

Call for submission on indicators of adaptation and resilience at the national and/or local level or for specific sectors¹

Name of the organization or entity:

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Type of organization/entity:

Please choose as appropriate:

- | | |
|---|---|
| <input type="checkbox"/> Local government/ municipal authority | <input type="checkbox"/> Regional center/network/initiative |
| <input type="checkbox"/> Intergovernmental organization (IGO) | <input type="checkbox"/> Research institution |
| <input type="checkbox"/> National/public entity | <input type="checkbox"/> UN and affiliated organization |
| <input checked="" type="checkbox"/> Non-governmental organization (NGO) | <input type="checkbox"/> University/education/training organization |
| <input type="checkbox"/> Private sector | |

Scale of operation:

- | | |
|---|--|
| <input checked="" type="checkbox"/> Local | <input checked="" type="checkbox"/> National |
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Specific sectors addressed:

- | | |
|---|--|
| <input type="checkbox"/> Adaptation finance | <input type="checkbox"/> Gender |
| <input type="checkbox"/> Agriculture | <input type="checkbox"/> Health |
| <input type="checkbox"/> Biodiversity | <input type="checkbox"/> Heavy industry |
| <input type="checkbox"/> Community-based adaptation | <input type="checkbox"/> Human settlements |
| <input type="checkbox"/> Disaster risk reduction | <input type="checkbox"/> Indigenous and traditional knowledge |
| <input type="checkbox"/> Ecosystem-based adaptation | <input type="checkbox"/> Infrastructure |
| <input type="checkbox"/> Ecosystems | <input type="checkbox"/> Services |
| <input type="checkbox"/> Energy | <input type="checkbox"/> Tourism |
| <input type="checkbox"/> Food security | <input type="checkbox"/> Urban resilience |
| <input type="checkbox"/> Water resources | <input checked="" type="checkbox"/> Other (Please specify below): Any sectors covered by countries' or projects' M&E system. |

¹ FCCC/SBSTA/2016/2, paragraph 18.

City(ies)/Country(ies)/Region(s) of operation (if appropriate):

Global, and numerous national and sub-national cases (please see below).

Description of relevant activities/processes or research:

On behalf of its commissioning parties, namely the German Federal Ministry for Economic Cooperation and Development (BMZ) and the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB), GIZ has been working on **Monitoring and Evaluation (M&E) of adaptation** with multiple partner governments at national and programme/project level, including in Bolivia, Brazil, Cambodia, Grenada, Mexico, Mongolia, Morocco, Mozambique, the Philippines, South Africa, Thailand and with the Mekong River Commission. GIZ's work on adaptation M&E includes **three pillars**:

1. **Development of tools and approaches**, including indicators, for M&E of adaptation
2. **Supporting partner governments** in the development and application of country-specific or project-specific adaptation M&E systems
3. **International knowledge exchange** through events, webinars and publications

Technical cooperation on adaptation M&E has been provided by several global and bilateral projects of GIZ and in particular by the specialised project "Effective Adaptation Finance – M&E Adapt". The **Adaptation M&E Toolbox** includes innovative methods and approaches developed by GIZ for the assessment of adaptation actions at national and local level (<http://www.adaptationcommunity.net/toolbox/>). A detailed overview and analysis of GIZ's experiences with assessing the results of its adaptation programmes and projects will be published as part of the Adaptation Perspectives Series of UNEP in December 2017 (see references).

Description of relevant tools/methods:

The multi-year experience by GIZ and partner governments in developing adaptation M&E systems has shown that it is useful to distinguish between different levels of application.

Country-specific adaptation M&E systems

National adaptation M&E systems differ substantially between countries in accordance with the national policy context and climate risk profile, as well as due to different purposes of undertaking M&E. GIZ has developed the following tools to assist national governments in this regard:

- **Guidebook for the development of national adaptation M&E systems** (GIZ & IISD, 2015). The guidebook describes four building blocks of adaptation M&E systems and guides users through a number of key questions with particular attention on the national adaptation plan (NAP) process. The guidebook has been developed in collaboration with the UNFCCC LDC Expert Group (LEG) and the Adaptation Committee (AC) and constitutes supplementary material to the NAP Technical Guidelines. Several countries, including Togo and Thailand, have been using the building blocks of the guidebook to inform the development of their national adaptation M&E systems.
- **Repository of adaptation indicators** (GIZ & IISD, 2014). This repository compiles indicators used by national adaptation systems in 2013 or earlier. Indicators are categorised into climate change impacts, adaptation actions and adaptation results. For each indicator, its context of application and relevance for adaptation is explained. The repository serves as illustration rather than as a collection of "ready-to-use indicators", since indicators should always be tailored to the specific purpose and data availability.

- **Factsheets and analysis of national adaptation M&E systems** (GIZ & IISD, 2014 and GIZ, 2017). This publication analysed ten adaptation M&E systems from France, Germany, Kenya, Morocco, Nepal, Norway, the Philippines, the UK, as well as the Mekong River Commission and the Pilot Programme for Climate Resilience (PPCR). The study provides lessons learned from early experiences of these systems in practice. The factsheets were updated in 2017 and additional countries added including Austria, Bolivia, Finland, and South Africa.
- **Linking and aggregating adaptation M&E across scales** (Leiter, 2015). Responding to a guiding question of the UNFCCC Adaptation Committee M&E Workshop in Fiji 2013, three ways of linking national and sub-national adaptation M&E systems are proposed and illustrated with practical examples, including from countries supported by GIZ.
- **Assessing and monitoring climate resilience** (GIZ & UNU-EHS, 2014). This discussion paper provides a conceptual framework on how to assess resilience based on absorptive, adaptive and transformative capacity. A **climate resilience matrix** is proposed to assess resilience along these capacities as well as along the social, economic, ecologic, physical, and infrastructure dimensions. A list of indicators based on globally available data sources is identified that could be used as part of a national assessment of climate resilience.

M&E of adaptation programmes/projects

Adaptation projects can build on established M&E frameworks and concepts such as theories of change, but the adaptation-specific aspects have to be considered. To support this, GIZ has developed the following tools:

- **Guidebook “Adaptation made to measure”** (GIZ, 2012/2013): it provides guidance on how to develop adaptation projects and respective results-based monitoring systems based on five steps: (1) assessing the context, (2) defining the contribution to adaptation, (3) developing an adaptation-specific theory of change, (4) defining indicators and the baseline, and (5) operationalising the M&E system. The guidebook is accompanied by an **excel tool (“Monitoring adaptation to climate change – MACC”)** (GIZ, 2014/2016): to facilitate data gathering and analysis. Data for up to 33 indicators can be entered and monitored through the tool which generates automated progress charts for project management.
- **The Vulnerability Sourcebook: Monitoring climate vulnerability and risk over time to assess adaptation outcomes** (GIZ, Adelphi & EURAC, 2014; and GIZ & EURAC, 2017). The Vulnerability Sourcebook proposes a standardised way to develop and perform vulnerability assessments. If the assessments are repeated over time, insights about the changes in vulnerability can be used to assess the effectiveness of adaptation interventions. An example of this approach by an adaptation project in Bolivia is described in detail in the Annex of the Vulnerability Sourcebook and discussed in Leiter (2017). In 2017, a supplement was published on how to apply the methodology of the Vulnerability Sourcebook to the new terminology of the IPCC’s Fifth Assessment Report which highlights the concept of climate risks.
- **Quantification of economic and health benefits of adaptation projects** (GIZ & Perspectives Climate Change, 2013). This approach quantifies the benefits of adaptation projects by determining how far they reduced negative health impacts (“saved health”) and negative economic damages (“saved wealth”). The approach was piloted in a coastal protection project in Viet Nam.
- **Impact Evaluation Guidebook for Adaptation Projects** (GIZ & CEVAL, 2015). This guidebook outlines six types of impact evaluations and how they can be applied to climate adaptation projects. Guidance is provided for the selecting of an appropriate evaluation design and illustrated with the example of an urban adaptation project in India.

Adaptation M&E tools across levels

The following tools are applicable to all levels:

- **The Adaptation M&E Navigator** (GIZ, 2015; Leiter, 2017). The Adaptation M&E Navigator helps practitioners to choose a suitable M&E approach for their particular M&E purpose. Nine common purposes for undertaking adaptation M&E are outlined and each is linked to suitable M&E approaches. Details for each M&E approach are provided in tables including references to practical examples. The Adaptation M&E Navigator was presented at the 2nd International Conference on Evaluating Climate Change and Sustainable Development. It is available as technical book chapter and interactive online tool (<http://www.adaptationcommunity.net/monitoring-evaluation/multi-level-adaptation-me/>)
- **The Adaptation M&E Training** (GIZ 2013/2016). This interactive training course (2-3 days) gives participants a systematic introduction to adaptation M&E. The content can be tailored to the needs of the participants and a focus can be put either on national or project-level M&E, or both. The course can also be combined with the GIZ/OECD training '[Integrating climate change adaptation into development planning](#)'. Modules of this training have been used in the development process of adaptation M&E systems in Bolivia, Grenada, Mexico, South Africa, the Philippines, and Thailand.

Key outcomes of the activities/processes undertaken:

Results of the activities can be structured according to the three pillars of GIZ's work on adaptation M&E.

1. Development of tools and approaches, including indicators, for M&E of adaptation

The tools and approaches for adaptation M&E developed by GIZ have been widely shared and applied by government and non-government actors at national and sub-national level. For example, the guidebook for national adaptation M&E systems has been the basis for the development of adaptation M&E systems in Thailand and Togo and has informed the process in numerous additional countries, including Brazil. The Vulnerability Sourcebook has been used in at least a dozen countries to conduct vulnerability assessments at the local or national level, e.g. in Bangladesh, Benin, Bolivia, Brazil, Burundi, Mauretania, Morocco, Pakistan and Thailand. Government officials have repeatedly confirmed the usefulness of the adaptation M&E tools, in particular the guidebooks and the repository of adaptation indicators. Each tool has been downloaded several hundred times at www.adaptationcommunity.net.

The tools have also inspired or informed the development of publications and tools by other organisations, including the NAP Global Network. Furthermore, the tools have been widely cited, for instance by the Adaptation Committee, the European Environment Agency, the Global Environment Facility, the OECD, the World Bank, as well as by several academic articles.

2. Supporting partner governments in the development and application of country-specific or project-specific adaptation M&E systems

GIZ has contributed to the development of national and regional (sub-national) adaptation M&E systems in partner countries in South America, Africa and Asia. For instance, South Africa with support from the BMZ-funded project "Effective Adaptation Finance – M&E Adapt" has developed desired adaptation outcomes and is reporting its progress through annual climate change response reports. The first report was published in 2016 and presents a significant step of South Africa in implementing the provisions on M&E laid out by its National Climate Change Response White Paper. In another example, the Mexican State of Vera Cruz with support from the GIZ projects M&E Adapt (BMZ-funded) and the Mexican-German Alliance on Climate Change (BMUB-funded) developed an indicator system

for adaptation that is being used by 19 state ministries to track the implementation status and results of their sectoral climate change plans. Further details of the results of GIZ support on adaptation M&E can be found in the relevant country M&E factsheets (GIZ, 2017). In addition, GIZ has supported capacity building of government officials on adaptation M&E through its adaptation M&E training courses which have been applied in Bolivia, Mexico, Germany, Grenada, the Philippines and South Africa.

3. International knowledge exchange through events, webinars and publications

GIZ has hosted and contributed to numerous international events discussing how adaptation progress can be measured at project and national level with a particular focus on the UNFCCC context. For instance, the project M&E Adapt has held two UNFCCC side events in 2014 and 2015 together with partner organisations and governments, and has been contributing to other side events at COP22 and COP23 (forthcoming). GIZ also partnered with the LDC Expert Group to present on M&E of adaptation during the regional NAP training workshops. On behalf of BMZ, GIZ has been co-funding the international community of practice “Climate-Eval” and co-hosted the [2nd International Conference on Evaluating Climate Change and Sustainable Development](#) which produced a [collection of good practice methods and examples](#). Country experiences on adaptation M&E are also shared through international networks which are implemented or supported by GIZ including the NDC Partnership and the [Partnership on Transparency in the Paris Agreement](#). A list of events on adaptation M&E with GIZ contribution is available at: <http://www.adaptationcommunity.net/monitoring-evaluation/events/>

Since 2013 GIZ has been conducting multiple **webinars** on adaptation M&E through its online platform www.AdaptationCommunity.net as well as with partner organisations including the NAP Global Network and the GEF. Topics have ranged from experiences with national adaptation M&E systems over M&E of ecosystem-based adaptation to the use of impact evaluations for adaptation projects. A list of webinars on adaptation M&E with GIZ contribution is available at: <http://www.adaptationcommunity.net/webinars/?topic=monitoring-evaluation>

Description of lessons learned and good practices identified:

The experiences gained through GIZ projects involving partner governments and partner organisations working on climate adaptation from national policy to local implementation have confirmed a number of important lessons learned:

- **There is no one-size-fits all approach to adaptation M&E.** Instead, the context and purpose determine which M&E approach is useful and appropriate.
- **A global set of common adaptation indicators would neither be feasible nor useful.** As noted by the 5th Assessment Report of the IPCC, there is no global reference metric for adaptation. Adaptation differs in this regard from mitigation, which can be measured on the basis of physical parameters (temperature; parts per million in the atmosphere; tons of emissions) whereas adaptation is typically assessed through constructs such as vulnerability or resilience for which no objective way of measurement exists (Leiter & Pringle, 2017).
- **Adaptation M&E should not start with indicators.** In order to be useful, any development of an adaptation M&E system should first clarify the purpose, information needs and target audience before deciding on the M&E method and associated indicators.
- **Repositories of indicators can provide examples, but indicators need to fit the specific context and purpose.** Illustrations of possible adaptation indicators have been found useful by practitioners to get ideas, but the formulation of indicators needs to still consider the specific context in order to be useful.

- **Country-specific adaptation M&E systems differ from project or programme M&E.** National adaptation M&E systems differ substantially between countries because of their different contexts and climate vulnerabilities. They employ different approaches depending on the purpose they are addressing, ranging from monitoring vulnerability over time to tracking the implementation of a climate policy or the collective performance of a portfolio of adaptation projects. Hence, national adaptation M&E systems are generally more diverse than methods used for project M&E, and developing national adaptation M&E systems can be more complex than just upscaling methods familiar from M&E of programmes and projects.
- **Global or regional vulnerability or resilience indices have limitations for use in decision-making.** Condensing many factors into one single number or ranking is masking the underlying causes of the score, yet it is precisely this information that would be needed to inform planning and decision-making. Global indices on climate vulnerability or risk also often vary in their ranking results and thus cannot be taken as sole basis for decisions such as the allocation of funding (GIZ, 2017).

Further experiences and lessons learned about national adaptation M&E systems are compiled in GIZ & IISD (2014), GIZ & IISD (2015), Leiter (2015), GIZ (2017) as well as in the policy briefs available at: <http://www.adaptationcommunity.net/monitoring-evaluation/policy-briefs/>

Description of key challenges identified:

Some of the key challenges in regard to the development of national adaptation M&E systems include:

- Many countries have found it challenging to clearly define the specific purpose and scope of their national adaptation M&E system.
- Lack of buy-in from line ministries and relevant government actors can impair the operationalization of adaptation M&E.
- The process of stakeholder engagement involving many government and non-government entities from national to sub-national level has been very time consuming in most cases and often resulted in multi-year development phases.
- Challenges of data availability and data sharing have also been reported.
- A limited mandate of the institution in charge of the development and coordination of adaptation information can lead to a delay or incomplete implementation of M&E.

Planned next steps (as appropriate):

GIZ continues to develop tools and approaches for adaptation M&E and is working jointly with partner governments and other organisations to advance adaptation M&E and transparency at all levels. Future publications, webinars and event announcements are available at: <http://www.adaptationcommunity.net/monitoring-evaluation/>

Relevant hyperlinks:

GIZ (2013). [Adaptation made to measure: A guidebook to the design and results-based monitoring of climate change adaptation projects](#) (2nd edition). [Also available in [Spanish](#) and [French](#)]

GIZ & Perspectives Climate Change (2013). [Saved health, saved wealth: an approach to quantifying the benefits of climate change adaptation](#). Practical application in coastal protection projects in Viet Nam.

GIZ & IISD (2014). [Repository of Adaptation Indicators](#). Real case examples from national Monitoring and Evaluation Systems. [Also available in [Spanish](#)]

GIZ, Adelphi and EURAC (2014). [The vulnerability sourcebook. Concept and guidelines for standardised vulnerability assessments](#). [Also available in Spanish and French]

GIZ & IISD (2014). [Monitoring and evaluating adaptation at aggregated levels: A comparative analysis of ten systems](#). [Also available in [Spanish](#) and [French](#)]

GIZ & UNU-EHS (2014). [Assessing and Monitoring Climate Resilience. From Theoretical Considerations to Practically Applicable Tools – A Discussion Paper](#). [Also available in [Spanish](#)]

GIZ & CEVAL (2015). [Impact Evaluation Guidebook for Climate Change Adaptation Projects](#).

GIZ & IISD (2015) [in collaboration with the UNFCCC Adaptation Committee and the LDC Expert Group]. [Developing national adaptation monitoring and evaluation systems: A guidebook](#). [Also available in [French](#) and [Spanish](#)]

GIZ (2013/2016). [Training course on adaptation monitoring and evaluation](#).

GIZ (2014/2016). [Excel Tool “Monitoring Adaptation to Climate Change \(MACC\)”](#). [Accompanying the guidebook by GIZ, 2013].

GIZ (2016). [Adaptation M&E Toolbox](#). [Also available in [Spanish](#)]

GIZ (2016). [Country-specific monitoring and evaluation of adaptation](#). Climate Change Policy Brief.

GIZ & EURAC (2017). [Risk Supplement to the Vulnerability Sourcebook](#). Guidance on how to apply the Vulnerability Sourcebook’s approach with the new IPCC AR5 concept of climate risk.

GIZ (2017). [Factsheets of national adaptation M&E systems](#). [Updated from GIZ & IISD, 2014].

GIZ (2017). [Can climate vulnerability and risk be measured through global indices?](#) Climate Change Policy Brief.

Leiter, T. (2015). [Linking monitoring and evaluation of adaptation to climate change across scales: Avenues and practical approaches](#). In: Bours, D., McGinn, C., & Pringle, P. (Eds.), Monitoring and evaluation of climate change adaptation: A review of the landscape. *New Directions for Evaluation*, 147, 117–127.

Leiter, T. (2017). [The Adaptation M&E Navigator. A decision support tool for the selection of suitable approaches to monitor and evaluate adaptation to climate change](#). In: Uitto, J., Puri, J., & van den Berg, R. (2016): *Evaluating Climate Change Action for Sustainable Development*. Springer Publishing.

Leiter, T. (2017). *Adaptation metrics in practice: experiences from German Development Cooperation*. UNEP-DTU Perspective Series on Climate Change Adaptation.

Leiter, T. & Pringle, P. (2017). *Pitfalls and potentials of measuring climate change adaptation through adaptation metrics*. UNEP-DTU Perspective Series on Climate Change Adaptation.