

# MONITORING CLIMATE ACTION

NOVEMBER 2013

Developing a comprehensive  
approach to monitoring climate  
change action for funds



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### Disclaimer

This report was written for the German Federal Environment Agency (UBA) as part of the project titled “Further development of a concept for monitoring and reporting of the International Climate Initiative (ICI)” UBA Project 395 01 005. This project is being carried out by Germanwatch, Ecofys, Wuppertal Institute for Climate, Environment and Energy. The contents of this publication do not necessarily reflect the official opinions.

## 1 Introduction – Challenges to monitoring climate change adaptation and mitigation actions

Climate change is a global issue which directly or indirectly affects all parts of the economy. Consequently, actions to mitigate and adapt to climate change need to be diverse and relate to all activities of the economy at different levels. This presents particular challenges for consistent and effective monitoring and reporting systems. In the past, complexities were often avoided by focusing monitoring on actions that directly relate to climate change and that can be directly measured. For instance, the Clean Development Mechanism (CDM) only stipulates obligatory monitoring of direct emission reductions. More recently the focus has shifted towards monitoring of activities that not only lead to direct climate change mitigation or adaptation benefits but which may provide the basis for longer term transformational change towards low-emission and climate resilient societies. These may, for example, include actions that build capacity or improve the institutional structures required for mitigation or adaptation in the mid to long term. This shift in thinking brings a number of new challenges to monitoring and reporting (M&R) systems:

- > M&R becomes more complex. A good balance between comprehensiveness, information needs, country circumstances, cost effectiveness, and feasibility is needed.
- > Monitoring needs to go beyond pure greenhouse gas (GHG) or adaptation related impacts and also cover environmental, social and economic co-benefits and co-costs, in order to increase its sustainability and relevance.
- > There is a lack of harmonisation and transparency of M&R approaches and verification processes. New harmonised monitoring approaches are needed, especially methodological approaches, to assess transformational changes in adaptation and mitigation.
- > M&R of non-direct climate impacts needs a higher degree of robustness than is currently the case. Indicators to assess the effectiveness of trans-

formational change are still few and scattered; and common approaches have only started to be developed.

- > M&R needs to contribute to showing the causal connection between actions undertaken and the impacts achieved. It is important to M&R the contribution of actions towards the overarching goals of mitigating and adapting to climate change.

In light of the above, this paper summarises the results of a research project which sought to advance the M&R system of a bilateral initiative, namely the International Climate Initiative (ICI) of the German Government. The focus of the paper is on highlighting some of the key challenges encountered and recommendations on how these could be resolved within an M&R system. The work was undertaken by a consortium comprising Germanwatch, Ecofys and Wuppertal Institute, under the guidance of the German Federal Environment Agency (UBA) and the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU).

## 2 The International Climate Initiative

The BMU established the ICI in 2008 as an instrument to strengthen cooperation between the German Government and developing countries as well as countries in transition, in order to mitigate and adapt to climate change, and preserve biodiversity.

In accordance with a resolution of the German parliament (Bundestag), the ICI receives EUR 120 million from the BMU budget annually. In addition, the Energy and Climate Fund contributes funds which are generated from the auctioning of emission allowances. This innovative financing mechanism has enabled Germany to support further measures in the area of climate change and biological diversity around the world in line with its international commitments to provide new and additional climate finance.

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The ICI funds projects in the following areas:

1. Mitigating greenhouse gas emissions
2. Adapting to the impacts of climate change
3. Conserving natural carbon sinks with a focus on reducing emissions from deforestation and forest degradation (REDDplus)
4. Conserving biological diversity

The BMU selects projects for ICI funding through calls for proposals. The projects need to be based on the needs of partner countries and supplement existing multilateral and bilateral cooperation activities of the German Government. Projects support partners primarily through technology cooperation, policy advice and capacity development, the preparation of studies and strategies, and the implementation of measures for climate protection, adaptation and conserving biodiversity.

### 3 Suggested Monitoring and Reporting System

An initiative such as the ICI requires a comprehensive M&R system that needs to fulfil multiple purposes, including steering of individual projects as well as reporting on achievements at the ICI programme level. The system should support both the project and programme level in collecting data for tracking progress on the projects' contribution to the ICI's objectives as well as their larger impacts on mitigation of and adaptation to climate change. In addition to gathering information on the ICI's contribution in the four programme areas highlighted above, it should help gather additional information on social, ecological and economic co-benefits of the projects including potential negative impacts (co-costs). The information gained through the M&R process can be used in the context of the climate negotiations and communicated to policymakers, international organizations such as the Organisation for Economic Co-operation and Development (OECD) and the German Bundestag as well as interested members of the public.

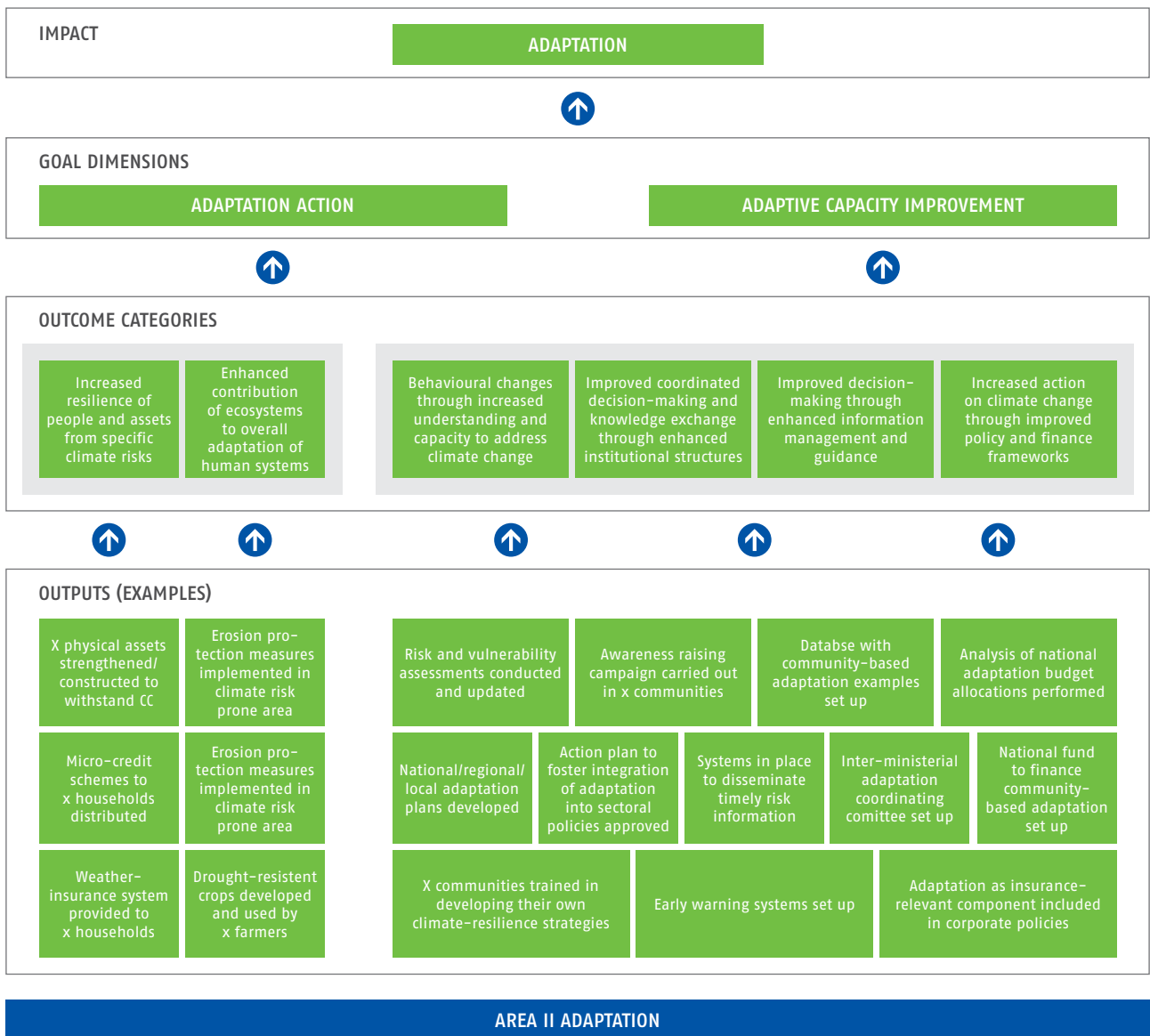
In the following, key aspects of an advanced M&R system for the ICI are presented. The system described here is meant as a conceptual input to provide guidance to the BMU and the ICI programme office. It does not predetermine the final design of the future M&R system for the ICI.

#### A result chain for comprehensive monitoring

At the core of systems which monitor the change achieved through an intervention is in many cases the result chain, especially in the development community. It puts project goals at different levels and their inter-linkages into a hierarchical and sequential order. The concept proposed here builds on the result chain that the OECD provides, and which has been used in multiple contexts. It was modified to accommodate the existent challenges to monitoring climate change as highlighted above.

The three levels of **outputs, outcomes and impacts form the core** of the proposed result chain. The first level, the output level, is under the full control of the project. It includes the products, goods, services or sets of regulations achieved through specific activities carried out by a project. The second level, the outcome level, can still be influenced by the project, but the influence of external factors is also significant. This level includes the overarching project goal(s), which describe(s) a change in the target group made possible by the project and which can verifiably be attributed to it. In the third level, impacts are farthest from the actual project control and are heavily influenced by external conditions. The proposed M&R system mainly refers to the output and outcome level.

**Environmental, social and economic co-benefits and co-costs have a central role** in the M&R system that is ancillary to the core result chain. Categorisation of projects according to pre-defined risk levels is undertaken in the early planning stages. This allows for addressing critical risks without unnecessarily burdening projects where such risks do not exist. Furthermore, the system foresees continuous monitoring of co-benefits and co-costs throughout the project, ensuring that the full impact, beyond its simple contribution to climate change, can be monitored.



**Figure 1**  
Exemplary result chain proposed for monitoring adaptation under the ICI

Furthermore the proposed system includes **enhanced representation of outcomes** in the second level of the result chain, as shown exemplary for adaptation in the figure above. A number of so-called “OUTCOME CATEGORIES” are proposed which could better guide the monitoring and reporting towards factors that are important with respect to longer term climate change impacts, in particular for transformational change processes. The defined “OUTCOME CATEGORIES” represent areas where progress can be achieved during the lifetime of a project that lays the ground for longer-term changes, such as capacity building or development of institutional frameworks. They were

developed in a process involving a review of literature for transformational change and expert consultations. Furthermore, these “OUTCOME CATEGORIES” form the basis for any further aggregation of results (see below).

These categories are complemented by a set of pre-defined standard indicators for each “OUTCOME CATEGORY”. These should be used by the project proponent as long as the project fits or these predefined categories. This allows for aggregated reporting and simultaneously allows for a high degree of flexibility as the outcome categories are defined broadly and the use of project-specific indicators is still allowed.



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## A guided process enabling streamlined planning

The proposed M&R system is accompanied by a comprehensive set of manuals which provide flexible guidance to project proponents. Guidance is provided at a general level as well as for the thematic areas: adaptation, mitigation and REDDplus<sup>1</sup>. The design of the manuals is flexible, providing different levels of guidance for users depending on their prior level of knowledge. At the core of the monitoring system is a 5-step approach that has two aims: First, to allow for a structured yet streamlined monitoring approach; and secondly, to ensure that a broad set of relevant aspects is covered.

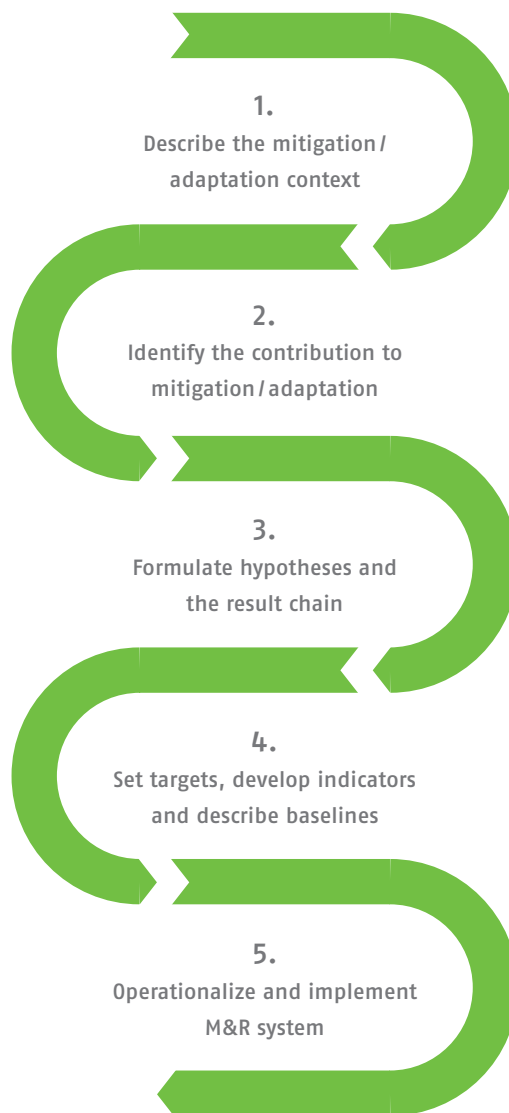
The **first** step includes a description of the existing context and sets the scene for the project. Using a bottom-up approach, it aims to develop a detailed understanding of the framework conditions, needs, and barriers with regard to greater action on climate change in the targeted country or region.

The **second** step then seeks to ascertain how the contribution of the project fits in this larger context. It points to the project's contribution to transformational change, including the identification of the "OUTCOME CATEGORIES" and impacts described above.

The **third** step specifies the project's contribution in more concrete terms by describing the hypotheses, i.e. testable statements, of how the intervention intends to address the barriers identified in the previous analysis. This helps to define the outputs and activities.

The **fourth** step includes the description of targets, indicators and the baseline for the OUTPUT and OUTCOME level to monitor the progress towards the desired outcomes and impacts. This allows assessing whether the project achieved the intended results.

The last, **fifth**, step includes the implementation and operationalization of the M&R system, allowing for regular monitoring of the progress during project implementation.



The system needs to be accompanied by a regular evaluation process that assesses best practices and problems encountered. This process allows for the constant improvement of the system as it for instance enables identification of additional, new standard indicators, by identifying those that are used frequently and are considered appropriate to show project successes.

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<sup>1</sup> A placeholder is included for the new thematic area biodiversity.

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## 4 Key Insights

In the course of the project a number of key aspects have been identified that we believe represent key insights also for other future M&R systems. This section describes four such key aspects and presents a set of possible solutions.

### 4.1 Defining and assessing results

**Issue:** Application of a logical framework to individual projects and definition of indicators to assess results rather than only actions

It is relatively simple to measure specific actions or activities under a project, for example, the number of workshops held or papers published. Yet, whilst measuring actions is useful to track progress of implementation, it does not convey whether the actions had climate-related impacts and led to the desired objectives of the intervention. Actions are not the end in themselves but the means towards achieving the end, i.e. a desired resulting change. So how can the actual effects and results of an intervention or project, such as reduced emissions in the long term, be measured in practice?

It is important to have a clear definition of the objective (outcome) of the intervention. This can be achieved through setting clear specific targets. Target setting is an essential part of an effective M&R system. Measuring results, or longer-term impacts, is really about assessing the change that has been achieved, or at least initiated. Measured outcomes need to be formulated in a way that clearly relates to the desired change; they should be associated with an indicator, a baseline and its specific target. Indicators for measuring progress towards the targets should follow the SMART principle by being specific, measurable, achievable, relevant and timely. Clearly defining what an intervention should achieve and what it should not lead to, allows focusing M&R activities accordingly.

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► **Example:** An intervention aims to increase the capacities for energy efficiency audits for buildings in a country. The desired change is that there are more capacities available on the market after the intervention. In this case, a suitable indicator might be the number of new auditors offering their services. For the indicator, a specific target of x number of auditors operating in the market by year y could be set. In contrast, the number of auditors trained in the intervention would not be sufficient for this purpose as it does not directly indicate how many trainees actually offer new services.

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Depending on the desired objectives of an intervention, the change may only occur after a certain time which may be beyond the duration of the intervention. Thus the question is not only what to measure, but also when to measure it. In the context of climate change, the desired impact, e.g. emission reductions, might only be achieved after a long time and/or after a system change has occurred. Especially for projects that seek to improve context-specific capacities, the desired impact often occurs after the project is finished. Measuring activities within the project are then restricted to measuring outcomes that can be achieved within the given project time horizon, additionally taking into account external factors. Embedding these outcomes into the larger country-specific context and considering its interactions with other on-going developments becomes very important.

#### Proposed approach for the ICI M&R framework:

Already the current ICI system provides a dedicated logical framework model to project proponents in the form of the result chain described above. This helps defining objectives, targets, and indicators for a project. As described in section 3, the result chain includes outputs, outcomes and impact levels of an intervention.

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The ICI's desired (long-term) impacts are adaptation to climate change (for the funding area adaptation) and emission reduction (for REDDplus and mitigation funding areas). Desired (mid-term) outcomes refer to specific adaptation actions and improved adaptive capacity or emission reductions and improved mitigative capacity/ REDDplus readiness. During project development, this logical framework guides target setting towards achieving the desired results on the long-term impact level, even if projects only aim at directly contributing to a shorter-term output.

The new proposed M&R system builds on the ICI's general approach. The manual includes the 5-step guidance described in section 3 to connect target setting and M&R even more strongly. The approach is based on the notion that a more sophisticated approach to project design also leads to a better M&R approach. By helping the project proponent to more clearly define what kind of change is to be achieved and to think through the causal result chain in a given area, options for measuring the desired change also become clearer.

## 4.2 Standard indicators and aggregation

**Issue:** Using standard indicators, i.e. indicators that are used across a range of projects, can present clear benefits, especially in view of presenting aggregated information on results, increasing comparability, and giving the project proponent existing indicators from which to choose. Yet, using only standard indicators may inadvertently steer project monitoring, reporting and result measurement in a direction that is not sufficiently reflective of multiple objectives and the variety of potential interventions or projects.

Interventions in a specific area often aim to achieve similar results, such as emissions reduced (in mitigation or REDDplus) or forest area retained (in REDDplus). This leads to the question of whether a set of standard indicators, against which all interventions in a given area are measured, can be developed. The use of standard indicators has several advantages. First, they may facilitate comparison of the effectiveness of different interventions and allow for easy

aggregation of the overall results achieved in a given area. Secondly, they can serve as a guide to the project proponent for choosing appropriate indicators and can facilitate documenting a project's contribution to an overarching programme-level goal.

However, using only standard indicators can at the same time lead to oversimplification. Interventions typically have multiple objectives. Focussing monitoring activities on standard indicators can lead to overemphasising aspects that are only of limited relevance for the specific project. At the same time, key results of an intervention might not be captured by these standard indicators and may therefore be underestimated. Relying too strongly on standard indicators may also lead to projects being designed to overachieve on these indicators, while not taking into account, or even being consistent with, the actual local climate and development needs.

### Proposed approach for the ICI M&R system:

An ideal approach would allow to both adequately monitor and report on single interventions using customised project-specific indicators as well as facilitate aggregation of project results for a specific area. The research consortium therefore tested options for a combined approach, including both standard indicators and project-specific indicators.

The research consortium came to the conclusion that a semi-flexible approach including standard indicators would be most useful. Therefore, a set of standard indicators is provided for the different areas that reflect parameters important and applicable for many projects. Where applicable, standard indicators should be used by project proponents. However, project proponents may also use their own indicators instead if the standard indicators are not applicable and they provide a clear explanation. Proponents are also encouraged to steer their projects towards these standard indicators if they are regarded as adequate to address the key objectives of their project. Over time, the proposed set of standard indicators could also be amended. For example, the ICI may find that some new indicators consistently apply, and should also become standard indicators.



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### 4.3 Defining and measuring mitigative and adaptive capacity

**Issue:** It is difficult to measure the contribution of improved mitigative and adaptive capacity on the ICI's longer term objectives of GHG emission reductions and adaptation. A variety of external factors may influence the overall contribution a project ultimately makes.

The ICI defines mitigative/adaptive capacity and REDDplus readiness as outcomes. Improving these capacities links to longer term transformational changes and enabling frameworks that are necessary for successful implementation of direct adaptation or emission reduction measures. Increasing adaptive or mitigative capacity or REDDplus readiness means addressing known barriers to achieving change, such as lack of knowledge, lack of suitable regulatory frameworks, or lack of available financing. These changes are critical for achieving the ICI's longer-term adaptation and mitigation objectives, even if they do not produce immediately visible results, e.g. quantifiable emission reductions.

Specific interventions to improve either mitigative or adaptive capacities, for example through training workshops, do not produce the long-term impacts in isolation. Instead, many other factors, often outside a project's control, must come together to achieve the desired long-term impacts. Therefore, it is important to gain a thorough understanding of the interactions between specific interventions and external forces, which together influence the desired change. Project proponents should build upon context-specific needs to ensure that the interventions lead to sustained change. A project proponent could for instance build on existing momentum and/or help address existing gaps in a particular project area.

#### **Proposed approach for the ICI M&R system:**

As the definitions of mitigative and adaptive capacity and REDDplus readiness are broad, the research consortium divided them into more manageable "OUTCOME CATEGORIES" for project proponents. This approach forms the basis for

defining standard indicators assigned to these categories and is based on a review of scientific literature and common practice of available funding instruments on transformational change as well as the realities of climate planning in action. The consortium concluded that the subcategories for mitigative and adaptive capacity and REDDplus readiness were fairly similar and were best combined in a common approach. For instance they all need to develop institutional capacities on various levels to enable the achievement of the desired long-term impact. This should also facilitate aggregation across thematic areas and facilitate reporting for developing countries with strategies or plans that address both mitigation and adaptation.

There are four "OUTCOME CATEGORIES" in the area of capacity improvement:

1. Behavioural changes through increased capacity to understand and address climate change
2. Improved decision making through enhanced information management and guidance
3. Improved coordinated decision making and knowledge exchange through enhanced institutional structures
4. Increased action on climate change through improved policy and finance frameworks.

Identifying standard indicators for these "OUTCOME CATEGORIES" has proven particularly challenging, given the diversity of actions applied by projects. In the end, the consortium identified a number of standard indicators for each of the four "OUTCOME CATEGORIES". Some of these are relatively concrete, others are framed more broadly which, however, can guide the specification of the indicator by the project proponents. A common feature of the proposed standard indicators is that they should show that the output has actually been used and has resulted in some kind of behavioural change and/or improved decision making.

Overall, this approach facilitates developing a targeted definition of the objectives of an intervention but it does not allow full aggregation of detailed results. It does however help to understand how many projects aimed to achieving a standard indicator on an aggregate level.

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Guidance sheets are provided to project proponents that describe scope and content of each category, suggest potential targets connected to the category, and provide further guidance on the development of indicators in that area, especially on how to measure the quality of the intervention. This approach intends to provide sufficient guidance to the project proponent on indicator development and understanding project results, without prescribing indicators that might not be relevant. In addition, comparability of project objectives at programme level increases. This approach also facilitates aggregation of interventions that contributed to improving different types of mitigative or adaptive capacity.

This process aims at supporting the project proponent to understand the project's contribution to the mitigative/ adaptive capacity of a country. Secondly, it provides the ICI Programme Office with a better understanding of the framework conditions within which the project is undertaken.

#### 4.4 Quantifying qualitative aspects

**Issue:** Measuring capacity changes often means addressing qualitative improvements that are difficult to measure. For this purpose semi-quantitative approaches for the assessment of qualitative aspects, e.g. co-benefits, co-costs, mitigative and adaptive capacity are useful.

Quantitative indicators often provide insufficient information for mitigative and adaptive capacity improvements. For example, the number of workshops indicates the level of capacity improvement attempted but not whether the workshop achieved the desired change among the beneficiaries. In these cases, a qualitative assessment of the targets allows to assess the change achieved. Qualitative targets must be carefully defined to ensure that they are SMART and minimise room for interpretation.

#### Proposed approach for the ICI M&R system:

The research consortium considered whether a semi-quantitative approach could be used to provide a minimum level of comparability when using qualitative indicator targets.

The consortium developed a three step approach which should be applied when defining and monitoring a capacity-related indicator adjusted for the four different "OUTCOME CATEGORIES":

1. First, it is proposed to identify whether actual existing barriers are addressed and/or the needs of the target group are matched by the intervention. Usually, this is identified directly after the activity is implemented. For a workshop aiming to build capacities in a country, this would address whether the measure matched the knowledge level of the participant.
2. Secondly, the extent to which the barrier was overcome and/ or knowledge has been gained is identified. This may require a time delay to ensure the action led to sustained change. In the context of the workshop example, it addresses what the workshop participants have learned.
3. Lastly, the long-term actual (behavioural) change is measured, allowing to assess whether the intervention actually led to the desired result. For the workshop case this would answer how the workshop training changed the participants' behaviour.

The project team suggests to use an approach based on surveys and questionnaires that includes a scoring scale from 1-5, where 1 generally means that no change has been achieved and 5 means that a high level of change has been achieved. For instance a project including a workshop could be evaluated directly after the workshop, using a scale from 0: "needs not matched at all" to 5: "needs matched fully". The scorecards qualitatively define steps from 1-5 and score each project against what it achieves to improve the specific situation in the country. This facilitates comparability between different projects achievements while still allowing to take account of different national circumstances.

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## 5 Outlook

The findings and insights gained in this research exercise are applicable well beyond the ICI. Especially relevant are the strong connection between project development and M&R as well as the categorisation of adaptive/mitigative capacity. The latter could enrich the international discussion, particularly with regards to Nationally Appropriate Mitigation Actions (NAMAs). NAMA experiences could, in turn, provide valuable feedback to the development of this system over time.

Currently there is a noticeable shift in the debate away from monitoring of only direct climate related impacts such as emission reductions towards monitoring transformational change. The debate is still at its beginning but it can already be observed that a change in mind set needs to accompany this shift. Single indicators such as emissions reductions will no longer suffice in describing the effectiveness of climate related action. Such indicators have to be replaced through an interactive learning process that includes the definition of harmonised approaches that allow for sufficient flexibility to be applied in multiple national contexts. While some degree of standardization should be a necessary aim to allow for comparability across contexts and supports more streamlined and transparent reporting of actions by funds to international bodies such as the UNFCCC (United Nations Framework Convention on Climate Change), it cannot be achieved by developing top-down methodologies. Instead only continuous bottom-up processes involving practitioners across a broad societal spectrum do the complexity of the issue justice.

Improving our knowledge through learning by doing is an important next step towards this. Currently many of the approaches are in theoretical stages, as is the case for the proposed M&R system here. Only practical implementation can show their applicability across the range of contexts they need to cover. This will require an on-going discourse that is accompanied by new scientific evidence and learning. Especially early-on flexibility will be a necessity as learning is still ongoing. Monitoring at regular intervals that follows

through from the initial activity to the long term impact of a project is very important in this context. Evaluation could also play an important role, as it allows for more indepth insights into the processes that govern the change.

Overall it will be important to foster a discourse among funding institutions. A process of best practice learning could be set up allowing to learn from practical experiences, positive and negative. Story telling can play a strong role here as it allows practitioners to easily learn from each other. Regular exchanges on approaches taken and experiences of different instruments, including the Green Climate Fund, may be valuable.

Last but not least the integration of adaptive and mitigative capacity supports more integrated planning of low carbon and climate resilient development, a general trend that can be observed in many countries.

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For more detailed information please see the forthcoming UBA report for the same Project (UBA Project 395 01 005)

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