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PILOT - CORE DOCUMENT - REQUIREMENTS

CLIMATE ADAPTATION REQUIREMENTS

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-[GUIDANCE Climate adaptation](#)

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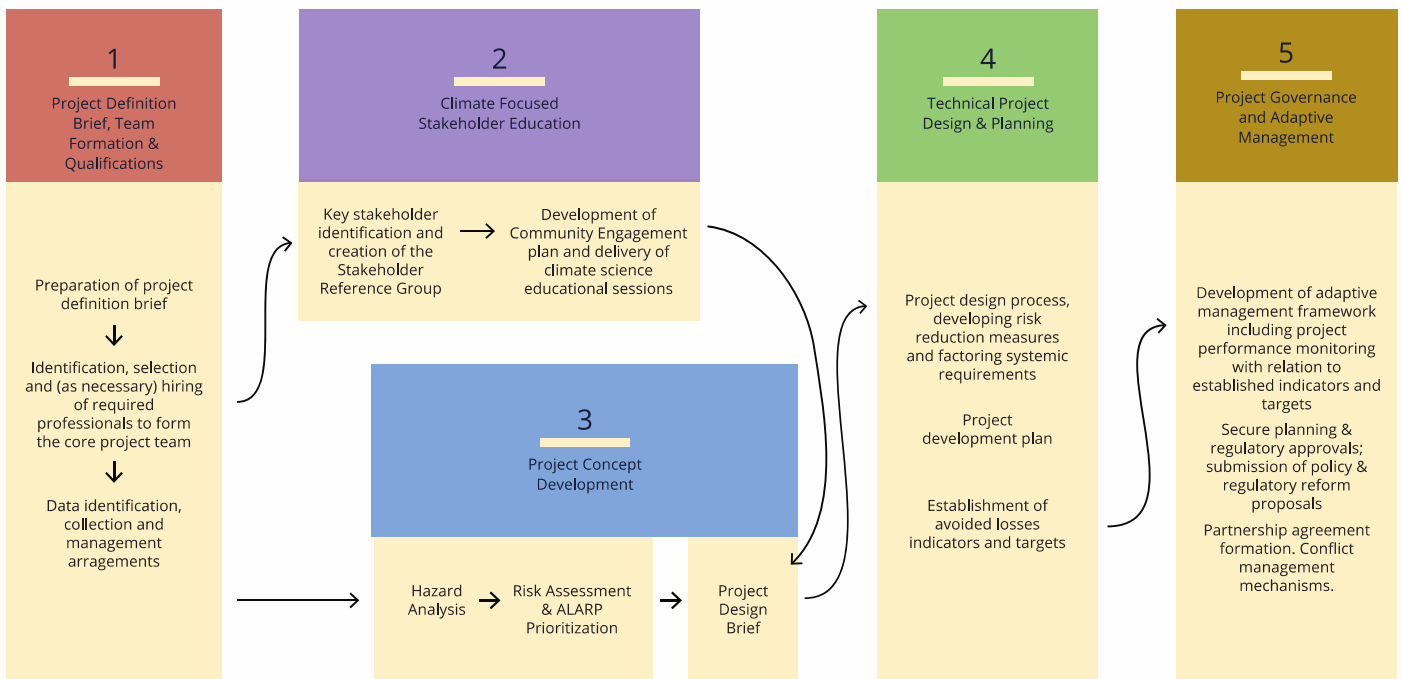
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INTRODUCTION

Increasing annual catastrophic losses caused by climate-related and other extreme events arise from poor systemic planning (social, institutional, and economic) making it difficult to cope with the stresses, disruptions, failures, and extreme events associated with climate change.

These losses highlight the growing need to build investment frameworks and professional and management capacity to both accelerate the development of quality adaptation project pipelines and, at the same time, to leverage climate adaptation project investments to further develop local capacities to prepare portfolios of SDG and climate mitigation projects as well.

The adaptation project preparation requirements provide a roadmap for project developers to design and implement projects that take future climate risks fully into account. See the infographic below summarizing the structure of the requirements during the project’s five project development phases.



KEY CONCEPTS AND TERM DEFINITIONS

ADAPTIVE CAPACITY: It is the ability to absorb or cope with a climate hazard event or extended climate stress to which a person, party, or asset is determined sensitive.

ASSETS: The physical structures, facilities, networks and other systems which provide services that are essential to the social and economic functioning of a community or society (United Nations Office Disaster Risk Reduction 2009). In the project context, adaptation requires consideration of assets that are on the physical project site (i.e., direct assets) and assets that are not located on the project site but upon which the project will depend and/or that the project will significantly impact. See Project Boundaries, below.

BASELINE: Baseline refers to the datasets showcasing the current/present situation relating to the project, its associated systems and communities and forms the benchmark against which future progress can be assessed or compared.

CLIMATE CHANGE CONDITION: This refers to the change in one or more aspects of the existing climatic regime such as 'Changing Temperatures', 'Changing Precipitation', 'Rising Sea Levels', and other events.

CLIMATE SCIENCE: Climate science investigates the structure and dynamics of earth's climate system. It seeks to understand how global, regional, and local climates are maintained as well as the processes by which they change over time. In doing so, it employs observations and theory from a variety of domains, including meteorology, oceanography, physics, chemistry and more (Parker 2018).

CLIMATE RISK: The potential, when the outcome is uncertain, for adverse consequences on lives, livelihoods, health, ecosystems and species, economic, social and cultural assets, services (including environmental services), and infrastructure. (IPCC). Risk is expressed as the combination of **likelihood** and **consequences** of a climate event or shock and/or of climate change stresses (e.g. damages/losses, injury/death, service interruption). In addition to climate risks resulting from physical climate hazards, there are **transition risks**. Transition risks are risks associated with a transition to a low-carbon economy (financial, political, legal, technology) (IPCC).

DOWNSTREAM: Systems and resources that are external to the project site and/or assets that will be impacted by the project and the project's performance.

EXPOSURE: arises from the range of conditions in an area in which hazard events may occur that may cause deleterious impacts.

1. Exposure may be assessed, for example, by estimating the number of people, the value of assets, the number of critical systems (etc) in the area in which a hazard event may occur.
2. Exposure considers only whether an element is exposed to the hazard or not – it does not evaluate the type of impacts the element might suffer.

EXPOSED PARTY: A person, group, community, species, asset, business, organization, or livelihood that may be harmed or damaged by an identified hazard.

HAZARD LIKELIHOOD: The potential occurrence of a natural or human-induced physical event or trend that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, ecosystems and environmental resources. (IPCC SRCCL 2019).

1. Climate hazards can be **climate shocks** (high magnitude, low frequency such as hurricanes) or **climate stresses** (low magnitude, high frequency such as nuisance flooding).
2. Unlike other natural hazards, climate hazards are **dynamic** due to climate change. Future hazard conditions will be different from current ones.
 - a. Climate change may make climate shocks **more frequent** and/or **more extreme**.
 - b. Climate change may affect climate stresses by making regular conditions **more variable** and/or by **changing averages**.

INTOLERABLE AND CRITICAL RISKS: Intolerable risks are those that fundamentally threaten a social norm and therefore cannot be justified except in extraordinary circumstances. Critical risks are those that involve loss of life, serious injury, and/or grave damages associated with substantial human, community, or operational harm.

PROJECT BOUNDARIES: Broadly, adaptation project boundaries can be divided into two categories:

1. Direct/Site: These boundaries are the actual physical boundaries in which the development has been proposed.
2. In-direct (Systemic and/or Landscape Scale): These boundaries include the systems that lie outside of the project's development site but that the project will depend upon, both to function (e.g., power and water supply) and to achieve targeted impacts (e.g., maintenance of biodiversity).

PROJECT LIFESPAN: This term refers to the total time from the project planning phases to the implementation stage to the operations and decommissioning phases, including all intermediary steps in between.

RISK MANAGEMENT: The process of identifying, controlling, and eliminating or minimizing uncertain events that may adversely affect the people, assets, communities, livelihoods, species and investments, thereby strengthening their resilience.

RISK AVOIDANCE: Eliminating the likelihood of a hazard event or exposure to a hazard that would pose potential harm or loss.

RISK MITIGATION: While not reducing the likelihood of a hazard event or exposure to the hazard, risk mitigation measures reduce the harm and losses if the event occurs.

RISK SHARING or POOLING: Establishing mechanisms whereby a group of parties facing the same risks share or 'pool' the costs of mitigation, transfer, and/or recovery from hazard events.

RISK TRANSFER: Transferring the costs of disruption, response, and recovery to an insurer or to capital markets, whether individually or as a risk pool.

SENSITIVITY: The physical predisposition of human beings, infrastructure, and environment to be affected by a dangerous phenomenon due to lack of resistance and predisposition of society and ecosystems to suffer harm as a consequence of intrinsic and context conditions making it plausible that such systems once impacted will collapse or experience major harm and damage due to the influence of a hazard event. (IPCC SREX Ch.2)

SHOCK: Shocks are events that cause an immediate damaging impact. Covariate shocks such as natural disasters or spikes in food prices affect multiple households, communities or regions. Idiosyncratic shocks are smaller in scale - within a household, idiosyncratic shocks may include illness or death of a family member, loss of livestock or of employment. (Government of United Kingdom 2016)

STRESS: Stresses are longer-term conditions and related trends that produce slow onset impacts on the functioning of systems or on the health and well-being of people, other species, and their communities.

UPSTREAM: Systems and resources that are external to the project site and/or asset(s) and upon which the project's performance depends.

VULNERABILITY: The propensity or predisposition to be adversely affected by a climate change shock or stress, including climate variability and extremes.

Vulnerability encompasses a variety of concepts and elements including sensitivity (or susceptibility to harm) and lack of capacity to cope and adapt. (IPCC). Vulnerability has two components:

1. **Sensitivity (Susceptibility or Fragility):** Physical predisposition of human beings, infrastructure, and environment to be affected by a dangerous phenomenon due to lack of resistance and predisposition of society and ecosystems to suffer harm as a consequence of intrinsic and context conditions making it plausible that such systems once impacted will collapse or experience major harm and damage due to the influence of a hazard event. (IPCC SREX Ch.2)
2. **Lack of Adaptive Capacity:** Limitations in access to and mobilization of the resources of the human beings and their institutions, and incapacity to anticipate, adapt, and respond in absorbing the socio-ecological and economic impact.

REQUIREMENTS

1 | PROJECT DEFINITION BRIEF, TEAM FORMATION, AND QUALIFICATIONS

1.1 | PROJECT DEFINITION BRIEF

The project team shall prepare a preliminary project definition brief to initiate the project development process. It must detail the following:

- i. Project goals and objectives, including impact objectives and targeted outcomes. The project's operational lifespan.
- ii. The direct project boundaries (as they are understood at project inception), including relevant maps and/or diagrams. For purposes of project definition, the project's direct boundaries are the project site including the areas, assets, settlements, habitats, infrastructures, and resources that will be directly altered by the project.
- iii. The indirect or systemic project-related assets, resources and associated upstream systems upon which project performance will depend, as well as any downstream settlements, habitats, systems, livelihoods and conditions outside of the direct project boundaries that the project will alter or impact as a result of the alterations made in the direct project boundaries.
- iv. The identified communities, organisations and individuals that represent a range of different stakeholder groups within the project's direct and indirect boundaries. Listed key project representatives identified for each stakeholder group (including representatives of identified vulnerable and historically marginalized groups).
- v. A high-level Preliminary Climate Importance Review indicating the general severity of climate hazards to the project area, site, and assets. The climate importance review will be used to guide recommendations by the verification professional regarding robustness of data and analytical approaches required to apply the standard in the course of project preparation. (See Appendix A in the 'Guidance Document' for more details.)

1.1.1 | A final version of the project definition brief should be completed with an updated climate importance review following completion of a full climate Hazard Analysis. The requirement and guidance for the final brief are presented in section 3.1.

1.2 | TEAM QUALIFICATIONS

The project development team shall formalise arrangements for participation throughout the project of each of the core team members in accordance with profiles described in 1.2 (1.2.1-1.2.3).

1.2.1 | Climate Adaptation Lead(s)

The project team shall identify at least one dedicated Climate Adaptation Lead(s) for the project.

- i. The Lead(s) must have a university degree in a field relevant to climate adaptation¹ or have completed professional assignments relevant to climate adaptation.²
- ii. The Lead(s) role includes ensuring that both scientific and stakeholders' knowledge, views and concerns have been considered in the course of project's climate Hazard Analysis, risk assessments, adaptation measures design, and adaptive management framework design.

1.2.2 | Climate Science Consultant

The project team shall identify a Climate Science Consultant that will advise them throughout the project development process. In collaboration with other project team members and the stakeholder reference group, the Climate Science Consultant will co-lead the design of methodologies, sourcing of data, and the development of materials and outputs as they relate to the stakeholder education, Hazard Analysis,

¹ Relevant university degrees include the following: architecture, urban planning, civil or environmental engineering, geoscience, emergency and disaster risk management, engineering (mechanical, structural, marine, environmental) social and earth sciences fields.

² Relevant professional experience includes any projects involving natural Hazard Analysis, risk assessment, and/or risk management through project planning, design, and/or implementation in which the professional was actively engaged in leading or technical support roles.

and risk assessment, and the project's adaptation design brief and adaptive management framework.

This will involve:

- i. For projects with a Low Climate Importance (Step 5 of Requirement 1.1), reviewing outputs of activities related to the initial climate importance review, Hazard Analysis and Risk Assessment.
- ii. Participating in data identification, collection, and analytical activities related to the Hazard Analysis (3.1) and Risk Assessment (3.2) in addition to reviewing/producing the outputs from the assessments.

The Climate Science Consultant must have a university degree in a field directly pertinent to climate science or climate change adaptation, or a minimum of 5 years of professional experience working on climate change adaptation projects or research.

1.2.3 | Community Knowledge Representative(s)

The project development team shall include at least one member who has a social sciences background and/or professional training and experience in community engagement and facilitation. The Community Knowledge Representative(s) will coordinate and ensure the effective and inclusive engagement of associated community stakeholders throughout the project design process. This representative must have knowledge of the history, experiences, needs, and priorities of the relevant local communities and stakeholders, including of local indigenous/tribal affairs, and access to relevant local/indigenous/tribal representatives to be consulted in the project design and implementation process.

1.3 | DATA IDENTIFICATION, COLLECTION AND ANALYSIS

The project team shall prepare a plan to identify, collect, and analyse data sources and datasets relevant to the project and its associated systems.

1.3.1 | The plan shall identify the following sources of data that will allow the project team to conduct a thorough analysis of the site conditions and climate

hazards and risks minimally within the project boundaries under a range of alternative future climate scenarios.

- i. The most recent and highest quality scientific data (e.g. highest level of geographic detail, peer reviewed science), including the most recent scientific and engineering assessments of climate change hazards and; scenarios related to the project’s defined direct and indirect boundaries.
- ii. Local weather data for the preceding five years and, where possible and relevant the preceding 10 years.
- iii. Documentation, stakeholder accounts and reports of recent weather and other climate-related events, and the impacts of these events.

1.3.2 | The data collection plan describes the process to be used to collect data from local project stakeholders, relevant local professionals and managers. The project team’s Community Knowledge Representative must identify these local knowledge experts/local activists/community leaders with significant lived experience in their region, or representatives from various key occupations within the community to provide historical data based on their lived experience and/or oral histories.

2 | CLIMATE FOCUSED STAKEHOLDER ENGAGEMENT & EDUCATION

2.1 | CREATION OF STAKEHOLDER REFERENCE GROUP

The project team shall:

- i. Identify all affected stakeholders (communities, governmental and utility units, civil society groups, organisations, and those most vulnerable to identified climate change impacts that would be directly affected by the project) within the project’s defined direct and indirect boundaries as indicated in step 4 of the preliminary project definition brief.
- ii. Identify key representatives for each stakeholder group to be constituted into a project Stakeholder Reference Group.
- iii. Produce terms of reference for the Stakeholder Reference Group that establishes how the group’s representatives will be educated, informed, and

consulted by the project team on all matters that will engage local stakeholders in project development and in project implementation activities.

- iv. Secure the support and sanction for the engagement of the constituted Stakeholder Reference Group by any designated traditional leaders for the communities that have been identified in 2.1(i), as are pertinent to the project location and context (e.g., the local chief, head of village head).

2.2 | DELIVERY OF CLIMATE-SCIENCE BASED EDUCATIONAL SESSIONS AND COMMUNITY ENGAGEMENT PLAN

The project team must design and conduct educational and knowledge sharing workshops or other information sessions about climate change science and its impacts in the defined project boundaries. Stakeholder representatives of low-income and/or disadvantaged group backgrounds, or whose participation could expose them to safety concerns, shall be provided financial and/or logistical support to minimise economic burden and any safety risks. Such support for participation shall minimally reflect the norms of international development practice in the respective country.

These sessions shall:

- i. Present the full project details (as per the project definition brief) to all members of the Stakeholder Reference Group, and as possible to representatives of the broader groups in the stakeholder community as identified in 2.1(ii).
- ii. Provide stakeholders with equal opportunity to educate the project team about climate-related trends and impacts that they have witnessed.

2.2.1 | Upon completion of the sessions, the project team shall provide documentation of the workshops/sessions, which includes a record of different concerns, issues, and perspectives expressed by stakeholders and changes agreed regarding the project development process. This has been shared with the Stakeholder Reference Group for its review and inputs prior to completion.

The document also summarizes a high-level plan outlining the process for future stakeholder engagement. The final document shall be shared with all

participants in workshops and information sessions in language(s) that they understand.

3 | PROJECT CONCEPT DEVELOPMENT

3.1 | HAZARD ANALYSIS

The project team together with the climate science consultant shall complete a climate Hazard Analysis and submit a Hazard Analysis Report to the verification professional.

3.1.1 | The Hazard Analysis shall begin with a comprehensive scoping of available data, modelling, research, and studies of climate change and weather trends and events, and their associated impacts, occurring or expected to occur within the direct and indirect boundaries of the project and over the operational life of the project, as defined in the Preliminary Project Definition Brief.

3.1.2 | In addition to all relevant climate and weather-related hazards, the Hazard Analysis must consider, and the Hazard Analysis Report must include:

- i. Consideration of empirical reports from local stakeholders on changes in weather and climate and other relevant natural environment conditions and events in the preceding 5-10 years.
- ii. Consideration of current and at least two future scenarios for both the direct and indirect project boundaries, as defined in 1.1.
- iii. Identification of non-climate natural hazards that would directly affect the built and natural assets (including habitat areas and agricultural lands), and infrastructures within the direct project boundaries.
- iv. Scale and source of the relevant data.
- v. Considered assumptions either due to lack of data or low access to localized data.
- vi. Relevant notes from the stakeholder education sessions, key exposed parties (direct and in-direct/systemic) relevant to each hazard, and the timescale of the onset and occurrence of the hazard.

- vii. Description of the potential impact of each potential climate shock event and climate stress condition that the project area, the project, and project stakeholders are or are expected to be exposed to during the useful life of the project investment, implementation, and operations.

3.1.3 | For each hazard considered in the Hazard Analysis, the Hazard Analysis Report shall provide available information and conclusions indicated in Appendix B of the guidance document.

3.1.4 | Prior to completion, the draft Report with preliminary analysis findings shall be presented to the Stakeholder Reference Group for review, engaging with the group to incorporate member inputs and finalize analysis of trends and exposures related to each climate hazard.

The findings of the Hazard Analysis will also be incorporated into a revised, Final Project Definition Brief.

3.2 | RISK ASSESSMENT

The Climate Adaptation Lead(s) and their consultants (as relevant) shall complete a comprehensive project Climate Risk Assessment and, following review by and the incorporation of input from the Stakeholder Reference Group, shall submit the findings and conclusions to the verification professional in a Climate Risk Assessment Report. The methodology and process used, and the Report's outputs shall be compliant with the following specified requirements:

- i. The Risk Assessment was performed using the methodology and process provided in the guidance document and/or using a methodology endorsed by a United Nations, multilateral development assistance, or bilateral development assistance entity of either a or b:
 - a. A national or international professional association or specialist organization for planning, hazard management, or risk management professionals
 - b. A program of a regional or local government association that focuses on climate change.
- ii. The Adaptation Lead(s) and any other consultants and project team members engaged in the Risk Assessment process have fully utilized and addressed the findings of the Hazard Analysis Report in the execution of the Risk Assessment.

- iii. The Risk Assessment Report evaluates the risk faced by each party, group, class of built and natural asset (including habitat areas and agricultural lands), type of enterprise or livelihood activity, or infrastructure (hereafter 'exposed party') that is or will be exposed to each climate hazard as identified in the Hazard Analysis Report. The Risk Assessment provides a risk profile for each of the relevant exposed parties, considering the likelihood of exposure (and in what timeframe) and the party's vulnerability to the exposure (i.e., sensitivities and adaptive capacities) to each identified climate hazard.
- iv. The Risk Assessment Report considers risks arising from potential interactions of both climatic and non-climate related hazards in preparing the risk profiles.
- v. The draft findings of the Risk Assessment shall be presented to the Stakeholder Reference Group (SRG) to obtain their feedback and adjust risk ratings as necessary, and the project team shall indicate to the verification professional how the SRG's feedback has been incorporated into the final Risk Assessment Report. The final Report may take the form of assessment tables, graphic, and explanatory texts—or a mix thereof—providing that the Report documents the nature of the exposure, likelihood of different impacts for each exposed party (i.e., time frame of impact and confidence in the data used), and sensitivity of each exposed party to the indicated impacts.

3.3 | ADAPTATION DESIGN BRIEF

The project team together with the project owner(s) (and where relevant at this stage, with the project investor(s)), shall complete and submit an Adaptation Design Brief to the verification professional.

3.3.1 | The Adaptation Design Brief has drawn upon the conclusions of the risk assessment to determine:

- i. Those risks that need to be given priority consideration in the current design of the project and
- ii. Those that need to be further monitored to determine the actual nature of risk prior to defining risk management measures.

For all risks, the project team shall establish risk monitoring indicators to be used in monitoring the extent and changing nature of risk. For each risk

monitoring indicator, the project team together with the project owner(s) shall establish indicator values or thresholds that, when occurring, will trigger further risk assessment and/or risk management measures.

3.3.2 | The preparation of the Brief shall involve engagement with the Stakeholder Reference Group who, for the prioritised risks, were consulted on defining targets for risk reduction and/or mitigation.

3.3.3 | The Adaptation Design Brief shall contain:

- i. The contents of the final project definition brief.
- ii. A summary of the risk assessment which includes a description of the climate hazards, direct and indirect risks confronting the project site and/or area, and a description of the assets/parties/systems that are exposed to each hazard.
- iii. Documentation of the estimated average risk rating for each of the considered exposed parties related to each considered hazard. The risk rating shall indicate the time period in which the estimated risk level would be expected to materialize.
- iv. Summary conclusions from a climate risk prioritization exercise that involved the project owner(s) and Stakeholder Reference Group to decide:
 - a) which risks are intolerable and/or critical and therefore require immediate consideration in the current project design,
 - b) which risks require further assessment and/or monitoring prior to definition of adaptation measures, and
 - c) which risks are acceptable.
- v. For each rated risk, the definition of at least one risk monitoring indicator. For each indicator the definition of the target level or range of indicator value that the project seeks to achieve and maintain.
- vi. Description of the planned adaptation measures (if any) by the project developers, and proposed adaptation measures along with the additional social and environmental co-benefits being pursued as part of the technical design development in the context of the project hazards and associated risks.

4 | TECHNICAL PROJECT DESIGN AND PLANNING

4.1 | PROJECT DESIGN PROCESS

The project development team shall demonstrate that a project design process has been implemented with reference to the Project Design Brief.

4.1.1 | The process shall use a deliberative method to consider alternative means to address, at a minimum, at least two options for risk management for the each of the **intolerable and critical risks** indicated in the Adaptation Design Brief. Risk management options for intolerable and critical risks shall address the different aspects of risk for each of the at-risk parties and assets. The deliberative method for identifying and selecting risk management options shall consider measures for risk prevention, risk mitigation and vulnerability reduction, and/or the pooling, spreading, or market transfer of risk.

4.1.2 | The design process shall engage the Stakeholder Reference Group and other stakeholder representatives who participated in the Hazard Analysis and Risk Assessment processes to also participate in the project consultations, workshops, and charrettes (aka **project conception meetings**), held to develop alternative project concepts and measures to prioritized climate risks. Evidence can be provided demonstrating how stakeholder input during consultations and engagement have been incorporated into the project concepts.

4.1.3 | In preparing the project design, the project team together with stakeholders and technical advisors shall **identify the systemic requirements** -- including materials and equipment, technologies, supporting infrastructure, utility, and services systems and related baseline engineering studies, operations and maintenance guidance-necessary for the continued ability of the project-related assets and parties in the direct boundaries of the project to deliver and maintain designed functions, infrastructures, risk reduction and other targeted co-benefits under the range of climate scenarios selected in 3.1.

4.1.4 | The project design shall incorporate features, measures, and mechanisms to maintain function and performance of the project-related assets, systems, and services within the direct project boundaries under extraordinary or “shock” event conditions to which the project site or asset is exposed, such that if there is a failure under extreme conditions the potential cascading impacts are minimized.

4.1.5 | Considering the project’s intended users, other beneficiaries, and non-user needs, the design shall identify and consider:

- i. Potential co-benefits that the adaptation measures could deliver, and
- ii. Potential negative, unintended consequences of the measures that will need to be managed.

4.2 | PROJECT DEVELOPMENT PLAN

The project team shall prepare and provide a project development plan that further specifies the approval requirements, stakeholder engagement requirements, timelines and resource requirements for further technical development and implementation of each of the measures included in the project design.

This includes:

- i. A review of relevant local, sub-national, and national level policies, regulations, operations standards, development rights and other approval requirements necessary for full implementation of the project design.
- ii. Necessary amendments or reforms to governmental plans, regulations, codes, standards, or procedures, identified where necessary to enable project delivery.

4.3 | RISK REDUCTION MEASURES

The project team shall calculate the total reduction in risk that it expects to achieve through implementation of the project design. This must include identification and documentation of measurable targets and indicators for the estimated avoidance of harm and losses during the specified period of project function, and under the considered climate scenarios.

4.3.1 | The project team shall make best efforts to quantify the estimated avoidance of harms and losses over the period of project function, doing so relative to the No Adaptation Project Condition (baseline), and where possible also in monetary terms.

4.3.2 | The project team shall define and document the additional SDG and other co-benefits that are expected to be delivered to the community and to specific stakeholders based on the project design.

5 | PROJECT GOVERNANCE AND ADAPTIVE MANAGEMENT

5.1 | MONITORING PLAN

The project development team shall develop and provide a project monitoring plan, which has been prepared and agreed upon by the project owners, implementation partners, and investors.

5.1.1 | The project monitoring plan shall establish a minimally bi-annual monitoring and review process that applies the qualitative and quantitative **indicators as defined in 4.3**. In addition to the targeted values for the established indicators, the Monitoring Plan shall include **trigger values** to be monitored. The indicator trigger values shall be specified in consultation with the Stakeholder Reference Group, with reference to the priorities established in 3.3.2 and 3.3.3.

Indicators are included to monitor:

- i. Effectiveness of each of the incorporated risk management measures based upon the realization of the project's targeted projections for avoided harms and losses,
- ii. The delivery of project co-benefits for intended project users/beneficiaries as included in the project design.

5.1.2 | The project monitoring plan shall incorporate an **adaptive management approach** that recognises the need to augment and adapt risk reduction measures arising from changing climate and non-climate scenarios, in which:

- i. The risk management indicators established in the Avoided Losses Estimation process (Requirement 4.3) are monitored.
- ii. A further assessment of specific risks is initiated if and when the related indicator trigger values (defined in Requirement 4.3) materialize, including as necessary the re-convening of project owners, and/or users/stakeholders, and/or investors to evaluate additional climate risk management measures.
- iii. Guided by the findings of the further risk assessment indicated in 5.1.2(ii), the developer, owner, and/or operator of the project and its associated assets and services, design and undertake corrective actions to achieve the risk management targets and co-benefits as established in 3.3.3(v) and 4.3.

5.1.3 | In the instance that the project-related assets are subject to other government or corporate risk and/or asset management plans and procedures, then the above adaptive management approach shall be coordinated with and/or integrated into these procedures.

5.1.4 | The project team and/or post-commissioning project owner have demonstrated that they have established and maintain the professional capacity and resources to implement the project monitoring plan.

5.2 | COOPERATIVE AND COLLABORATIVE AGREEMENTS

The project team shall identify and initiate the cooperative or collaborative agreements, approvals, or required submissions to obtain approvals, from government entities, property owners, or any other parties required for the delivery of all aspects of the project plan and design.

5.3 | REGULATORY APPROVAL AND ADOPTION

In the instance that proposals for amendments or reforms are required for policies, plans, regulations, and standards to enable project delivery (as per project objectives (Requirement 4.4)). The project development team **has submitted** these proposals for formal decision by and/or have been adopted by relevant local, regional, and national governing and regulatory bodies. Project owners, and/or users/stakeholders, and/or investors to make such changes.

5.4 | MITIGATION AND/OR MANAGEMENT OF FUTURE CONFLICTS

The project owners and project development team **have included** mechanisms for addressing or otherwise managing potential future conflicts related to challenges associated with lack of achievement of the targeted avoided losses in the project delivery plans. These plans **ensured** that agreements and contracts related to the project with investors, affected asset and business owners, project implementation partners, and project beneficiaries contain clauses that:

- i. Take into consideration the uncertainties regarding emerging climate and other non-climate natural disaster risk scenarios that could affect project performance. Stating that they cannot predict or control how climate change trends and impacts will manifest within the project boundaries, and therefore cannot guarantee that the climate risk management measures designed into the project will prove adequate to achieve the targeted levels of harm and loss avoidance.
- ii. Waive the project owner, project developer, and investors of liability for climate change related harms and losses.
- iii. Contain provisions for efficiently resolving any conflicts that may arise pertaining to implementation of the project as designed and associated with any future harms or losses due to climate change.

BIBLIOGRAPHY

- Parker, Wendy. 2018. "Climate Science (Stanford Encyclopedia of Philosophy)." Stanford Encyclopedia of Philosophy. <https://plato.stanford.edu/entries/climate-science/>.
- United Nations Framework Convention on Climate Change. n.d. "What do adaptation to climate change and climate resilience mean?" UNFCCC. Accessed May 9, 2022. <https://unfccc.int/topics/adaptation-and-resilience/the-big-picture/what-do-adaptation-to-climate-change-and-climate-resilience-mean>.
- United Nations Office Disaster Risk Reduction. 2009. "Terminology." <https://www.undrr.org/terminology>.
- Government of United Kingdom. 2016. "WHAT IS RESILIENCE?" GOV.UK. https://assets.publishing.service.gov.uk/media/57a08955ed915d3cfd0001c8/EoD_Topic_Guide_What_is_Resilience_May_2016.pdf.
- UNDRR. 2020. "Hazard definition and classification review." United Nations Office of Disaster Risk Reduction.