduced at local level

3.1. Percentage of targeted population aware of predicted adverse impacts of climate change and of appropriate responses

Relationship of the indicator to outcomes and outputs:	Relates to Outcome 3 (Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level) of the Strategic Results Framework. This indicator would mainly measure the state of enabling conditions.
Definition of indicator:	Percentage of targeted population aware of predicted adverse impacts of climate change and of appropriate responses is a measure of the level of knowledge and capacity of the targeted population to respond to adverse effects through appropriate adaptation responses. Definition of terms used in indicator: Project proponents should define "targeted population." Is it the whole country, a city, several communities, women and/or other vulnerable groups, etc.? "Aware:" having or showing realization, perception or knowledge. "Predicted adverse impacts of climate change:" as defined by project or program in the area of intervention and context analysis, baseline, and scenarios. "Appropriate responses:" as defined by project or program in the area of intervention and supported by National Adaptation Programmes of Action (NAPAs) and other relevant information. These could include: effective (including sustainable) climate change related aspects: changing natural resources management practices, building institutions, launching planning processes, raising awareness, promoting technology change, establishing monitoring/early warning systems, changing agricultural practices, empowering people, promoting policy change, improving infrastructure, providing social protection, other. (Hedger et al. IN Van den Berg and Feinstein 2009, page 247).
Difficulty of measuring the indicator:	Overall low; would depend on geographic coverage of intervention.
How to measure it?	Use scale from 1 to 5 to summarize findings of analysis. 5: Targeted population is fully aware of predicted adverse impacts of climate change and of appropriate responses. 4: Targeted population is mostly aware of predicted adverse impacts of climate change and of appropriate responses. 3: Targeted population is partially aware of predicted adverse impacts of climate change and of appropriate responses. 2: Targeted population is partially not aware of predicted adverse impacts of climate change and of appropriate responses. 1: Targeted population is neither aware of predicted adverse impacts of climate change nor of appropriate responses. Describe.

Why measure it?	To understand awareness levels of the population and therefore being able to respond through appropriate measures to increase (if necessary) the baseline level.
When to measure it?	Depends on length of project. Usually for baseline/context information and end of project. For projects longer than 3 years, also at mid term. Ex-post evaluation is recommended for this indicator.
How to collect the data?	Household perception survey should be carried out. Results could be summarized through the 1-3 scale presented above. Qualitative assessments and in-depth studies may be required to assess specific level of awareness of population to predicted adverse impacts and appropriate responses. Where relevant, focus group discussions can be held with different groups of people (women, youth, ethnic minorities and entrepreneurs) in order to stimulate thinking and elicit ideas on changes in their level of awareness. Baseline and target data should be collected through the use of the same assessment tool.
What is required to collect the data?	- Assessment tools: survey sample (questionnaire), and focus groups. - Interviewer(s) - Project reports and publications.
How to analyze and interpret the results?	Percentage of population aware or not of predicted impacts and appropriate responses is compared with before and after intervention figures. Interpretation is based on results of census/survey and estimates.
Strength and limitations of indicator	Population aware of climate change and appropriate response measures does not necessarily translate to the application of response measures at the household level. Population perceptions are difficult parameters to assess because perceptions, opinions and attitudes are highly variable and few secondary data exist on population perception. Usefulness of indicator depends on availability and cooperation of informants.
Outputs of measuring activities: Example:	Narrative report assisted by tabulation of numerical results (percentages). "This is a disaster risk communication project based on the use of proven communication practices targeting local communities. Disaster risk reduction (DRR) messages are integrated into the story lines of the very successful BBC educational radio programme called "New Home, New Life", NHNL. As the NHNL was launched by the BBC World Service Trust 13 years earlier to support returning internally displaced Afghans, it is broadcast in two Afghan languages. The DRR-related project includes a disaster based radio drama series set in a fictional remote village in Afghanistan. As between 60 to 68 per cent of those who have radio sets in Afghanistan listen to the BBC programme which is broadcast five times a week in the Dari and Pashtu languages, the DRR messages have reached a wide audience. Between two to four times per month, a programme on the findings of a research conducted at community level and an expert-advised story line on disaster issues are broadcast. The story lines are generally hazard specific and are run for up to a period of four months as a reoccurring theme (e.g. April to August on earthquakes). The programmes are rebroadcast at different times of the day and are aired on a variety of radio frequencies and channels to ensure wider audience. The story lines have been operating since July 2006" (UNISDR 2007). "It is early to understand the full impact of the DRR messages, but indications are that the communities are keen to listen and understand more about what they can do in times of disaster. Also, reports from an evaluation team include evidence of success by the previous story lines. An evaluation of the effectiveness of the messages is indeed being conducted, and those who use the programme material in their projects are also being asked to provide information on their effectiveness" (UNISDR 2007).

	Percentage of targeted population aware of predicted adverse impacts	Percentage of targeted population aware of appropriate responses	Summary of results (household perception survey)
Baseline	10%	5%	3
Target (by mid term)	30%	20%	3

Target (by end of project)	70%	50%	3
Result (by end of project)			Still Unknown (project being implemented)

References, resources, and tools:

- Hedger, et al. IN Van den Berg, R. D., and O. Feinstein (Eds.). 2009. Evaluating Climate Change and Development. World Bank Series on Development, Volume 8.
- IFAD. 2007. Results and Impact Management System: RIMS First and Second Level Results Handbook.
- NOAA/National Ocean Service/IUCN WCPA Marine, WWF. 2004. How is your MPA doing?
- Tearfund. Raising Awareness of Risk through Radio Drama IN UNISDR. International Strategy for Disaster Reduction. Building Disaster 2007. Resilient Communities Good Practices and Lessons Learned: A Publication of the "Global Network of NGOs" for Disaster Risk Reduction. http://www.unisdr.org/eng/about_isdr/isdr-publications/06-ngos-good-practices/ngos-good-practices.pdf

Where possible, definitions have been quoted word for word from the source.

3.1.1 Number and type of risk reduction actions or strategies introduced at local level

Relationship of the indicator to outcomes and outputs:

Relates to Output 3 (Targeted population groups participating in adaptation and risk reduction awareness activities) of the Strategic Results Framework.

This indicator would mainly measure the state of demonstration/pilot interventions and/or investments.

Definition of indicator:

This is the assessment of the extent to which the intervention/project or program contributed to improving risk reduction at the local level.

"Types of risk reduction actions or strategies at the local level" are defined as: Monitoring/Forecasting capacity (EWS, vulnerability mapping system); Policy/regulatory reform; Capacity development; Sustainable forest management; Strengthening infrastructure; Supporting livelihoods; Mangrove reforestation; Coastal drainage and infrastructure; Irrigation system; Community based adaptation; Erosion control; Soil water conservation; Microfinance; Special programs for women; Livelihoods; Water storage; ICT and information dissemination, other.

"Introduced:" through training, dissemination of guidance documents, implementation of pilot activities, etc.

Difficulty of measuring the indicator:

Low

How to measure it?

Number and type (in separate columns) at local level.

Why measure it?

Communities need to be equipped with tools to participate in adaptation and risk reduction activities. Interventions introducing action or strategy that increases the use of such tools as required at local levels.

When to measure it?

Depends on length of project. Usually for baseline/context information and end of project. For projects longer than 3 years, also at mid term.

How to collect the data?

For numbers (baseline and target): Use secondary data and project reports and information.

What is required to collect the

- Access to secondary data on previous risk reduction actions and strategies introduced at targeted local levels.
- Project plans and implementation reports.

data?

How to analyze and interpret the results?

Number of action or strategies introduced at local levels, which could also be disaggregated by other information (e.g., total population, geographic area, etc.).

Other indicators can be considered:
Number of risk reduction actions/strategies piloted at the local level
Number of people trained in risk reduction actions/strategies at the local level
Number of risk reduction strategies designed/implemented at the local level

Strength and limitations of indicator

Number of introduced risk reduction actions and strategies does not necessarily equate to effective application of risk reduction actions and strategies at local level.

Outputs of measuring activities: Example:

Narrative report including a table with numbers of actions/strategies.

By the end, the project pilot tested one irrigation system in community X (with a total population of 4,000 people).

	Number of actions/strategies	Type
Baseline	1	Mangrove reforestation
Target (at end of project)	5	EWS, strengthening infrastructure, irrigation system, sustainable forest management, supporting livelihoods.
Actual result (at end of project)	4	EWS, strengthening infrastructure, irrigation system, supporting livelihoods

References, resources, and tools:

- IFAD. 2007. Results and Impact Management System: RIMS First and Second Level Results Handbook.
- NOAA/National Ocean Service/IUCN WCPA Marine, WWF. 2004. How is your MPA doing?

Where possible, definitions have been quoted word for word from the source.

EXPECTED RESULTS	INDICATORS
Outcome 4: Increased adaptive capacity within relevant development and natural resource sectors	4.1. Development sectors' services (health and social services) responsive to evolving needs from changing and variable climate
	4.2. Physical infrastructure improved under climate change and variability-induced stress
Output 4: Vulnerable physical, natural and social assets strengthened in response to climate change impacts, including variability	4.1.1. No. and type of health or social infrastructure developed or modified to respond to new conditions resulting from climate variability and change (by type)
	4.1.2. No. of physical assets strengthened or constructed to withstand conditions resulting from climate variability and change (by asset types)

4.1. Development sectors' services (health and social services) responsive to evolving needs from changing and variable climate	
Relationship of the indicator to outcomes and outputs:	Relates to Outcome 4 (Increased adaptive capacity within relevant development sectors) of the Strategic Results Framework. This indicator would mainly measure the state of enabling conditions.
Definition of indicator:	This is the assessment of the extent to which project/program interventions of improvement and adaptation of development sector's services succeeded in achieving their intended results. Definition of terms used in indicator: "Development sector's services (health and social services):" Health and social development projects: support the reform of secondary education; control the spread of infectious diseases; increased capacity of health services; provision of national level health policy assistance; provision of expanded and improved reproductive health services; and improved conditions for vulnerable children and youth. "Responsive:" reacting quickly and positively (effective in terms of its adaptation to climate change). Define by project proponents (answer the question: what is it needed for the development services to be fully responsive to climate change?). Define scale of intervention: national, regional, local; Describe.
Difficulty of measuring the indicator:	Moderate
How to measure it?	Analysis on how responsive is/are targeted development sectors' services addressed through project interventions. To assess each development sector specific information and tools are needed as well as other indicators. Summarize in an overall scale (1-5): 5: Highly responsive (development sectors' service includes all defined elements to respond to climate change) 4: Mostly responsive (development sectors' service includes most defined elements to respond to climate change) 3: Moderately responsive (development sectors' service includes some defined elements to respond to climate change) 2: Partially responsive (development sectors' service lacks most elements to respond to climate change) 1: Non responsive (development sectors' service lacks all elements to respond to climate change) Describe.
Why measure it?	To understand increased adaptive capacity within relevant development sectors.
When to measure it?	Depends on length of project. Usually for baseline/context information and end of project. For projects longer than 3 years, also at mid term. Ex-post evaluation is recommended for this indicator.
How to collect the data?	Depends on service and scale of intervention. Assessment should be completed for each service adapted.
What is required to collect the data?	- Technical documents related to targeted service(s) (including information contained in payments and financial records). - Beneficiaries and local authorities can be consulted for collecting updated information on the actual and perceived status of the service. Participatory methods can be employed for exploring whether social changes have been achieved. - Documents and tools to assess level of improvement and adaptation of service. - Quantitative data can be collected in relation to economic or technical features. Secondary data sources, in particular regularly collected government data may prove useful. - Notebook, pencil and/or computer
How to analyze and	The results of services may relate to technical, environmental, economic and social dimensions. Data can be presented as financial resources used for improvement/adaptation of physical asset.

interpret the results?

Strength and limitations of indicator

Subjectivity of person performing analysis could be a limitation. It is important to understand development sector services in light of climate change and be familiar with development sector services assessments.

Outputs of measuring activities:

Narrative report; use of tables and graphs as required.

Example:

Malaria Treatment and Prevention Project (March 2003 - March 2011

This project focuses on the expansion of another project (X) to ensure effective diagnosis and treatment of malaria in Region Y and eventually nationwide. The project supports the National Anti Malaria Program to improve clinical and laboratory services for malaria patients in Region Y.

	Development sector (describe)	Geographic scale	Assessment results of responsiveness at targeted area
Baseline	Health (Control the spread of infectious diseases; increased capacity of health services;	Region Y	1 (describe)
	Health (Control the spread of infectious diseases; increased capacity of health services;	Nationally	1 (describe)
Target	Health (Control the spread of infectious diseases; increased capacity of health services;	Region Y	4 (describe)
	Health (Control the spread of infectious diseases; increased capacity of health services;	Nationally	3 (describe)

References, resources, and tools:

- Confalonieri, U., B. Menne, R. Akhtar, K.L. Ebi, M. Hauengue, R.S. Kovats, B. Revich and A. Woodward, 2007: Human health. Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson, Eds. Cambridge University Press, Cambridge, UK, 391-431. http://www.ipcc-wg2.gov/AR4/website/08.pdf
- IFAD. 2007. Results and Impact Management System: RIMS First and Second Level Results Handbook.
- NOAA/National Ocean Service/IUCN WCPA Marine, WWF. 2004. How is your MPA doing?
- USAID Georgia. http://georgia.usaid.gov/index.php?m=19 (Accessed September – November 2010).

Where possible, definitions have been quoted word for word from the source.

4.1.1. Number and type of development sector(s) services addressed to respond to climate change variability.

Relationship of the indicator to outcomes and outputs:

Relates to Output 4 (Vulnerable physical and social assets strengthened in response to climate change impacts, including variability) of the Strategic Results Framework.

This indicator would mainly measure the state of demonstration/pilot interventions and/or investments.

Definition of indicator:

This is the assessment of the extent to which project/program interventions address services to respond to climate change variability.

Definition of terms used in indicator:
"Type of development service:" for example, for health and social development projects: support the reform of secondary education; control the spread of infectious diseases; increased capacity of health services; provision of national level health policy assistance; provision of expanded and improved reproductive health services; and improved conditions for vulnerable children and youth.

Difficulty of measuring the indicator: Low

How to measure it? Number and type

Why measure it? Number of development services addressed by the intervention provides information on availability of adapted services available for human use in response to climate change impacts.

When to measure it? Depends on length of project. Usually for baseline/context information and end of project. For projects longer than 3 years, also at mid term.

How to collect the data? Numbers and type in a table format. Baseline and target information should be included.

What is required to collect the data?
- Technical documents related to service (including information contained in payments and financial records).
- Quantitative data can be collected in relation to economic or technical features. Secondary data sources, in particular regularly collected government data, may prove useful.
- Notebook, pencil and/or computer.

How to analyze and interpret the results? Present results in table accompanied by narrative form to clarify and highlight points.

Examples on how the data might be presented/analyzed (other indicators that can be used to complete information):
- Total number of services addressed by project/programme
- Number of existing services previously addressed in area of intervention

Strength and limitations of indicator: Number of development sector services addressed during the project does not inform on sustainability or effectiveness of these services against the impacts of climate variability.

Outputs of measuring activities: Table including number and type of development sector services and/or narrative format.

Example:

	Number	Development sector (describe)	Geographic scale
Baseline	0	Health (Control the spread of infectious diseases; increased capacity of health services;	Region Y
	1	Health (Control the spread of infectious diseases; increased capacity of health services;	Nationally
Target	1	Health (Control the spread of infectious diseases; increased capacity of health services;	Region Y
	1	Health (Control the spread of infectious diseases; increased capacity of health services;	Nationally

References, resources, and tools:

- Confalonieri, U., B. Menne, R. Akhtar, K.L. Ebi, M. Hauengue, R.S. Kovats, B. Revich and A. Woodward, 2007: Human health. Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson, Eds. Cambridge University Press, Cambridge, UK, 391-431. http://www.ipcc-wg2.gov/AR4/website/08.pdf
- IFAD. 2007. Results and Impact Management System: RIMS First and Second Level Results

Handbook.

- NOAA/National Ocean Service/IUCN WCPA Marine, WWF. 2004. How is your MPA doing?
- USAID Georgia. http://georgia.usaid.gov/index.php?m=19 (Accessed September – November 2010).

Where possible, definitions have been quoted word for word from the source.

4.2. Effectiveness of physical infrastructure to withstand climate change and variability-induced stress	
Relationship of the indicator to outcomes and outputs:	Relates to Outcome 4 (Increased adaptive capacity within relevant development sectors) of the Strategic Results Framework. This indicator would mainly measure the state of demonstration/pilot interventions and/or investments.
Definition of indicator:	This is the assessment of the extent to which project/program interventions of improvement and adaptation of physical assets succeeded in reaching their intended results/objectives. Definition of terms used in indicator: "Physical infrastructure includes:" Roads, Government Buildings, Causeways, Airports, Schools, Training Centres, Hospitals, other. "Effectively withstand or Improved/adapted:" should include: technical, environmental, social and financial cost-benefits analysis (see below).
Difficulty of measuring the indicator:	Moderate
How to measure it?	Use scale (1-5) for summarizing overall assessment results: 5: Fully improved (all technical, environmental, social and financial/economic aspects of infrastructure improved). 4: Mostly Improved (most technical, environmental, social and financial/economic aspects of infrastructure improved) 3: Moderately improved (some technical, environmental, social and financial/economic aspects of infrastructure improved) 2: Somewhat improved (most technical, environmental, social and financial/economic aspects of infrastructure lack improvement) 1: Not improved (all technical, environmental, social and financial/economic aspects of infrastructure lack improvement). Describe. A framework of performance questions (see examples below) that can be used to analyze the effectiveness (including sustainability) of infrastructure and facilities (adapted from IFAD) include: <u>Technical:</u> Design: Are the structures sound? Do they have structural problems? Soundness: Were high-quality materials used for construction? Operation and maintenance (ability): Do those responsible have the required skills for operation and maintenance? Environmental: Are environmental consequences undermining the sustainability of project benefit? Is the location at risk of erosion? <u>Social:</u> Use: Are people using the infrastructure? Participation: Are beneficiaries involved in maintenance and management?

	In addition, to understand success of climate change adaptation measures a series of factors should be assessed: effectiveness, flexibility, equity, efficiency and sustainability (see Hedger et al 2009).
Why measure it?	In order to assess the sustainability of the facilities constructed/rehabilitated by the project, technical aspects (related for example to the quality of design or construction materials) should be combined with broader considerations related to the managerial capacity of beneficiaries and others involved in the management of the infrastructure, the level of support from local institutions, etc.
When to measure it?	Depends on length of project. Usually for baseline/context information and end of project. For projects longer than 3 years, also at mid term. Ex-post evaluation is recommended for this indicator.
How to collect the data?	Depends on targeted physical asset(s). For example, kilometres of road, hectares of land under irrigation systems, square meters or number of government buildings, etc. Measures of physical assets are based on the simple counting of the number of infrastructure/facilities that have been, strengthened, constructed and/or modified by the project or program. The number should be calculated on the basis of the infrastructure/facilities where strengthening, construction/modification works have been fully completed during the period under review. Assessment should be completed for each physical asset effectively improved/adapted. Data relevant for formulating this assessment can be gathered from various sources: institutions or groups managing the infrastructure can provide important insights on the factors affecting sustainability. It is however important to keep in mind that these stakeholders may have a vested interest in under (or over) estimating performance figures, threats, risks, etc. The assessment may also be based on studies undertaken by engineers, institutional specialists, etc.
What is required to collect the data?	- Technical documents related to the construction process (including information contained in payments and financial records). - Beneficiaries and local authorities can be consulted for collecting updated information on the actual and perceived status of construction/rehabilitation works. - Documents and tools to assess the level of improvement and adaptation of infrastructure. Quantitative data can be collected in relation to economic or technical features. Secondary data sources, in particular regularly collected government data (e.g., annual agricultural censuses) may prove useful. Participatory methods can be employed for exploring whether social changes have been achieved.
How to analyze and interpret the results?	The results of productive infrastructure may relate to technical, environmental, economic and social dimensions. Technical results of irrigation schemes include the increased intake of canals, provision of adequate water to each field, etc. Economic results relate to increases in yields, changes in cropping patterns (to more high value crops) or employment opportunities at the farm level. Finally, social results relate to the improvement in the quality of life of farmers served by irrigation schemes. Other indicators can and should be used for measuring whether the project/program is providing farmers with adequate access to water. For example: land productivity per unit of irrigated area or percentage amount of delivered vs. required water. Data can be presented as financial resources used for improvement/adaptation of physical asset.
Strength and limitations of indicator	Further indicators are needed to understand effectiveness of improvements.
Outputs of measuring activities:	Narrative report, use of tables and graphs as required.
Example:	By the end of project implementation, 4 out of 10 bridges adapted are also operational. Beneficiaries and local stakeholders highlighted the low commitment of authorities in ensuring adequate funds for proper functioning of the adapted facilities. Only 3 are likely to be sustainable. The other 6 bridges have been moderately improved (include further information from assessment).
References, resources, and tools:	- Hedger M., et al. Evaluation of Adaptation to Climate Change from a Development Perspective IN Van den Berg, R. D., and O. Feinstein (Eds.). 2009. Evaluating Climate Change and Development.

World Bank Series on Development, Volume 8.

- IFAD. 2007. Results and Impact Management System: RIMS First and Second Level Results Handbook.
- NOAA/National Ocean Service/IUCN WCPA Marine, WWF. 2004. How is your MPA doing?

Where possible, definitions have been quoted word for word from the source.

4.1.2. Number and type of physical assets strengthened, constructed or moved to withstand conditions resulting from climate variability and change

Relationship of the indicator to outcomes and outputs:	Relates to Output 4 (Vulnerable physical and social assets strengthened in response to climate change impacts, including variability) of the Strategic Results Framework. This indicator would mainly measure the state of demonstration/pilot interventions and/or investments.
Definition of indicator:	Number and type of physical assets strengthened, constructed or moved to withstand conditions resulting from climate variability and change is a measure of physical adaptation efforts to withstand conditions resulting from climate variability and change. Definition of terms used in indicator: "Types of physical assets:" Roads; Government Buildings; Causeways; Airports; Schools; Training Centres; Hospitals, drinking water systems, other. Project interventions: "Strengthened:" it assumes that the physical asset already exists but will be improved in terms of its capacity to better withstand conditions resulting from climate variability. "Constructed:" it assumes that the physical asset does not exist. "Moved or changed in location or position:" it assumes that the physical asset already exists, but needs to be rebuilt or constructed somewhere else. E.g., road near sea where see level rise would cover it in the future (scenario); the road should be moved if this is one of the cost-effective adaptation options selected by stakeholders.
Difficulty of measuring the indicator:	Low
How to measure it?	Number and type (entered in separate columns).
Why measure it?	Physical assets established/constructed, strengthened and/or moved provides information on adapted physical resources available for human use in response to climate change impacts.
When to measure it?	Depends on length of project. Usually for baseline/context information and end of project. For projects longer than 3 years, also at mid term.
How to collect the data?	Measures of physical assets are based on counting the number of infrastructure/facilities that have been strengthened, constructed and/or moved by the project or program. The number should be calculated on the basis of the infrastructure/facilities where strengthening and construction works have been fully completed during the period under review.
What is required to collect the data?	- Technical documents related to construction process (including information contained in payments and financial records). - Notebook, pencil and/or computer
How to analyze and interpret the	Present results in table accompanied by narrative form to clarify and highlighted points.

results?	Examples on how the data might be presented/analyzed (other indicators that can be used to complete information): - Total number of physical assets addressed by project/programme - Total number of physical assets strengthened or modified or constructed - Previous physical assets established/strengthened/modified in area of intervention - Total resources (time and funds) used to strengthened physical asset, etc.
Strength and limitations of indicator	Number of physical assets address during the project does not inform on sustainability or effectiveness of these structures against the impacts of climate change.
Outputs of measuring activities: Example:	Table including number and type of asset address by project/program. Should also include baseline information and achievement or not of set target.

	Number of assets	Type of asset	Project Intervention
Baseline	4	Bridges	Already constructed
Target (end of project)	4		Strengthened
Actual result (end of project)	3		Strengthened

References, resources, and tools:	- IFAD. 2007. Results and Impact Management System: RIMS First and Second Level Results Handbook. - NOAA/National Ocean Service/IUCN WCPA Marine, WWF. 2004.How is your MPA doing? Where possible, definitions have been quoted word for word from the source.

EXPECTED RESULTS	INDICATORS
Outcome 5: Increased ecosystem and natural assets resilience in response to climate change and variability-induced stress	5. Ecosystem services and/or natural assets maintained or improved under climate change and variability-induced stress
Output 5: Vulnerable natural assets strengthened in response to climate change impacts, including variability	5.1. No. and type of natural resource assets created, maintained or improved to withstand conditions resulting from climate variability and change (by type of assets)

5. Effectiveness of interventions towards maintenance or improvement of ecosystem services and/or natural assets under climate change and variability-induced stress

Relationship of the indicator to outcomes and outputs:	Relates to Outcome 5 (Increased adaptive capacity within relevant natural resource sectors) of the Strategic Results Framework. This indicator would mainly measure the state of demonstration/pilot interventions and/or investments.
Definition of indicator:	This is the assessment of the extent to which project initiatives aimed at reestablishing/regenerating (e.g. mangrove ecosystem), maintaining or improving natural resources (land, water, soil, forests, etc.) have reached their intended objectives. Definition of terms used in indicator: "Ecosystem services:" Ecosystems provide many goods and services that are of vital importance for the functioning of the biosphere, and provide the basis for the delivery of tangible benefits to human society. Hassan et al. (2005); define these to include supporting, provisioning, regulating and cultural services.

	"Types of natural assets[55]:" These consist of biological assets (produced or wild), land and water areas with their ecosystems, subsoil assets and air. "State:" Established, maintained or improved. For example: transformation of degraded land, reduced deforestation, improved biodiversity, enhanced integrity of ecosystem, increased adoption of environmentally friendly practices and utilization of alternative energy sources, etc. These natural assets and ecosystem services are maintained or improved through: Ecosystem Management, Forest Landscape Management, Mangrove Restoration, Soil and Water Conservation Management, Production Landscape Management, other. Define geographic scale of intervention.
Difficulty of measuring the indicator: How to measure it?	Moderate (mainly depending on area of intervention and type of asset). Depends on the targeted natural asset. For example, if the natural asset is biological, specifically species, the asset could be presented and measured through changes in population numbers -dynamics and structure, etc. If the natural asset improved were land, then hectares would be a preferable measurement to use. Hectares of land improved through soil and water conservation methods. This is the amount of land (measured in hectares) where results are visible in terms of reduced deforestation, improved integrity of ecosystems, reduced erosion and degradation, improved water retention, etc. Technical studies by government or specialised agencies, satellite maps and before-and-after photographic evidence can be used to estimate the area of improved land. Baseline data will be necessary to estimate the change. Partnership arrangements with specialised agencies may be established for collecting the data needed to assess changes in soil and water conservation. Supporting indicators baseline and target (as well as contextual information) are needed, for example, - Farmers adopting recommended technologies - Ha. of land improved - Average deforestation rate. - Etc. Scale 1 – 5 (used to summarize assessment results). 5: Very effective (all elements of an effective intervention towards maintenance or improvement of ecosystem services and/or natural assets under climate change and variability-induced stress are present) 4: Effective (most elements of an effective intervention towards maintenance or improvement of ecosystem services and/or natural assets under climate change and variability-induced stress are present) 3: Moderately effective (some elements of an effective intervention towards maintenance or improvement of ecosystem services and/or natural assets under climate change and variability-induced stress are present) 2: Partially effective (most elements of an effective intervention towards maintenance or improvement of ecosystem services and/or natural assets under climate change and variability-induced stress are not present) 1: Ineffective (all elements of an effective intervention towards maintenance or improvement of ecosystem services and/or natural assets under climate change and variability-induced stress are not present) Describe.
Why measure it?	Ecosystem services and/or natural assets effectively established, improved or created would give information on availability of resources for human access and sustainable use as well as overall ecosystem health.
When to measure it?	Depends on length of project. Usually for baseline/context information and end of project. For projects

[55] As defined by the OECD: http://stats.oecd.org/glossary/detail.asp?ID=1729

	longer than 3 years, also at mid term. Ex-post evaluation recommended for this indicator.
How to collect the data?	In order to assess the results of natural resources management and conservation programs, the project may rely on the findings of special studies, mapping exercises, environmental monitoring systems (such as GIS), before-and-after photographs, etc. Site visits may highlight the most visible changes that occurred after the implementation of project initiatives. Furthermore, beneficiaries and local authorities can provide useful information (including perceptions) on the changes that occurred in the agro-ecological environment as a result of project initiatives.
What is required to collect the data?	- Tools for evaluating health of ecosystem and natural asset (primary data and/or perception survey) - Secondary data - Surveys, questionnaire, interviews
How to analyze and interpret the results?	If the target results are quantified in the Logframe or in other project documents, the rating may be based on the comparison of the actual achievement with this stated target. Where relevant, the potential negative impacts on the environment should be considered in assessing the effectiveness of financed initiatives (IFAD).
Strength and limitations of indicator	Measurement of indicator may be easy or difficult to attain depending on a series of factors (from type of natural asset, area covered in the intervention, etc.). For example abundance of sessile species within a small area would prove easier than abundance of pelagic species within a large area (adapted from NOAA/National Ocean Service/IUCN WCPA Marine, WWF. 2004)
Outputs of measuring activities: Example:	Narrative report with graphs and tables. Although the deforestation rate remains high at approximately 2%, in PY5 an increasing number of farmers have adopted environmentally friendly practices. The total land improved after the adoption of these practices is still below the initial target (800 ha. out of the planned 2000). Overall, interventions are rated as moderately effective (3) (Adapted from IFAD).
References, resources, and tools:	- Assets of the natural environment. These consist of biological assets (produced or wild), land and water areas with their ecosystems, subsoil assets and air. *Choudhury and Jansen (1997).* - Fischlin, A., G.F. Midgley, J.T. Price, R. Leemans, B. Gopal, C. Turley, M.D.A. Rounsevell, O.P. Dube, J. Tarazona, A.A. Velichko, 2007: Ecosystems, their properties, goods, and services. Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson, Eds., Cambridge University Press, Cambridge, UK, 211-272. http://www.ipcc-wg2.gov/AR4/website/04.pdf - Glossary of statistic terms. http://stats.oecd.org/glossary/detail.asp?ID=1729 (Accessed September – November 2010). - Glossary of Environment Statistics, Studies in Methods, Series F, No. 67, United Nations, New York, 1997. - http://www.iucn.org/about/union/commissions/wcpa/wcpa_puball/wcpa_pubsubject/wcpa_climatepub/?2085/Securing-protected-areas-in-the-face-of-global-change-key-lessons-learned-from-case-studies-and-field-learning-sites-in-protected-areas - IFAD. 2007. Results and Impact Management System: RIMS First and Second Level Results Handbook. - IPCC. 2002. Climate Change and Biodiversity. IPCC Technical Paper V. http://www.ipcc.ch/pdf/technical-papers/climate-changes-biodiversity-en.pdf - IUCN World Commission on Protected Areas (IUCN-WCPA) (2008). Establishing Marine Protected Area Networks—Making It Happen. Washington, D.C.: IUCN-WCPA, National Oceanic and Atmospheric Administration and The Nature Conservancy. 118 p. http://www.wdpa-marine.org/MPAResources/MPAPlanningResources/Docs/Establishing%20resilient%20MPA%20networks-making%20it%20happen.pdf

- Nigel Dudley, Sue Stolton, Alexander Belokurov, Linda Krueger, Nik Lopoukhine, Kathy MacKinnon, Trevor Sandwith and Nik Sekhran. 2009. Natural Solutions - Protected Areas: Helping people cope with climate change. A report funded and commissioned by IUCN-WCPA, TNC, UNDP, WCS, The World Bank and WWF http://cmsdata.iucn.org/downloads/natural_solutions.pdf

- NOAA/National Ocean Service/IUCN WCPA Marine, WWF. 2004. How is your MPA doing?

- Shadie, Peter, ed. ; Epps, Minna, ed. Securing protected areas in the face of global change : key lessons learned from case studies and field learning sites in protected areas. IUCN ; IUCN World Commission on Protected Areas ; IUCN, Asia Regional Office Bangkok, TH : IUCN Asia Regional Office, 2008. 49p. : ill. ISBN 978-974-04-6136-4

- Thompson, I., Mackey, B., McNulty, S., Mosseler, A. 2009. Forest Resilience, Biodiversity, and Climate Change. A synthesis of the biodiversity/resilience/stability relationship in forest ecosystems. Secretariat of the Convention on Biological Diversity, Montreal. Technical Series no. 43, 67 pages. http://www.cbd.int/doc/publications/cbd-ts-43-en.pdf

- WB. 2010. Convenient Solutions to an Inconvenient Truth. Ecosystem Based Approaches To Climate change. http://issuu.com/world.bank.publications/docs/9780821381267

Where possible, definitions have been quoted word for word from the source.

5.1. Number and type of interventions implemented towards natural resource assets established, maintained or improved to withstand conditions resulting from climate variability and change	
Relationship of the indicator to outcomes and outputs:	Relates to Outcome 5 (Increased adaptive capacity within relevant natural resource sectors) of the Strategic Results Framework. This indicator would mainly measure the state of demonstration/pilot interventions and/or investments.
Definition of indicator:	This is the assessment of the extent to which project initiatives aimed at reestablishing/regenerating (e.g. mangrove ecosystem) maintaining or improving natural resources (land, water, soil, forests, etc.) have reached their intended objectives. Definition of terms used in indicator: "Ecosystem services:" Ecosystems provide many goods and services that are of vital importance for the functioning of the biosphere, and provide the basis for the delivery of tangible benefits to human society. Hassan et al. (2005) define these to include supporting, provisioning, regulating and cultural services. "Types of natural assets[56]:" These consist of biological assets (produced or wild), land and water areas with their ecosystems, subsoil assets and air. "Established, maintained or improved:" transformation of degraded land, reduced deforestation, improved biodiversity, enhanced integrity of eco-system, increased adoption of environmental friendly practices and utilization of alternative energy sources, etc. These natural assets and ecosystem services are maintained or improved through: Ecosystem Management, Forest Landscape Management, Mangrove Restoration, Soil and Water Conservation Management, Production Landscape Management, other (define). Define geographic scale of intervention.
Difficulty of	Low.

[56] As defined by the OECD: http://stats.oecd.org/glossary/detail.asp?ID=1729

measuring the indicator:

How to measure it?

Number of interventions by type of natural asset and intervention.

Why measure it?

Natural assets and ecosystems addressed provide information on availability of adapted natural resources available for human use in response to climate change impacts.

When to measure it?

Depends on length of project. Usually for baseline/context information and end of project. For projects longer than 3 years, also at mid term to understand progress.

How to collect the data?

In order to assess the results of natural resources management and conservation programs, the project may rely on the findings of special studies, mapping exercises, environmental monitoring systems (such as the GIS), before and after photographs, etc.
Site visits may highlight the most visible changes that occurred after the implementation of project initiatives.
Furthermore, beneficiaries and local authorities can provide useful information on the changes that occurred in the agro-ecological environment as a result of project initiatives.

What is required to collect the data?

- Project documents (including description of interventions in targeted area(s) and description of targeted natural asset(s).

How to analyze and interpret the results?

Present results in table accompanied by narrative form to clarify and highlighted points.

Examples on how the data might be presented/analyzed (other indicators that can be used to complete information):

- Total number of natural assets addressed by project/programme
- Total number of natural assets established, maintained or improved.
- Previous natural assets established/maintained in area of intervention

Strength and limitations of indicator

This indicator does not measure effectiveness (including sustainability) of interventions to create, maintain or improve natural assets addressed neither the state of the natural asset.

Outputs of measuring activities: Example:

Table with number and type of natural assets (should include comparison with baseline data).

	Number	Type of natural asset	Intervention
Baseline	1	Water	Water: conservation of water resources in the upper river basin X (specifically: intervention x, y and z).
Target (mid term)	3	Water, coastal sand dune system, species x,	Water: conservation of water resources in the upper river basin X (specifically: intervention x, y and z); coastal sand dune system (maintenance of sand dune system for the protection of …; specifically interventions x, y and z); ….
Target (end of project)	5	Water, coastal sand dune system, species x, species Y, lake ecosystem.	Water: conservation of water resources in the upper river basin X (specifically: intervention x, y and z); coastal sand dune system (maintenance of sand dune system for the protection of …; specifically interventions x, y and z); ….
Actual result (end of project)	3	Water, coastal sand dune system, species x	Water: conservation of water resources in the upper river basin X (specifically: intervention x, y and z); coastal sand dune system (maintenance of sand dune system for the protection of …; specifically interventions x, y and z); ….

References, resources, and tools:

- Assets of the natural environment. These consist of biological assets (produced or wild), land and water areas with their ecosystems, subsoil assets and air. *Choudhury and Jansen (1997).*

- Fischlin, A., G.F. Midgley, J.T. Price, R. Leemans, B. Gopal, C. Turley, M.D.A. Rounsevell, O.P. Dube, J. Tarazona, A.A. Velichko, 2007: Ecosystems, their properties, goods, and services. Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson, Eds., Cambridge University Press, Cambridge, UK, 211-272. http://www.ipcc-wg2.gov/AR4/website/04.pdf

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- Nigel Dudley, Sue Stolton, Alexander Belokurov, Linda Krueger, Nik Lopoukhine, Kathy MacKinnon, Trevor Sandwith and Nik Sekhran. 2009. Natural Solutions - Protected Areas: Helping people cope with climate change. A report funded and commissioned by IUCN-WCPA, TNC, UNDP, WCS, The World Bank and WWF http://cmsdata.iucn.org/downloads/natural_solutions.pdf

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- Thompson, I., Mackey, B., McNulty, S., Mosseler, A. 2009. Forest Resilience, Biodiversity, and Climate Change. A synthesis of the biodiversity/resilience/stability relationship in forest ecosystems. Secretariat of the Convention on Biological Diversity, Montreal. Technical Series no. 43, 67 pages. http://www.cbd.int/doc/publications/cbd-ts-43-en.pdf

- WB. 2010. Convenient Solutions to an Inconvenient Truth. Ecosystem Based Approaches To Climate change. http://issuu.com/world.bank.publications/docs/9780821381267

Where possible, definitions have been quoted word for word from the source.

EXPECTED RESULTS	INDICATORS
Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	6.1 Percentage of households and communities having more secure (increased) access to livelihood assets
	6.2. Percentage of targeted population with sustained climate-resilient livelihoods
Output 6: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	6.1.1.No. and type of adaptation assets (physical as well as in terms of knowledge) created in support of individual or community livelihood strategies

6.1 Percentage of households and communities having more secure access to livelihood assets	
Relationship of the indicator to outcomes and outputs:	Relates to Outcome 6 (Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas) of the Strategic Results Framework. This indicator would mainly measure the state of demonstration/pilot interventions and/or investments.
Definition of indicator:	Percentage of households with more secure access to livelihood assets is a measure of how targeted individual and community livelihoods are strengthened in relation to climate change impacts and variability. Definition of terms used in indicator: "More secure access:" According to IFAD, secure access includes issues of availability, diversity, amount, balance, and quality of assets, as well as sustainability of assets (among other considerations) (See reference below). Define within project frameworks livelihood asset(s) targeted. Livelihood assets include natural, physical, social, human, personal, and financial capitals or assets (see IFAD, DFID or LBS 2006). Define targeted population/community(ies).
Difficulty of measuring the indicator:	Moderate (according to scale intervention and type and number of livelihood asset(s) targeted).
How to measure it?	Percentage (number of households/communities with improved access after intervention/total number of households in targeted area with improved access after intervention). Description (result of survey): Summarize analysis through scale (1-5) from 1: no improved access to 5: very high improvement of access: 5: Very high improvement of access to targeted livelihood asset. 4: High improvement of access to targeted livelihood asset. 3: Moderate improvement of access to targeted livelihood asset. 2: Limited improvement of access to targeted livelihood asset. 1: No improved access to any targeted livelihood asset. Describe (issues of secure access includes issues of availability, diversity, amount, balance, and quality of assets, as well as sustainability of assets (among other considerations)
Why measure it?	A key part of understanding project beneficiary characteristics are household livelihoods, which includes how people have access to and use assets to make a living. Higher understanding of these livelihoods will allow the project manager to better measure and understand the impacts of climate change and climate change variability on targeted beneficiaries.
When to measure it?	Depends on length of project. Usually for baseline/context information and end of project. For projects longer than 3 years mid term reports would help to understand any progress/challenge achieving results. Ex-post measurements are recommended for this indicator.

How to collect the data?	Percentage of households with more secure access to livelihood assets in targeted area. First, secondary socioeconomic data is collected and reviewed at the targeted level of project/program. Data may be available from the census bureau or other census information institution or public offices and institutions with missions focussed on livelihood improvement in the targeted area. Baseline and targeted indicators should be clearly stated: Total number of households in the area Number of targeted households Any information on previously present livelihood asset in the area. Targeted livelihood assets by project/program Measuring this indicator would also require the assessment of targeted household perceptions to the extent to which they believe their access to more secure livelihood assets has materialized. Therefore, primary data may need to be collected. This could be done through a survey or semi-structured interview. Questions could include: - What are the different sources of income in the household? - What are the different livelihoods assets in the household? List all - What is the relative importance of targeted livelihood asset in comparison with other livelihood assets? - Do beneficiaries perceive that there has been an improvement in the level of access to more secure assets? - Etc. Further information collection and analysis could be completed. For example, by disaggregating the number of households in different categories of analysis (income level, total number of persons integrating the household, desegregation by gender or vulnerable groups, etc.). For example: number of households with X level of income with more secure access to livelihood assets or number of households with more than two family members with more secure access to livelihoods assets. For this, further baseline information and adjustment in questionnaire needs to be accounted for. Data should be collected from a sample over time to understand any shifting (increasing/decreasing) in level of access of livelihood assets.
What is required to collect the data?	- Survey forms. - Sample or list of households to be surveyed. - Interviewers. - Secondary data (documents, study results, etc.)
How to analyze and interpret the results?	Present results in narrative form accompanied by tables, charts, and figures to clarify and highlight points. Include quantitative information in tables and as needed. Examples on how the data might be presented/analyzed (other indicators): - Total number of households in area - Previous common livelihood assets in area - Perception on level of security of livelihood assets (new livelihood asset or lost livelihood assets). - Household income in project area (USD)
Strength and limitations of indicator	Strength: similarities in household opinions may be obtained inexpensively (depending on extension of targeted area) and show major challenges/opportunities. Limitation: household perceptions are difficult parameters to assess because perceptions, opinions and attitudes are highly variable and few secondary data exists on household perception. In addition, depending on number and extent of household, collection of information may be time consuming and therefore expensive. Usefulness of indicator depends on availability and cooperation of informants on sensitive issues.
Outputs of measuring activities: Example:	Table and narrative report; Venn diagrams; The project created a total of 100 new jobs, mostly for women, in the enterprises benefiting from project initiatives. This is partially in line with the target established in the Logframe. The effectiveness of project in terms of generation of employment opportunities is rated as 3 (adapted from IFAD 2007)….

	Livelihood	Percentage of	Summary of analysis

	asset/describe	households/community	
Baseline	Financial capital	30%	1: No improved access to any targeted livelihood asset.
	Human capital	10%	3: Moderate improvement of access to some or all the targeted livelihood asset
Target and end of project result	Financial capital	60%	3: Moderate improvement of access to some or all the targeted livelihood asset
	Human capital	10%	5% 4. High improvement of access to some or most targeted livelihood asset; and 5% 3: Moderate improvement of access to some or all the targeted livelihood asset

References, resources, and tools:

- BOND, R. and N. MUKHERJEE. 2002. LIVELIHOOD ASSET STATUS TRACKING: AN IMPACT MONITORING TOOL? Journal of International Development. J. Int. Dev. 14, 805–815. http://portals.wi.wur.nl/files/docs/ppme/Livelihood_asset_tracking_a_tool_for_impact_monitoring.pdf
- DFID. 1999. SUSTAINABLE LIVELIHOODS GUIDANCE SHEETS. http://www.nssd.net/pdf/sectiont.pdf
- GEF 2006. The Role of Local Benefits in Global Environmental Programs. Washington, D.C.
- Hedger M., et al. Evaluation of Adaptation to Climate Change from a Development Perspective IN Van den Berg, R. D., and O. Feinstein (Eds.). 2009. Evaluating Climate Change and Development. World Bank Series on Development, Volume 8.
- IFAD. Understanding poor people and their livelihoods. http://www.ifad.org/english/institutions/guidance/2.pdf (Accessed September - November 2010)
- IFAD. 2007. Results and Impact Management System: RIMS First and Second Level Results Handbook.
- NOAA/National Ocean Service/IUCN WCPA Marine, WWF. 2004. How is your MPA doing?
- An IFAD Sustainable Livelihoods Framework. http://www.ifad.org/sla/framework/index.htm (Accessed September - November 2010).
- Samaki Consultants. Ltd. 2003. Livelihood Assets Required for an East Africa FADs Programme. Final Technical Report. http://www.fmsp.org.uk/Documents/r8249/r8249_1.pdf

Where possible, definitions have been quoted word for word from the source.

6.1.1. Number and type of adaptation assets (physical as well as in terms of knowledge) created in support of individual or community livelihood strategies

Relationship of the indicator to outcomes and outputs:

Relates to Output 6 (Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability) of the Strategic Results Framework.

This indicator would mainly measure the state of demonstration/pilot interventions and/or investments.

Definition of

Definition of terms used in indicator:

indicator:	"Adaptation assets:" Assets, as used here, are resources which people use not only to generate additional flows and stock (Ford 2004, cited in Moser 2007), but which also give 'the capability to be and to act' (Bebbington 1999: 2022). Assets thus include both tangible capitals (natural, physical, and financial) as well as intangible capitals (human, social, and personal). Physical capital: the stock of plant, equipment, infrastructure and other productive resources owned by individuals, the business sector or the country itself. Financial capital: the financial resources available to people (savings, supplies of credit). Human capital: investments in education, health and nutrition of individuals. Labour is linked to investments in human capital; health status influences people's capacity to work, and skill and education determines the returns from their labour. Social capital: an intangible asset, defined as the rules, norms, obligations, reciprocity and trust embedded in social relations, social structures, and societies' institutional arrangements. It is embedded at the micro-institutional level (communities and households) as well as in the rules and regulations governing formalized institutions in the marketplace, political system and civil society. Natural capital: the stock of environmentally provided assets such as soil, atmosphere, forests, minerals, water and wetlands. In rural communities land is a critical productive asset for the poor; in urban areas, land for shelter is also a critical productive asset. Sources: Bebbington (1999); Carney (1998); Moser (1998); Narayan (1997); Portes (1998);Putnam (1993) Personal capital: which includes self-esteem. "Adaptation strategies:" Monitoring/Forecasting capacity (EWS, vulnerability mapping system); Policy/regulatory reform; Capacity development; Sustainable forest management; Strengthening infrastructure; Supporting livelihoods; Mangrove reforestation; Coastal drainage and infrastructure Irrigation system; Community based adaptation; Erosion control; Soil water conservation; Microfinance Special programs for women; Livelihoods; Water storage; ICT and information dissemination.
Difficulty of measuring the indicator:	Low
How to measure it?	Number and type (in separate columns of monitoring plan).
Why measure it?	A key part of understanding project beneficiary characteristics are household livelihoods, which includes how people have access to and use assets to make a living. Higher understanding of these livelihoods will allow the project manager to better measure and understand the impacts of climate change and climate change variability on targeted beneficiaries.
When to measure it?	Depends on length of project. Usually for baseline/context information and end of project. For projects longer than 3 years, also at mid term.
How to collect the data?	Secondary data on previous adaptation assets present or created at the targeted level. Information of adaptation assets created during project interventions.
What is required to collect the data?	Project document and reports.
How to analyze and interpret the results?	Comparison of previous and present numbers and types of adaptation assets created at targeted levels.
Strength and limitations of indicator	Creation or establishment of adaptation assets does not provide information on effectiveness (including sustainability) of those assets towards adaptation.
Outputs of measuring activities: Example:	Table including number and type of adaptation assets at present and compared to past.

	Livelihood asset/describe	Number of Adaptation assets	Adaptation strategy
Baseline	Financial capitals	1	Microfinance Special programs for women

Target and end of project result	Financial capitals	2	Microfinance Special programs for women and savings systems introduced;

References, resources, and tools:

- IFAD. 2007. Results and Impact Management System: RIMS First and Second Level Results Handbook.
- NOAA/National Ocean Service/IUCN WCPA Marine, WWF. 2004. How is your MPA doing?
- Martin Prowse and Lucy Scott. 2008. Assets and Adaptation: An Emerging Debate. IDS Bulletin Volume 39 Number 4 September 2008 © Institute of Development Studieshttp://www.odi.org.uk/resources/download/2564.pdf
- Moser, C. and D. Satterthwaite. 2008. Towards pro-poor adaptation to climate change in the urban centres of low- and middle-income countries. IIED. Human Settlements Discussion Paper Series. Climate Change and Cities Discussion Paper 3. http://www.iied.org/pubs/pdfs/10564IIED.pdf

Where possible, definitions have been quoted word for word from the source.

6.2. Percentage of targeted population with sustained climate-resilient alternative livelihoods

Relationship of the indicator to outcomes and outputs:	Relates to Outcome 6 (Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas) of the Strategic Results Framework. This indicator would mainly measure the state of demonstration/pilot interventions and/or investments.
Definition of indicator:	Percentage of targeted population with sustained climate-resilient livelihoods is a measure of the level of adaptability of vulnerable people in targeted areas to climate change and impacts. Definition of terms used in indicator: "Targeted population:" define the targeted population for project/program. For example: total population of country, total population of community X, all women from community Y, etc. "Alternative livelihoods": "It is difficult to assess the impact that weather-related shocks have on employment and therefore household income. The impact depends primarily on the degree of destruction of income-generating assets and how long flows of goods and services are disrupted. If alternative sources of employment/income are available neither within nor outside a disaster area, the frictional unemployment resulting from a climate shock could reduce income over the long term" (WB 2010).
Difficulty of measuring the indicator:	Moderate
How to measure it?	Household income by source of livelihood in project area (USD) prior and post project intervention.
Why measure it?	A significant part of understanding beneficiaries' characteristics are household livelihood and sources of income, which include the way people use the assets at their disposal to make a living for themselves and their families. An understanding of these livelihood and income sources will allow the project manager to better measure and understand the impacts of climate change and climate change adaptation on local households, which then can be used to take specific management action (NOAA/National Ocean Service/IUCN WCPA Marine, WWF 2004).
When to measure it?	Depends on length of project. Usually for baseline/context information and end of project. For projects longer than 3 years, also at mid term. Ex-post evaluation recommended for this indicator.
How to collect the	Secondary data to determine main sources of income and income level prior project intervention.

data?	Separate main sources of income in groups by sources of income and income level. Data may be available from other projects in the area of intervention, census bureaus or other government offices. Primary data may be collected through a survey (for a sample of households) over time.
What is required to collect the data?	- Survey and sample - Interviewer - Secondary data from public offices, etc.
How to analyze and interpret the results?	Through narrative and tables showing percentages of targeted population with sustained climate-resilient livelihoods pre and post intervention and compare both percentages. If possible, disaggregate by income level, main source of income, average number of people constituting the households, etc.
Strength and limitations of indicator	Household cooperation is required to obtain meaningful and sensitive data for this indicator.
Outputs of measuring activities: Example:	Narrative report explaining quantitative information. "In Belize in 1998, Hurricane Mitch caused more than US$1.2 million in losses when it destroyed fishing grounds such as mangroves and coral reefs in the north and damaged equipment, keeping fishermen on land for months without any alternative livelihood option (Allison and others 2005). In Antigua and Barbuda in 1995, Hurricane Luis destroyed about 16 percent of the fishing fleet and damaged another 18 percent, causing a loss of roughly one-third of the fishing capacity and a 24 percent drop in annual revenues from fishing (Murray n.d.)" (In WB 2010).

	Household income in project area	Sources of income	Percentage of population
Baseline	US$1000/year	Fisheries	20%
	US$1050/year	Agriculture	50%
Target (and actual result at end of project)	US$1100/year	Fisheries, agriculture and other alternative sources	

References, resources, and tools:

- Davies, M., K. Oswald and T. Mitchell. 2009. Climate Change Adaptation, Disaster Risk Reduction and Social Protection. Promoting pro-poor growth: social protection. OECD.
- IFAD. 2007. Results and Impact Management System: RIMS First and Second Level Results Handbook.
- NOAA/National Ocean Service/IUCN WCPA Marine, WWF. 2004. How is your MPA doing?
- Verner, D. (Ed.) 2010. Reducing Poverty, Protecting Livelihoods, and Building Assets in a Changing Climate Social Implications of Climate Change in Latin America and the Caribbean. The World Bank. Washington D.C.

Where possible, definitions have been quoted word for word from the source.

EXPECTED RESULTS	INDICATORS
Outcome 7: Improved policies and regulations that promote and enforce resilience measures	7. Climate change priorities are integrated into national development strategy
Output 7: Improved integration of climate resilience strategies into country development plans	7.1. Number of policies introduced to address climate change risks or adjusted to incorporate climate change risks

7. Integration of climate change adaptation priorities into targeted development strategy	
Relationship of the indicator to outcomes and outputs:	Relates to Outcome 7 (Improved policies and regulations that promote and enforce resilience's measures) of the Strategic Results Framework. This indicator would mainly measure the state of enabling conditions.
Definition of indicator:	Integrating adaptation priorities into a national or local development strategy is the measure of existence of a document to achieve goals and objectives at national and/or local levels and a group of potential and agreed adaptation options to be implemented. Definition of terms used in indicator: Climate Change "adaptation priorities" depend on: - Targeted geographic area covered (local, regional, national, etc.). For example, at the national level NAPAs include climate change adaptation priorities. - Sector's targeted: agriculture, health, energy, waste, forestry, etc. - Socioeconomic aspects covered by policy: physical capital, improve livelihoods, social, natural or human capital. It may be important first to establish area-driven criteria with which to evaluate and prioritize climate change adaptation measures. If priorities have not being defined at any level or if priorities are included in the NAPAs, then specific processes on how to translate them to local levels should be discussed. "Development strategy:" a document containing integrated objectives and usually developed to harmonize the various sectoral (economic, social and environmental) policies and plans that are operating in a country/region/locality. National development strategies/regional development strategies, etc.
Difficulty of measuring the indicator:	Moderate
How to measure it?	Use scale 1-5 to summarize results from analysis. 5: All climate change identified priorities are fully integrated in targeted development strategy(s) 4: Most climate change identified priorities are integrated in targeted development strategy(s) 3: Some climate change identified priorities are integrated in targeted development strategy(s) 2: Most climate change identified priorities are **not** integrated in targeted development strategy(s) 1: No climate change identified priorities are integrated in targeted development strategy(s) Describe.
Why measure it?	By understanding the integration of climate change priorities into development strategies it is possible to determine the level of commitment at local/municipalities, regional, and national scales and determine the effectiveness of adaptation responses. The existence of a development strategy that considers climate change priorities means that the country has developed a strategic direction and actions, which include climate change priorities.
When to measure it?	Depends on length of project. Usually for baseline/context information and end of project. For projects longer than 3 years, also at mid term.
How to collect the data?	Climate change priorities and development strategy(ies) that would be addressed by project/program need to be explicitly mentioned. Data could be collected first through secondary data from development strategies by sector, level, etc. Document review: review, compile and register all relevant (identifying sectors and level) and targeted strategy.
What is required to collect the data?	- Reviewer, computer or any other compilation media (e.g., notebook and pencil). - Copies of targeted development strategy(ies) documents. - Secondary data on targeted development strategy(ies).
How to analyze and interpret the	Present results in narrative form accompanied by tables, charts, and figures to clarify and highlight points. Include quantitative information in tables and as needed.

results?	Examples on how the data might be presented/analyzed: - Total vs. targeted number of climate change priorities identified, - Total vs. number of development priorities identified (including level or geographic coverage and sector of strategy). - Percentage of climate change priorities considered/targeted to be included in development plan(s) - Percentage of development strategies to target
Strength and limitations of indicator	Integrating climate change priorities in development strategies does not necessarily address their actual implementation. Other aspects like regulation and enforcement should be considered to fully understand the impact of policies (see indicator below).
Outputs of measuring activities: Example:	Tabulation and narrative report, which contains number of strategies, sector and level as well as type of climate change priorities included. Niue has recognized the threat of climate change and placed adaptation among its top priorities, clearly articulated in its National Climate Change Policy. This Policy outlined key vulnerability areas and defined the need to establish and implement action plans accordingly, which has been initiated in a systematic manner only in the water sector. Currently there is no systematic assessment and action plan for food security-related sectors and current agricultural, forestry and fishery practices do not integrate climate risk and resilience. Unsustainable land use and agricultural practices have been contributing to increasing the vulnerability of communities to climate change. This project will in effect represent the development and implementation of an action plan targeted to reduce shorter and longer-term climate risks that jeopardize food security and related development objectives. Baseline: Current services of the Meteorological Service do not support planning and management decisions in food security sectors, as it has been stated above in the case of a drought in 2009. Project resources will support the revision of Agriculture, Forestry and Fishery sector policies and plans, for full integration of climate risk and resilience, through targeted training of government officials. The need for enhanced monitoring capacity of natural resources has been highlighted in a number of policy documents, awaiting implementation (like the Coastal Management Policy), this project will support building such capacity, in order to track climate – induced impacts on vital livelihood resources.
References, resources, and tools:	- Change in Asia and the Pacific 2010 http://www.adb.org/documents/brochures/climate-change-priorities/climate-change-priorities.pdf - IFAD. 2007. Results and Impact Management System: RIMS First and Second Level Results Handbook. - NOAA/National Ocean Service/IUCN WCPA Marine, WWF. 2004. How is your MPA doing? Where possible, definitions have been quoted word for word from the source.

Effectiveness of targeted development strategy/strategies with incorporated climate change priorities	
Relationship of the indicator to outcomes and outputs:	Relates to Outcome 7 (Improved policies and regulations that promote and enforce resilience's measures) of the Strategic Results Framework and previous indicator 7. This indicator would mainly measure the state of enabling conditions.
Definition of indicator:	This indicator looks at the extent to which project activities affected implementation or enforcement at local or national level in favour of development strategies that include climate change priorities. Definition of terms used in indicator: "Climate Change adaptation priorities" depend on: - Targeted geographic area covered (local, regional, national, etc.). For example, at the national level NAPAs include climate change adaptation priorities.

	- Sector's targeted: agriculture, health, energy, waste, forestry, etc. - Socioeconomic aspects: physical capital, improve livelihoods, social, natural or human capital, It may be important to first establish area-driven criteria with which to evaluate and prioritize climate change adaptation measures. If priorities have not being defined at any level. Or if priorities are included in the NAPAs, then how to translate them to local levels (if this info is not included). "National or local development strategy:" a document containing integrated objectives and usually developed to harmonize the various sectoral economic, social, and environmental policies and plans that are operating in a country/region/locality. National development strategies/regional development strategies, etc. Effectiveness: has the strategy being enforced? "Enforced:" A regulation or legislation can be considered as enforced when it is approved (by parliament or councils, etc.) and conditions are in place that it will be implemented.
Difficulty of measuring the indicator: How to measure it?	Moderate Enforcement level could be summarized as follow (Scale 1-5): 5: Development strategy is fully enforced (all elements of enforcement plan are implemented) 4: Development strategy is enforced (most elements of enforcement plan are implemented) 3: Development strategy is partially enforced (some elements of enforcement plan are implemented) 2: Development strategy is partially not enforced (most elements of enforcement plan are not implemented) 1: Development strategy is not enforced (no elements of enforcement plan are implemented) Describe.
Why measure it?	The strategic direction is not only developed and includes climate change priorities but also implemented and enforced.
When to measure it?	Depends on length of project. Usually for baseline/context information and end of project. For projects longer than 3 years, also at mid term. Ex-post evaluation recommended for understanding long term results.
How to collect the data?	The climate change priorities and development strategy(s) that would be addressed by project/program need to be explicitly mentioned. The data should be collected first through secondary data from development strategies by sector, level, etc. Document review: Review, compile and register all relevant (identifying sectors and level) and targeted strategy.
What is required to collect the data?	- Reviewer, computer or any other compilation media (e.g., notebook and pencil). - Copies of targeted development strategy(ies) documents. - Secondary data on targeted development strategy(ies).
How to analyze and interpret the results?	Present results in narrative form accompanied by tables, charts, and figures to clarify and highlight points. Include quantitative information in tables and as needed. Examples on how the data might be presented/analyzed: - Total vs. targeted number of strategies implemented and enforced - Total vs. number of development priorities implemented and enforced (including level or geographic coverage and sector of strategy).
Strength and limitations of indicator	Integration of climate change priorities in development strategies and enforcement of such strategies demonstrate specific actions towards implementing climate related issues at defined level(s) and sector(s).
Outputs of measuring activities: Example from	Narrative report. Targeted development strategy has not been enforced during project implementation. (Further describe

the field:	conditions/causes for this not to occur).
References, resources and tools:	- Change in Asia and the Pacific 2010 http://www.adb.org/documents/brochures/climate-change-priorities/climate-change-priorities.pdf - IFAD. 2007. Results and Impact Management System: RIMS First and Second Level Results Handbook. - NOAA/National Ocean Service/IUCN WCPA Marine, WWF. 2004. How is your MPA doing? Where possible, definitions have been quoted word for word from the source.

7.1. Number, type, and sector of policies introduced or adjusted to effectively address/incorporate climate change risks (increase adaptive capacity or achieve and enhance level of protection).	
Relationship of the indicator to outcomes and outputs:	Relates to Output 7 (Improved integration of climate resilience strategies into country development plans) of the Strategic Results Framework. This indicator would mainly measure the state of enabling conditions.
Definition of indicator:	This is the assessment of the extent to which project activities have contributed to policies to address/incorporate climate change risks in the different sectors. Existence of policies that introduce or adjust climate change risks is one measure of how enabled countries/sectors are to achieve climate change adaptation. Definition of terms used in indicator: "Policy:" All encompassing definitions include: "policy is a settled course of action to be followed by a government body or institution" (Patton and Sawicki 1993). Or "a policy is typically described as a principle or rule to guide decisions and achieve rational outcome(s). The term is not normally used to denote what is actually done, this is normally referred to as either procedure or protocol. Whereas a policy will contain the 'what' and the 'why', procedures or protocols contain the 'what', the 'how', the 'where', and the 'when' (Wikipedia). The term may apply to policies from or of government, private sector organizations and groups, and individuals. "Type:" Company Policy; Communications and Information Policy; Defense policy; Domestic policy; Economic policy; Education policy; Energy policy; Environmental Policy; Foreign policy; Health policy; Housing policy; Human resource policies; Information policy; Macroeconomic policy; Monetary policy;; Population policy; Privacy policy; Public policy in law; Science policy; Social policy; Transportation policy; Urban policy; Water policy; Other policy (specify). "Sector:" health and social welfare, infrastructure, production, planning, agriculture and environment, defense. "Effectively address/incorporate:" would the set/modified policy could achieve its objectives of address/incorporate climate change risks (increase adaptive capacity or achieve and enhance level of protection). "Climate change Risks:" Risk is defined as the probability of that climate change, including variability, negatively impacting a country, community or household, as the result of the interaction between a hazard and conditions of vulnerability (AF).
Difficulty of measuring the indicator:	Low (specifically on number and sector aspects).
How to measure it?	Number/Sector

Effectiveness: are policies set/modified to achieve climate change risks, increase adaptive capacity or achieve and enhanced level of protection? Should be linked to an analysis of policy and adaptation scenarios. (See Yin et al IN Leary et al. 2008).

Why measure it?

The establishment of adaptation measures at all sectors and scales more often requires the introduction of policies. The purpose, therefore, of this indicator is to ensure that adaptation measures are supported by such policies.

When to measure it?

Depends on length of project. Usually for baseline/context information and end of project. For projects longer than 3 years, also at mid term.

How to collect the data?

The policies that would be developed or modified need to be explicitly mentioned in the project/program proposal.
Data should be collected first through secondary data from official regulations and other policy related documents, compilation of relevant policy.
Document review: Review, compile and register all relevant (identifying sectors and level) and targeted policy.

What is required to collect the data?

- Person reviewing/analyzing policy information;
- Interviewer
- Survey: expert judgement, etc., or
- Secondary data on policy(ies) and policy analysis;
- Notebook and pen and/or computer.

How to analyze and interpret the results?

Present results in narrative form accompanied by tables, charts, and figures to clarify and highlight points. Include quantitative information in tables and as needed.

Examples on how the data might be presented/analyzed:

- Total number could be calculated if more than one policy/sector/level is addressed.
- Number of sector for which policies are developed or modified.
- Perception on the level of effectiveness could be grouped by sector/type of policy/level.

Strength and limitations of indicator

Having developed or adjusted policies that not translates on their adoption or implementation. Other aspects like regulation and enforcement should be considered to fully understand impact of policies.

Outputs of measuring activities:

Tabulation and narrative report, which contains number of policies, sector and perception of effectiveness (which should also include a short analysis of scenarios and risks).

Example from the field:

Number of policies	Description of policy	Sector	Effectiveness for addressing climate risk (results of analysis).
1	Develop new crop types and enhance seed banks.	Agriculture	Describe.
1	Avoid monoculture and encourage farmers to plant a variety of heat- and drought-resistant crops.	Agriculture	Describe.

References, resources and tools:

- Burton, I., E. Malone, and S. Hug. 2004. Adaptation Policy Frameworks for Climate Change: Developing Strategies, Policies and Measures. Lim, B. and E. Spanger-Siegfried and (Eds.). UNDP. Cambridge University Press.

- Burton, I., E. Diringer and J. Smith. 2006. Adaptation to Climate Change: International Policy Options. Prepared for the Pew Center on Global Climate Change

- Hedger M., et al. Evaluation of Adaptation to Climate Change from a Development Perspective IN Van den Berg, R. D., and O. Feinstein (Eds.). 2009. Evaluating Climate Change and Development. World Bank Series on Development, Volume 8.
- IFAD. 2007. Results and Impact Management System: RIMS First and Second Level Results Handbook.
- NOAA/National Ocean Service/IUCN WCPA Marine, WWF. 2004. How is your MPA doing?
- Patton, C.V. and Sawicki, D.S. 1993. Basic Methods of Policy Analysis and Planning. Englewood Cliffs, NJ: Prentice-Hall.
- Policy definition: http://en.wikipedia.org/wiki/Policy (Accessed September - November 2010).
- Smith, J.B. and S. S. Lenhart. 1996. Climate change adaptation policy options. Climate Research. Vol. 6: 193-201,1996
- Yin, Y., Z. Xu, and A. Long. 2008. Evaluation of Adaptation Options for The Heihe River Basin of China. Leary, N., J. Adejuwon, V. Barros, I. Burton, J. Kulkarni, and R. Lasco (Eds.). 2008. Climate Change Adaptation. Earthscan. UK. 381pp. (Includes description of adaptation evolution tools for policy analysis).

Where possible, definitions have been quoted word for word from the source.

Number, type, sector and level of enforcement of policies to effectively address climate change risks (increase adaptive capacity or achieve and enhanced level of protection).	
Relationship of the indicator to outcomes and outputs:	Relates to Outcome 7 and Output 7 (Improved integration of climate resilience strategies into country development plans) of the Strategic Results Framework. It also relates to indicator 7.1. This indicator would mainly measure the state of enabling conditions.
Definition of indicator:	This is the assessment of the extent to which project interventions have contributed towards the enforcement of policies to effectively address/incorporate climate change risks in the different sectors. Existence and adequacy of policies that introduce or adjust climate change risks is a measure of how enable are country/sector/locality to achieve climate change adaptation. A regulation or legislation can be considered as enforced when it is approved (by parliament or councils, etc.) and conditions are in place that it will be implemented. Definition of terms used in indicator: "Policy:" All encompassing definitions include: "policy is a settled course of action to be followed by a government body or institution" (Patton and Sawicki 1993). Or "a policy is typically described as a principle or rule to guide decisions and achieve rational outcome(s). The term is not normally used to denote what is actually done, this is normally referred to as either procedure or protocol. Whereas a policy will contain the 'what' and the 'why', procedures or protocols contain the 'what', the 'how', the 'where', and the 'when'. Traditional policy or law may also serve to address/incorporate climate change risks" (Wikipedia). The term may apply to policies from or of government, private sector organizations and groups, and individuals. "Type:" Company Policy; Communications and Information Policy; Defence policy; Domestic policy; Economic policy; Education policy; Energy policy; Environmental Policy; Foreign policy; Health policy; Housing policy; Human resource policies; Information policy; Macroeconomic policy; Monetary policy; National defence policy; Population policy; Privacy policy; Public policy in law; Science policy; Social policy; Transportation policy; Urban policy; Water policy; Other policy (specify).

	"Sector:" health and social welfare, infrastructure, production, planning, agriculture and environment, defence, "Enforced:" A regulation or legislation can be considered as enforced when it is approved (by parliament or councils, etc.) and conditions are in place that it will be implemented. Includes the existence of policing measures, incentives and punishments to direct human behaviour. "Climate change Risks:" Risk is defined as the probability of that climate change, including variability, negatively impacting a country, community or household, as the result of the interaction between a hazard and conditions of vulnerability (AF).
Difficulty of measuring the indicator: How to measure it?	Low (specifically on number and sector aspects) Moderate to high (on clarifying perceived effectiveness). Number/Sector; Effectiveness (see previous indicator) through enforcement level. Effectiveness: are policies enforced to achieve climate change risks, increase adaptive capacity or achieve and enhanced level of protection? To understand effectiveness an analysis of policy and adaptation scenarios should be in place (see previous indicator). In addition, enforcement level could be summarized as follow (Scale 1-5): 5: Targeted policy is fully enforced (all elements of enforcement plan are implemented) 4: Targeted policy is enforced (most elements of enforcement plan are implemented) 3: Targeted policy is partially enforced (some elements of enforcement plan are implemented) 2: Targeted policy is partially not enforced (most elements of enforcement plan are not implemented) 1: Targeted policy is not enforced (no elements of enforcement plan are implemented) Describe.
Why measure it?	By understanding the number and sector of policies enforced to effectively address/incorporate climate change risks (increase adaptive capacity or achieve and enhanced level of protection) it is possible to determine and ensure that the policy(ies) is/are supported through specific regulations to be successfully implemented.
When to measure it?	Depends on length of project. Usually for baseline/context information and end of project. For projects longer than 3 years, also at mid term. Enforcement of policies may take longer than project or intervention implementation. Status of policy at mid term may give hints on potential ways to further support an expedite processes for its enforcement.
How to collect the data?	The policies that would be enforced through project interventions need to be explicitly mentioned in the project/program proposal. Data should be collected first through secondary data from official regulations and other policy related documents, compilation of relevant policy. Document review: Review, compile and register all relevant (identifying sectors and level) and targeted policy. Analysis on how policy(ies) effectively address climate variability. Consider factors in determining the success of climate change adaptation: achieving objectives of policy, flexibility, equity, efficiency and sustainability (see Hedger et al 2009.)
What is required to collect the data?	- Notebook and pen and/or computer - Person reviewing/analyzing policy information - Project reports and documents - Relevant secondary data for policy diagnosis - Independent policy analyzer
How to analyze and interpret the results?	Present results in narrative form accompanied by tables, charts, and figures to clarify and highlight points. Include quantitative information in tables and as needed. Examples on how the data might be presented/analyzed: - Total number could be calculated if more than one policy/sector/level is addressed. - Number of sector for which policies are enforced. - Perception on the level of effectiveness by relevant stakeholders could be seek and grouped by sector/type of policy/level.

Strength and limitations of indicator: Subjectivity of person performing analysis could be a limitation. Important to understand legislative process and be familiar with policy analyses.

Outputs of measuring activities: Tabulation and narrative report, which contains number of policies, sector and perception of effectiveness (which should include a short analysis of scenarios and risks).

Example from the field: Project intervention contributed to enforcement of the Y policy and partial enforcement of the X policy. No enforcement of Z policy was possible due to… (explain/describe).

Number of policies	Description of policy	Sector	Effectiveness for addressing climate risk (results of analysis).	Enforcement/describe
1	Develop new crop types and enhance seed banks.	Agriculture	Describe	3: Partially enforced.
1	Protected and enhance migration corridors	Ecosystems/Environment	Describe	4: Enforced.
1	Adopt contingency planning for drought	Water	Describe	1: Not enforced.

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Where possible, definitions have been quoted word for word from the source.