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CLIMATE RISK MANAGEMENT MONITORING, EVALUATION, LEARNING, AND KNOWLEDGE MANAGEMENT

A Guide for USAID Staff and Implementing Partners



COVER PHOTO: On October 10, 2014 engineers and water resources specialists from the NGO AEDES, SENAMHI and Glaciology Unit of Huaraz, climbed over 5,500 meters to install a weather station on the northern front of Coropuna glacier (Arequipa, Peru) to understand the most important deglaciation factors of the principal glacier in the Pacific slope in southern Peru. Thomas Quispe / AEDES

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ACRONYMS

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| ACCM | All-Cause Child Mortality |
| ADS | Automated Directive System |
| AFDM | African Flood and Drought Monitor |
| AOR | Agreement Officer's Representative |
| CIL | Climate Integration Lead |
| CLA | Collaborating, Learning and Adapting |
| CRM | Climate Risk Management |
| COR | Contracting Officer's Representative |
| EA | Environmental Assessment |
| EMMP | Environmental Mitigation and Monitoring Plan |
| FEWS NET | Famine Early Warning Systems Network |
| GDP | Gross Domestic Product |
| HIV/AIDS | Human Immunodeficiency Virus infection and Acquired Immune Deficiency Syndrome |
| IE | Impact Evaluation |
| IEE | Initial Environmental Examination |
| IUU | Illegal, Unreported and Unregulated |
| KM | Knowledge Management |
| M&E | Monitoring & Evaluation |
| MEL | Monitoring, Evaluation and Learning |
| MEO | Mission Environment Officer |
| PMI | President's Malaria Initiative |
| PMP | Performance Management Plan |
| PRIME | Pastoralist Areas Resilience Improvement and Market Expansion |
| REA | Regional Environment Advisor |
| RMS | Resilience recurrent Monitoring Survey |

TARGET AUDIENCE

Managers of USAID programming (USAID staff and implementing partners), monitoring and evaluation (M&E) specialists, Climate Integration Leads (CILs), mission environment officers/regional environment advisors (MEO/REA)

PURPOSE

Climate risk management (CRM) is required per USAID's Automated Directive System (ADS) 201. CRM is the process of assessing, addressing and adaptively managing climate risks that may impact the ability of USAID programs to achieve their objectives. This document will help the target audience manage climate risks adaptively, learn from the process of climate risk management and share its learning. Note, this document complements [USAID's Climate Risk Screening and Management Tools](#), which facilitate assessing and addressing climate risks.

For USAID country/regional strategies, see ADS 201 at [Climate Change in USAID Country/Regional Strategies](#).

For USAID project/activities see ADS 201 at [Climate Risk Management for USAID Projects and Activities](#).

For additional CRM tools and resources, see [USAID's intranet](#) (internal) and [Climatelinks](#) (external).

KEY TAKEAWAYS

- Monitoring, Evaluation and Learning (MEL) processes (e.g., MEL Plans) should reflect CRM as appropriate to ensure climate risks are adaptively managed and that learning is captured and shared.
- If actions are being taken to address climate risks and/or if opportunities are being acted upon, performance monitoring can help reveal if implementation is on track and if expected results are being achieved.
- Context indicators can help manage when there is uncertainty, determine when key thresholds are reached and to understand how climate may be impacting results.
- Evaluations can help determine the effectiveness or impact of addressing climate risks and/or acting upon opportunities.
- The learning section of a MEL Plan can identify CRM knowledge gaps and how they will be filled via M&E, research, or otherwise. The section additionally facilitates an intentional approach to adaptive management, which involves periodically reflecting on learning and making adjustments based on evidence.
- Sharing feedback and examples, and learning from others inside and outside of USAID, are examples of knowledge management, which can help all of us improve climate risk management.
- Examples of incorporating CRM to MEL are provided.

INTRODUCTION

Program managers should monitor, evaluate and learn (MEL) during implementation. This should be done at the frequency required to inform decision-making in order to adapt and achieve results. See [ADS 201](#) for Agency policy on MEL. CRM should be incorporated into MEL processes to ensure climate risks are adaptively managed throughout implementation and that learning is captured and shared. MEL is a critical aspect of climate risk management and it flows through all stages of USAID's program cycle (i.e., strategy, project and activity). This document focuses largely on the activity and project levels, but the principles apply at the strategy level as well.

From ADS 201mal, "CRM means programming for a range of possible future climate scenarios, building in flexibility to adjust and adapt to a changing climate during the timeframe over which a project or activity is expected to confer benefits, favoring choices that still generate benefits if climate changes to a greater or lesser extent, and managing risk in an adaptive manner." There are numerous approaches to managing/decision-making under uncertainty. Some involve incorporating climate information only at the outset (e.g., during design phase) while others additionally involve periodic review of climate information (often in conjunction with performance information) to adjust and adapt. MEL processes and plans actualize the management approach.

The World Bank produced a [report](#) that describes decision-making methodologies that are able to deal with climate-related uncertainty, namely cost-benefit analysis under uncertainty, cost-benefit analysis with real options, robust decision-making, and climate informed decision analysis. USAID's discussion note on [Complexity Aware Monitoring](#) may also be of interest.

At USAID, the plan for monitoring, evaluation and learning at the country/regional strategy level is the Performance Management Plan, or PMP. At the project and activity levels, these plans are called the Project MEL Plan and Activity MEL Plan, respectively. These plans should reflect CRM, as appropriate (e.g., when an action to address climate risk is incorporated into activity design). For Environmental Compliance, Environmental Mitigation and Monitoring Plans (EMMPs) are required to monitor conditions identified in the Initial Environmental Examination (IEE) or Environmental Assessment (EA). If a climate risk(s) is a condition, the mitigation measures to address the condition would be monitored through the EMMP.

For assistance in incorporating CRM in MEL processes, project/activity design teams and managers can consult their operating unit's Climate Integration Lead (CIL), technical and regional bureau CILs, their operating unit's environment officer, and M&E specialists. Assistance can also be accessed by emailing climatechange@usaid.gov.

MONITORING

Performance monitoring is an ongoing and systematic collection of indicator data and other quantitative or qualitative information to reveal if implementation is on track and whether expected results are being achieved. Managers monitor the performance of their activities as well as the context in which they operate to recognize trends and shifts in external factors that might affect performance. Performance and context can be monitored through indicators as well as through other monitoring approaches.

For Agency Policy on monitoring see [ADS 201: Program Cycle Operational Policy](#). For additional general information and resources on monitoring at USAID, see [USAID's Monitoring Toolkit](#) (external link). The "[Monitoring in the Program Cycle](#)" graphic may be of particular interest.

PERFORMANCE INDICATORS

Performance indicators are used to measure progress against intended results. If actions are being taken to address climate risks and/or if opportunities are being acted upon to increase climate resilience or reduce greenhouse gas emissions, performance indicators can help determine (1) if the actions are being taken and (2) the extent to which actions are effectively addressing climate risk and/or achieving other objectives. If relevant, [standard indicators for climate change adaptation and climate change mitigation](#) can be used to monitor progress. An example is standard indicator (EG.II-6): "Number of people using climate information or implementing risk-reducing actions to improve resilience to climate change as supported by USG assistance". The following is an example of how performance indicators can be used in managing climate risks.

For more on performance indicators, see [ADS 201.3.5.7 on Monitoring Indicators](#) and [ADS 201 Mandatory Reference on Performance Indicator Reference Sheets](#).

Note, standard indicators should be reported in the operating unit's annual Performance Plan and Report so that results can be aggregated across the Agency. Per Agency policy, people level indicators must be sex disaggregated.

Example 1: A food security activity aims to increase productivity for smallholders. The design team identifies drought limiting productivity as a climate risk that should be addressed and decides to facilitate the uptake of a drought-resistant seed variety. They hypothesize that if the activity (a) works with a local supplier to make the seed available and (b) demonstrates to smallholders the utility of the seeds (for instance, through demonstration plots), then (c) smallholders will take up drought-resistant seeds and, if a drought occurs, they will be more resilient than those that did not use the drought-resistant seeds. An output indicator could be the number of smallholders that visit the demonstration plots. Outcome indicators could include number of distributors selling the seeds on the local market and number of smallholders that have adopted the drought-resistant seeds. An impact indicator could measure the productivity of crops grown from drought-resistant seeds (which would be particularly interesting if a drought occurred during the growing season).

CONTEXT INDICATORS

Context indicators are a means to monitor factors outside the control of USAID that have the potential to affect (positively or negatively) the achievement of expected results. They are used to monitor programmatic assumptions or understand the operational context. For climate risk management, context indicators may be used in a number of situations, for instance, if

- a climate risk will only be addressed once a predetermined threshold is crossed (“sentinel indicator”),
- the uncertainty in future weather or climate is greater than the robustness of the selected management approach,
- the selected management approach will vary year-to-year or season-to-season depending on weather data and information, or
- an intervention is not as successful as intended and climate may be a factor as to why.

Context indicators could be based on ground or satellite observations, can involve single variables (e.g., temperature, rainfall) or indices (e.g., Normalized Difference Vegetation Index) and can be used in conjunction with subjective measures (see example 4 below). Which context indicators should be monitored depends on the context. How often data is updated depends on the source and use of the data.

A quick guide on climate information is being produced that will contain common climate data and information sources. A link to the guide will be provided when it is finalized. In the meantime, in addition to the sources included in the examples, sources include [World Bank’s Climate Change Knowledge Portal](#), [SERVIR](#) and IRI’s [Climate and Society Map Room](#).

Example 2 (note, overlap with performance indicators): [AgriSERV](#) is a monitoring tool being developed with satellite data proxies for crop yields and length of growing season as well as data that aids in monitoring climate variables (for instance, if productivity is less or more than expected, or the growing season is shorter or longer, do relevant climate variables like temperature and rainfall explain the shortfall or bounty?). Satellite data sources like these can also be used to monitor changes to land cover and ecosystem and forest health.

Example 3: A seasonal forecast for rainfall and temperature is consulted before each season to help inform where insecticide-treated bednets are distributed.

Example 4 (note, this example overlaps with the evaluation section below): USAID is employing the [Resilience Recurrent Monitoring Survey \(RMS\)](#) to capture the dynamic nature of resilience while shocks and stresses are occurring. RMS consists of real-time data collection (e.g., household surveys) following a predetermined shock trigger. Objective data sources for climatic shocks can include [FEWS NET](#) Food Security Outlook publications, project/activity early warning trigger indicator data, rainfall classifications provided by the government, and satellite remote sensing data from the African Flood and Drought Monitor ([AFDM](#)). Subjective shock and stresses data can be collected from project beneficiary households themselves as a part of regular project/activity monitoring. RMS has been used as part of an impact evaluation (IE) of USAID/Ethiopia’s Pastoralist Areas Resilience Improvement and Market Expansion (PRIME).

OTHER MONITORING APPROACHES

Other monitoring approaches may include qualitative insights, data collection on a more ad hoc basis, or more in-depth exploration into the achievement of results. Examples of other monitoring approaches for climate risk management include:

Example 5: During site visits, the A/COR may decide to discuss with stakeholders the climate impacts they have experience in the past and potential climate risks. If the activity is taking action to address climate risk, they may also discuss the outcomes of those actions (intended, unintended, positive or negative).

Example 6: Managers may stay abreast of climate events that are happening locally or regionally that may have impacts on the project or activity objectives. For instance, a drought that impacts a harvest may impact school attendance. A major tsunami might dislocate populations to an area where water or other services are overwhelmed. This more passive approach may be most appropriate in situations where climate risks were perceived to be low or were accepted after consideration of tradeoffs.

EVALUATION

Evaluation at USAID is defined as the systematic collection and analysis of information about the characteristics and outcomes of strategies, projects, and activities as a basis for judgments to improve effectiveness, and/or to inform decisions about current and future programming. The purpose of evaluations is twofold: to ensure accountability to stakeholders and to learn to improve development outcomes. The use and user of the evaluation determines the questions the evaluation will answer.

For Agency Policy on evaluation, including evaluation requirements, see [ADS 201: Program Cycle Operational Policy](#).

For additional general information and resources on evaluation at USAID, see [USAID's Evaluation Toolkit](#).

If there are gaps in CRM knowledge that can be addressed through evaluation, evaluation questions can be identified to address those gaps. For instance, evaluation questions (or sub-questions) can determine the **effectiveness or impact** (positive or negative) of addressing climate risks and/or acting upon opportunities, for example:

Example 7: The Pastoralist Areas Resilience Improvement and Market Expansion (PRIME) project has three interrelated objectives: increasing household incomes, enhancing resilience, and bolstering adaptive capacity to climate change among pastoral people in Ethiopia. An [impact evaluation](#) is being undertaken to determine the impact of the project's interventions on household resilience to shocks and, thus, on well-being outcomes, including poverty, food security, and children's nutritional status. The evaluation will be answering six questions, including: "Which PRIME interventions improve the ability of vulnerable households to withstand stressors and shocks affecting their economic activities? In what ways?", "What interventions strengthen the ability of vulnerable households to recover from common and extreme shocks?" and "Have interventions strengthened risk-reduction strategies pursued by men and women to cope with shocks (e.g., agro-climatic, health, economic and socio-political)?" The baseline data has been collected for the impact evaluation, the endline is expected to be collected in 2017 with the final report in 2018.

If an activity or components of an activity are sensitive to weather or climate, this can be taken into consideration as a **contextual factor** to help determine the extent to which an external factor (external to intervention) contributed to observed positive or negative results.

Example 8: Mainland Tanzania scaled up multiple malaria control interventions between 1999 and 2010. The President’s Malaria Initiative (PMI), in collaboration with Roll Back Malaria and the Global Fund, evaluated whether, and to what extent, reductions in all-cause under-five child mortality (ACCM) tracked with malaria control intensification during this period. The [evaluation](#) was careful to consider contextual factors so as to not over- or underestimate the impact of the malaria control intensification efforts. Contextual factors included climate, per capita GDP, HIV/AIDS indicators, and other factors. For climate, the evaluation looked at (1) the number of months during the year when climatological conditions were suitable for malaria transmission and (2) the suitability for malaria, based on temperature and rainfall, during the evaluation period as compared to baseline (this [tool](#) was developed to aid in this analysis). Analysts then determined whether variations in climate contributed to declines or increases in malaria transmission and therefore changes in ACCM. The evaluation’s conclusion was that rainfall patterns suitable for malaria transmission persisted throughout the evaluation period and that observed declines in ACCM were unlikely due to variations in malaria transmission linked to climate variations. That is, the impact evaluation provides plausible evidence that the observed reduction in ACCM was partially attributable to the interventions.

Example 9: An activity addressing Illegal, Unreported and Unregulated (IUU) Fishing within a given boundary may consider climate induced migration of fish (in or out of the boundary) when determining the success of their interventions to decrease IUU harvests.

If there is a time lag between planning for an evaluation and conducting the evaluation, an [Evaluability Assessment](#) can be conducted to determine whether a planned evaluation: a) is still feasible, b) whether its evaluation questions are still valid, and c) whether the intervention being evaluated will be able to produce the information required by the evaluation itself.

LEARNING AND ADAPTIVE MANAGEMENT

Managers should facilitate an intentional approach to learning and adaptive management. The learning portion of the [MEL Plan](#) or PMP can identify learning questions, for instance, based on potential gaps in the theory of change or technical knowledge base. The plan should also indicate how to address learning questions or knowledge gaps, for instance, through performance monitoring, evaluation or other means, and identify ways to allow for adjustments as circumstances change or learning evolves. For instance, climate research, including the understanding of how climate interacts with human and natural systems, is rapidly evolving. [Climatelinks](#), a global knowledge portal for climate change and development practitioners, is one relevant resource. One may also participate in relevant communities of practice to stay informed.

For Agency Policy on learning and adaptive management see [ADS 201: Program Cycle Operational Policy](#).

For additional general information and resources on collaborating, learning and adapting (CLA) at USAID, see [USAID’s CLA Toolkit](#).

Example 10: At USAID/Zambia, gaps in knowledge were identified and climate relevant questions were developed that could be inserted into relevant ongoing sector assessments. For instance, when a cross-sectoral assessment around Feed the Future was conducted, questions were included to gather information on farmers' impressions of climate and weather.

Example 11: An activity addressing meningitis may decide to periodically review the literature to ensure managers and implementers are up-to-date with the latest understanding of how climate variables interact with meningitis and have considered implications and potential adjustments to the activity.

Example 12: An activity that supports renewable energy resource mapping will periodically review modelling capabilities to see if there are improvements in the treatment of climate variability and change in resource mapping (e.g., wind and water resources).

USAID's efforts can be adaptively managed for climate risks by periodically reflecting on learning and making adjustments based on evidence. Opportunities to reflect on learning and/or make adjustments include annual reviews and work planning, partner meetings, portfolio reviews, after-action reviews, and upon completion of an evaluation. For climate risk management, it can be important to consider:

1. If actions being taken to manage climate risks are effective and, if not, how they should be adjusted
2. If climate risks that were accepted during the design stage should instead be addressed, and vice versa
3. If new or additional climate risks have manifested during implementation and if/how they should be addressed

For these purposes, it may be worthwhile to apply (or re-apply) the [Climate Risk Management and Screening Tools](#) at the midpoint of a project or activity in combination with reviewing project or activity results. This mid-term review will also help to remind the implementer that they should continue updating and following through with CRM.

For learning and accountability purposes, it can be worthwhile to reflect at the end of the project or activity on the success of efforts (or lack of success) to manage climate risk, how it impacted results and how it may impact sustainability. This could be addressed as a section of the activity's end report.

KNOWLEDGE MANAGEMENT

Knowledge management refers to the organization and curation of operational information, best practices, and lessons learned in support of an organization's defined goals. Knowledge management enables organizational learning and consists of an iterative cycle of knowledge generation, capture, sharing, and application.

USAID is learning as it applies climate risk management with the intention to improve the process and outcomes. Managers across development sectors must critically contribute to a common, widely-accessible base of knowledge and experience to systemize learning specific to sector, geography, mission context, scale of implementation, etc.

PROVIDE FEEDBACK

A [brief survey](#) has been developed to capture feedback from USAID design teams after undertaking climate risk management during the design of strategies, projects and activities. The feedback will inform and improve the climate risk management process and assistance provided.

LEARN FROM OTHERS WITHIN USAID

Examples of climate risk management that span sectors and regions are being collected to serve as references can be found on [USAID's intranet](#) (under "Examples of Climate Risk Management"). Missions should explore options to share CRM experiences both electronically and in-person. CILs may also be able to connect you with others in your bureau/mission engaged in CRM.

LEARN FROM OTHERS OUTSIDE AGENCY

Public-facing knowledge management platforms provide an opportunity to periodically survey the state of practice in managing climate risk and engage in knowledge sharing through online discussion. See [an example](#) on Climatelinks. Routine outreach to the practitioner community helps identify relevant live events for sharing experiences and learning from other organizations. Partner meetings can also be a platform for sharing and learning.

SHARE YOUR WORK

If you would like to share your climate risk management experience, please email climatechange@usaid.gov.