

TAMD Climate Change Indicator - Methodological Note

Short title	<p>INDICATOR 5. USE OF CLIMATE INFORMATION</p> <p><i>Extent to which climate information is (i) used to inform responses to climate change, and (ii) generated at all levels of society</i></p>																				
Type or Indicator	<i>Scorecard, output or outcome depending on how applied</i>																				
Technical definition/ Methodological summary	<p>This indicator is designed to assess the extent to which adaptation and adaptation-relevant development interventions are informed by information about climate change (nature, magnitude, rapidity, local manifestations, associated risks), and to which they help to generate new information about climate change.</p> <p>The indicator can be used to assess the performance of an individual capacity building programme, through evaluation of the target system (e.g. ministry, sector, institution) at the beginning, during, and at the end of the programme.</p> <p>The indicator may also be used to assess the use and generation of climate information by systems targeted by multiple programmes.</p> <p>Where the aim is to evaluate the effectiveness of capacity building interventions to improve the use and generation of climate information, assessments will need to be supported by evidence that any improvements are attributable to the programme(s) in question.</p> <p>The indicator is most likely to represent an <u>outcome</u> indicator, as it examines the outcomes at the level of the target system resulting from the outputs of programmes.</p> <p>The indicator could also be used as an <u>output</u> indicator, if it is adapted to measure climate information and/or the uptake of climate information resulting from a specific programme.</p> <p>The indicator takes the form of a scorecard based on five criteria relating to the extent to which climate information is used and generated. These criteria are expressed as questions that ask to what extent the criteria have been met: not at all (“NO”), partially (“PARTIAL”), or to a large extent/completely (“YES”).</p> <p>An overall score is calculated, as the number of “PARTIAL” answers plus the number of “YES” answers, with each of the former scoring 1 and each of the latter scoring 2, giving a maximum score of 10.</p> <p>The indicator scorecard is set out in <u>the table below</u>.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4" style="text-align: left;">INDICATOR 5. Use of climate information</th> </tr> <tr> <th style="text-align: left;">CRITERIA/QUESTIONS</th> <th style="text-align: center;">NO</th> <th style="text-align: center;">PARTIAL</th> <th style="text-align: center;">YES</th> </tr> </thead> <tbody> <tr> <td>1. Observational data relating to climate trends and variability available/used.</td> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> </tr> <tr> <td>2. Climate information (forecasts, projections, information on responses) readily accessible via information sharing platforms or networks.</td> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> </tr> <tr> <td>3. Climate information generated by foreign and international organisations (e.g. IPCC, research bodies, academic institutions) readily accessible/</td> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> </tr> </tbody> </table>	INDICATOR 5. Use of climate information				CRITERIA/QUESTIONS	NO	PARTIAL	YES	1. Observational data relating to climate trends and variability available/used.				2. Climate information (forecasts, projections, information on responses) readily accessible via information sharing platforms or networks.				3. Climate information generated by foreign and international organisations (e.g. IPCC, research bodies, academic institutions) readily accessible/			
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used.			
4. Does the capacity to interpret and use climate information (e.g. in scenario planning, risk and vulnerability assessments and frameworks) exist?			
5. Is the use of scientific information complemented by the use of local/traditional indigenous knowledge?			
<i>SCORE (No. of "YES" answers x 2, plus no. of "PARTIAL" answers x 1)</i>			

Methodological points to note

1. This indicator addresses the use (and generation) of climate information to contextualise and inform adaptation decision-making. Climate information is used to evaluate risks associated with climate change (and variability) that are associated with (changes in) the occurrence of extreme events (e.g. heat-waves, droughts, intense rainfall events associated with flooding and landslides, etc) and longer-term changes/trends in key climatic variables (e.g. temperature, rainfall, sea-level, etc).
2. The indicator is used to **assess systems targeted by one or more programmes**, and is an outcome indicator, which will be assessed at the beginning, during, and at the end of a programme (where the outcomes resulting from a single programme are to be assessed), or at regular intervals (e.g. annually) where the cumulative results of multiple programmes are to be assessed. Where the indicator is applied to a targeted system, improvements in scores will need to be complemented by supporting qualitative evidence in order to demonstrate attribution (e.g. narratives, testimonials, other evidence of causal relationships).
3. The indicator might also be adapted for use as an outcome indicator, e.g. to evaluate the extent to which a programme has generated climate information that can/will be used in systems targeted by the programme, and/or the actual use/uptake of climate information in decision-making and planning processes within that system.
4. Observational data [Question 1] are data that are collected by meteorological observing systems and collated and disseminated by national meteorological services or other organisations with a similar role. These data allow changes in seasonality and other aspects of climate variability, and longer-term climate trends, to be identified.
5. A variety of different types of climate information [Question 2] may be useful to members of the public and institutional decision-makers. These include seasonal forecasts (e.g. for farmers), short-term weather forecasts or real-time information about existing conditions (e.g. for pastoralists who need to know where grazing is available), longer-term (e.g. downscaled) projections for planners (e.g. of sea-level rise, potential changes in rainfall or temperature), notifications when key climatic variables cross certain thresholds (e.g. when rainfall deficits reach a certain magnitude for weather-related insurance), information about recent/historical trends that might provide a guide for how climatic conditions are likely to evolve in the near to medium term, etc.
6. Climate information generated by international or foreign bodies/organisations [Question 3] is most likely to be useful to planners, strategic decision-makers and research organisations. This information includes global and regional climate projections from bodies such as the Intergovernmental Panel on Climate Change (IPCC) and international data centres, which may be used to produce downscaled projections

	<p>useful at sub-national scales. A number of initiatives have sought to convert data from global climate models into accessible, country-level data that can be used for adaptation and development decision-making (e.g. the UNDP-Oxford University Climate Change Country Profiles).</p> <p>7. Vulnerability assessments [Question 4] are widely used in climate change adaptation, but there is often confusion about concepts such as vulnerability and risk, and such assessments may not always yield useful or practical results or be followed up with further actions. Risk frameworks that examine the societal aspects of vulnerability in parallel with but separately to current and potential future climate hazards, and the exploration of possible adaptation strategies and options under different plausible futures through scenario planning, are less frequently employed but are often conceptually easier to deal with and more transparent. Scenarios are useful tools for examining the implications of a range of potential future changes, but there is a risk that they may be used in an inappropriately deterministic way if they are not understood properly.</p> <p>8. Local, traditional or indigenous knowledge [Question 5] has proved to be useful in understanding historical and emerging climate risks in a number of contexts. Local people are often intimately familiar with their environment, and can identify trends and changes in climate where useful observational records based on the collection of meteorological data are lacking. In particular, local knowledge can identify changes in seasonality and the behaviour of extremes that might not be picked up by conventional meteorological data, which are often presented in terms of monthly or annual averages. Even where traditional ways of forecasting weather and climate are breaking down, this may be an indication that empirical relationships between climatic and environmental variables are changing as a result of climate change.</p> <p>Guidance on answering the questions that make up the indicator is provided in the table below. This includes guidance on how to treat the criteria in the scorecard according to its application directly to a programme, or to a system targeted by a programme.</p>
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		Conditions necessary for answer of:		
Q	NO	PARTIAL	YES	
1	Required observational data not available/used, or of poor quality due to poorly resourced meteorological or equivalent services and observing networks.	Relevant observational data available/used but significant resource and coverage gaps (e.g in locations of interest where data not available).	Required observational data available/used; data available for all major regions/ locations of interest, due to well-resourced met services and observing networks.	
2	No or very limited/poor mechanisms for disseminating met and climate data; significant administrative or cost barriers to public access. For programme: no or very limited dissemination of met and climate data.	Mechanisms exist for accessing met and climate data, but restricted to limited number of (e.g. research or commercial) organisations; public access limited or expensive. For programme: some dissemination of met and climate data but limited in scope.	Met and climate data readily and freely available through publicly accessible mechanisms (web, phone, via agricultural extension workers, other networks, organisations, etc). For programme: data used made readily available to relevant stakeholders.	
3	Data/information from international/foreign organisations not accessible due to lack of mechanisms. For programmes: such data/information not used.	Some data/information from international/ foreign organisations available, but limited in usefulness; other data that might be useful not accessible. For programme: limited use of such data and available, potentially useful data not used.	Data/information from international/foreign organisations routinely accessed and used due to existence of effective access mechanisms. For programmes: such data/ information as is appropriate accessed and used effectively.	
4	Stakeholders not familiar with risk frameworks, vulnerability assessments, scenario planning, and these not used.	Some use of risk frameworks, vulnerability assessments, scenario planning, but limited (e.g. vulnerability assessment done but informs decision-making only to limited extent, not followed up/ associated with scenario planning, or ignores available information on observed or projected changes).	Risk frameworks, vulnerability assessments and scenario planning used routinely/extensively.	
5	Local/traditional/ indigenous knowledge (LTIK) not considered relevant to adaptation decision-making.	LTIK used to inform decision-making, but this is ad hoc and informal.	High-level recognition of potential usefulness of LTIK and active engagement with LTIK to add value to scientific knowledge and inform decision-making.	
Rationale	For effective action on climate change, government personnel, staff in key institutions, key stakeholders and the public at large need to be aware of climate change and associated risks, and responsive to initiatives intended to address climate change through adaptation and/or mitigation/low-carbon development. Where information on climate change risks and response options (e.g. seasonal forecasts, climate projections, information on			

	<p>adaptation options) is made available to stakeholders, this information needs to be in a form that they can understand and use. Awareness is most likely to be enhanced, and useful information produced, where key institutions are given mandates to raise awareness and generate and distribute information while engaging with stakeholders and the public at large.</p>
<p>Data source</p>	<p>Data will be collected through evaluations based on completion of the scorecard (above) at specified intervals. Depending on the purpose of the evaluation, the scorecard might be completed by staff in donors' country offices, by external consultants, or (for national self-assessment) by government or other relevant personnel.</p> <p>Where assessments are carried out by external consultants, they will be based on consultations with key staff in the sectors being evaluated and (where appropriate) staff within donor country offices. Where assessments are carried out by country offices, they will be based on the judgment of key country office staff with responsibility for supporting the (national) processes and sectors in question, e.g. through sector budget support. In the case of self-assessment, they will be carried out by staff familiar with the relevant sectors.</p> <p>When assigning scores, evaluators concerned with the efficacy of support programmes should also record complementary qualitative information relating to attribution of outcomes to interventions. This information might include notes on the chronology of changes across the target sectors relative to key outputs from support programmes, the views of key stakeholders regarding the extent to which outcomes are direct (or indirect) consequences of programme outputs, and the identification of 'pathways of change' that link outputs and outcomes (e.g. via key mechanisms, processes, events).</p>
<p>Data included and data aggregation</p>	<p><i>Support to a single institution, sector, mechanism or process</i> Where the indicator is used to report on outcomes from support to a single system or entity (i.e. institution, sector, mechanisms or process), the data reported will be the score calculated across the 5 questions that make up the indicator (up to a maximum of 10), applied to the system targeted by the support. Where this support is from a single intervention/programme, the scorecard should be completed at the beginning of the programme, during the programme (e.g. annually in the logframe), and at the end of the programme. Where support is from multiple programmes, the scorecard should be conducted at regular intervals (e.g. annually, 6-monthly) spanning the period of support.</p> <p><i>Support to multiple institutions, sectors, mechanisms or process</i> Where the indicator is used to report on outcomes from support to multiple systems or entities (e.g. from multiple support programmes across multiple sectors for a cross-sectoral national-level assessment), an overall score may be calculated by averaging the totals for each relevant system/entity. However, such aggregated scores should always be presented alongside disaggregated data (detailing results for individual target systems) so that areas of strength and weakness can be identified (e.g. in specific sectors, ministries, etc). Alternatively, a national system might be assessed as whole. The approach taken will depend on the purpose of the assessment (e.g. a comprehensive assessment of CRM at the national level across all relevant sectors versus an assessment of national mechanisms that sit 'above' the sectoral level). It will also depend on the national CRM 'architecture' (e.g. is CRM coordinated centrally by a body that has authority over relevant sectors, or decentralised down to the sectoral level).</p> <p><i>Interpretation</i> In all cases, scores should be presented alongside qualitative information related to attribution (see data included and aggregation).</p>

	Outcomes will be assessed on the basis of changes in the score over time, over the lifetime of the programme or programmes being evaluated, or otherwise at regular intervals for (e.g. internal) evaluation of planning systems in general. Attribution of outcomes to outputs will be assessed through the use of complementary qualitative information.
Most recent baseline	The baseline will be represented by the first available set of results, i.e. the first time the scorecard is applied to a system. Subsequent assessments will be looking for an improvement/increases in score(s) relative to this first assessment.
Good performance	Good performance will be demonstrated by improvement/increases in scores over time that can be linked with support programmes. Where assessment is focused on multiple processes evaluation will be looking for a consistent improvement across these processes, sustained over time. Good performance of support programmes that target these processes will be demonstrated by strong evidence that the outcomes can be attributed to this support (see data categories above, and discussion in TAMD Technical Paper).
Return format (options)	<ol style="list-style-type: none"> 1. Scores (out of 10) at different points in time (e.g. before, during, after intervention) 2. Numbers of target systems (within or across countries) improving scores by different amounts (increasing over time) <p>For the assessment of multiple systems (e.g. sectors, ministries, countries, etc), results might be represented graphically. For reporting directed at target systems, changes in scores over a specified time period (from -10 to +10 at the theoretical extremes) might be represented along the horizontal axis, and numbers of systems (for each integer change in score) along the vertical axis.</p>
Data dis-aggregation	If the indicator is to be presented as a single score out of 10 as in "Return format", answers for each of the 5 questions from which the indicator is constituted should also be preserved, so that areas of strength and weakness can be identified. Similarly, where evaluation of multiple target systems has involved aggregation/averaging across systems, results should be preserved for individual systems.
Data availability	Evaluation of this indicator does not depend on the availability of independent/external data. The indicator is based on the judgment of those assessing the processes in question (programme managers, country office staff, such as climate change advisers, implementing partners, external consultants). Guidance is provided on how to complete the scorecard, based on criteria for different answers for each question making up the indicator. Data are therefore based on one or more of the following: (i) the informed judgment of the evaluators, (ii) knowledge of the relevant programmes and target systems, (iii) consultations with stakeholders (who will include country office staff if the assessment is carried out externally). The availability of reliable data therefore will depend on the level of knowledge of personnel involved in the evaluation, and/or on the quality of consultations. However, there should be sufficient knowledge among evaluators to ensure that the scorecard is completed realistically.
Time period/ lag	Where this indicator is applied in the context of individual programmes, it should be assessed annually in programme logframes, based on assessment of the target system(s). The indicator can also be applied to target systems (e.g. national systems, sectors, ministries, etc) on a regular (e.g. annual or biennial) basis, for example where these systems receive budget support.
Quality assurance measures	Where this indicator is assessed internally (e.g. by country office staff), an independent assessment might be performed (e.g. during a strategic review) by external experts. The answers to the 5 questions constituting the indicator should be justified by some explanation, e.g. describing the nature of the screening or mainstreaming processes and giving examples of measures to

	address climate change that have been identified during the assessment.
Data issues	It is recognised that some element of subjective judgment is required, although the questions have been designed to be quite specific and transparent, with supporting guidance on how to answer the questions. In some cases data may be based on implementing partners' own assessments.
Additional comments	This indicator might be complemented by quantitative output indicators that can be applied directly to support programmes whose goals include the realisation of the outcomes addressed by the indicator. Quantitative outcome indicators might also be identified depending on the precise nature of an intervention, and these might be based on an adaptation of the outcome version of the indicator described here.