Second meeting of the global network of basins working on climate change adaptation
Session 4: Developing and implementing transboundary climate change adaptation strategies

Monitoring and evaluation of climate change, impacts and adaptation in the transboundary context

Anja Waldraff
anja.waldraff@giz.de
Outline

1) GIZ: Analysis of M&E of adaptation at aggregated levels

2) MRC: Establishment of the MRC system for monitoring and reporting on climate change, impacts and adaptation in the Lower Mekong Basin
Analysis of M&E of adaptation at aggregated levels – undertaken in 2013 –

M&E of adaptation focused mostly on development of indicator systems at *project and programme level*.

Little attention for higher or more aggregated levels – i.e. portfolio, national, regional and international – with more strategic questions, such as:

- How is the climate changing?
- What are the observed impacts of climate change?
- What is the progress towards meeting national/regional adaptation and development goals?
- What is the progress in implementing adaptation activities that respond to climate impacts?
- What are the benefits or results of implementing these adaptation activities?
- What works in adapting to climate change and why?

Link to publication:
Contact person: Julia Olivier, julia.olivier@giz.de
## Analysis of M&E of adaptation at aggregated levels – Comparative analysis of 10 systems –

<table>
<thead>
<tr>
<th>Country or Program</th>
<th>M&amp;E for adaptation framed in terms of</th>
<th>Purpose</th>
<th>Level(s) of application</th>
<th>Aggregation based on</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nepal</td>
<td>National Climate Change Program (CCP)</td>
<td>Monitor progress, achievements, and lessons-learned from the implementation of the CCP</td>
<td>Program</td>
<td>Eight national projects of the CCP</td>
</tr>
<tr>
<td></td>
<td>Environment Friendly Local Governance (EFLG) framework</td>
<td>Monitor and evaluate environmentally friendly development activities (including the integration of climate change into local development plans and programs.) NOTE: This is not a M&amp;E system for adaptation only.</td>
<td>Subnational</td>
<td>Sectors (environment, climate, disaster risk reduction and waste management)</td>
</tr>
<tr>
<td>Norway</td>
<td>2008 Adaptation Action Plan; 2010 National Vulnerability Assessment</td>
<td>Learn what is working in adaptation and why (focusing on qualitative information) in order to inform policy</td>
<td>National, Municipal</td>
<td>Results of surveys, research, pilot projects, and consultations</td>
</tr>
<tr>
<td>Philippines</td>
<td>2011 National Climate Change Action Plan (NCCAP)</td>
<td>Monitor progress in implementing the NCCAP and evaluate the efficiency, effectiveness and impacts of the Plan</td>
<td>National</td>
<td>Seven strategic priorities of the NCCAP</td>
</tr>
<tr>
<td>Pilot Program for Climate Resilience (PPCR)</td>
<td>Climate-responsive development planning; PPCR activities</td>
<td>Monitor national progress towards climate-resilient development and monitor and report on implementation of PPCR</td>
<td>National Program</td>
<td>Projects from the 18 PPCR countries</td>
</tr>
<tr>
<td>United Kingdom (UK)</td>
<td>2013 National Adaptation Program (NAP)</td>
<td>Monitor the country’s preparedness to climate impacts in priority areas</td>
<td>National</td>
<td>Seven policy themes of the NAP</td>
</tr>
</tbody>
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Dekens et al. (2013).
## Analysis of M&E of adaptation at aggregated levels
– Comparative analysis of 10 systems –

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<tr>
<td>France</td>
<td>2011 National Adaptation Plan (NAP)</td>
<td>Monitor progress in implementing NAP actions and, eventually where possible, evaluate their impacts</td>
<td>National</td>
<td>20 sectors of the NAP</td>
</tr>
<tr>
<td>Germany</td>
<td>2008 German Strategy for Adaptation to Climate Change (DAS)</td>
<td>Monitor climate change impacts and adaptation responses for the 15 action fields outlined in the DAS</td>
<td>National</td>
<td>15 action fields (including two cross-sectional fields) of the DAS</td>
</tr>
<tr>
<td>Kenya</td>
<td>National Climate Change Action Plan (NCCAP) 2013-2017</td>
<td>Measure, monitor, evaluate, verify and report the results of adaptation actions</td>
<td>National County</td>
<td>Sector and geographic scale</td>
</tr>
<tr>
<td>Mekong River Commission (MRC)</td>
<td>Adaptation planning at different levels in the Lower Mekong Basin</td>
<td>Monitor and report on the status of climate change and adaptation in the Mekong region</td>
<td>River-basin</td>
<td>Sector and geographic scale</td>
</tr>
<tr>
<td>Morocco</td>
<td>System for Regional Information on Environment (SIRE)</td>
<td>Monitor and report on the status of climate change impacts, vulnerabilities and adaptation in two regions</td>
<td>Sub-national</td>
<td>Sector (water, agriculture and biodiversity/forests) and geographic scale</td>
</tr>
</tbody>
</table>

Dekens et al. (2013).
Analysis of M&E of adaptation at aggregated levels - MRC

Context

Programmatic context

The Climate and Adaptation Initiative (CAI), a regional initiative of the Sida, supported by the Mekong River Commission (MRC), was established in 2008 and is a program implemented through the Mekong Regional Commission (MRC). The Mekong River Commission (MRC) is a regional intergovernmental body established in 1995 between the riparian states of Cambodia, Laos, Thailand, Vietnam, and Myanmar. The MRC has a mandate to coordinate and harmonize the management of the Mekong River basin, focusing on the sustainable development of the river and its resources. The MRC is governed by its member countries, which are responsible for implementing and monitoring the strategies and actions identified in the Mekong River Commission (MRC) strategy document. The MRC also employs an independent Evaluation Office (Eo) to assess the effectiveness and efficiency of its programs and activities. The Eo provides annual reports to the MRC's Governing Board, which reviews and evaluates the MRC's work and makes recommendations for improvements.

Purpose of the M&E system

The overall purpose of the monitoring and evaluation system is to monitor changes in key climate, social, and economic indicators, and to assess the effectiveness and efficiency of the MRC's programs and activities. The M&E system is designed to provide information to support decision-making at the regional, national, and subnational levels. The M&E system is also designed to support the development of evidence-based policies and strategies for climate change adaptation in the Mekong River basin. The M&E system includes a range of indicators and evaluation methods, including baseline assessments, impact assessments, and process evaluations. The M&E system is expected to contribute to the sustainable development of the Mekong River basin and to the achievement of the MRC's strategic objectives.
Mekong River Commission – Impacts and change?

Output 3.2 – MRC Climate Change and Adaptation Initiative:
System for monitoring and reporting on the status of climate change and adaptation in the Mekong region is developed and promoted.
Work plan of CCAI
Assessments and Development of Adaptation Strategy 2013-2015

- Climate information, regional climate change scenarios and treatment of uncertainties (2013)
- Assessment of impacts on flow regime (2013)
- Assessment of changes in climate extremes and hydrological extremes (2013-2014)
- Basin-wide assessment with piloting adaptation options:
  - Ecosystem
  - Food security
  - Floods
  - Droughts
  - Hydropower (2013-2014)
- Database and monitoring system (2013-2015)
- Capacity building will be included in all these activities (2013)
- Literature review (2013)

- Mekong climate change forum (2013, 2016)
- Capacity needs assessment (2013)
- Report on status of climate change and adaptation in the LMB (2013, 2016)

- Compilation of experiences from other international river basins (2012, 2013)
- Roundtable discussions and study visits (2012, 2013)

  - Assessment of impacts on flow regime (2013)
  - Assessment of changes in climate extremes and hydrological extremes (2013-2014)
  - Basin-wide assessment with piloting adaptation options (2013-2014)
  - Database and monitoring system (2013-2015)
  - Policy review (2013)
  - Literature review (2013)

- Country-run demonstration projects (2011-2014)
- Regional climate change and adaptation strategy (2014-2015)
Identified areas for monitoring

The adaptation planning process, Source: CCAI (2013).

Exposure Indicators

Biophysical / socio-economic Indicators

Impact dimensions
1. Water
2. Land
3. Agriculture
4. Biodiversity
5. Fisheries
6. Hydropower
7. Food Security
8. Poverty/Employment

Outcome Indicators

Process Indicators
Indicators: Selection Criteria Approach

Step 1: Long list of existing indicators
  • Within LMB
  • Outside LMB

Step 2: Selection Criteria
  • Relevant to climate change and MRC/LMB → 98 indicators

Step 3: Priority Setting
  → Score for each indicator
  • Significance to CCAI
  • Measurability
  • Data Availability
  • Acquisition Costs
  • Ease of Understanding
  • Applied by MRC
List with 98 selected indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Selection Criteria (1=negative, 3=positive)</th>
<th>Coverage</th>
<th>Calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Selected indicators</td>
<td>Spatial</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Time</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Temporal</td>
<td></td>
</tr>
<tr>
<td>Indicator</td>
<td></td>
<td>Data source</td>
<td></td>
</tr>
<tr>
<td>EXPOSURE</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Change in annual temperature</td>
<td>CCAI, 3</td>
<td></td>
<td>current - ref (1960-1990); 2050-current; 2100-current</td>
</tr>
<tr>
<td>Mean monthly temperature</td>
<td></td>
<td></td>
<td>GIS average per region</td>
</tr>
<tr>
<td>Number of hot days</td>
<td></td>
<td></td>
<td>per year: days with temp &gt; 35oC</td>
</tr>
<tr>
<td>Extreme precipitation</td>
<td></td>
<td></td>
<td>current - ref (1960-1990); 2050-current; 2100-current</td>
</tr>
<tr>
<td>Change in annual precipitation</td>
<td>CCAI, 3</td>
<td></td>
<td>GIS average per region</td>
</tr>
<tr>
<td>Monthly precipitation</td>
<td></td>
<td></td>
<td>per year: highest rainfall</td>
</tr>
<tr>
<td>Extreme precipitation events</td>
<td></td>
<td></td>
<td>per year: days with precipitation &gt; 100 mm</td>
</tr>
<tr>
<td>Change in greenhouse emission</td>
<td></td>
<td></td>
<td>current - ref (1960-1990); 2050-current; 2100-current</td>
</tr>
<tr>
<td>GHG emission total</td>
<td></td>
<td></td>
<td>Total of four countries</td>
</tr>
<tr>
<td>GHG emission per capita</td>
<td></td>
<td></td>
<td>Average of four countries</td>
</tr>
<tr>
<td>Potential evapotranspiration</td>
<td></td>
<td></td>
<td>Penman Monteith or Hargreaves</td>
</tr>
<tr>
<td>Changes in large storms</td>
<td></td>
<td></td>
<td>current - ref (1960-1990); 2050-current; 2100-current</td>
</tr>
</tbody>
</table>

Source: CCAI.
Next steps of the establishment process of the MRC system

2. Selection of a set of indicators (on-going)
An initial set of indicators to monitor changes in climate parameters, climate change impacts and adaptation has been developed with the support of GIZ by international consultants and is being reviewed by the Member Countries.

3. Development of methods for data collection and analysis (on-going)
This step contributes to define the baseline and the indicators’ future values.

4. Methods piloting (forthcoming)
Pilot projects will test the methods and the set of indicators.

5. Reporting, refining and capacity transfer (forthcoming)
A report on the status of climate, impacts, vulnerability and adaptation performance will be released. This step also focuses on maintaining and further developing the operation of the system including transferring capacity to the national level.

Thank you very much for your attention!

Sources:

Mekong River Commission

GIZ
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P.O. Box 9233
Vientiane
Lao PDR

T  +856 21 263263 ext. 3143
E  mrc@giz.de
I  www.giz.de

Responsible
Dr. Philipp Magiera

Author(s)
Anja Waldraff

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