

Table S3. Grey literature search and charting of information about indicators for assessing climate change-related health outcomes and systems adaptation effectiveness

| Title | Agency / Institution | Climate health indicator | Intervention / adaptation | Indicators to assess effectiveness of intervention / adaptation | Timing of measure of effectiveness | Change measured (results) |
|--|---|--|---|---|---|---|
| Best practices in monitoring and evaluation of urban climate adaptation: A literature review | USAID | Climate variability and extreme weather events | The evaluation of urban monitoring and evaluation systems | Literature review of existing frameworks from international development organizations, national governments, and case studies from cities. | Not applicable as this is a literature review. | Toolbox of key factors for framework design and implementation, including a list of successful examples of frameworks. |
| Progress on adaptation to climate change in developed countries: an analysis of broad trends | Member states of the OECD and/or Parties listed under Annex I of the UNFCCC | Climate change adaptation practices in developed countries | Cross-national comparisons of adaptation practices. Limited attention to adaptation in National Communications (NCs) relative to mitigation policies. | Coverage of adaptation limited to assessment of future climatic changes (anticipatory measures) and impacts, identification of generic options. | Ongoing monitoring of NCs and other policies/projects | Reporting on implementation of anticipatory measures. Encouraging trend towards comprehensive adaptation planning, impact yet to be assessed. |

| Title | Agency / Institution | Climate health indicator | Intervention / adaptation | Indicators to assess effectiveness of intervention / adaptation | Timing of measure of effectiveness | Change measured (results) |
|---|--|--|--|--|--|---|
| BRACE Adaptation and Evaluation Plan Template | Centres for Disease Control and Prevention (BRACE) | Tool that is used under a Climate and Health Program | Tool: Adaptation and Evaluation Plan Template | Documentation of planning, implementation, communication, evaluation, and management of adaptation actions. | Ongoing monitoring and evaluation of adaptation actions. Periodic review and evaluation of adaptation actions. | This tool is expected to give the user an enhanced capacity to plan for and manage health impacts of climate change. There is an improved accountability and reporting on adaptation efforts. Improved health outcomes and resilience among targeted populations. |
| Advancing Effectiveness of Climate Adaptation | UNEP | The program targets researchers, policymakers, and practitioners to help them successfully bridge the science-policy-action gap. | World Adaptation Science Programme (WASP) initiative | Effectiveness of policies and plans, including National Adaptation Plans (NAPs). Effectiveness of actions such as projects and programs. | Not given | How adaptation policies and plans enable effective, ambitious, feasible, equitable, and just adaptation actions, including finance. Whether adaptation actions produce desired adaptation outcomes in terms of reducing risk. Approaches to |

| Title | Agency / Institution | Climate health indicator | Intervention / adaptation | Indicators to assess effectiveness of intervention / adaptation | Timing of measure of effectiveness | Change measured (results) |
|--|-----------------------|--|--|---|------------------------------------|---|
| | | | | | | measuring potential effectiveness (ex-ante) and actual effectiveness (ex-post) are emerging. |
| Methodologies for reporting adaptation fund core impact indicators | Adaptation Fund Board | Rainfall, temperature, sea level rise, floods, droughts, storms, landslides, salination, coastal inundation, heatwaves, cold waves, and biodiversity loss. | The guidance document aims to help Adaptation Fund project proponents define and measure core indicators to assess project-level progress effectively. | The indicator measures the number of beneficiaries or the number of people supported by the Pilot Programme for Climate Resilience (PPCR) to cope with effects of climate change. | Project duration (not specified) | The extent to which a project intervention(s) has reached its intended results or objective to respond to climate change variability through improving, developing, or strengthening asset(s), which could be developmental sector services or physical infrastructure. |

| Title | Agency / Institution | Climate health indicator | Intervention / adaptation | Indicators to assess effectiveness of intervention / adaptation | Timing of measure of effectiveness | Change measured (results) |
|--|------------------------------------|---|--|--|---|--|
| Good practice study on Principles for Indicator Development, Selection, and Use in Climate Change Adaptation Monitoring and Evaluation | Climate-Eval Community of Practice | Study of good practice on Principles for Indicator Development, Selection, and Use in Climate Change Adaptation Monitoring and Evaluation | The study aimed to provide guidelines on concepts that specialists in climate change adaptation may use in their work. It is imperative to acknowledge that although strong signs hold significance, they must never serve as the only basis for comprehensive analysis or assessment. | Numerous indicators and guidance to formulate frameworks are given in this best practice study document. | Not applicable as this is a best practice study document. | This research demonstrated that there is no universally applicable or standardized set of adaptation indicators. Offering specific examples of indicators for adaptation programming won't enhance progress in the field. Therefore, recommended principles for effectively selecting, developing, and employing indicators for Climate Change Adaptation (CCA) have been put forward. |

| Title | Agency / Institution | Climate health indicator | Intervention / adaptation | Indicators to assess effectiveness of intervention / adaptation | Timing of measure of effectiveness | Change measured (results) |
|--|---|--|---|---|--|---|
| Development of Adaptation Indicators | The European Topic Centre on Air and Climate Change | The vulnerability of European biodiversity to climate change and regions being the interface between high-level national/European policy and local implementation. | This paper presents a theoretic and practical foundation for the development of indicators of climate change adaptation. Additionally, case examples are used to demonstrate how indicators for tracking and assessing the efficacy of adaption plans, initiatives, and actions may be created. | Process-based indicators (adaptation policy indicators' and 'adaptation measure indicators) and Outcomes-based indicators | Not application as this is a technical paper focusing on guidance on how climate change indicators might be developed. | This paper utilized insights from expert meetings to develop practical tools for assessing climate change adaptation efforts. It focused on creating specific indicators for the biodiversity sector in collaboration with experts. Additionally, it considered stakeholder involvement, spatial resolution, and integration with existing indicators to enhance effectiveness of strategies. |
| Monitoring & evaluation for climate change adaptation: A summary of key challenges and emerging practice | UNEP DTU Partnership | Climate change resilience | Implementation of M&E frameworks in adaptation projects | Documenting project outputs and outcomes, financial flows of adaptation finance | Periodic: ex-ante, ex-post facto, or mid-term evaluations | Improved visualization of challenges, overview of emerging practices |

| Title | Agency / Institution | Climate health indicator | Intervention / adaptation | Indicators to assess effectiveness of intervention / adaptation | Timing of measure of effectiveness | Change measured (results) |
|---|--------------------------------------|---|--|---|------------------------------------|---|
| Monitoring and evaluation for climate change adaptation and resilience: a synthesis of tools, frameworks and approaches | SEA Change, UKCIP, Pact, Rockefeller | Climate change adaptation and resilience | Synthesis report, detailing the focus on international development projects and programmes, their M&E frameworks for climate change adaptation and resilience (CCAR) interventions | Tailored M&E resources, frameworks, and approaches to measure effectiveness | None mentioned | Improved understanding of adaptation M&E, identification of key themes, gaps, and future priorities |
| Developing national adaptation monitoring and evaluation systems: A guidebook | GIZ, UNFCCC, IIED | Climate change adaptation and resilience- identifies adaptation categories which should be considered in policy | National Adaptation Plan (NAP) process, national M&E systems for adaptation | Progress in implementing adaptation-related investments, policies, plans, interventions (process), adaptation outcomes (impact) (1) climate risk management indicators; (2) resilience and related indicators; (3) indicators of human wellbeing; and (4) climate indices | Ongoing, periodic assessments | Insights into sector-specific adaptation progress, guidance for M&E system development |

| Title | Agency / Institution | Climate health indicator | Intervention / adaptation | Indicators to assess effectiveness of intervention / adaptation | Timing of measure of effectiveness | Change measured (results) |
|--|---|---|---|--|---|--|
| Desk review: evaluation of adaptation to climate change from a development perspective | Institute of Development Studies | Climate change adaptation impacts | Evaluation of climate change adaptation interventions (CCA) | Reducing risk and vulnerability, building adaptive capacity, enhancing governance and institutions | Ongoing and periodic evaluations | Identification of effective adaptation strategies, consensus on evaluation frameworks, insights into scaling up adaptation efforts |
| Mainstreaming climate adaptation Planning and action into health systems In Fiji, Ghana, and Benin | World Resources Institute | All focuses on how climate adaptation can be mainstreamed | Adaptation tracking, modifying development programming to consider climate risk | Reducing risk, building resilience, integrating climate risk into development programming | Not mentioned for health | Insights into adaptation progress, evolving methodologies, and frameworks for measuring adaptation |
| Maricopa County Cooling Centre Evaluation Project in Collaboration with Arizona State University and Arizona Department of Health Services: Observational survey results | Maricopa County Department of Public Health | Heat and health | Cooling centre | Number of visitors at centre and purpose of visit | Two years November 2013-September 2015 | None described |
| WHO Guidance for climate resilient and environmentally | WHO | Broadly expressed as direct and indirect | Actions to protect health care facility human capacity, | Monitor and evaluate improvements. | Not mentioned | Not captured – guidance only. |

| Title | Agency / Institution | Climate health indicator | Intervention / adaptation | Indicators to assess effectiveness of intervention / adaptation | Timing of measure of effectiveness | Change measured (results) |
|---|--------------------------|--------------------------|---|---|------------------------------------|---------------------------|
| sustainably health care facilities | | | infrastructure and services Water, sanitation and health case waste interventions Energy interventions Infrastructure, technology and products interventions | | | |
| Underfinanced. Underprepared. | UNEP | Broadly at country level | Country-level strategies | Criteria for adaptation planning assessment includes comprehensiveness, inclusiveness, implementability, integration, monitoring and evaluation | Not mentioned | Not mentioned |
| Tracking tool for climate change adaptation projects | Green Climate Fund (GEF) | None | Generic tool for climate change adaptation projects | 14 indicators None for health | Not mentioned | Not mentioned for health |
| Climate adaptation and its measurement – challenges and opportunities | USAID | None | Not explicitly, broadly discussed | General indicators applied by funders to assess projects, e.g., TAMD approach in Mozambique | Not mentioned | Not mentioned for health |

| Title | Agency / Institution | Climate health indicator | Intervention / adaptation | Indicators to assess effectiveness of intervention / adaptation | Timing of measure of effectiveness | Change measured (results) |
|--|----------------------|---|---|---|---|---|
| Partnership – Adaptation metrics: perspective on measuring, aggregating and comparing adaptation results | UNEP DTU | Global Climate Fund adaptation performance measurement framework includes 'increased resilience of health and wellbeing, and food and water security' | Several including Saved Health using Disability Adjusted Life Years Saved | Tracking Adaptation Measurement Development (TAMD) framework Not health specific, included for example early warning systems | Mentions the need for results-based monitoring during a project's lifespan, and metrics of Saved Health at or towards the end or sometime after completion. | Several were considered including change in well-being, using relative change and not absolute values |