Short Course 4: *Fundamentals of Developing a Climate Rationale*

Get Started

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START

LDC CLIMATE CHANGE

CLIMATE ANALYTICS

About this course

The application of climate science is critical for making a defensible case for mobilizing financial resources to support adaptation, such as through the Green Climate Fund (GCF) and similar mechanisms. This short course explores the key aspects of climate science that are necessary to support the development of a strong climate rationale within climate finance proposals.

Short course outline

Session 1

Climate science as a basis for climate action

Session 2

Conceptualizing a Climate Rationale

Session 3

Developing a Climate Rationale

Session one: Climate science as a basis for climate finance

Why is climate science important for climate finance?

Climate science enables public and private actors, including development financing institutions, governments and private sector investors to take an evidence-based approach to addressing risks arising from climate variability and change.

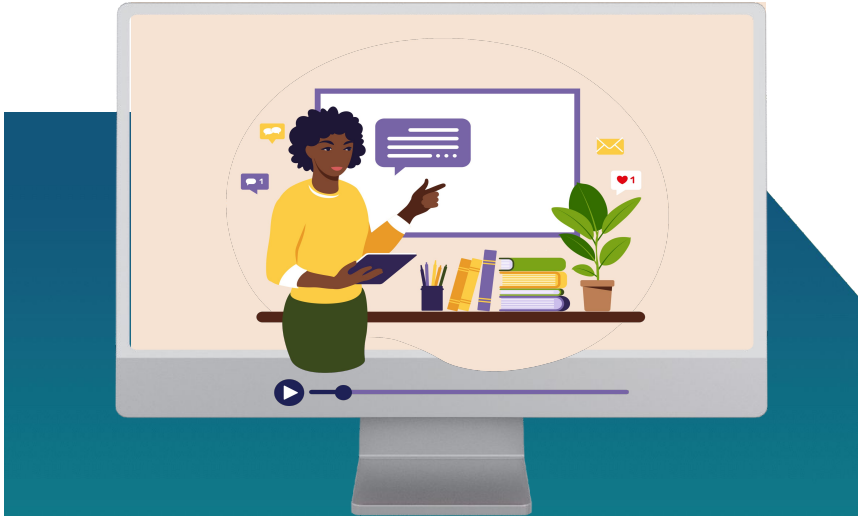
Why is an evidence-based approach important?

An evidence-based approach:

- (a) Provides greater certainty that an intervention is more likely to address climate risks and impacts;
- (b) Accommodates for better upfront planning and design of investments; and
- (c) Mitigates potential risks

This makes science-based investments more attractive to climate finance organizations and schemes.

How does climate information facilitate an evidence-based approach?



- Climate information is the synthesis and analysis of climate data for specific purposes, including future predictions and projections on monthly, seasonal or decadal timescales and their impact on natural and human systems

- Climate information translates scientific data - derived from observations and data generation tools/methodologies - into analyses that can inform climate action.

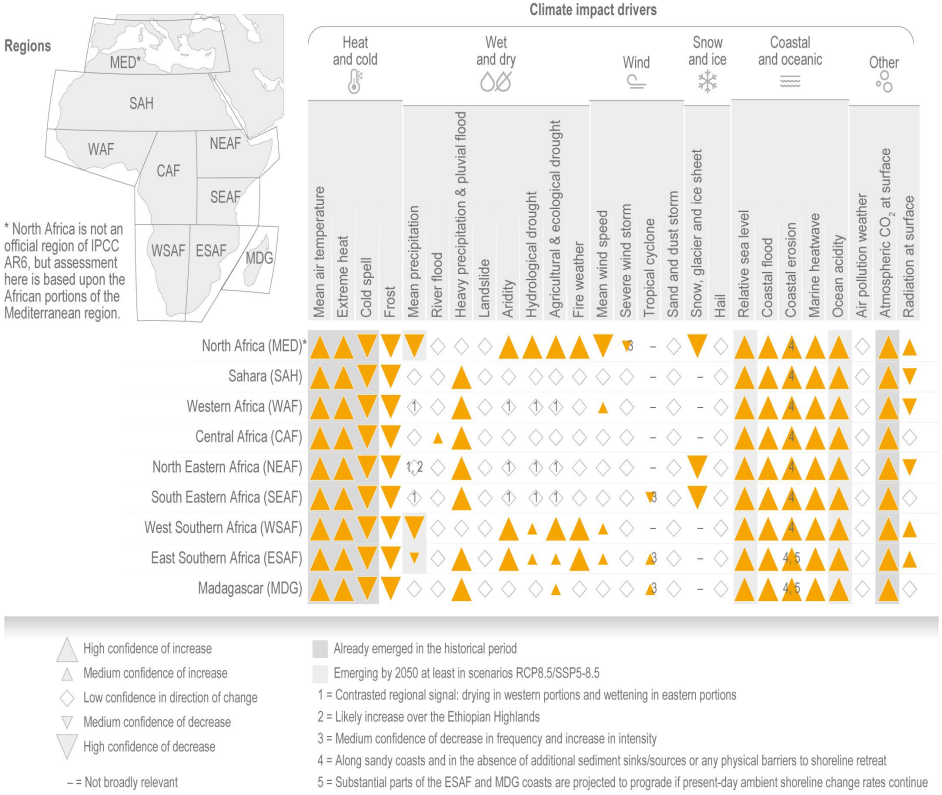
Overview of key findings from the IPCC Sixth Assessment Report (AR6) and other climate data sources

Observed and projected climate trends in Africa

General Observations:

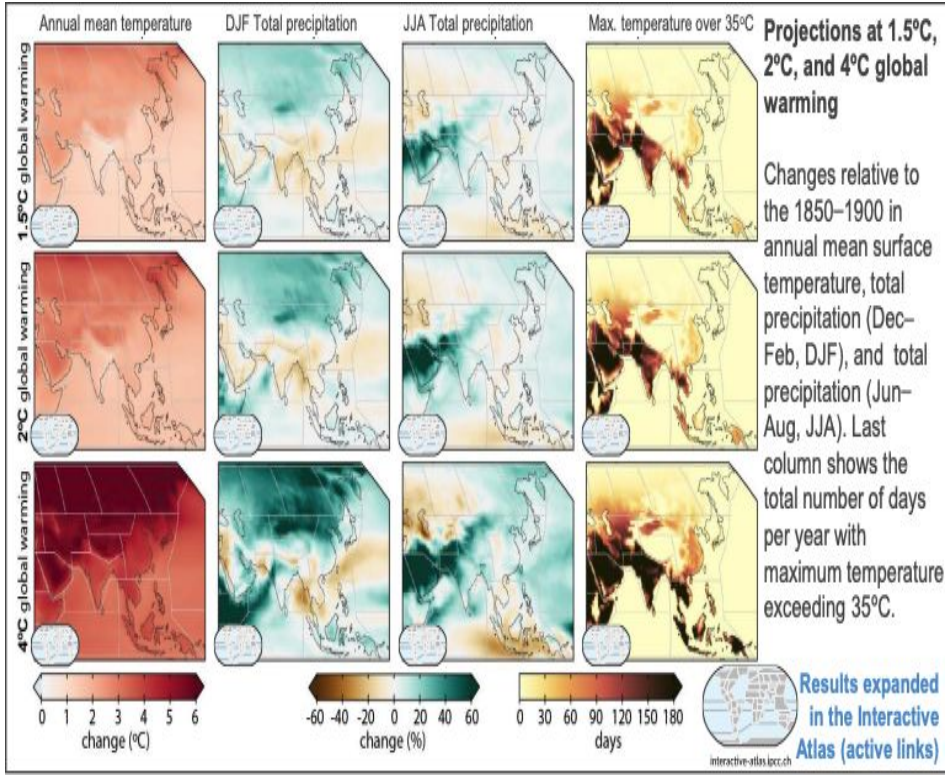
- Increase in mean air temperature and extreme heat in all regions
- High confidence in increased precipitation and pluvial floods in most regions
- High confidence in increase in sea levels, coastal floods, and ocean acidification in all regions

Summary of confidence in direction of projected change in climate impact drivers in Africa



Source: IPCC, 2021

Temperature Projections for Asia at Different Warming Scenarios



General observations:

- Increase in mean air temperature and days with temperature above 35°C in most regions
- Increased precipitation in South and Southeast Asia during JJA season, and decrease during DJF season

Source: IPCC, 2021

The broad contours of climate change science in the Global South

Inconsistent climate projections in the Global South from six generations of IPCC assessments have compounded the many challenges it faces in adapting to climate change.

The implications of data gaps in climate science

Challenges with respect to availability and quality of climate data

From 1990–2019, research on Africa received just 3.8% of climate-related research funding globally (IPCC AR6).

National- and Regional-Level Data for Climate Finance

- The AR6 is a good starting point for understanding the high-level climate change impacts, scenarios, and projections for your region of focus
- However, this data is often too broad and general to use for projects proposing specific actions in specific geographical areas
- At the project level, it is important to use data that is as directly close to the proposed target area, climate impacts, and proposed activities as possible

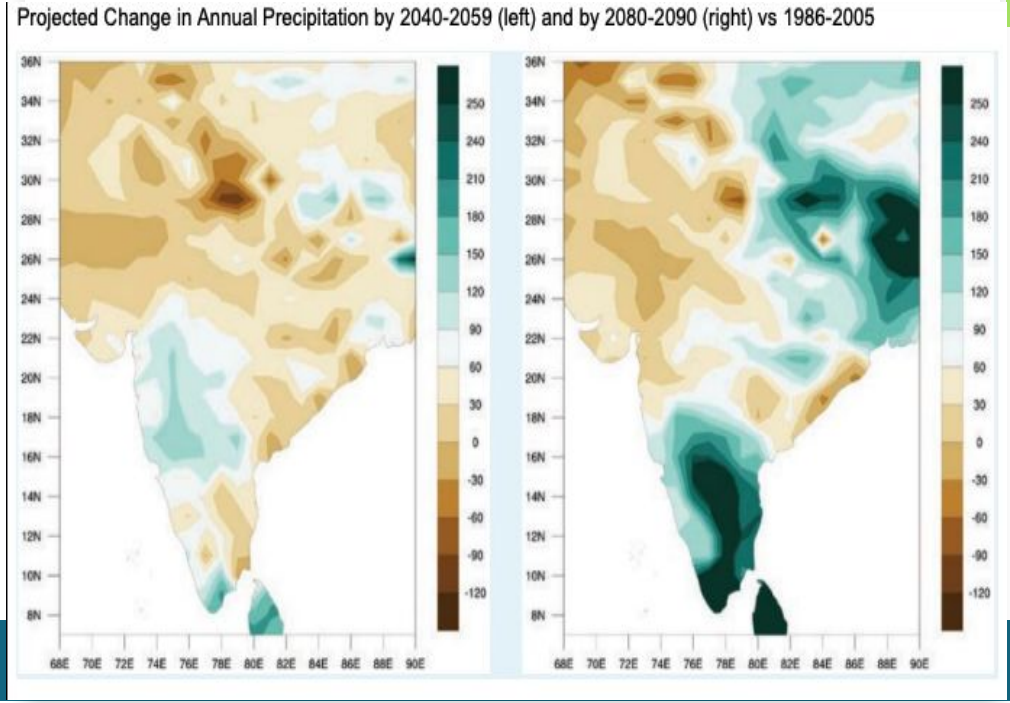
National- and Regional-Level Data for Climate Finance

Verifiable and nationally recognized climate data sources can be used to inform climate rationales

- Information from National Ministry studies, national university research, or reputed international organizations within the UNFCCC ecosystem can be relevant

This information can be summarized visually in a manner that clearly highlights climate change impacts in the geographic area of focus (regional, national, or subnational)

Country-Level Projected Climate Trends Example: India



Source: GCF SAP037: Avaana Sustainability Fund

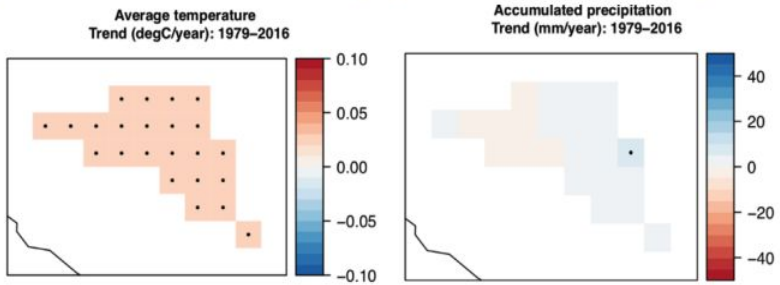
- Utilizes G20 Climate Risk Atlas and the World Bank Climate Risk Profile papers to present scenarios of projected temperature and precipitation changes across India

Source: GCF, 2024

Country-Level Projected Climate Trends Example: The Gambia

11. **Historical trends for air temperature and precipitation**. Considering the whole of the Gambia River watershed over the period 1979-2016, average annual precipitation has shown a non-significant increase of about 1 mm per year, while temperatures have increased on average 0.02°C per year, or about 0.74°C in total over the period (statistically significant at the 95 percent confidence interval). Geographically, temperatures have increased uniformly over the entire watershed, while precipitation has declined slightly in the central watershed, with slight increases seen in the upper reaches of the watershed, and along the coast (see Figure B-3).

Figure B-3 Average annual change in temperature and precipitation, 1979-2016 (the shape represents the Gambia River watershed and the grid cells with black dots indicate statistically significant trends; source: FAO analysis of EWEMBI dataset)



Source: GCF FP188: Climate Resilient Fishery Initiative for Livelihood Improvement in the Gambia (PROREFISH Gambia)

- Utilizes analyses of existing datasets by the FAO to highlight historical (and later projected) changes to temperature and precipitation around the Gambia River watershed. Given the size of the country, this high-level dataset is sufficient.

Source: GCF, 2022

Session two: Conceptualizing a climate rationale

Understanding the “Climate Rationale”

The climate rationale:

1. Connects current climate risks with anticipated climate change effects, their impacts on key sectors or areas, and the proposed responses

2. Shows how proposed activities are informed by, and seek to address current and projected climate change risks and impacts

3. Highlights the need for climate finance and clearly explain the climate impacts/risks being addressed through adaptation, or the projected emissions mitigation outcomes

4. Ensures linkages between climate and climate impacts, climate action, and societal benefits fully grounded in the best available climate data and science

Understanding the “Climate Rationale”

From the GCF Proposal Template

01

Describe the climate change problem the proposal is expected to address.

Describe the mitigation needs (GHG emissions profile) and/or adaptation needs (climate hazards and associates risks based on impacts, exposure, and vulnerabilities) that the proposed interventions are expected to address.

02

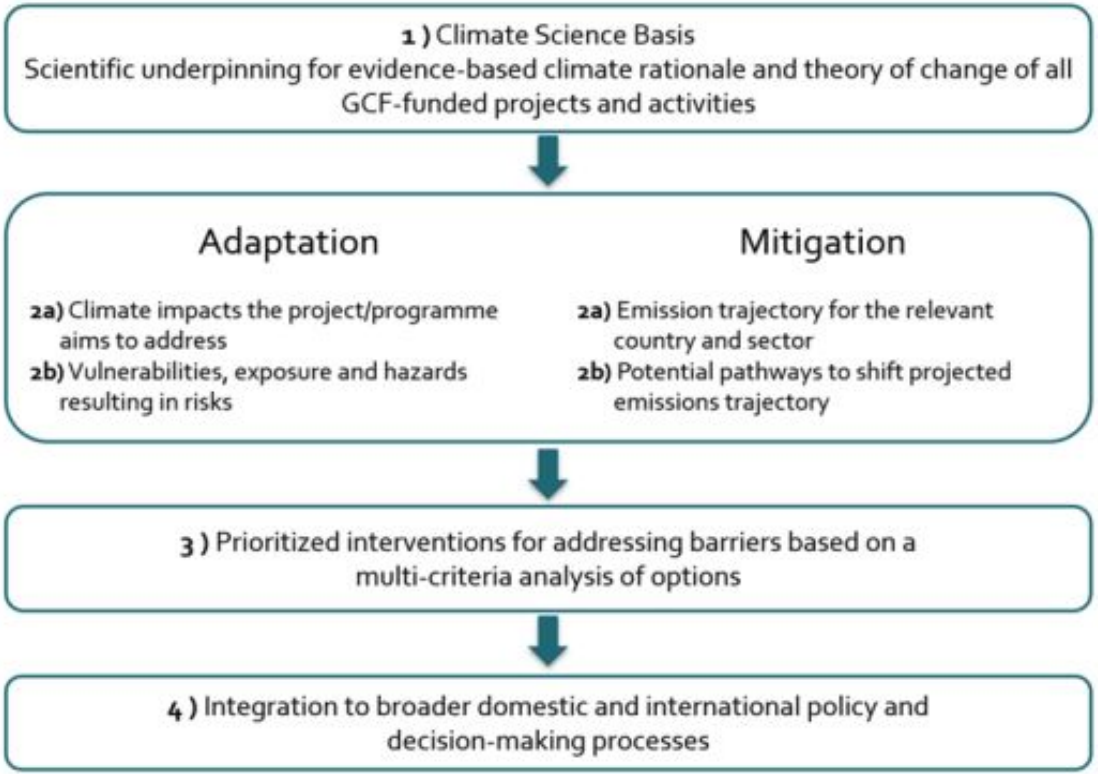
03

Describe the most likely scenario (prevailing conditions or other alternative) that would remain or continue in the absence of the proposed interventions.

Include baseline information. The methodologies used to derive the climate rationale should be included in the feasibility study.

04

Key Elements of a Climate Rationale



Source: GCF (2018) Steps to enhance the climate rationale of GCF-supported activities

Key Considerations for Climate Rationale Development

Why is this project/programme important for the country, population, and the economy to address climate change?

What types of observed changes are climate-related in the target region(s)?

To what extent are these changes attributable to the impacts of climate change for the system, sector, and/or the different socio-demographic groups in the target region(s)?

How does the (adaptation) project/programme address climate vulnerabilities and/or adaptive capacity?

What interventions are proposed and considered to address the identified climate change-related impacts?

What are the projected climate change impacts likely to occur in the intervention area (e.g. by 2030 or 2040)?

Session three: Developing a climate rationale

GCF Priorities for Adaptation Project Funding

GCF Board Decision GCF/B.33/05 (June 2022)

In relation to adaptation, resources will be allocated based on:

- the ability of a proposed activity to demonstrate its potential to adapt to the impacts of climate change in the context of promoting sustainable development and a paradigm shift;

- the urgent and immediate needs of vulnerable countries, in particular least developed countries (LDCs), small island developing States (SIDS) and African States

Key Principles & Considerations for Adaptation Activities

Proposals should provide **evidence-based analysis** to show that a proposed activity is likely to be an effective adaptive response to the risk or impact of a specific climate change hazard.

01

Identification

- Of systems, groups, sectors, and subregions at risk from specific climate change hazards
- Of non-climatic factors that may cause or exacerbate risk/impact

02

Response

- Explain how the proposed activity will reduce exposure and/or vulnerability
- Justification of selecting activity over alternatives (if relevant)

03

Alignment

With national climate plans, strategies, and targets

04

Monitoring & Evaluation

Description of monitoring and evaluation system to assess impact and quantify beneficiaries

Key Principles for Demonstrating Adaptation-Specific Climate Rationale

Identification

- Does the proposal show **how it will address current/future climate risks and impacts, and why** the chosen method is effective?
- Does the proposal **consider non-climatic factors causing/exacerbating climate risks**, and describe interactions between climate change and non-climatic factors?
- Does the proposal **identify groups, sectors, and subregions most susceptible** to climate change impacts?

Response

- Institutional roles and responsibilities;
- Duration and frequency of monitoring;
- Measurement or data collection methods (e.g., surveys, censuses)
- Appropriate sectoral indicators to assess whether efforts are having the desired effects;
- Key stakeholder indicators to assess whether efforts are improving inclusi

Key Principles for Demonstrating Adaptation-Specific Climate Rationale

Alignment

- Does the proposal align with the country's national plans and climate strategies (e.g. NAPs, NDCs, long-term strategies)?

M&E

- Does the proposal have a well-designed theory of change?
- Does the proposal describe the M&E system used to assess the climate impact of the proposed project, and quantify adaptation beneficiaries?

Key Principles & Considerations for Mitigation Activities

Alignment with national climate priorities and policies

Methodological Quantification of Mitigation Results

Proposals should demonstrate that a **projected level of GHG emissions reductions will occur**

Approaches to assessing mitigation impact should include:

1) Determining project impact boundaries

2) Defining baseline (using assumptions consistent to those made in national GHG reporting)

3) Showing additionality (if relevant)

Key Principles & Considerations for Mitigation Activities

Alignment with National Priorities

Is the challenge/activity aligned with national priorities, policies, and strategies (NDC, National Climate Change Policies, etc)?

Approach for Quantification of Mitigation Results

Have established/reputable methodologies and tools been used for quantification and monitoring of mitigation impact?

Additionality

Has it been shown that GHG emissions reductions would not occur in the absence of project funding?

Consistent Assumptions & Reporting to Paris Agreement Goals

Are the mitigation impact assumptions consistent to those made in national GHG reporting? Is it compatible with Paris Agreement reporting requirements?

Common Challenges in Developing Rationale

Distinguishing between adaptation actions/projects and broader development initiatives (important to highlight specific climate impacts that an intervention responds to)

Inconsistent climate projections for much of the Global South from six generations of IPCC assessments have compounded the many challenges it faces in adapting to climate change.

Challenges with availability and quality of climate data in Africa and South Asia

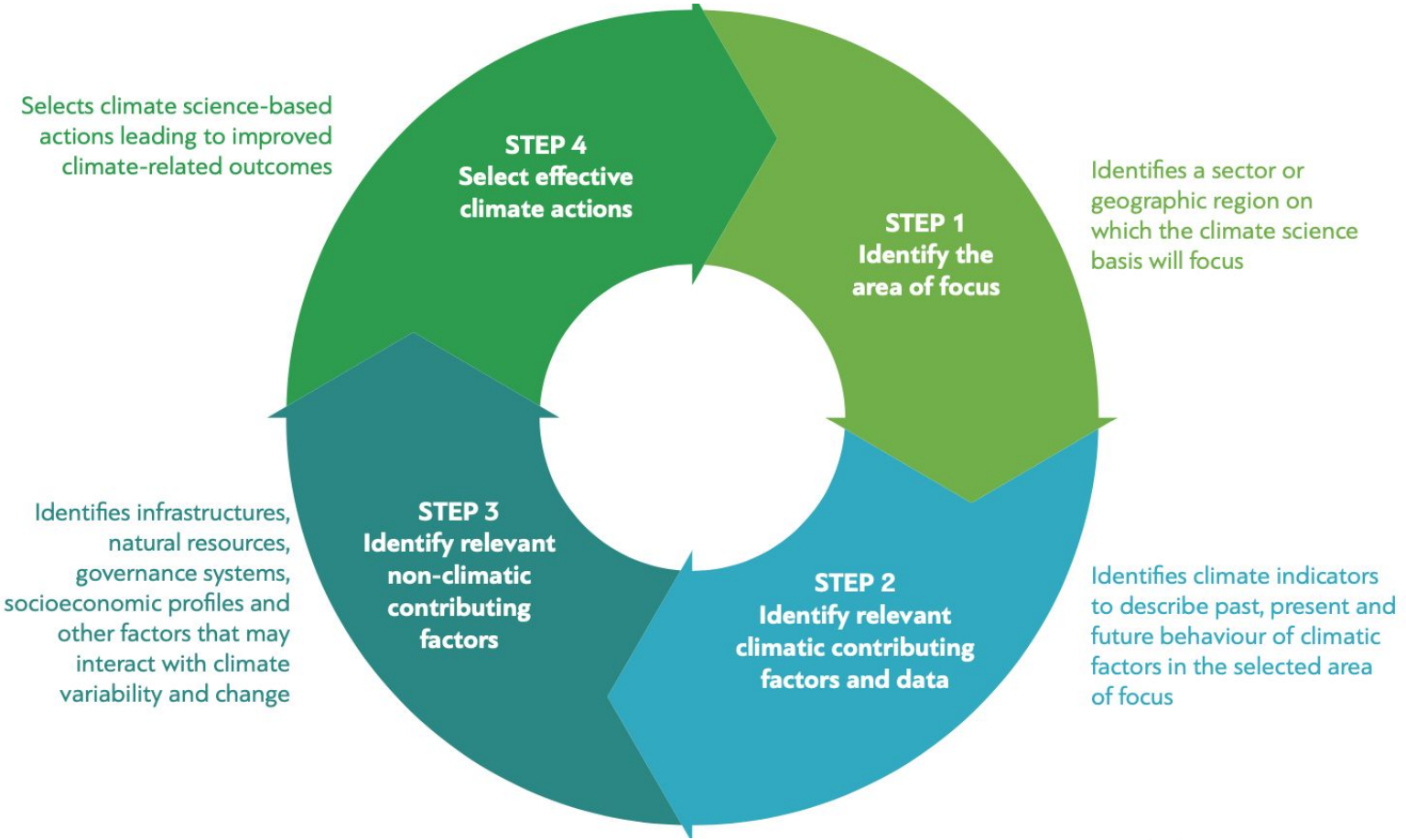
The implications of data gaps in climate science: From 1990–2019, research on Africa received just 3.8% of climate-related research funding globally (IPCC AR6).

Steps for Developing a Climate Rationale

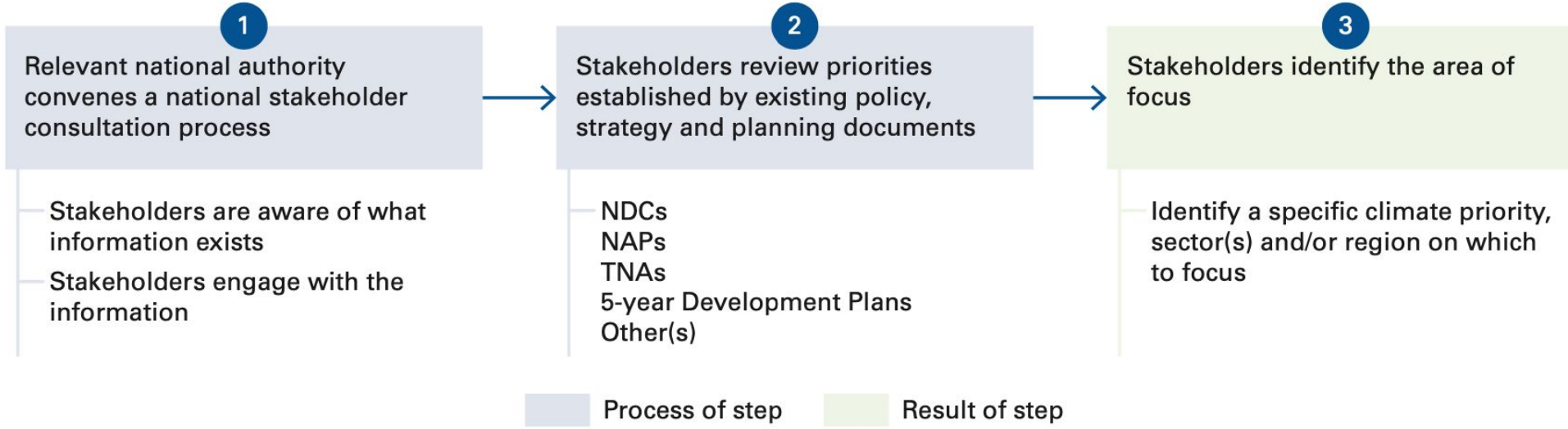
The WMO and GCF “Developing the Climate Science Information for Climate Action” Guide helps users to:

- Identify past, present and future climate conditions affecting society and the environment, and
- Select effective actions under current and anticipated climate conditions.

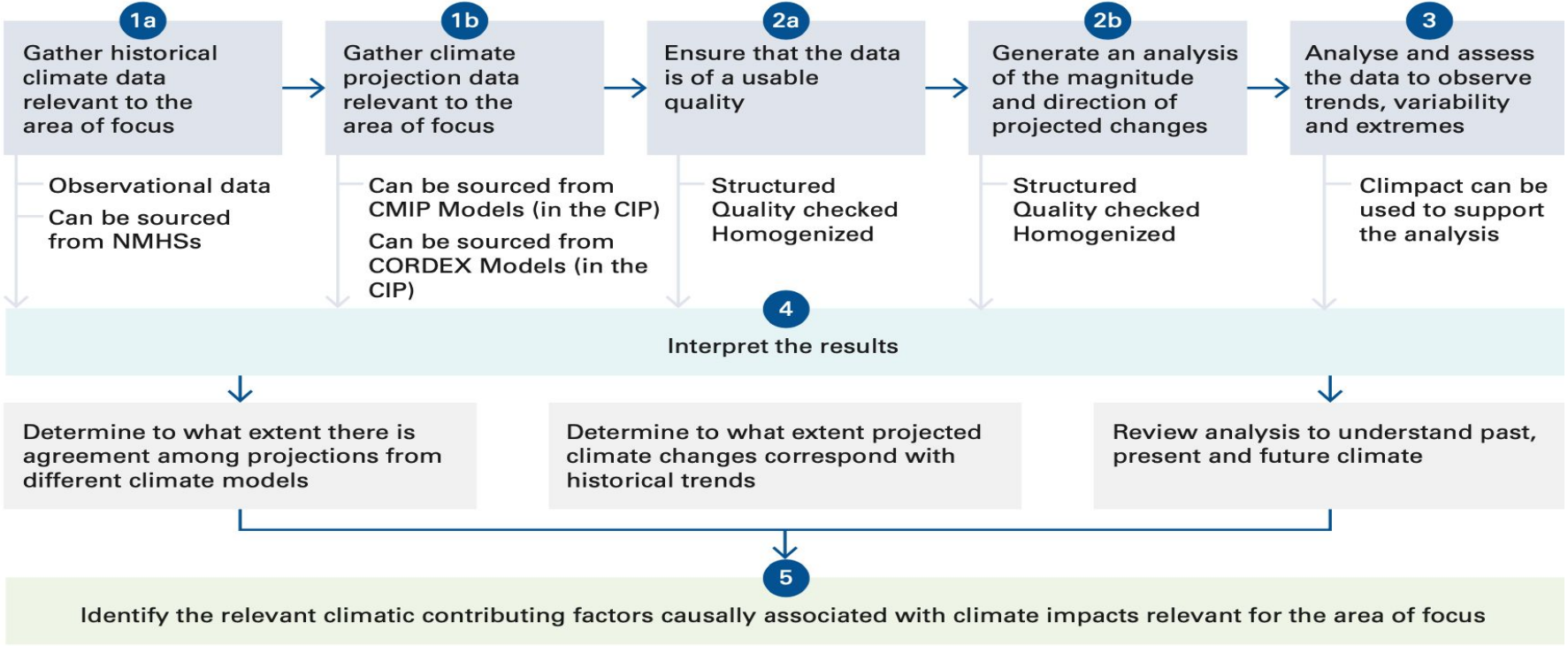
- To do this, the guide involves **a four-step process**:


Selects climate science-based actions leading to improved climate-related outcomes
STEP 4
Select effective climate actions
STEP 1
Identify the area of focus
Identifies a sector or geographic region on which the climate science basis will focus
Identifies infrastructures, natural resources, governance systems, socioeconomic profiles and other factors that may interact with climate variability and change
STEP 3
Identify relevant non-climatic contributing factors
STEP 2
Identify relevant climatic contributing factors and data
Identifies climate indicators to describe past, present and future behaviour of climatic factors in the selected area of focus

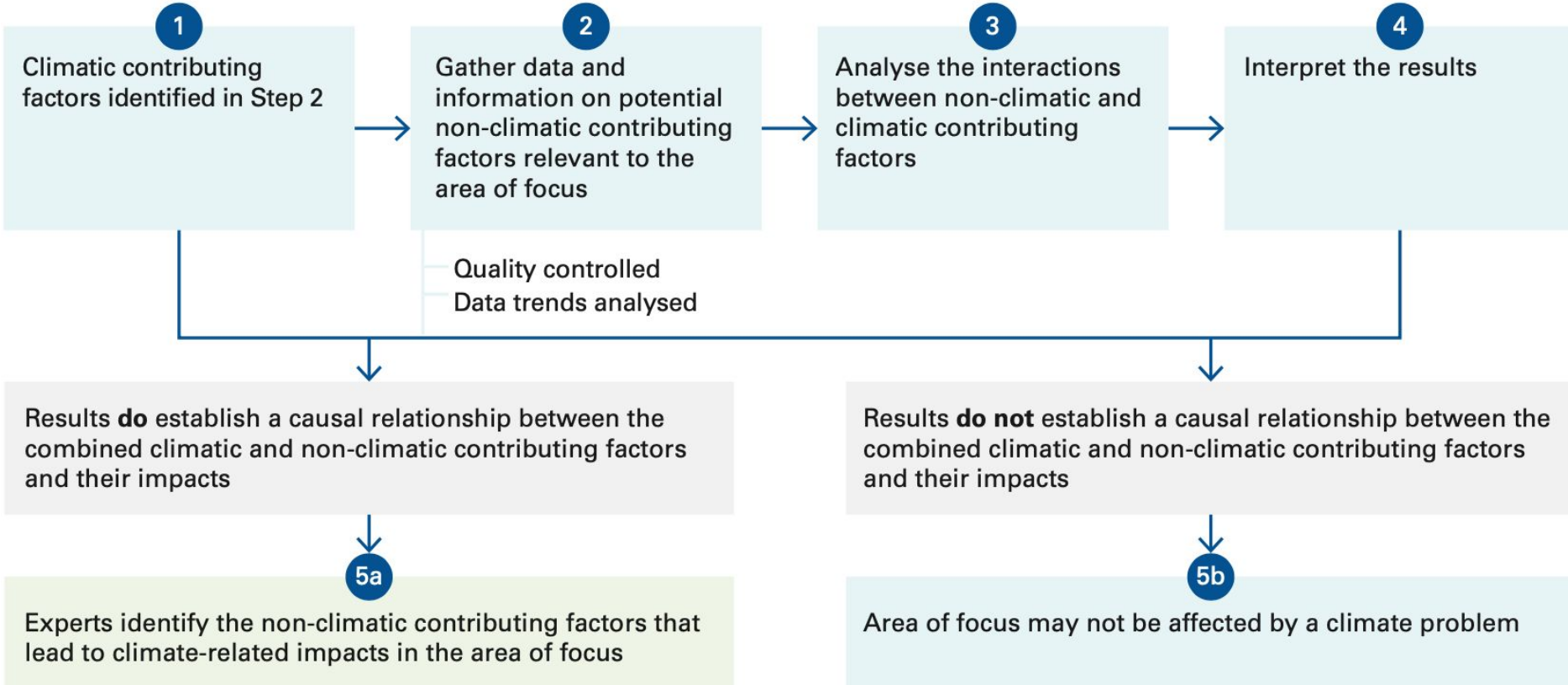
Step 1: identify the area of focus



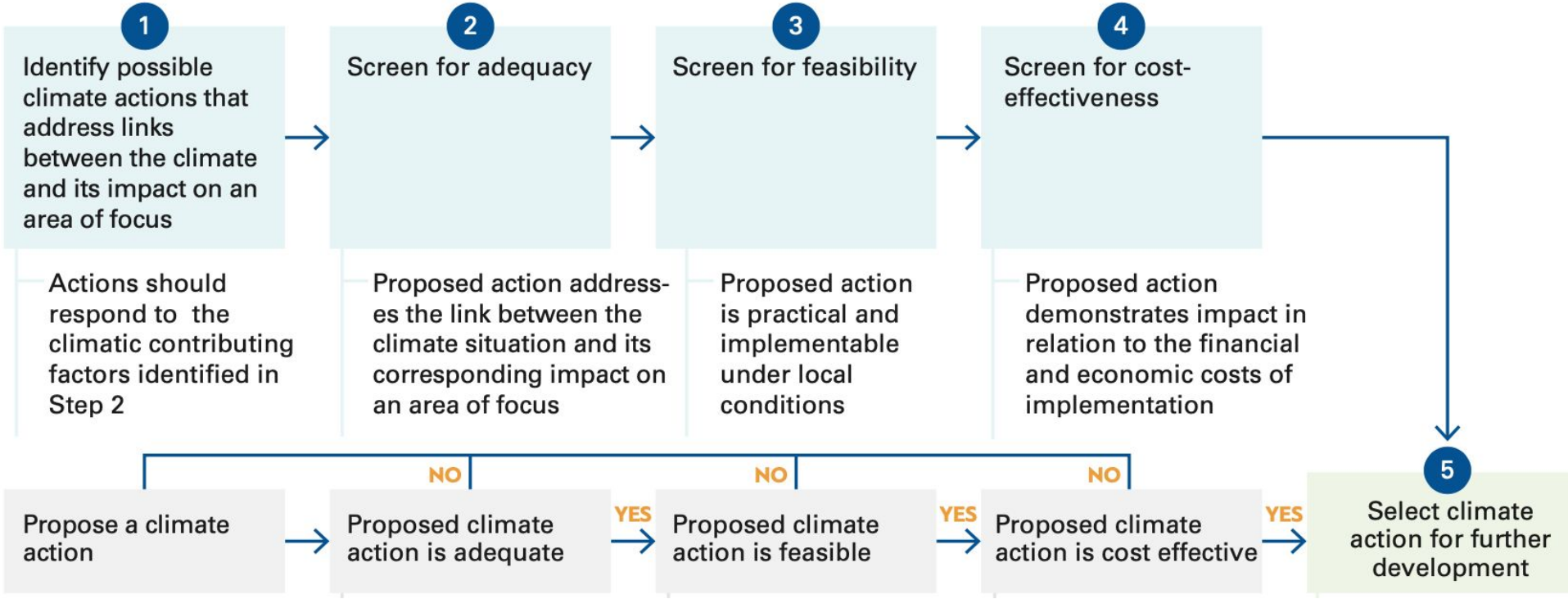
Step 2: identify relevant climatic contributing factors and data



Step 3: identify relevant non-climatic contributing factors



Step 4: select effective climate actions



The *Do's* of a climate rationale: key elements of a successful proposal

Clear identification and description of the climate impacts to be addressed
Articulation (including, to the best level possible, quantification) of the vulnerabilities and risks of the climate impacts to human wellbeing
Emissions trajectories for mitigation projects for mitigation projects
Assessment of adaptation options based on priorities (including through the use of approaches like vulnerability assessments)
Demonstration of how a proposed intervention fits into broader domestic and international policies and decision-making processes, including NDCs, NAPs, and national climate change and/or sector-specific policies.

The *Don'ts* of a climate rationale: key pitfalls to avoid in developing a proposal

Providing only surface-level overviews of climate impacts (both observed and projected), especially when a project has sub-national target areas and/or more geographically precise information is available
Failing to identify specific climate impacts or priority areas of intervention that the project activities will directly respond to
Limited details surrounding the socioeconomic implications of identified climate impacts, including an analysis of impacted/beneficiary localities, communities, economic sectors, most vulnerable groups (such as indigenous communities and women), etc.
Insufficient articulation of the connection between climate change impacts, priority areas for intervention, and the ultimate choices of activities and interventions
Limited use of quantified data (or in-person engagements) to demonstrate climate impacts, vulnerabilities, and intervention options

Practical Application #1: Example of a Climate Rationale for an Approved Funding Proposal


GCF DOCUMENTATION PROJECTS

Funding Proposal

FP131: Improving Climate Resilience of Vulnerable Communities and Ecosystems in the Gandaki River Basin, Nepal

Nepal| International Union for Conservation of Nature (IUCN) | Decision B.26/02

21 August 2020

GREEN CLIMATE FUND

- GCF FP131: Improving Climate Resilience of Vulnerable Communities and Ecosystems in the Gandaki River Basin, Nepal
- Approved in August 2020 by the GCF Board
- Focused on agriculture-related adaptation interventions in the Gandaki River Basin Area

Source: IPCC, 2021

Key principles & considerations for adaptation (GCF example)

Clear identification and description of the climate impacts to be addressed

Table 5: Projected change in climate in GRB districts

Region	Rep. District	ΔP (%)	ΔT (°C)	Δ Rainy days (%)	ΔCDD (%)	ΔCWD (%)	ΔP99 (%)
High Mountain	Manang	3.0	0.88	-1.82	4.56	1.66	32.09
	Mustang	3.7	0.94	-2.26	2.62	1.11	31.60
Mid-Mountain	Myagdi	3.5	0.87	-1.73	5.51	1.47	29.66
	Baglung	3.3	0.92	-1.44	6.93	0.83	29.56
Hill	Nuwakot	3.0	0.88	-1.38	9.32	-1.69	34.31
	Dhading	2.5	0.88	-1.55	8.25	-2.54	29.16
	Tanahu	2.5	0.91	-1.94	9.92	-0.88	27.45
	Syangja	2.3	0.93	-1.86	9.36	-0.66	29.16
Siwalik/Terai	Chitwan	0.4	0.87	-2.25	9.43	-11.34	21.76
	Nawalparasi	1.6	0.90	-2.25	9.43	-10.61	21.36

Source: MoFE, 2019. *Climate change scenarios for Nepal for National Adaptation Plan (NAP)*. Ministry of Forests and Environment, Kathmandu

Climate change problems and adaptation needs to be addressed

28. The above projections underscore the risk of occurrence and magnitude of extreme events such as winter droughts, flash floods and landslides. Increases in monsoon rainfall will lead to the saturation of soils which increases the possibility of floods, landslides and erosion of soils. This significantly impacts already vulnerable communities, incurring high recovery costs, straining limited financial resources and placing fragile development gains at risk. These major observed impacts are verified by the participants of various consultations (see Annex

Demonstration of Key Climate Rationale Elements in FP131

Articulation (including quantification to the most reasonable level possible) of the vulnerabilities and risks of the climate impacts to human wellbeing

Table 7: Land use pattern in GRB

Region		Forest	Shrub	Agri culture	Water	Barren	Snow	Others	Total	Percent by physiographic region
Mountain	Area (ha)	75,977	59,558	10,007	704	117,052	419,587	55,164	738,049	20.71
	Percent	10.29	8.07	1.36	0.10	15.86	56.85	7.47	100	
Hill	Area (ha)	1,040,110	382,744	577,590	8,651	110,767	261,779	0	2,381,641	66.82
	Percent	43.67	16.07	24.25	0.36	4.65	10.99	0.00	100	
Siwalik/ Terai	Area (ha)	222,381	21,440	181,952	5,725	12,956	25	0	444,479	12.47
	Percent	50.03	4.82	40.94	1.29	2.91	0.01	0.00	100	
Total	Area (ha)	1,338,468	463,742	769,549	15,080	240,775	681,391	55,164	3,564,169	100

44. **Economy**: Agriculture is the mainstay of the Nepalese economy. It contributes almost one-third of total GDP and provides employment to 74% of the economically active population. Agriculture exports provide important revenues for the country. However, insufficient production of key crops (such as rice and maize) to meet domestic demand explains the high import rates of staple crops in the country. The slow growth of the agriculture sector in recent years has been associated with farming practices highly dependent on weather conditions, insufficient irrigation facilities, unavailable agricultural inputs (particularly seed and fertilizers), and an increasing trend of land fallowing and abandonment23. Agriculture is dominated by small-scale farms of less than two hectares (ha)24. This occupies roughly 76% of the country's cultivated land25. Likewise, the agriculture sector is the mainstay of livelihoods for people in the GRB, around 74 percent of the population, mostly marginal farmers, still depend on agriculture for their subsistence, and one third of the Gross Domestic Product (GDP) comes from this sector.

Demonstration of Key Climate Rationale Elements in FP131

Assessment of adaptation options based on priorities (including through the use of approached like vulnerability assessments)

From several projects recently completed or under implementation in the GRB, a summary of projects is provided on ecosystems, water resources, climate change initiatives, and improving livelihood are presented in Tables 42-44 of the FS. There are several lessons learned from the past projects that can serve as a source of information, technology and process to ensure past mistakes are not repeated. The major lessons from the past projects are summarized as follows.

- Healthy forests contribute significantly in preventing landslides and protecting watersheds and thus contribute to reduce climate shocks
- EbA is an effective nature-based solution to climate change adaptation in mountainous regions to enhance ecosystem services and agricultural production
- Long-term climate resilience can be built through an integrated water resource and ecosystem-based approach
- Early warning systems can reduce disaster risk to a great extent
- Communities can improve their lives and withstand the challenges posed by climate extremes and natural hazards if they are supported with new technologies, modern farming, and greater flood mitigation measures.
- Climate vulnerability of people can be reduced through investing on biodiversity conservation and anthropogenic activities
- In order to change the adaptation capacities of the vulnerable households, they should be supported in the transfer of appropriate technologies
- Increasing vulnerable communities' access to services and opportunities enhances their livelihoods and wellbeing

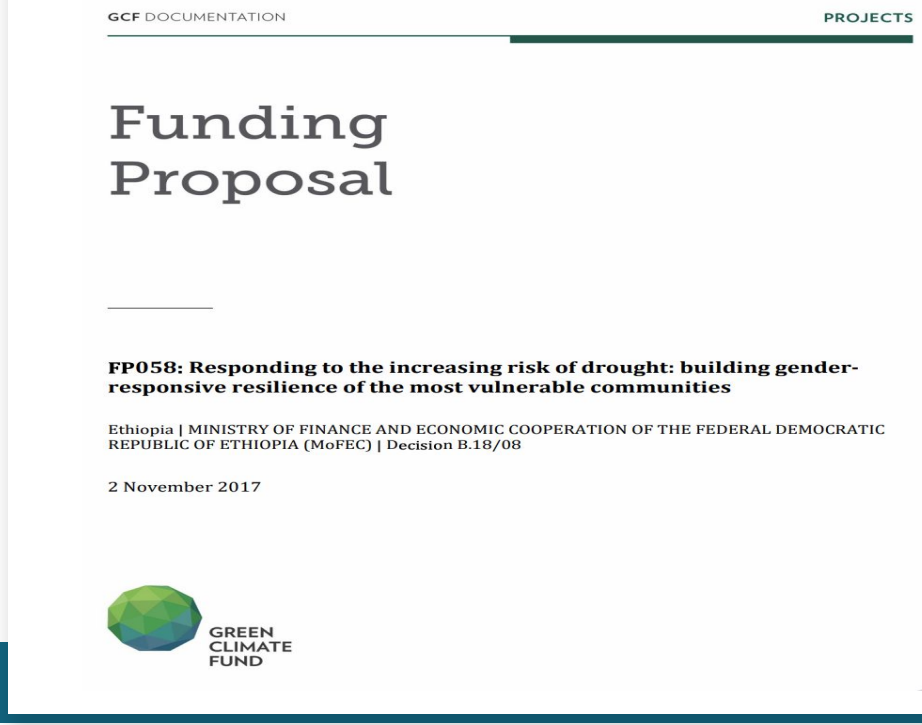
Demonstration of Key Climate Rationale Elements in FP131

Demonstration of how a proposed intervention fits into broader domestic and international policies and decision-making processes, including NDCs, NAPs, and national climate change and/or sector-specific policies

Alignment with existing policies such as NDCs, NAMAs, and NAPs

216. The planned interventions are closely aligned with the GoN's national priorities for enhancing resilience of communities and ecosystems. More specifically, the project is aligned with relevant national policies, laws, including the Constitution, the National Adaptation Programme of Action (NAPA), the National Framework on Local Adaptation Plan for Action (LAPA) 2011, and the Climate Change Policy (2011). Details of the alignment and role of the project in supporting these instruments can be found in the feasibility report (Annex 2a).

Practical Application #2: Example of a Climate Rationale for an (Initially) Rejected Funding Proposal



GCF DOCUMENTATION PROJECTS

Funding Proposal

FP058: Responding to the increasing risk of drought: building gender-responsive resilience of the most vulnerable communities

Ethiopia | MINISTRY OF FINANCE AND ECONOMIC COOPERATION OF THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA (MoFEC) | Decision B.18/08

2 November 2017

GREEN CLIMATE FUND

- GCF F058: Responding to the Increasing Risk of Drought: Building Gender-responsive Resilience of the Most Vulnerable Communities
- Focused on climate change adaptation in Ethiopia, the project was not approved when first submitted for consideration due to (in part) to a weak climate rationale
- Ultimately approved in October 2017 by the GCF Board after recommended changes were taken onboard (and on the condition that a water-balance study would be submitted to the GCF)

Source: IPCC, 2021

Practical Application #2: Example of a Climate Rationale for an (Initially) Rejected Funding Proposal

Review conducted by the GCF Board, independent Technical Advisory Panel (iTAP), and Secretariat

1 Found That

- The rationale lacked an integral socioeconomic analysis to facilitate the prioritization of interventions in a holistic manner
- Proposed activities and interventions were scattered and not clearly connected to one-another effectively (and in relation to benefits for target communities)

2 Recommended that the rationale:

- Reorient activities to focus on water infrastructure and management interventions, given the clear importance of water-related adaptation in the geographical area of focus
- Develop a hydrological study to justify interventions, including the management and maintenance of the aquifer under different climate change scenarios

Source: IPCC, 2021

To learn more about constructing a Climate Rationale:

GCF “Steps to Enhance the Climate Rationale of GCF-Supported Activities”

WMO “Climate Rationale: Strengthening Evidence-Based Adaptation Planning and Decision-Making”

Climate Analytics “Enhancing the Climate Rationale for GCF Proposals”

Green Climate Fund International Technical Workshop – Adaptation Rationale for Project Pipelines and other Climate Investment

A Framework for Climate Change Vulnerability Assessments - GIZ

Source: IPCC, 2021

Available platforms to access climate data

The appropriate standard/guidance is to use **best available data.**

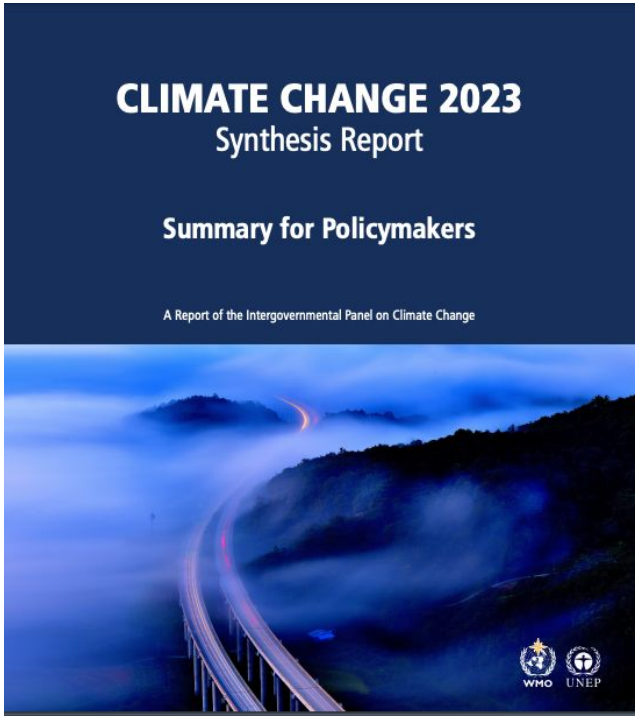
Funders accept that there are **differences in data availability** between countries/regions. Countries with limited data **should never** have proposals rejected for lacking specific sources.

Good practice is therefore to:

- Ensure **alignment of data with nationally sources** (e.g. GHG inventory reports)
- Leverage **internationally recognized sources and methodologies** for data, including IPCC reports and related sources

Source: IPCC, 2021

IPCC Sixth Assessment Report



- The latest baseline climate science can be found in the various chapters and sections of the IPCC's 6th Assessment Report

Source: IPCC, 2021

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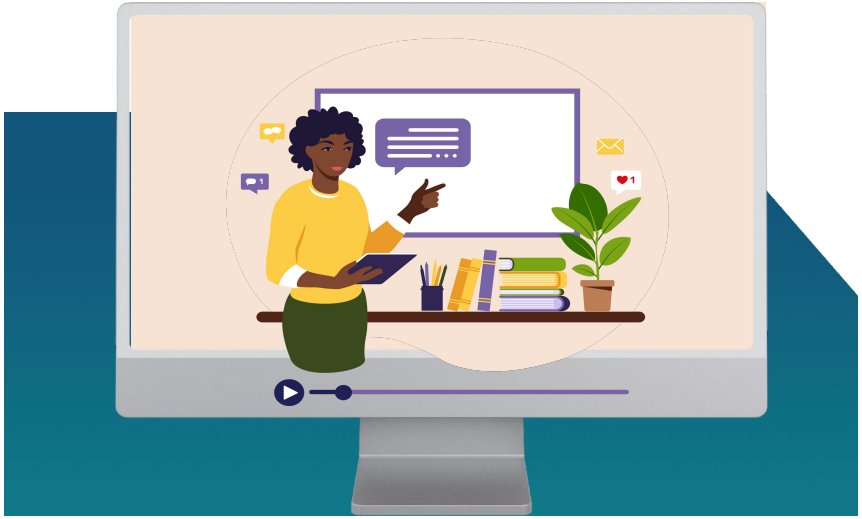
Climate Data & Projection Tools/Platforms (Climdex, ND-GAIN Index, Climate Information Platform, Climpact, etc)

Regional Climate Outlook Forums (GHACOF, SARCOF, SASCOF, PRESAO, etc) - mainly for raw historical climate data and socioeconomic analyses on impacts/vulnerabilities

Publications and Frameworks from National Meteorological, Hydrological, and other Relevant Centers and Agencies

World Resources Institute Data Platform Overview (World Resources Institute

UN environment programme START LDC CLIMATE CHANGE CLIMATE ANALYTICS



Other sources can be found in the Short Course 4 PDF, which highlights the different platforms available for accessing climate data and processed climate information.

More information on conducting risks and vulnerability assessments (as well the tools available to support in this) for climate change adaptation interventions can be found in the PDF as well.

THANK YOU !