



TAMID



Tracking
Adaptation
and Measuring
Development:
*a manual for local
planning*



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Acronyms

CRM	climate risk management
IEG	Independent Evaluation Group
IIED	International Institute for Environment and Development
M&E	monitoring and evaluation
SLMP	Sustainable Land Management Project
TAMD	Tracking Adaptation and Measuring Development

Introduction

Adaptation in developing countries usually seeks to partly fill a gap in development as well as ensuring that development is viable, sustainable and effective in the face of climate change. Climate change governance structures therefore play an important role in mainstreaming climate change into local planning and in linking benefits from adaptation measures to community to sub-national reporting systems. These governance structures need monitoring frameworks at each level, to track adaptation benefits and development interventions.

Tracking Adaptation and Measuring Development (TAMD) is a twin-track framework to monitor and evaluate climate change adaptation. You can use it to assess climate risk management (CRM), adaptation and development outcomes.

TAMD evaluates adaptation success as a combination of how well countries or institutions manage climate risks and how successfully adaptation interventions reduce vulnerability, build resilience and keep development on course.

This guide is based on the TAMD step-by-step guide,¹ and has been adapted for use at sub-national level.

Who should use this guidance?

- ▶ Local governments, to prioritise and plan adaptation actions and to create a system that can monitor and evaluate adaptation outcomes.
- ▶ Community committees and institutions to set up monitoring and evaluation (M&E) systems for local adaptation planning.
- ▶ Facilitators who are building the capacity of sub-national governments and communities on adaptation M&E.

This manual will provide:

- ▶ an understanding of general adaptation M&E
- ▶ an understanding of key elements of TAMD, and
- ▶ a step-by-step process for developing a simple M&E framework for use at sub-national and community levels.

1 | Brooks, N and Fisher, S (2014). Tracking Adaptation and Measuring Development: a step-by-step guide.

Eight golden tips for using this guide

- 1]** Understand the composition of the audience.
- 2]** Ask for their expectations.
- 3]** Gauge their level of understanding by asking them to define or share their experiences, using various concepts in the guide — for example, definitions or TAMD tools — before unpacking the various concepts.
- 4]** Simplify the language by using day-to-day examples.
- 5]** Use the local language for greater understanding if possible.
- 6]** Make the training participatory — allow the trainees to lead a lot of the discussions.
- 7]** Ensure that there is gender representation in the participatory exercises — different genders have different views on adaptation outcomes and their indicators.
- 8]** Make it fun!

The TAMD framework

TAMD assesses institutional CRM (Track 1) and tracks adaptation and development performance (Track 2). These processes may be linked to each other and across scales within the TAMD framework by a theory of change (ToC).

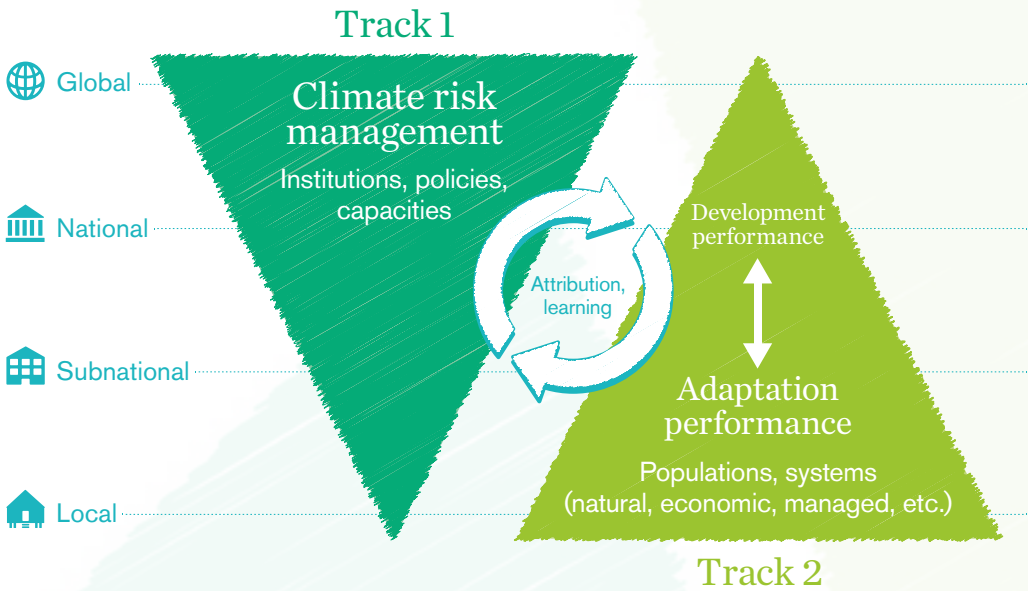


Figure 1. The TAMD framework

Figure 1 shows how the TAMD framework assesses the way in which Track 1 interventions by sub-national governments influence development and adaptation outcomes in Track 2. These interventions include:

- ▶ creating enabling policies, by-laws and regulations for adaptation at community level
- ▶ ensuring that planning takes into account relevant climate information and predictions
- ▶ allocating budgets for adaptation actions
- ▶ coordinating the relevant actors who are implementing climate change interventions, and
- ▶ building the capacity of relevant actors — for example, politicians, technical staff, private sector and communities.

Track 2 assesses the benefits that accrue from implementing adaptation or development actions despite the occurrence of climate hazards such as floods and drought over time. Adaptation and resilience building are long-term endeavours, so Track 2 benefits are measured from the project implementation period to beyond the project's lifetime.

It is important that TAMD users understand basic climate change concepts, as this will enhance their knowledge and clear any misconceptions (see Box 1). Facilitators should simplify these terminologies and explain them in the local language, if possible.

Box 1. Climate change terminology definitions

- ▶ **Climate change:** A change in the average state of climate variables that persists for an extended period, typically decades or longer.
- ▶ **Climate variables:** for example, rainfall, temperature.
- ▶ **Climate variability:** Short-term changes in the mean state of climate — for example, seasonal changes — beyond individual weather events. It can be caused by natural or man-made factors.²
- ▶ **Climate (change) hazard:** a physical manifestation of climate variability or change with the potential to have adverse effects on populations and systems exposed to it. Hazards can be short-lived and transient (e.g. heavy rainfall), persistent (e.g. increased aridity), recurrent (e.g. storms, droughts), singular (e.g. glacial lake outbursts), or progressive (e.g. sea-level rise). Hazards are often discussed in terms of shocks and stresses.
- ▶ **Adaptation:** Adjustments in natural or human systems in response to actual or expected changes in climate variables to moderate harm or exploit beneficial opportunities.
- ▶ **Adaptation intervention:** An activity, project or programme that aims to help people or systems respond to the challenges and hazards posed by the effects of climate change.
- ▶ **Mitigation:** An intervention to reduce the emitting of greenhouse gases.²

2 | IEG (2013)

TAMD users also need to understand basic M&E concepts (see Box 2). Facilitators should also simplify these terminologies and explain them in the local language, if possible.

Box 2. Understanding monitoring and evaluation

Monitoring: The systematic and routine collection of data and information from actions or interventions. It is collected to:

- ▶ learn from experiences to improve practices and activities in the future
- ▶ have internal and external accountability of resources used and results obtained
- ▶ take informed decisions on the future of the initiative, and
- ▶ promote the empowerment of beneficiaries.

Evaluation: A systematic process of analysing data and information to assess how effectively an action or intervention contributes towards desired goals. This serves to:

- ▶ provide regular feedback to help sub-national governments or communities assess the relevance, scope and sustainability of CRM processes and adaptation actions
- ▶ help make sub-national governments or communities more accountable to climate finance providers, such as national government or external funders, and
- ▶ provide lessons learned that sub-national government and communities can use in subsequent planning and implementation processes.

Common M&E terms:

- ▶ **Outputs:** goods and services delivered by an intervention
- ▶ **Outcomes:** shorter-term changes in the population or system targeted by the intervention resulting from the outputs
- ▶ **Impacts:** longer-term changes that result from outputs and outcomes

TAMD explicitly addresses the assessment of outcomes, impacts and outputs; it therefore seeks to go further than many existing or emerging adaptation M&E approaches.³

3 | IEG (2013)

Steps in applying TAMD

Figure two shows the six key steps for effectively applying TAMD in diverse M&E contexts.







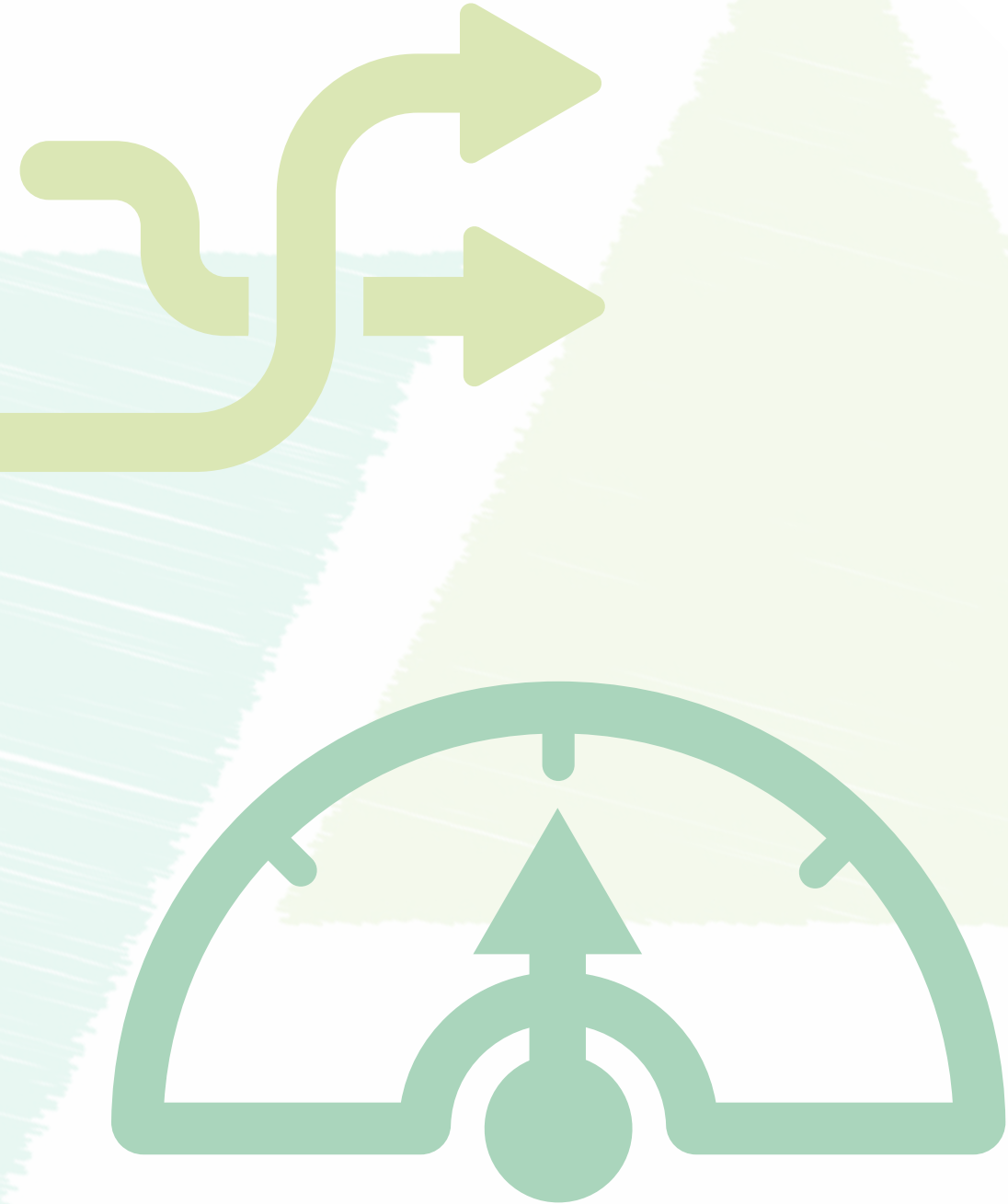
	1	Scope	Local government and community-level entry points Identifying who should be involved
	2	Theories of change	Developing a Theory of change for local government and communities
	3	Defining and constructing indicators	Climate risk management; resilience; vulnerability; wellbeing
	4	Measuring indicators	Using scorecards; baseline data plan; M&E plan; data collection tools
	5	Analysing and interpreting results	Using an outcome assessment tool Using climate data
	6	Learning	Possible learning processes that feed into local and possibly national government/sectoral planning processes

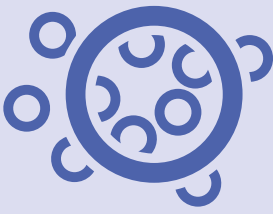
Figure 2. The six steps in applying TAMD

These steps are iterative: results from one step can feed back into previous steps, and steps may be repeated. This can help refine the processes represented in previous steps of the current intervention or improve the way these steps are followed or applied in future initiatives. The results of TAMD can therefore be used to inform the planning of subsequent adaptation investments and activities, and to develop CRM processes. There are also cross-cutting issues — such as gender equality and the political context — to consider when applying TAMD.⁴

4 | Fisher (2014)

Steps





Step 1: Define scope

The first step in applying TAMD is identifying the scope and purpose of the M&E, including:

- ▶ **entry point(s)**: for example, designing an adaptation M&E framework during local government or community planning processes or evaluating specific interventions, such as projects, policies and/or programmes
- ▶ **time scales** to be addressed: for example, you could design M&E to correspond to the same timeframe as the local government plan
- ▶ target **populations and systems** for activities or assessment
- ▶ climate-related (and other) **hazards** to which they are exposed, and
- ▶ the **consequences** of exposure.

You should identify populations, systems, hazards and consequences together, as different hazards will be relevant to different populations and systems. For example, storms and storm surges may be a priority for coastal communities, whereas drought may be a priority for people in arid and semi-arid areas. Even where people are concerned with the same hazards, the consequences may be different for different groups. This may be a result of differences in location, livelihoods or levels of poverty and vulnerability.

Information on the prevalence of different hazards and their consequences for different populations, groups, places and sectors may be available from national databases, meteorological and hydrological services or other sources such as technical reports, academic papers and news media. Identifying sources of such information — including climate data for characterising climate hazards (see Step 3) — is an important part of scoping.

Table 1 summarises the most probable entry points for sub-national governments and communities to apply TAMD and the focus of each application.



Women in health post in Rukum District, Nepal, Susannah Fisher

Table 1. Sub-national and local application levels of TAMD

Entry point	Focus		Scales	
	Track 1	Track 2	Spatial	Time
Tracking local government-level performance of adaptation	Local government-level institutional CRM mechanisms	Local government-level development performance	Local government	Long (years to around a decade)
M&E of local government programmes and projects	Will probably focus on CRM (programme or project-specific)	Will probably focus on resilience (programme or project-specific)	Local government	Short (a few years)
Evaluating the impacts of particular policies	Will probably focus on CRM (policy-specific)	Will probably focus on resilience (policy-specific)	Local government	Short to medium (years to around a decade)
Tracking adaptation at local level	Will include CRM	Will probably focus on resilience May track local development performance	Local government Local and community	Medium to long (a decade and longer)

Source: Brooks and Fisher (2014)



Women doing theory of change in Mafada, Mozambique, Irene Karani

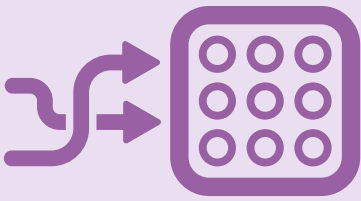
Box 3. Strengthening local adaptation planning with TAMD

In Mozambique, TAMD has been used to support and strengthen local adaptation plans (LAPs). Initially piloted in Guija district, TAMD was rolled out to other districts as part of the LAP process. Developing a LAP involves 10 steps, including scoping, vulnerability assessment, plan design, data collection and evaluation. The research team used the TAMD framework to design local-level scorecards and developed a ToC with district stakeholders and local communities. This ToC was integrated into Step 2 of the LAP process, allowing the district to identify a clear goal for their adaptation activities and a vision of what a climate-resilient district would look like. Following the vulnerability assessments and ToC process, the team worked with district staff to identify Track 2 indicators for adaptation and development performance.

Source: Artur et al. (2014)

Checklist:

- Have you chosen your entry point for M&E — for example, local government or local planning, projects and programmes, policy evaluation?
- Are you addressing Track 1 or Track 2 processes, or both?
- Have you identified the key actors and institutions to engage in the M&E process?
- Have you identified target populations and systems, climate-related hazards and the consequences of these hazards on exposed populations and systems?
- Have you identified potentially relevant data sources and existing M&E systems?



Step 2: Theories of Change

A ToC is a model that explains the links between actions, outputs outcomes and impacts.

The ToC for a project or programme will be closely related to – and can be seen as a narrative representation of – the logframe. It is not meant to replace the logframe; you can use it to explain the linkages between activities and impacts which may not be apparent in the logframe matrix.

A ToC can be useful in a number of ways at the local level:

- We can use it within local planning structures during the design phase of an intervention or local government plan to understand how investments in governance and climate risk management might improve resilience.
- We can use it with communities to understand what changes will support their resilience
- We can use both community and local government theories of change to create an overall vision for the local area

On the basis of these theories of change, indicators and tools will be chosen.

Local planning institutions

Local planning institutions can use a theory of change approach to understand the impact of an investment in climate risk management or to better understand how a policy or programme is building resilience across the local area.

For an institutional approach, stakeholders identify potential actions to address climate risks relating to climate change policies, institutional processes and capacity building that the sub-national government has planned or under implementation. These can include:

- setting up climate change coordination structures
- disseminating climate information
- delivering climate change training, and
- developing climate change policies or regulations.

You can derive these actions from local government or sectoral plans.

Stakeholders should then discuss and identify the short, medium and long-term changes they expect from the priority action/s as outputs, outcomes and impact. = and how these link to broader resilience for the local area. These will contribute to the overall impact statement for the local area.

After outlining expected outputs, outcomes and impacts from the priority actions, stakeholders need to create a ToC diagram to draw the interlinkages between the changes while also interrogating the logic behind the linkages.

If the local government is more interested in assessing the resilience benefits of a local programme such as for example providing veterinary care for livestock then they can follow a process similar to the community theory of change with a group of relevant stakeholders. This should include involvement of the communities affected.

Community theories of change

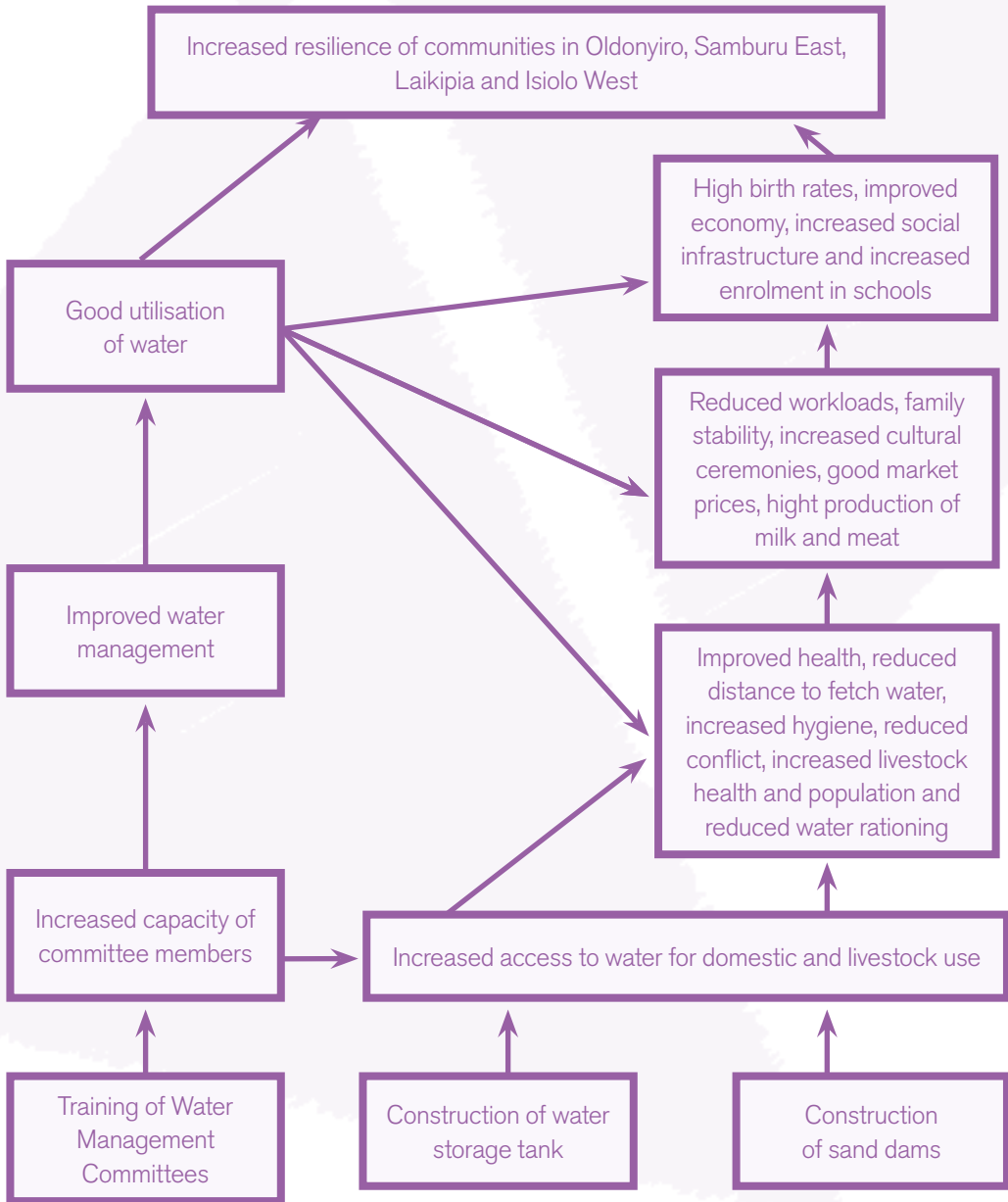
Stakeholders need to identify priority actions to build resilience to the hazards they face, as a basis for the theory of change. These might come from resilience or vulnerability assessments already undertaken within vulnerable communities, or as part of a project or planning process that identifies these options. Techniques such as focus groups can be used, and it should be ensured that women's voices are heard and their opinions included in the theory of change.

Sample actions include:

- improving water accessibility or availability
- building flood control dams
- planting drought-resistant crops, and
- training natural resource management committees.

The community should then go through a participatory process to work out how such an intervention would affect their livelihoods (including that of women and girls) and what mechanisms would lead to improvements for them. This should go into detail on the various stages, and how the community would know whether this step had been achieved. The ToC below shows the outcome from this process in a community in Kenya where they wished to invest in the construction of sand dams, water storage tanks and training of water management committees.

Figure 3. ToC from Oldonyiro community, Isiolo County, Kenya



Source: Karani et al. (2014)

Box 4: Using tables to develop a Track 2 ToC

After completing a community vulnerability assessment, stakeholders fill in two tables: one to prioritise adaptation interventions (A) and another to show anticipated changes and indicators (B).

Sample Table A

Livelihood activity	Major risks			Current adaptation practices	Limitations of current practices	Proposed adaptation interventions
	drought	floods	deforestation			
agriculture						
livestock						
fishing						

When Table A is complete, the trainer leads a discussion of the ToC and the M&E system to fill in Table B.

Sample Table B

Livelihood activity	Proposed interventions	Product of the intervention (change 1)	Result of the intervention (change 2)	Impact of the intervention (change 3)
agriculture	Irrigation scheme	More water for agriculture	Increased crop production and marketing	Increased incomes and wellbeing
livestock	Vaccination programme	Reduced incidences of livestock diseases	Increased livestock production and sales	Increased incomes and wellbeing
fishing	Fishing equipment access programme	Increased fish catch	Increased sales	Increased incomes and well being

Once Table B is complete and the linkages have been established between proposed interventions and the third level of change, stakeholders use this information to develop a ToC diagram.

Source: Adapted from Artur et al. (2014)

You should adopt the method that suits you best to develop a ToC and accompanying narrative.

Creating an overall theory of change

It can be useful to combine community theories of change or theories of change looking at institutions and resilience to have an overall vision for the local area.

For example in Kenya, several community-level ToCs were integrated into the overall local government ToC. See Annex 2 for a sample composite ToC from Isiolo county, Kenya. This can help combine top-down and bottom-up understandings of building resilience for the area.

A participatory process should facilitate stakeholders to identify the long-term desired positive change in the local government that shows resilience to climate change. Examples include “enhanced resilience in local government X” or “enhanced socio-economic status of communities in local government X”.

Since this statement is the overarching vision for the local area on climate change adaptation and/or development, all local stakeholders should be involved in its development. This will ensure buy-in and ownership as each actor will be expected to mainstream climate change adaptation in their own department or area.

Assumptions

Assumptions are important in interrogating the logic of a ToC. They are usually circumstances that are outside the control of a project, programme or local government. It is important to define any underlying assumptions, as this will help define the results of a ToC. Once you have defined the assumptions, you can develop and resource a risk mitigation strategy to ensure that anticipated changes in adaptive capacity, resilience and/or development are not derailed and the possibility of enhancing impacts is increased. See Box 5 for sample assumptions from Tanzania and Mozambique.

Box 5: Sample assumptions from Tanzania and Mozambique

Tanzania

- ▶ Trained staff are not transferred
- ▶ Adequate financial resources
- ▶ Community goodwill
- ▶ National peace and security

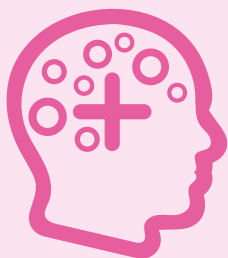
Mozambique

- ▶ Enabling environment fosters local partnerships to finance adaptation and development projects
- ▶ Financing agreements to address climate change adaptation and development are honoured
- ▶ Improved certified seeds available
- ▶ Extension services on improved production technologies available

Sources: LTS (2015a), Artur et al. (2014)

Checklist:

- Have you created a theory of change for the relevant intervention whether this is with local institutions or communities?
- Have the relevant stakeholders been involved?
- Does the theory of change consider the impacts on women and girls?
- Have you outlined the short (output), medium (outcome) and longer-term changes (impact) you expect from the prioritised actions?
- Have you drawn linkages between the different levels of change in the ToC? Are they logical?
- Where relevant, have you harmonised theories of change to create an overall vision for the local area?
- Have you assessed your assumptions?



Step 3: Constructing indicators and assumptions

Indicators are used to measure change over time. They can be used to describe a situation, monitor the evolution of a situation and/or measure achievements against an objective, comparing levels of quantitative or qualitative units to a baseline.

Our local work in various countries has identified that stakeholders are commonly developing and using three types of indicator – institutional capacity indicators, those on resilience and vulnerability (shorter term) and longer term wellbeing indicators. These can be identified after the theory of change process when it is understood what changes in resilience and/or climate risk management are being sought, and how these are expected to deliver increased wellbeing.

At the local level terms such as outputs, outcomes and impacts are commonly used to understand changes over time. It might be helpful to identify outcomes as shorter term changes over time in capacity to cope, that can be measured using resilience indicators, and impacts as longer term improvements in the development situation that can be measured using wellbeing indicators. Improvements in resilience (outcomes) should contribute to enhanced wellbeing (impacts) in the face of hazards that might be intensifying as a result of climate change.

3.1 Scorecards for assessing climate risk management processes

TAMD uses scorecard-based indicators to assess CRM processes at the local level (see Annex 1 for sample scorecards). You can use the scorecards to construct a baseline for the local institution and identify areas that need addressing to ensure effective community-level adaptation and to prioritise CRM interventions.

The scorecards should be used with different local government departments, as they relate to planning, decision making, policy, regulation and capacity building. They also involve integrating cross-cutting issues such as gender.

The TAMD framework has defined the following nine scorecard indicators for use by sub-national governments:⁵

1. Climate change integration into planning
2. Institutional coordination for integration
3. Budgeting and finance
4. Institutional knowledge and capacity
5. Climate information
6. Uncertainty
7. Participation
8. Awareness
9. Existence and coverage of local CRM processes

Methodological notes for the first eight indicators, which can generally be applied to most institutional contexts, are available online.⁶ The ninth indicator relates to local-level CRM processes — for example, managing specific risks through measures such as forecasts, micro-insurance or water resources — which can be highly context-specific and will need to be tailored as necessary.

Each indicator consists of five questions on whether a particular criterion has been met; answers are scored with 0 (no), 1 (partial) or 2 (yes), with a maximum score of 10. You can use these scorecards to assess an institution at regular intervals, measuring any changes in its CRM performance for each indicator.

You can change, rephrase or delete elements of the scorecard that are not relevant to the local context and insert additional indicators according to local needs. You can also develop your own scoring criteria. Table 2 is an adapted scorecard from northern Tanzania.

5 | These are detailed in Brooks et al. (2013), which also reproduces indicator scorecards.

6 | See www.iied.org/tracking-adaptation-measuring-development-tamd-framework

Table 2: Modified scorecard from Ngorongoro district, Tanzania

CRM indicators	Poor 0-25%	Fair 26-50%	Good 51-75%	Excellent 76-100%	Comments
Mainstreaming or integrating climate change into district planning	X				95% of the council budget is from central government and comes with guidelines. Climate change issues have never been integrated in the guidelines. Heads of department, councillors, leaders and other government officials have not internalised the concept of climate change.
Institutional coordination		X			Although coordination is in place, it is not effective because heads of department, councillors, leaders and other government officials have not internalised the concept of climate change.
Budgeting and allocation	X				No budget has been allocated to climate change activities. 95% of the council budget is from central government and comes with guidelines, which restrict the reallocation of funds between and within sectors.
Institutional knowledge and capacity			X		Institutional knowledge at district level is high.
Use of climate information	X				The Tanzania Meteorological Agency releases climate information on a quarterly basis, whereas the budget cycle starts from October to April every year. These conflicting cycles mean the district cannot factor climate information into its planning.
Planning under uncertainty	X				Budget guidelines restrict the reallocation and provision of contingency funds between and within sectors, so there is no room for scenario planning.

CRM indicators	Poor 0-25%	Fair 26-50%	Good 51-75%	Excellent 76-100%	Comments
Participation		X			Poorly implemented.
Awareness among stakeholders		X			Main stakeholders such as NGOs and other government institutions are aware. Awareness among village leaders, ward and village extension staff, and the general population is low.
Link between government and community planning	X				95% of the council budget is from central government and comes with guidelines and priorities according to sectoral policies. Most projects designed by central government are not aware of the importance of pastoral rangelands and mobility for livestock production.

Source: LTS (2015a)



Community focus group in Kinna, Kenya, Irene Karani

Although CRM alone cannot address gender equality issues or the treatment of marginalised groups, it should always be sensitive or responsive to gender and the inclusion of vulnerable groups. You can integrate extra questions to assess these into existing scorecards. Key questions to ask could be:

- ▶ How are women's voices included in the CRM processes?
- ▶ Are women involved — as individuals or organised groups — in planning, decision making or prioritisation?
- ▶ Do women's groups represent the most marginalised women?
- ▶ Are issues of interest to women included in the allocated projects and funded decisions?

You can easily integrate or add scorecard-based indicators into existing government monitoring systems as minimum conditions for local governments in CRM, or as a way of assessing the implementation of a district development plan into which climate change is already integrated.

3.2 Assessing vulnerability, risk and resilience

Vulnerability assessments may have been undertaken prior to any M&E processes or may be a required part of constructing a baseline before indicators can be developed to assess change over time.

Vulnerability assessments ask which places or groups or people are more or less likely to experience adverse effects when they are exposed to a climate (or other) shock or stress. They assess:

1. **Current exposure:** which places and population groups are more or less exposed to climate shocks and stresses, based on recent historical measurements of the frequency and severity of climate hazards such as droughts, storms and floods, across a country or district?
2. **Current vulnerability:** for places or population groups exposed to the same or similar hazards, which ones experience the worst effects? What are the factors that make these places and population groups more 'vulnerable' to the climate hazards experienced (e.g. lack of assets, poor access to services and resources, geographic remoteness, dependence on certain livelihoods or practices, demographic structure, etc.)?
3. **Future exposure:** how might exposure change as a result of climate change (e.g. changes in storm tracks & intensity, changes in drought frequency, changes in rainfall intensity etc.)?
4. **Future vulnerability:** how might the vulnerability of people and places change in the future, for example as a result of development and environmental trends, policies, resource availability, etc.?

At the local and community level, the emphasis is likely to be on assessments of current exposure and vulnerability (1 and 2), in order to deliver near-term development benefits through adaptation. However, future exposure and vulnerability should be considered as far as is relevant and practical.

Once the factors that make different places and groups vulnerable have been identified (e.g. through participatory surveys), these can be represented using vulnerability indicators. These indicators can be tracked over time to measure how vulnerability is changing, and to evaluate whether adaptation interventions have contributed to reductions in vulnerability. Vulnerability assessments and indicators can identify highly vulnerable groups and communities that can be targeted by adaptation interventions.

Where the emphasis is on resilience a similar approach can be taken, in which participatory and other methods are used to identify the factors that make certain places, people and groups more able to anticipate, plan for, **avoid, cope with, recover from and adapt to** evolving climate stresses and shocks. These factors can be represented by resilience indicators, which can be measured at regular intervals to track how resilience is changing. Where resilience is low, adaptation interventions can focus on building resilience.

Interventions to reduce vulnerability or improve resilience can focus on improving people's capacity to cope with existing or emerging climate hazards, and/or improving their capacity to adapt to future changes in these hazards. A focus on adaptive capacity should be informed by assessments of future exposure and vulnerability.



Livestock in a village, Ethiopia, Diane Guerrier

3.3 Defining vulnerability and resilience indicators

Vulnerability and resilience indicators measure the factors that make people or systems more or less likely to experience harm when they are exposed to a hazard (in this case a climate shock or stress). These factors can be identified in vulnerability or resilience assessments (see above).

Indicators representing these factors might involve quantities such as household income, number of different income streams or livelihood activities, distance from nearest town or services, etc.

Alternatively we can assign scores for individuals, households or other units that represent subjective judgements about how well people can (or expect to) cope with specific shocks and stresses.

Different factors will be important for the vulnerability and resilience of different groups of people; vulnerability and resilience indicators should reflect this and be context specific. Nonetheless, a number of studies have identified common 'dimensions' of resilience that can be used to guide and inform the identification and selection of resilience (and vulnerability) indicators (Box 6).

Because vulnerability and resilience indicators represent people's, household's and communities' circumstances and characteristics, they can be measured at any time. It is not necessary to wait until a climate shock or stress has occurred to measure these indicators. They therefore provide a means of measuring adaptation performance over relatively short timescales. They can be considered as "outcome" indicators, if outputs, outcomes and impacts are used.

The concepts of resilience, vulnerability and adaptive capacity are only meaningful when they refer to specific entities (individuals, households, communities, etc.), hazards (droughts, storms, etc.), consequences (lives lost, economic costs, etc.) and timescales. In other words:

- ▶ **Who is (not) resilient?**
- ▶ **To what?**
- ▶ **With respect to what consequences?**
- ▶ **Over what period(s)?**

So, when we talk about a population's resilience to future droughts over the next decade, specifying the consequences — reduced food security — allows us to link resilience with wellbeing and to identify relevant wellbeing indicators within our ToC (see Step 2).

Specifying the timescale encourages us to think about the magnitude of a hazard.

In this case, we are looking ahead a decade and can ask how severe droughts are projected to be in this period. It may be that a population could be resilient to drought over the next 10 years, but unable to cope with more severe droughts anticipated by 2050.

Box 6 outlines the main dimensions of resilience that can be considered.

Box 6. Dimensions of resilience

Resilience, vulnerability and adaptive capacity are all highly context-specific phenomena. Although there are no universal indicators, a number of studies have sought to define dimensions of resilience, with each dimension gathering a suite of related factors that can be represented by context-specific indicators. A recent review⁷ identified the following potential dimensions of resilience.

- ▶ **Assets:** both physical and financial assets — eg food and seed reserves (contingency).
- ▶ **Access to services:** water, electricity, early warning systems, transport, knowledge, information — to help people plan for, cope with and recover from stresses and shocks.
- ▶ **Adaptive capacity:** ability to anticipate, plan for and respond to longer-term changes — eg by modifying current practice, creating new strategies.
- ▶ **Income and food access:** the extent of people's poverty or food insecurity before a stress or shock.
- ▶ **Safety nets:** formal and informal support networks, emergency relief, financial mechanisms such as insurance.
- ▶ **Livelihood viability:** the extent to which livelihoods can be sustained in the face of shock/stress; the magnitude of shock/stress that can be accommodated.
- ▶ **Institutional and governance contexts:** the extent to which governance, institutions, policy, conflict and insecurity constrain or enable coping and adaptation.
- ▶ **Infrastructural contexts:** the extent to which coping and adaptation are helped or constrained by the quality and functioning of built infrastructure, environmental systems, natural resources and geography.
- ▶ **Personal circumstances:** other factors that make individuals more or less able to anticipate, plan for, cope with, recover from and adapt to changes in stresses/shocks — eg debt, low socio-economic status.

Source: Brooks et al. (2014)

7 | Brooks et al. (2014).

3.4 Using wellbeing indicators

Adaptation success will ultimately be measured with indicators representing the cost of climate-related shocks and stresses in terms of assets, livelihoods and lives and other aspects of human wellbeing that could be undermined by climate change. These 'development performance' or 'wellbeing' indicators might include indicators on ecosystem health or functioning and other systems that might be affected by climate change, to monitor how the systems are coping with or adapting to climate change, with or without human intervention. These can be considered as "impact" indicators.

These will overlap to a large extent with standard development indicators used to track changes in poverty, inequality, health, nutrition, economic status, education, longevity, conflict and economic growth — in short, any aspect of development that might be adversely affected by climate change. The overlap with widely used development indicators means that there is greater potential to use secondary data than with vulnerability and resilience indicators. In order to interpret trends in wellbeing indicators in the context of climate change that might affect human wellbeing, these indicators will need to be tracked over long periods in parallel with data on how climate hazards and evolving. In the short term, it may be possible to compare the effects of similar hazards on wellbeing before and after an adaptation intervention.

Detailed guidance on the construction of resilience and wellbeing indicators is given in the TAMD general step-by-step guide⁸ or the local government can use the following steps:

1. Go through the local government's development M&E plan or sectoral M&E plans and identify indicators that can qualify as resilience or wellbeing indicators
2. Go through the different outputs, outcomes and impacts developed in the ToC in step 2.
3. Link the identified indicators with the outputs, outcomes and impacts
4. Identify the gaps i.e. where no suitable indicators can be found to measure identified outputs, outcomes or impacts.
5. Develop these indicators using the process the local government uses for developing indicators.
6. Ensure that data can be collected and is available against these new indicators and that there are adequate resources within the local government to collect new information.

8 | Brooks and Fisher (2014)

These steps can also be adjusted for communities if they have community plans with indicators. If there are no community plans, communities should be facilitated to go through all the outputs, outcomes and impacts identified in their theories of change and develop indicators by asking the following questions:

- ▶ **How will we know that the outputs, outcomes or impacts will have been realised?**
- ▶ **What will have changed as a result of our activities?**
- ▶ **How will we know that things have changed or are not changing?**

Answering the above questions will assist in the development of indicators not only at the community level but also at the local government level.

See Box 7 for sample wellbeing indicators, and see Brooks (2014) for more discussion of how to use climate data to interpret wellbeing indicators.

Box 7: Sample indicators from Mozambique

Output indicators:

- ▶ number of households adopting climate change coping strategies due to drought risk

Outcome indicators (resilience)

- ▶ amount of water available per person, per household
- ▶ number of disease cases per year
- ▶ quantity and availability of crops produced locally in the market
- ▶ number of investors in the district
- ▶ number of households affected by drought, per event
- ▶ hours spent fetching water

Impact indicators (all %) (wellbeing):

- ▶ unemployment rate
- ▶ literacy rate
- ▶ disease occurrence
- ▶ increase in improved houses

Source: Artur et al. (2014)

Checklist:

- Have you identified the categories of indicator you need: CRM, resilience-type, wellbeing?
- Have you identified relevant indicators in existing government plans and strategies?
- Have you identified which indicators for specific interventions represent outputs, outcomes and impacts?
- Can you use existing TAMD scorecards for CRM indicators? Do you need to modify them or develop new ones?
- Have you identified appropriate context-specific resilience indicators using participatory processes?
- Can you use wellbeing indicators from existing sources and link these to existing monitoring systems?
- Have you checked that all of your indicators are logically linked in your ToC?



Step 4: Measuring indicators

The methods you use to gather data and measure indicators will depend on the types of indicator you use. In some cases, it may be possible to use secondary data such as existing census or other data. In others, you may need to build a data-gathering component into an intervention, set up new monitoring systems or enhance existing ones. Although gathering primary data through new initiatives may have significant resource implications, it might be the only way of tracking results with any confidence.

4.1 CRM indicators

You can gather data for CRM indicators through:

- ▶ **Self-assessment** – for example, where a local government tracks the development of its own CRM capacities using scorecards
- ▶ Structured or semi-structured **interviews** with key stakeholders, led by local staff from the M&E unit.
- ▶ **Focus groups** that bring together stakeholders from different departments, convened by the coordinating district entity.

You should complete the relevant indicator scorecards to track institutional CRM processes at regular (annual or bi-annual) intervals. The first set of measurements will constitute a baseline against which you can measure future changes. It is important to record narratives from stakeholders and experts and to collate these to support the interpretation of the scorecards.

4.2 Resilience and vulnerability indicators

Resilience and vulnerability indicators should be measured at regular intervals (ideally annually, or at least every 2-3 years or at the beginning and end of an intervention). These indicators will represent key factors that make people and systems resilient (or vulnerable, depending on how the M&E is framed). These factors might be represented by variables available from secondary data sources. However, because these factors will be highly context-specific, it is more likely that resilience and vulnerability indicators will require the gathering of primary data, for example through participatory techniques or household surveys.

The level of data collection required will depend on the purpose for which the information will be used. Participatory wellbeing rankings and other mapping techniques may help give a general picture of changes in key dimensions of community resilience over time, this may be sufficient for long term tracking. In other contexts, household survey data may be needed to ensure all parts of the community are benefitting from an intervention and so that improvements can be quantified. Qualitative techniques such as family portraits can give in-depth complementary data for more quantitative techniques.

What is important is that data collection is proportional to the intended use of the information and there is a clear use for any information collected.

It is important that relevant resilience and/or vulnerability indicators are measured for different groups. Where these indicators represent individuals, they should be disaggregated by gender. Where they represent households they should be measured for male and female headed households. Populations might also be disaggregated using criteria other than gender, such as level of poverty, main livelihood, etc. Different indicators might be used for different groups, as the factors important for their resilience might be different (see Step 3). If the purpose is to measure whether resilience has improved or not this should not present problems of comparability. The extent to which the resilience of different groups has changed might even be compared using different indicators for each group, if this is measured in terms such as 'not at all', 'a little', 'a lot', etc.

4.3 Wellbeing indicators

Wellbeing indicators should also be measured at regular intervals when the M&E system is looking at medium to long term changes. The frequency will depend on the M&E context and, when monitoring and evaluating adaptation, the nature of the climate hazards to which the populations or systems of interest are exposed. In order to interpret wellbeing indicators in the context of climate-related shocks and stresses, monitoring periods need to be long enough to include hazard events associated with these shocks and stresses. This might involve monitoring over relatively short periods (several years) to assess and compare:

- ▶ the effects of similar shocks/stresses before and after an intervention
- ▶ the consequences of a shock/stress across different groups/populations – for example, those who do and do not receive support from a specific intervention, and
- ▶ the effects of a shock/stress with expectations of what would have happened without the intervention or how the intervention should reduce adverse impacts on wellbeing.

You can design a monitoring plan to systematically collect data on wellbeing indicators (see Annex 3 for a sample from Tanzania). It is good practice to construct historical baselines for wellbeing indicators wherever possible, to place changes in a longer-term context.

You should collect the first data before adaptation interventions begin. This will provide the baseline data. You should then collect data and report this against the monitoring plan over time, systematically documenting lessons learnt along the way and adjusting indicators that prove difficult to measure.

In order to interpret wellbeing indicators in the context of the climate hazards that can affect wellbeing, climate data relating to those hazards should be collected over the same period. These data should allow the occurrence of hazards and changes in their frequency, severity, duration, spatial extent, etc., to be tracked over time.

Wellbeing indicators should be measured separately for men and women (or male and female headed households) wherever possible, to allow a disaggregated picture of climate impacts by gender. Wellbeing indicators might also be disaggregated by other criteria such as poverty level or livelihood. Where both vulnerability/ resilience and wellbeing indicators are used in an M&E system, the same disaggregation criteria should be used for these two types of indicator.

More detailed guidance on the collection of resilience and wellbeing indicators is provided in the TAMMD general step-by-step guide.⁹

4.4 Data collection methodologies

There are many data collection tools, but you should start with those normally used in the local government before introducing any new tools. These tools include:

- ▶ secondary data from local documents, research studies, socio-economic surveys or census data
- ▶ household surveys
- ▶ key informant interviews
- ▶ participatory methods such as wellbeing rankings, seasonal forecasts
- ▶ focus group discussions, and
- ▶ field visits.

Depending on the indicator being measured, using normal local government data collection methodologies will ensure that the local government staff responsible for M&E do not feel overburdened with data collection and lose interest. The adaptation M&E plan should also be harmonised with the normal local government plan to synchronise the frequency of data collection for development and adaptation. This will reduce time spent collecting data. The plan should include collecting both wellbeing and climate indicator data.

It is important to determine a sampling size and approach to ensure collected data are robust. Local government stakeholders should agree on the sampling approach. If there are existing sampling guidelines in the local government, these should be followed. If not, local government planners and economists should advise on which approach to take, as sampling needs to consider many external factors such as accessibility of areas, seasons, livestock and human migration, population size and time spent.

All collected data needs to be disaggregated by gender to measure whether adaptation and/or development benefits accrue to different gender groups over time.

9 | Brooks and Fisher (2014)

4.5 Collection of climate data

To assess adaptation using wellbeing indicators, you need to determine whether adaptation actions have improved wellbeing by comparing data with a situation in which these actions did not take place. If the implementation of adaptation actions and interventions is the only thing to change in a given development context, you can simply measure changes in wellbeing over time and attribute these to the adaptation actions. But changes in wellbeing indicators are influenced by other drivers – including economic trends, policy change and changes and variations in climate.

You can identify economic trends using relevant economic indicators. You can also use more general development analyses and narratives to identify and describe economic trends and policy change. But climate hazards may complicate the interpretation of wellbeing indicators. As such, you will need to use climate indicators or indices to identify and track trends and variations in these hazards. These must be taken into account to prove adaptation.

Potentially useful indicators of climatic conditions include:

- ▶ average or extreme temperature
- ▶ average daily rainfall
- ▶ total annual or seasonal rainfall
- ▶ maximum rainfall intensity (for runoff and flood risks)
- ▶ the onset date of seasonal rains
- ▶ the number of days without rain during the growing season, and
- ▶ the storm intensity of destructiveness.¹⁰

Where possible, you should measure indicators and indices of relevant climate variables over the same timescales as wellbeing indicators, and build historical climatic baselines over as long a period as possible. This enables us to say whether climate hazards are intensifying and whether any apparent changes are outside the range of historical variability and therefore manifestations of climate change. You will need long-term historical records spanning several decades or more to contextualise or calibrate wellbeing indicators (see Step 5).

But in many contexts, climate data is sparse or non-existent, and reconstructing historical baselines will be difficult or impossible. In such circumstances, you should try to set up systems to measure the climate variables that are most relevant to the wellbeing indicators you are tracking. You can still use climate data to contextualise wellbeing indicators, even over short periods (see Step 5).

¹⁰ | See for example, Emmanuel (2005), for a power dissipation index, which provides an objective measure of the potential destructiveness of tropical storms by estimating the energy they deliver.

Indicators of climatic conditions can be derived from existing datasets held by national meteorological, hydrological or agricultural services, or by national or international research institutions. Where this information is unavailable, it is worth setting up new observational systems – for example, automated weather stations in specific places – even at project and programme level.

Local populations might provide information on the frequency and relative severity of certain climate hazards. Whereas such qualitative information may involve considerable subjectivity and should be approached with caution, you can use it to identify years associated with particular climate conditions, such as moderate or severe drought or abundant rainfall. You can use other climate indicators – such as times of animal migrations, leaf budding or flowering – to infer trends in climatic parameters such as temperature and rainfall at specific times of year.

Table 3. Baselines and sources, by indicator types

Indicator type	Baseline	Sources
CRM	Result of first application of scorecards	Scorecards completed by stakeholders
Wellbeing: development performance, cost in terms of assets, lives, livelihoods, etc.	Historical baselines desirable, otherwise construct at start of monitoring periods	Secondary sources: census, national databases Some primary collection may be necessary
Climate indicators/indices	Historical baselines (averages) highly desirable	National met/hydro services International organisations Local populations (qualitative) New monitoring systems if no available data

Checklist:

- Have you decided how you will collect data on the scorecards?
- Have you established how you will gather your baseline data for resilience and wellbeing indicators?
- Have you agreed what type of sampling is appropriate?
- Have you decided what secondary data can support your primary data collection?
- Have you established how you will disaggregate your results for wellbeing indicators?
- Have you identified which climate indices to measure?
- Have you identified the sources of climate data?
- If climate data is not comprehensive, have you found an alternative method of collecting this data?
- Have you developed and resourced your M&E plan?



Step 5: Analysing and interpreting results

Once you have constructed your indicators and collected your data, you will need to process and interpret the indicators to establish whether, how and why CRM, resilience (or vulnerability) and wellbeing are improving.

To get a true picture of adaptation performance, you need to place any measured changes in wellbeing indicators in the context of changes to climate hazards.

At the most basic level, monitoring involves identifying whether CRM and wellbeing indicators have changed, and in what direction. This simple approach is useful for aggregating across indicators and across interventions. For example, within a project M&E system, we can determine how many people experienced an improvement in a minimum number of indicators or plot the numbers of people experiencing improvements and declines in multiple indicators. At the programme level, we can aggregate across projects to say how many people experienced improvements in wellbeing.

5.1 CRM indicators

Scorecard-type CRM indicators are relatively straightforward to process and interpret. You can track changes in individual indicators over time, and aggregate multiple indicators by adding scores together. You can design scorecards for different CRM indicators to ensure they have the same maximum score. Processing of CRM indicators should be based on the scoring system the local government agreed at the time of the baseline exercise.

If CRM indicators reveal an improvement in the extent and quality of CRM, you will need to assess the extent to which this can be attributed to an intervention or activity. You can do this by gathering supporting narratives of how and why CRM has improved, while stakeholders and/or experts complete the scorecards. Alternatively, or in addition, you can simply ask attribution questions to stakeholders when they complete the scorecards.

Attribution questions might ask stakeholders to assess how much a particular activity or intervention contributed to improving CRM: not at all, a little, to a moderate extent or a lot, and whether there has been no improvement in areas without the activity/intervention. These answers can be converted into scores of 1–5 to provide a quantitative measure of an activity's or intervention's contribution. These scores can be aggregated over time to show the trends in CRM.

5.2 Changes in vulnerability, resilience and wellbeing

Communities can also analyse wellbeing indicators using a simple weighting system to measure the extent to which outcomes and impacts have been achieved (e.g. improvements in resilience and wellbeing). Table 4 shows how a simple form can capture the weighing and narratives against each outcome indicator in a community ToC. More detailed guidance on interpreting Track 2 indicators is provided in the TAMD general step-by-step guide.

Table 4. Outcome assessment form, Kinna ward, Isiolo county, Kenya

Indicator	1 (not achieved)	2	3	4	5 (Achieved with great success)
livestock drugs			diagnoses.		
Reduced livestock disease outbreaks				Reduced due to lower influx of livestock from neighbouring counties and provision of disease diagnosis from laboratory.	
management					grazing areas.

Source: LTS (2015b)

5.3 Wellbeing indicators and climate data

Wellbeing indicators might show improvement, deterioration or no significant change over time. To evaluate what this means in terms of adaptation, you need to contextualise changes in wellbeing indicators using climate information. Table 5 shows the possible explanations for trends in wellbeing.

Table 5. Contextualising wellbeing indicators

Trend in wellbeing indicators	Possible explanations: <i>Climate hazards have...</i>
Wellbeing has improved over time	<ul style="list-style-type: none"> ▪ intensified and adaptation has enhanced wellbeing, despite increased potential risks ▪ not changed, but adaptation has delivered benefits ▪ somewhat improved, with adaptation amplifying resulting benefits ▪ significantly improved, but adaptation actions have contributed little.
Wellbeing has remained more or less stable	<ul style="list-style-type: none"> ▪ intensified, but adaptation has prevented deterioration in wellbeing (invisible benefits) ▪ not changed and adaptation has not delivered benefits ▪ improved, but adaptation has been counterproductive or irrelevant in the face of other drivers.
Wellbeing has declined over time	<ul style="list-style-type: none"> ▪ intensified and adaptation has not been effective ▪ intensified, but adaptation has prevented an even greater decline in wellbeing ▪ not intensified and adaptation has been counterproductive or irrelevant in the face of other drivers.

Quantitative climate data provides contextual information that helps us explain whether adaptation has taken place (see Table 5). If this is not available, stakeholder perceptions of changes in climate hazards and of how these changes are related to changes in wellbeing indicators can be helpful. This is particularly important if wellbeing has declined despite adaptation actions (scenario 3 in Table 5). This does not necessarily mean that adaptation has failed to deliver benefits; it could just mean that these benefits are difficult to demonstrate. See Box 8 for an example of how we used narratives and climate information to contextualise indicators in the pilot work in Ethiopia.

Box 8. Applying TAMD in Ethiopia

IIED and Echnoserve (a local research partner), in partnership with Ethiopia's Ministry of Agriculture, have been testing the TAMD approach in assessing and developing the country's CRM. The initial stage of work looked at the Sustainable Land Management Programme (SLMP-1) and how this is contributing to building resilience through soil and water conservation. Local indicators were developed and tracked at different levels. Soil and water conservation interventions in Ethiopia have enabled people to adapt to an increasing frequency of intense rainfall. TAMD was used to develop indicators to assess how people are adapting. The team compared indicators to their baseline levels prior to the social and water conservation interventions, in communities that had and had not received the SLMP intervention.

To contextualise the results, the team collected narratives through focus groups in both intervention and comparable woredas on the type of climate hazards local people encountered, their frequency and their impacts on livelihoods. The team also analysed climate data available from the weather observation stations closest to the selected intervention and comparable sites, including: monthly, seasonal and annual rainfall trends; anomaly and frequency of heavy falls; and temperature. The team compared people's testimonies on the occurrence of the hazards with the actual observations, and assessed whether intervention and comparable kebeles faced similar climate challenges during the course of the SLMP-1 intervention period. The team used this analysis of climate data to triangulate with and compare local people's testimony information regarding climate hazards and variability in rainfall and temperatures to assess the validity of the non-intervention woredas as comparable sites with which to measure SLMP-1 intervention effects. The team also obtained the quantitative measures of climate impacts — such as an increased in heavy rainfall days leading to flash flooding — and compared these for kebeles with and without SLMP-1 interventions.

Source: Awraris et al. (2014)

5.4 Aggregation of results at local government level

For a local government to show evidence of resilience or development performance in the long term it is important that the planning or M&E unit consolidates adaptation information/data being collected, measured and analysed by projects and programmes by government, civil society and other stakeholders, and various sectors in the area. These actors will have been specifically identified in the M&E plan as sources of information (example in Annex 3).

If the M&E plan is effectively operationalised by the local government the necessary documentation will have been produced as stipulated in the plan. This documentation will then be used to aggregate results against the indicators that the local government prioritised in Step 3 that measure resilience/wellbeing/development performance in their theory of change developed in Step 2.

An annual report can be produced for this alongside the normal local government annual reports. Or alternatively a section/chapter on adaptation/resilience can be incorporated as part of the overall local government annual report.

5.5 Evaluation

Evaluation of adaptation programmes should follow a local government's normal evaluation procedures. Internal and external evaluations, which can be conducted periodically, normally assess:

- ▶ **Relevance:** the contribution of interventions to local government development priorities
- ▶ **Efficiency:** how adaptation resources have been translated into anticipated benefits within a reasonable timeframe
- ▶ **Effectiveness:** the extent to which outcomes articulated in a theory of change have been realised
- ▶ **Impact:** the extent to which the interventions have begun to bring about long-term change as defined in the ToC
- ▶ **Sustainability:** the extent to which adaptation benefits will last beyond the life of the project or programme. To ensure sustainability, adaptation interventions should:
 - ▷ not be environmentally destructive, seek to minimise environmental disruption and not contribute significantly to greenhouse gas emissions
 - ▷ not increase vulnerability or drive maladaptation in the medium to long term, when they are designed to deliver adaptation benefits in the near term, and
 - ▷ be integrated into local government planning, budgeting and resourcing processes.

Checklist:

- Have you analysed your CRM results and presented them in an accessible way?
- Have you set up a practical way to analyse your resilience and wellbeing indicators over time?
- How will you contextualise wellbeing indicators using climate indices?
- Have you considered how you will use the results and what format will be most useful?
- Have you designed an evaluation plan with timelines for internal and external evaluations?
- Have you identified the resources you need for the evaluations?



Step 6: Learning

Carefully designed monitoring and evaluation processes can support continuous learning through reflection and evaluation and are therefore particularly relevant for evaluating complex, long-term and uncertain adaptation outcomes. Given the complex nature of many adaptation initiatives, learning should be an integral part of their M&E. There are several ways to make learning meaningful in M&E:

- ▶ Consider M&E in initial planning of adaptation interventions and develop a clear ToC, testing and revising it throughout the implementation process.
- ▶ Develop a local government learning strategy where stakeholders can analyse challenges and document lessons in various forums such as learning workshops.
- ▶ Disseminate lessons learnt in appropriate formats for different audiences.
- ▶ Use lessons learnt to enhance local-level decision making on climate change.

In some cases, learning from adaptation will need long timeframes. These may be significantly longer than those used for most projects, programmes or local government planning cycles. By feeding learning from adaptation into local government plans, sub-national governments can start to move towards monitoring resilience in the longer term and achieving their respective strategies with as much evidence as possible.

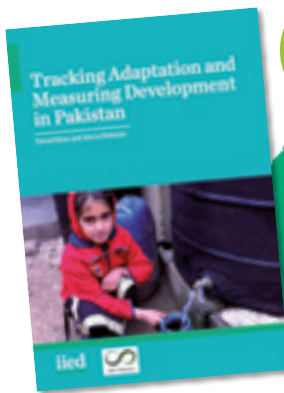
Evidence and lessons from an adaptation, monitoring, evaluation and learning framework at sub-national level can influence national adaptation policy and strategy, providing a means of tracking and prioritising climate finance.

Checklist:

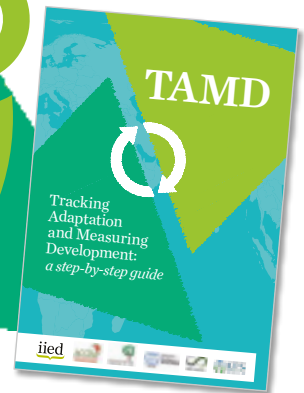
- Do you have a local learning strategy that incorporates lesson-learning forums and timeframes?
- How will you present and disseminate the lessons to different audiences?
- How will you integrate the lessons into your local planning cycle?

Further reading on TAMMD

1] A series of conceptual papers on TAMMD



IIED's publications on TAMMD fall into three main categories:



3] A series of country reports documenting experiences of piloting TAMMD

2] A series of technical guidance notes for practitioners using TAMMD



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1] Conceptual TAMD papers

- ▶ The original theoretical framing paper that outlines the rationale for a methodology that can track adaptation and measure development – Brooks, N. *et al.* 2011. Tracking adaptation and measuring development (TAMD). Working Paper 1. IIED. <http://pubs.iied.org/10031IIED>
- ▶ A working paper that provides practical guidance on how to put the TAMD concepts outlined in Working Paper 1 into action. – Brooks, N. *et al.* 2013. TAMD, an operational framework for tracking adaptation and measuring development. Working Paper 5. IIED. <http://pubs.iied.org/10038IIED>
- ▶ A briefing that provides an overview of the TAMD framework for policymakers and practitioners. – Anderson, S. 2012. TAMD, a framework for assessing climate adaptation and development effects. Briefing Paper. IIED. <http://pubs.iied.org/17234IIED>

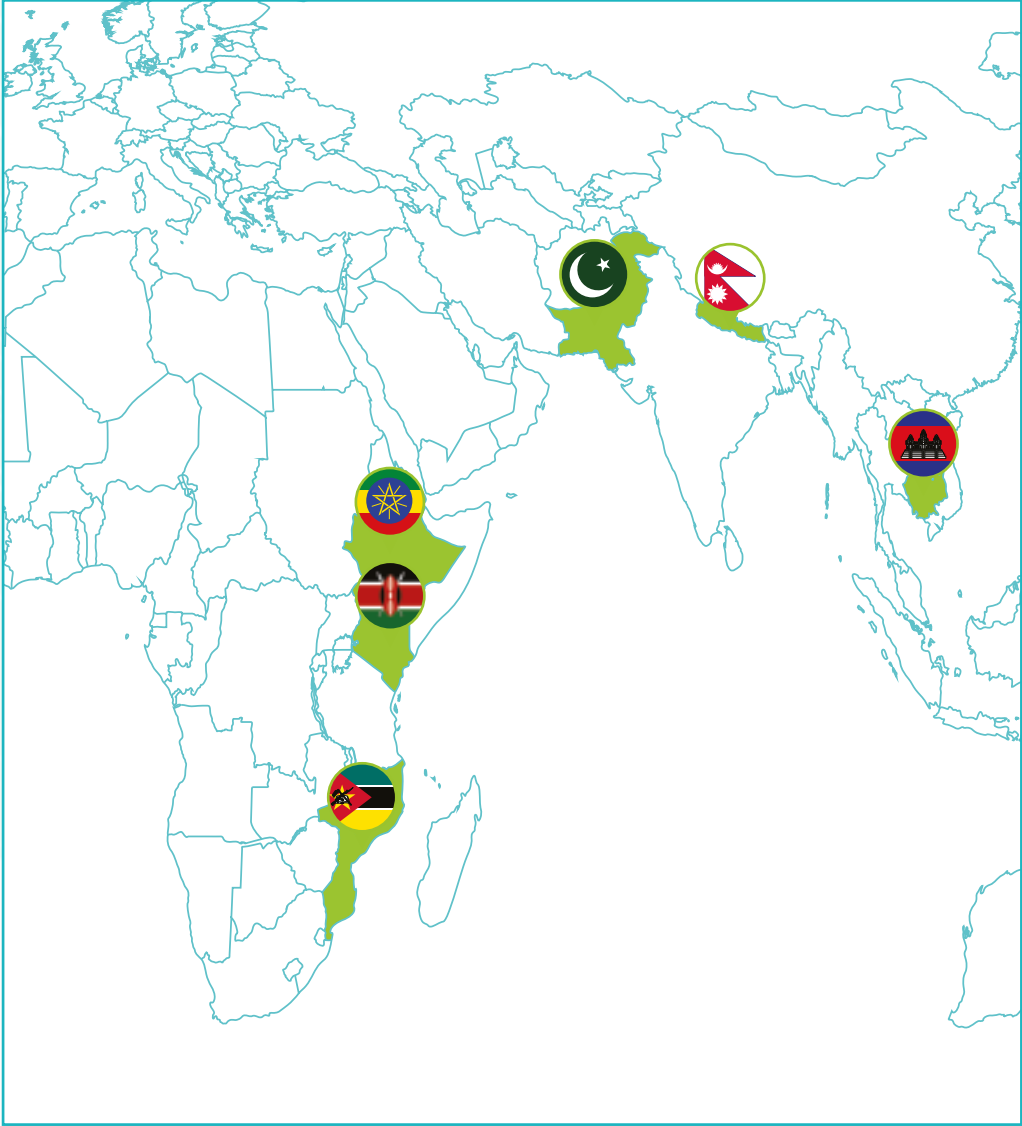
2] Guidance documents

- ▶ Step by step guidance to using TAMD.
– Brooks, N., and Fisher, S., 2014, TAMD: a step by step guidance, Toolkit. IIED. <http://pubs.iied.org/10100IIED>
– Brooks, N. 2013. TAMD Climate Risk Management Indicators: Methodological note. IIED. <http://pubs.iied.org/G03881.html>
- ▶ Guidance for national governments on using TAMD.
– Rai *et al.* 2015, TAMD: a national manual, Toolkit IIED.
- ▶ A briefing on selecting indicators for adaptation M&E.
– Brooks, N. 2014. Indicators for the monitoring and evaluation of adaptation. Briefing. IIED. <http://pubs.iied.org/17273IIED>
- ▶ A briefing on using institutional scorecards. – Rai, N and Nash, E. 2014. Evaluating institutional responses to climate change in different contexts. Briefing. IIED. <http://pubs.iied.org/17271IIED>
- ▶ A briefing on thinking about gender when applying TAMD.
– Fisher, S. 2014. Tracking Adaptation and Measuring Development through a gender lens. Briefing. IIED. <http://pubs.iied.org/17270IIED>
- ▶ A briefing on using climate data to understand trends
– Brooks, N., 2014. Using wellbeing indicators and climate information to assess adaptation effectiveness. Briefing. IIED. <http://pubs.iied.org/17275IIED>



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3] Country reports



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Cambodia

– Rai, N. *et al.* 2014. Developing a national framework to track adaptation and measure development in Cambodia. Briefing . IIED. <http://pubs.iied.org/17259IIED>

– Rai, N. *et al.* forthcoming. Tracking Adaptation and Measuring Development in Cambodia. Research report. IIED.



Ethiopia

– Anderson, S., 2014, Testing TAMD in Ethiopia, Backgrounder, IIED. pubs.iied.org/17247IIED

– Awraris, M. *et al.* 2014. Tracking Adaptation and Measuring Development in Ethiopia. Research report. IIED. <http://pubs.iied.org/10104IIED>



Kenya

– Karani, I. *et al.* 2014. Institutionalising adaptation monitoring and evaluation frameworks: Kenya. Briefing. IIED. <http://pubs.iied.org/17251IIED>

– Karani, I. *et al.* 2014. Tracking Adaptation and Measuring Development in Kenya. Research report. IIED. <http://pubs.iied.org/10101IIED>



Mozambique

– Anderson, S. *et al.* 2014. Forwards and backwards evidence-based learning on climate adaptation. Briefing. IIED. <http://pubs.iied.org/17257IIED>

– Artur, L. *et al.* 2014. Tracking Adaptation and Measuring Development in Mozambique. Research report. IIED. <http://pubs.iied.org/10102IIED>



Nepal

– Fisher, S. *et al.* 2014. Tracking adaptation and measuring development in Nepal. Briefing . IIED.

<http://pubs.iied.org/17242IIED>

– Pokhrel *et al.* March 2015. Tracking Adaptation and Measuring Development in Nepal. Research report. IIED.



Pakistan

– Anderson, S. *et al.* 2014. Forwards and backwards evidence-based learning on climate adaptation. Briefing. IIED.

<http://pubs.iied.org/17257IIED>

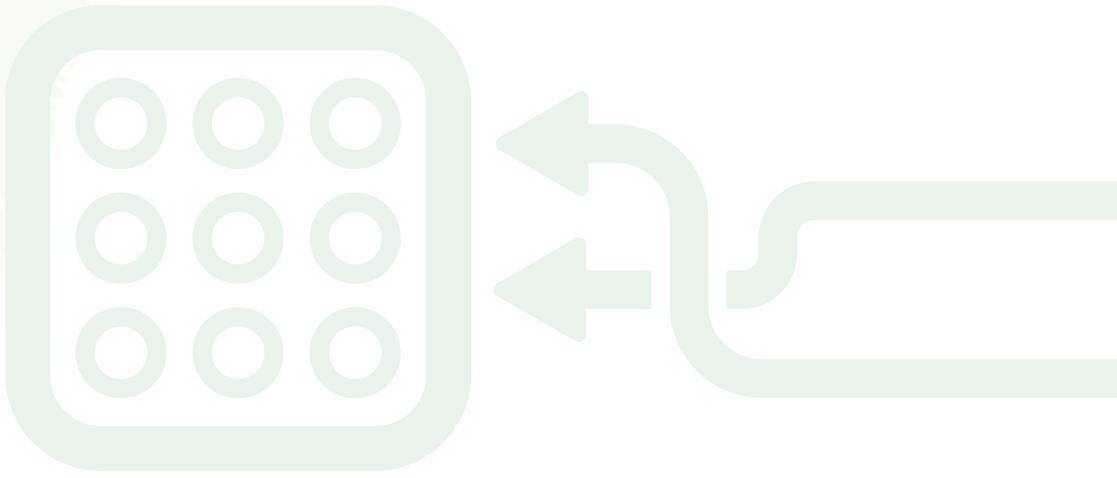
– Khan, F. & Rehman, A. 2014. Tracking Adaptation and Measuring Development in Pakistan. Research report. IIED. <http://pubs.iied.org/10104IIED>



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References

- Artur, L. *et al.* 2014. *Tracking Adaptation and Measuring Development in Mozambique*. Research report. IIED, UK.
- Awraris, M. *et al.* 2014. *Tracking Adaptation and Measuring Development in Ethiopia*. Research report. IIED, UK.
- Brooks, N. 2014. *Using wellbeing indicators and climate information to assess adaptation effectiveness*. IIED Briefing, December 2014.
- Brooks, N. 2014. *Indicators for the monitoring and evaluation of adaptation*. Briefing. IIED, UK.
- Brooks, N. *et al.* 2013. *An operational framework for Tracking Adaptation and Measuring Development (TAMD)*. IIED climate change working paper No. 5.
- Brooks, N. and Fisher, S. 2014. *Tracking Adaptation and Measuring Development (TAMD): A step-by-step guide*. IIED, UK.
- Brooks, N., Aure, E. and Whiteside, M. 2014. *Assessing the Impact of ICF Programmes on Household and Community Resilience to Climate Variability and Climate Change. Evidence on Demand*.
- Fisher, S. 2014. *Tracking Adaptation and Measuring Development with a gender lens*. Briefing. IIED, UK.
- IEG 2013. *Adapting to climate change: assessing World Bank Group experience*. World Bank Group.
- Karani, L. *et al.* 2014. *Tracking Adaptation and Measuring Development in Kenya*. Research report. IIED, UK.
- LTS 2015a. *Tracking Adaptation and Measuring Development (TAMD): district officer's training on combined monitoring and evaluation*. Training workshop report, 12–16 January 2015. Arusha, Tanzania
- LTS 2015b. *Ward adaptation indicator review report. Isiolo County*.



Annexes



Annex I: Climate risk management scorecards (Track 1)

INDICATOR 1. CLIMATE CHANGE INTEGRATION INTO PLANNING Representation of strategies that address climate change in relevant planning documents & processes	No	Partial	Yes
1. Is there a climate change plan or strategy set out in a dedicated strategy document and/or embedded in the principal planning documents at the level being assessed (e.g. national, sector, ministry)?			
2. Is there a formal (e.g. legal) requirement for climate change (adaptation/mitigation) to be integrated or mainstreamed into development planning (c.f. requirement for EIA for certain activities/projects)?			
3. Have specific measures to address climate change (adaptation/mitigation) been identified and funded?			
4. Are climate-relevant initiatives routinely screened for climate risks?			
5. Is there a formal climate safeguards system in place that integrates climate risk screening, climate risk assessment (where required), climate risk reduction measures (identification, prioritisation, implementation), evaluation and learning into planning?			
SCORE (No. of "YES" answers x 2, plus no. of "PARTIAL" answers x 1)			

INDICATOR 2. INSTITUTIONAL COORDINATION FOR INTEGRATION Extent and quality of coordination of climate risk management across relevant institutions	No	Partial	Yes
1. Has an authoritative body been tasked with coordinating climate change planning and actions?			
2. Does the coordinating body have high convening authority/hierarchical importance across other cross sectoral departments or ministries?			
3. Has a dedicated institutional mechanism been defined for coordination and implementation across sectors?			
4. Is there dedicated funding or certainty of long term funding for sustaining this institutional coordination mechanism?			
5. Is there regular contact between the coordinating body and relevant ministries and agencies (e.g. in key climate-sensitive sectors)?			
SCORE (No. of "YES" answers x 2, plus no. of "PARTIAL" answers x 1)			

INDICATOR 3. BUDGETING AND FINANCE Financial support for climate change mainstreaming & initiatives – funding available for local initiatives, locally-owned/driven	No	Partial	Yes
1. Is funding available to pilot measures that address climate change (e.g. adaptation, risk management, mitigation, low-carbon development)?			
2. Is funding available to roll out/support mainstreaming/integration of climate change?			
3. Do mechanisms/capacities exist for assessing the costs associated with measures to address climate change, such as those identified during climate screening/risk assessment?			
4. Is funding available to cover the costs of the necessary climate change measures identified (and costed) during climate screening/risk assessment?			
5. Are actions to address climate change supported by an authoritative financial entity (e.g. at national level, Ministry of Finance)?			
SCORE (No. of “YES” answers x 2, plus no. of “PARTIAL” answers x 1)			

INDICATOR 4. INSTITUTIONAL KNOWLEDGE/CAPACITY Level of knowledge and training of key personnel in climate change issues and mainstreaming processes	No	Partial	Yes
1. Does planning involve individuals with some awareness of climate change?			
2. Does planning involve individuals with formal training in climate change issues?			
3. Does planning involve individuals who have attended accredited courses on climate change, development, planning and “mainstreaming” issues?			
4. Is integration of climate change into planning overseen by individuals with in-depth knowledge of integration/mainstreaming processes?			
5. Are enough people with the required training involved in planning processes?			
SCORE (No. of “YES” answers x 2, plus no. of “PARTIAL” answers x 1)			

INDICATOR 5. USE OF CLIMATE INFORMATION Extent to which climate information is (i) used to inform responses to climate change and (ii) generated, at all levels of society	No	Partial	Yes
1. Does planning take account of observational data relating to climate trends and variability?			
2. Does planning take account of climate projections - is climate information (forecasts, projections, information on responses) readily accessible via information sharing platforms or networks (e.g. for screening)?			
3. Is there sufficient access to climate information generated by foreign and international organisations (e.g. IPCC, research bodies, academic institutions)?			
4. Is the use of scientific information from external sources complemented by the use of domestically generated information including local/traditional/ indigenous knowledge?			
5. Does the capacity to interpret and use climate information (e.g. in scenario planning, risk frameworks, vulnerability assessments) exist?			
SCORE (No. of "YES" answers x 2, plus no. of "PARTIAL" answers x 1)			

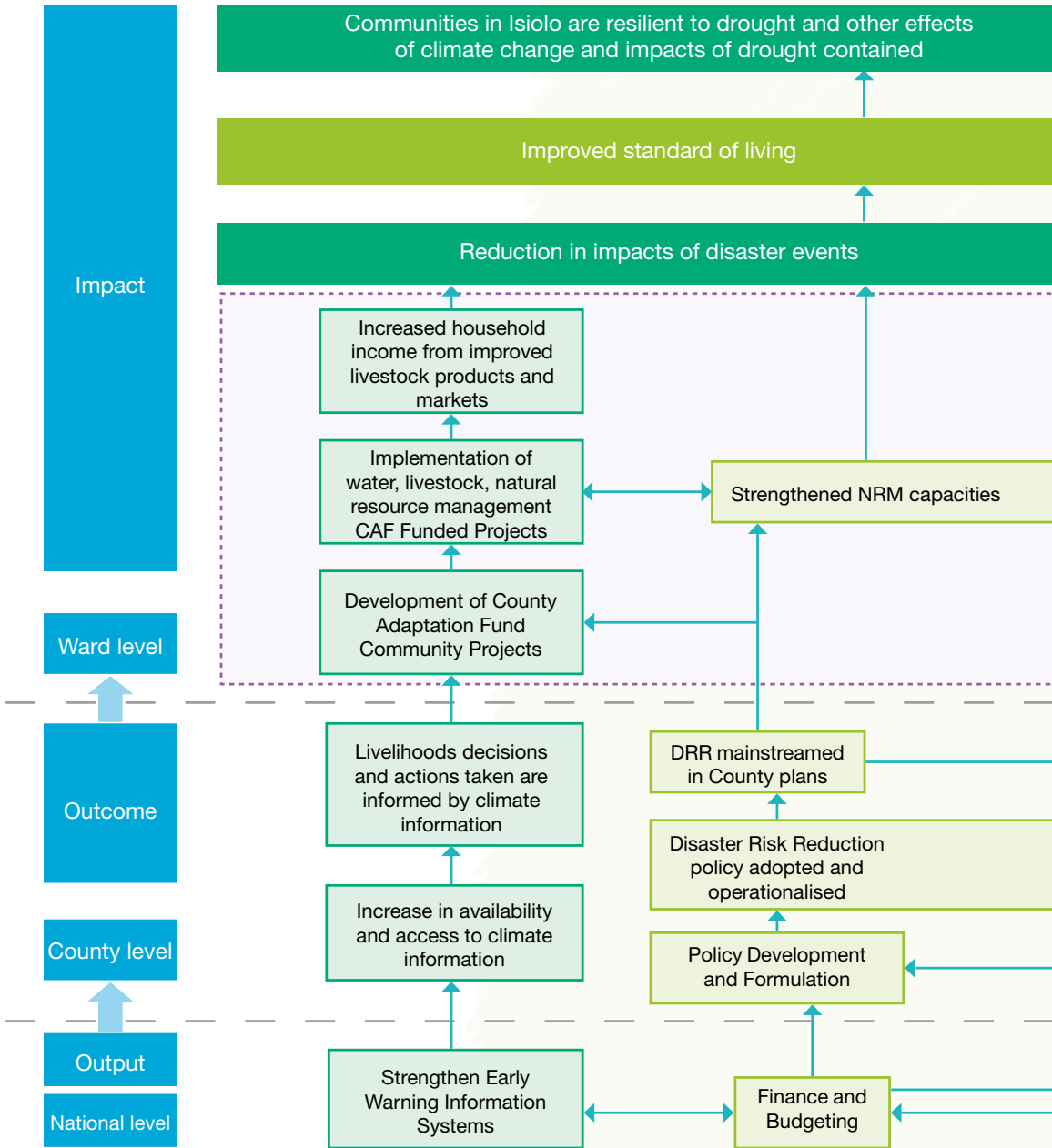
INDICATOR 6. PLANNING UNDER UNCERTAINTY Institutional capacity for decision-making under climatic uncertainty	No	Partial	Yes
1. Does planning (and wider climate change dialogue) incorporate 'envelopes of uncertainty', defined as plausible ranges of key climatic parameters over relevant timescales, informed by climate projections where feasible?			
2. Does planning make use of scenario planning exercises, preferably based on 'envelopes of uncertainty'?			
3. Does planning explicitly address risks associated with 'maladaptation'?			
4. Is planning guided by well-developed frameworks and methodologies that address uncertainty?			
5. Do mechanisms exist for ensuring that planning guidance is updated with new information on climate change as it becomes available?			
SCORE (No. of "YES" answers x 2, plus no. of "PARTIAL" answers x 1)			

INDICATOR 7. PARTICIPATION Quality of stakeholder engagement in decision-making to address climate change	No	Partial	Yes
1. Are all relevant levels of governance (national, provincial/district, local/ community) (required to be) represented in planning process?			
2. Are those who might be adversely affected by climate change initiatives represented in planning/decision-making?			
3. Are those most in need of / likely to benefit from measures to address climate change represented?			
4. Are the poorest and most marginalized members of society represented?			
5. Is the participation of all the above groups sustained throughout planning and implementation (i.e. at the start, end and throughout an initiative)?			
SCORE (No. of "YES" answers x 2, plus no. of "PARTIAL" answers x 1)			

INDICATOR 8. AWARENESS AMONG STAKEHOLDERS Level of awareness of climate change issues, risks and responses	No	Partial	Yes
1. Are stakeholders aware of climate change and its potential implications (e.g. for their sector, for society at large)?			
2. Are stakeholders aware of potential, available, or on-going climate change response options?			
3. Does relevant information reach key stakeholders (e.g.) in climate-sensitive sectors?			
4. Do institutional mandates raise awareness of and disseminate information about climate change (risks, impacts, responses, etc)?			
5. Is adequate funding available for awareness raising among relevant stakeholders and public at large?			
SCORE (No. of "YES" answers x 2, plus no. of "PARTIAL" answers x 1)			

Annex II.

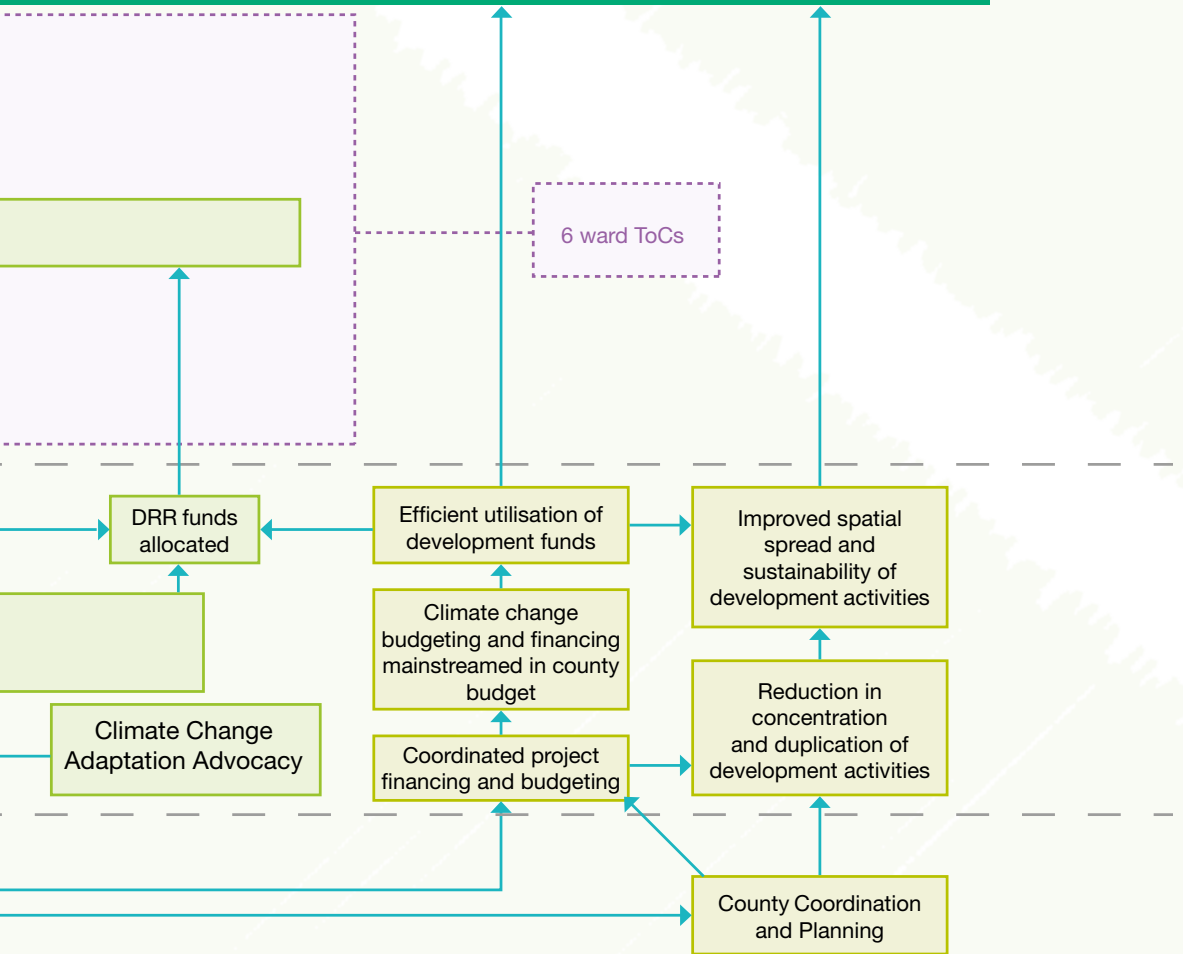
Sample composite theory of change from Isiolo county, Kenya



Communities in Isiolo are resilient to drought and other effects of climate change and impacts of drought contained

Improved standard of living

Reduction in impacts of disaster events



Annex III.

Sample district-level M&E plan from Tanzania

Key indicators (from theories of change)	Type of info/data to be collected	How (info/Data collected method)
Number of HOD, extension officers, community trained.	Information on no. of officers trained on climate change	Review of training reports Focus group discussion
Presence of coordination unit	Information on presence of climate change coordination units	Reports from different sources e.g. TMA, Departments etc.
Number of weather equipment installed	Data on purchased and installed weather instruments	Field visit of weather station. Reports through weather record cards
Radio/media disseminate climate information	Data and information on radio stations set up to disseminate climate info.	Field visit Questionnaire Communication department and TMA reports
Amount of funds available for risk management	Information on funds available to the district for climate risk management	District expenditure reports and budgets
Number of projects implemented	Data on climate change projects being implemented in the district	Field visit Public meeting District project implementation reports
Number of the project planned	Information on total number of projects planned, funds allocated	District plans Public meeting
Mortality rate	Deaths reported from climate hazards in the district	District department of health reports Health center reports
School dropouts	Pupils dropping out of school	Department of Education reports School registers

Source of data/ information	Who (individual responsible for Gathering/analysing information)	When (frequency of information collected)
Department VEO	District Coordinator	Quarterly
DED	District Coordinator	Quarterly
TMA Extension Officers	Coordinator TMA	Monthly
Community Radio/TV Station TMA	District Coordinator	Quarterly
DED	District Coordinator	Quarterly
VEOS DED Coordinator	District Coordinator	Quarterly
VEOS DED Coordinator TOT	District Coordinator	Quarterly
Health Departments	Coordinator District Reproductive and Child Health Officer (DRCHO)	Monthly
Education Departments VEOS, WEOS	Coordinator District Coordinator	Annual

Glossary

Adaptation intervention: An activity, project or programme that aims to help people or systems respond to the challenges and hazards posed by the effects of climate change.

Adaptive capacity: The ability or potential to respond effectively to changing stresses and shocks to manage or reduce risk.

Attribution: The process of establishing the primary cause for a noted change.

Baseline: Information and data that is gathered prior to the start of an intervention, which serves as an initial reference point from which future evaluations will be measured against.

Climate risk management: The extent and quality of institutional processes and mechanisms for addressing climate-related risks.

Contextualisation: A process of accounting for change in the frequency and severity of climate-related shocks and stresses over time.

Evaluation: An occasional or periodic activity to assess achievements, in a systematic and objective manner, for the purpose of informing stakeholders, re-orienting future activities and/or drawing lessons for future interventions.

Hazards (climate-related): physical manifestations of climate change and variability including climate-related phenomena that can be either rapid onset, coming in the form of a shock – for example, a flood – or slow onset, or a stress, such as variable rainfall.

Impacts: Longer-term changes that result from outputs and outcomes.

Indicators: A quantitative or qualitative variable that provides a simple basis for assessing achievement, change or performance.

Livelihoods: The capabilities, assets (including both material and social resources) and activities required for a means of living.

Longitudinal surveys: A methodology that involves the tracking of changes in circumstances of the same individuals or households over time.

Monitoring: A process to keep track of progress and external factors, on a continual basis, to inform management decisions and allow the timely adoption of corrective measures, where necessary.

Outcomes: Shorter-term changes in the population or system targeted by the intervention, which result from the outputs.

Outputs: Goods and services delivered by an intervention

Resilience: The ability of a system to resist, absorb and recover from the effects of hazards in a timely and efficient manner, preserving or restoring its essential basic structures, functions and identity.

Theory of change (ToC): A pathway or pathways connecting activities to the anticipated changes of a policy or programme through a set of causal mechanisms.

Wellbeing: Aspects of human development and livelihoods such as health, nutrition, poverty/economic status, education, assets, and lives.

Vulnerability: Vulnerability to climate change is the degree to which geophysical, biological and socio-economic systems are susceptible to, and unable to cope with, adverse impacts of climate change.

IIED is a policy and action research organisation promoting sustainable development and linking local priorities to global challenges. We are based in London and work on five continents with some of the world's most vulnerable people to strengthen their voice in the decision-making arenas that affect them.

The Climate Change Group works with partners to help secure fair and equitable solutions to climate change by combining appropriate support for adaptation by the poor in low- and middle-income countries, with ambitious and practical mitigation targets.

Garama 3C Ltd is a small UK-based consultancy firm specialising in climate change and international development.

The Institute for Social and Environmental Transition – Pakistan is a research organisation based in Islamabad and affiliated to ISET International.

Echnoserve, Ethiopia is a private research consultancy company based in Addis Ababa.

ACCRA is a consortium of NGOs working on climate resilience issues.

LTS Africa is a leading provider of technical services in support of sustainable development.

The Integrated Development Society, Nepal (IDS Nepal) is a non-profit development NGO.

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Tracking adaptation and measuring development (TAMD) is a conceptual framework to monitor and evaluate climate change adaptation. This manual seeks to guide local actors in governments, NGOs and communities to use TAMD in local planning. TAMD evaluates adaptation success as a combination of how well institutions manage climate risks and how successfully adaptation actions keep development on course.

This manual is part of a set of three publications that build on the experiences of TAMD pilot countries to give guidance on how to apply TAMD. There is a general step by step guide for all users, a manual for national governments and this manual specifically for local planners.

This is the first version of this guidance building on the experience of testing TAMD in Kenya, Mozambique, Nepal, Pakistan, Cambodia and Ethiopia. This guidance will be updated and revised as more experience is generated on each step.



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