

Resource 3: Monitoring and Evaluation indicators and data collection approaches

This resource provides a list of example indicators and potential approaches to data collection when considering how to conduct monitoring and evaluation of climate adaptation projects. The list is grouped into impact indicators (measuring the impact of a project, usually via the change against the baseline) and process indicators (namely community engagement approaches). Impact indicators specific to flood solutions are listed first, followed by those focused on heat islands and then more general approaches to conducting monitoring and evaluation on more general climate and environment.

The list is non-exhaustive but aims to provide the reader with a starting point for designing an approach to monitoring and evaluation, before tailoring the indicators and data collection for a specific project.

Indicator Group	Potential indicators	Potential approach to data collection <i>Time frames for data collection</i>
Impact Indicators		
Flood specific	Number of flood incidents	<ul style="list-style-type: none"> Historical data (GIS) and local interviews to establish key flooding zones and identify the key parameters to investigate (what constitutes a flood). GIS, meteorological data and remote sensor data to monitor flood occurrences. Survey data to validate impact of flooding. Monthly data, evaluated annually.
Flood specific	Amount of standing water in vulnerable areas	<ul style="list-style-type: none"> Using same data collection systems as above (GIS, meteorological and remote sensor). x measure of spots and height in each Monthly data, evaluated annually.
Flood specific	Flood damage	<ul style="list-style-type: none"> Financial impact analysis based on number of households impacted x estimated impact. Impact on public goods to be calculated in a similar way. e.g. damage pavement would be m² of pavement damaged x impact by m² Data collected and evaluated annually.
Heat island	Decrease in temperature	<ul style="list-style-type: none"> Clearly define sites and areas for measurement. Meteorological and remote sensor data. Monthly data, evaluated annually.
Heat island	Number of illnesses / fatalities	<ul style="list-style-type: none"> Number of fatalities Rate of illnesses linked to intense heat (number of hospitalisations or rate of heat-linked illnesses like fainting/collapsing). Monthly data, evaluated annually.
General environmental	Improvement of quality of life	<ul style="list-style-type: none"> Improvements in aggregate indices, overarching metrics like life expectancy, quality of life,

		<p>happiness etc.</p> <ul style="list-style-type: none"> Increases in participation in certain activity (community activities like sports, volunteering, etc). Data collected and evaluated annually.
General environmental	Qualitative change	<ul style="list-style-type: none"> Site visit records (against a questionnaire or consistent survey). Ground surveys. Data collected and evaluated quarterly.
General environmental	Biodiversity impact	<ul style="list-style-type: none"> Volume measurement (e.g. number of trees planted). Key to this would be measurement over time (e.g. volume that have survived x months/years). Forest area increases (m² or km²). Data collected and evaluated annually.
Process Indicators		
Community engagement	Engagement and awareness	<ul style="list-style-type: none"> Surveys and questionnaires monitoring level of engagement with programme, awareness of initiatives, and level of understanding to monitor engagement level. Surveys monitoring sentiment against the initiatives and programmes can be used to measure impact/sentiment on the engagement. Workshop participation. Feedback form completion rates. % of community members that have heard about a change. Data collected and evaluated quarterly.
Community engagement	Involvement in ongoing ownership and maintenance	<ul style="list-style-type: none"> Interviews, surveys and test completion rates. Learning and training completion rates. Qualitative metrics on quality of project or degradation of project over time. Employment statistics and employee retainment rates. Data collected and evaluated quarterly.

It is worth noting that although historical data may provide a strong baseline for measuring impact, the baseline must continue to be updated over time. When measuring a change in temperature over several years in a specific site or local environment, one must also factor in the changing temperature over time for the surrounding area. *For example, if Mérida's average temperature will be 2 degrees Celsius higher in 2050, one should factor in the wider increase in temperature when measuring the impact of an urban heat island project (as the decrease in temperature created by the project may be offset over time by wider external factors).*