MEET ITAP
LESSONS LEARNED

GREEN CLIMATE FUND

Independent Technical Advisory Panel

Songdo, Republic of Korea

21 June 2021

Agenda

From	To	Agenda item	Presenter Name
21:00	21:05	Welcoming remark and moderating	Abdullah Bikzad, Operations Consultant to the Independent Technical Advisory Panel – iTAP
21:05	21:15	Introduction of the Independent Technical Advisory Panel (ITAP)	Daniel Nolasco, Chair of independent Technical Advisor Panel – iTAP
21:15	21:55	Climate Rationale for Adaptation Projects	Ahsan Ahmed, Member of Independent Technical Advisory Panel – iTAP
21:55	22:25	Q&A Sessions	Daniel and Ahsan
22:25	22:30	Closing Remarks	Daniel Nolasco, Chair of iTAP

- All times are based on KST

INTRODUCTION OF THE INDEPENDENT TECHNICAL ADVISORY PANEL (ITAP)

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WHAT IS ITAP

- The ITAP was established based on Board decision B07/03:

  "The Board, through its decision B.07/03, agreed to establish an independent Technical Advisory Panel (the Panel) to provide an independent technical assessment of, and advice on, funding proposals. The Panel will operate as an independent technical advisory body, and will be accountable to the Board. "

- With terms of reference established by GCF/B.09/09, February 2015:

  "The Panel, in the conduct of its technical assessment of funding proposals, will be provided with the final funding proposal..."

WHO WE ARE

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Daniel Nolasco (Chair)

Former Director of the International Water Association and the Water Environment Federation. Fellow of University of California's Water-Energy Nexus Group. Consultant to water utilities and advisor to boards of private sector institutions on climate change issues. Co-author of six books and over 100 technical papers.

Ahsan Uddin Ahmed

A member of IPCC since 1995. Specialized in designing and evaluating adaptation projects. Associated with scientific networks. Currently a freelance consultant.

Felix Dayo

Previously Member, CDM Executive Board's CDM Methodology Panel, Small Scale CDM Working Group and CDM Registration and Issuance Team. Presently Adjunct Professor of Engineering and Public Policy, Carnegie Mellon University, USA; Visiting Professor of Energy and Environmental Engineering, Emerald Energy Institute, University of Port Harcourt, Nigeria.

WHO WE ARE

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Claudia Martinez

Director of E3-Ecologia, Economia y Etica. Chair of the Food and Land Use Coalition- FOLU-Colombia. Former Vice-president for Social and Environmental Development and Director for Sustainable Development at the Latin American Development Bank (CAF). Former Deputy Minister of Environment of Colombia

Marina Shvangiradze

Former member of CDM Executive Board, Expert Group on Technology Transfer and CDM Accreditation Panel. Acting member of CDM RIT. Manager of Georgia's second and third national communications, technology needs assessment and other climate change related projects.

Andreas Biermann

Director at Globalfields ltd. Member of the Technical Panel for Climate Bonds Initiative Grids Standards. Former Head of Climate Finance at EBRD. Former Deputy Director Mitigation at the Green Climate Fund

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Caroline Petersen

Director at Prosper with Nature. Former Global Head of Ecosystems & Biodiversity for United Nations Development Programme (UNDP), with 13 years of experience supporting developing country governments to access GEF, GCF and other funds. Member of the National Council of the Botanical Society of South Africa.

Rey Guarin

21 years as independent climate change advisor/ consultant on mitigation, adaptation and finance covering various public and private sector policies, programs, plans, strategies, projects in Asia Pacific region.

Ricardo Nogueira

Ricardo Nogueira is an independent expert on climate finance, international development, and sustainable investing. His clients include major philanthropies, governments, and multilateral development banks. Rick is also a Member of the Board of Washington, DC's Green Finance Authority, the first municipal Green Bank in the world.

ITAP ASSESSMENT PROCESS

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The Secretariat forwards a final and complete funding proposal to iTAP

iTAP reviews the funding proposal against 6 criteria and issues a questionnaire for AE to respond

The iTAP holds a meeting with the AE and Secretariat to enquire further into the funding proposal

iTAP issues its assessment report to the Board with a decision to endorse or not the funding proposal. Endorsement may be subject to conditions.

3 weeks

1 week

ESTABLISHING PROJECT-SPECIFIC CLIMATE RATIONALE: A STEP-BY-STEP APPROACH

Ahsan Uddin Ahmed

What is a project-specific 'climate rationale'

It is the justification that indicates links between project-related actions and climate change

GCF offers finance for carrying out climate actions.

In ADAPTATION, `response actions are planned to reduce adverse impacts by

i) Reducing exposure to phenomena that are aggravated by climate parameters
ii) Reducing "sensitivity" ...., and
iii) Enhancing capacity
    - Human capacity – skills, training, demonstration …
    - Social capacity – policy, institutions, community plans …
    - Environmental capacity – green belt, sea grass, ...
    - Physical capacity – infrastructure (cyclone shelter, ...); &
    - Financial capacity – CB emergency fund, O&M fund, ...

What is a project-specific 'climate rationale' (CR)

It is the justification that indicates links between project-related actions and climate change

GCF offers finance for carrying out climate actions.

In ADAPTATION, `response actions' are planned to reduce adverse impacts by

i) Reducing exposure to phenomena that are aggravated by climate parameters
ii) Reducing "sensitivity" ...., and
iii) Enhancing **capacity**

A GCF-able project presents apparent solutions to a known problem, which is worsened/aggravated by climate parameters

Establishing CR is an effort to rationalize, with appropriate facts and evidence, the "causality" between the apparent 'solution' and climate change.

STEPS TO FOLLOW

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Step 1: Define the problem statement

Once it is established that CC has indeed occurred (in the target location of a given country), it is important to define the CC-related "problem", which is `causing' the `effect(s)'

Examples:

1) Total seasonal rainfall (RF) and floods
2) Rising temperature and simultaneous reduction in seasonal RF & drought
3) Change in RF intensity and landslide in hills

Step 2: Observational Network to provide basis for evidence

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In step-1, key climate parameters are identified
The next step is about establishing physical relationship(s) between climate parameters and the "problem"

The most representative observational data-network provides for the basis for presenting climatological evidence.
As adaptation is location-specific, evidence base must be derived from location-specific representative meteorological stations.

The objective is not to publish a paper, rather to present the scientific evidence base on which actual investment decisions can be taken. This warrants scientific rigor in analyses so that reviewers can place confidence in your justification.

Step 2: Observational Network to provide basis for evidence *(contd.)*

Requirements

Long-term longitudinal observation data sets (NOT computer-generated data)

A minimum of 30 years of observational data from stations

A technical analysis of location/region-specific met data

FAQs

Can anybody use computer-generated "gridded" datasets?

Can anybody use less than 30 years of longitudinal data?

CC might trigger a completely new phenomenon. How to capture that?

The observation may be valid; however, one cannot decide on the basis of causality which is not scientifically validated. Since one is never certain what exactly has caused the phenomenon to take place, we cannot establish causality.

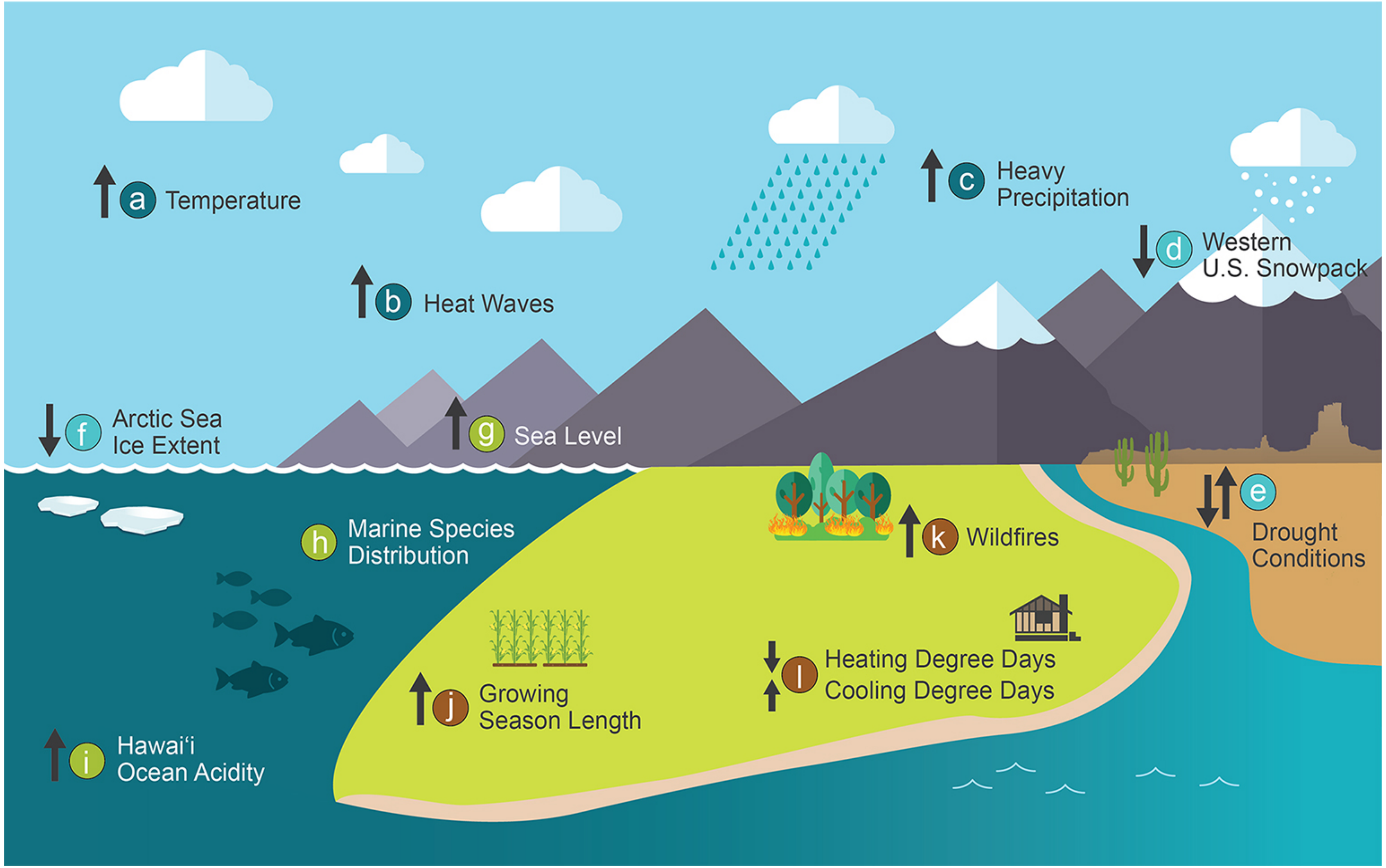
Step 3: Identify indicators and indices

In earlier steps, key climate parameters with respect to main observed problems are identified
It is necessary to probe further into the causality by selecting indicators and indices

Indicators regarding direct impacts – number of days with peak temperature (T) over a known threshold
Indicators regarding indirect impacts – (a) floods caused by change in (seasonal) rainfall (RF); (b) area of coastal land inundated (Km^2) by seawater during storm surge.

A known threshold can be indicative of impacts.
[Not all indices are relevant to a local situation].

*Refs: * USGCRP website; * Karl et al., 1999.*



Source: USGCRP

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Step-4: Establish historical trends

How climate parameters and indices have been changing over time?

The selection of time-scale is critically important to indicate causality. [*Example: Flooding in an area is often better understood when seasonal RF is plotted, instead of Total RF*].

An analysis of frequency of occurrence of a known phenomenon beyond a certain threshold often gives specific idea regarding impact.

Comparison of trends: Long-term historical trend VS trend in recent decades.

[If a linear trend is discernable, it is better to present the linear regression equation including the slope & R^2 value]. [Info regarding choice of methodology is important]. [Never to forget data source].

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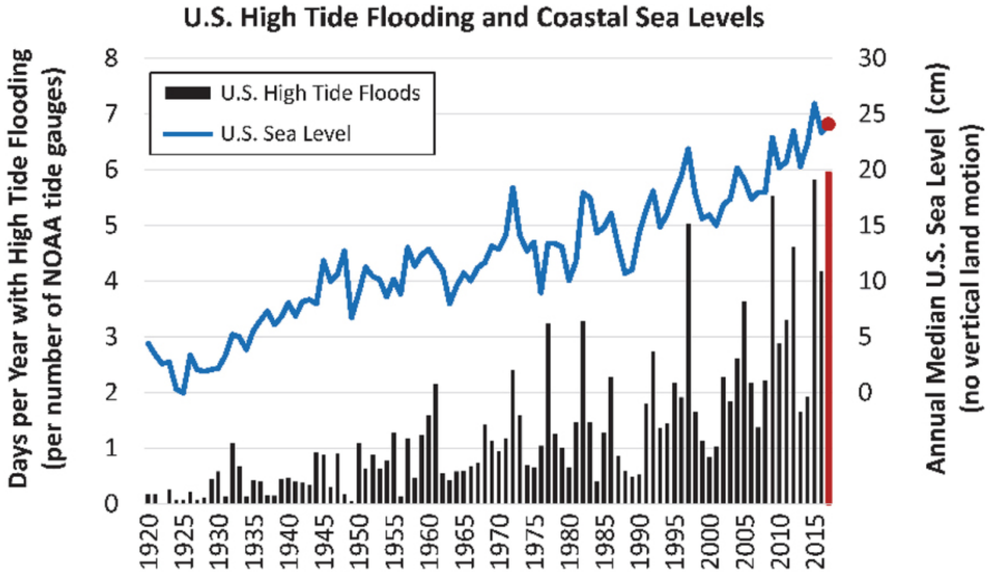
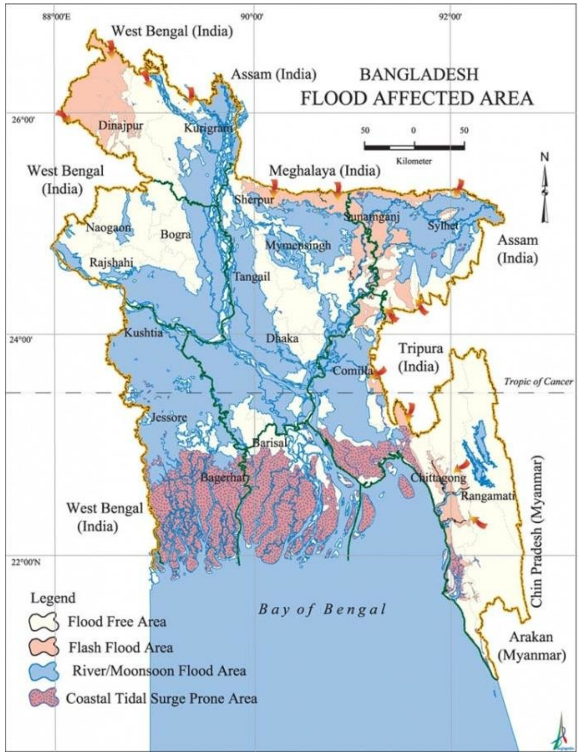
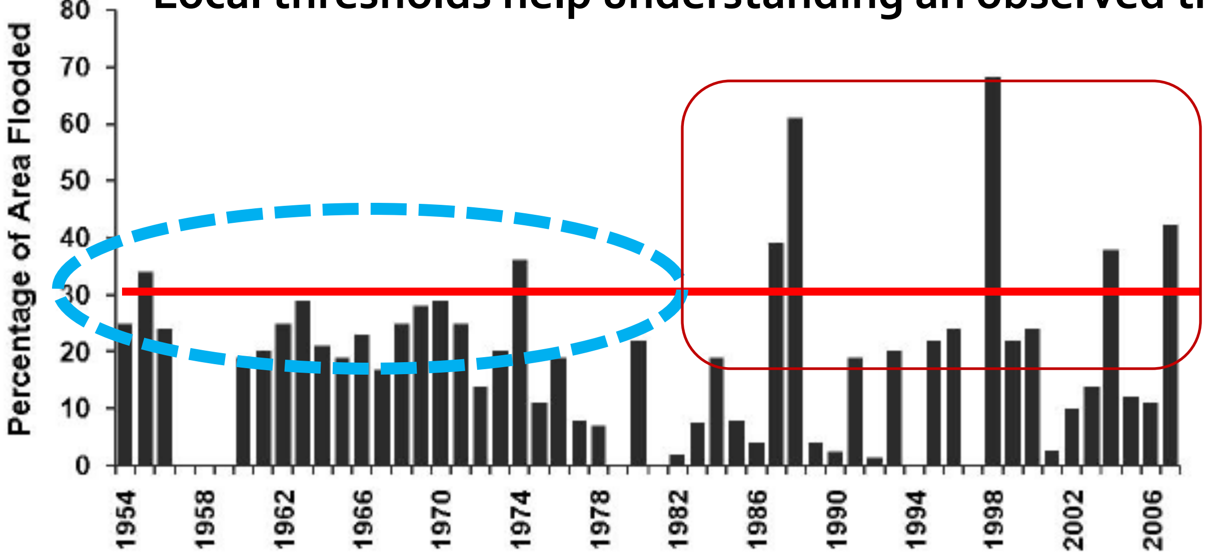




Local thresholds help understanding an observed trend.



Climate change signals in time series

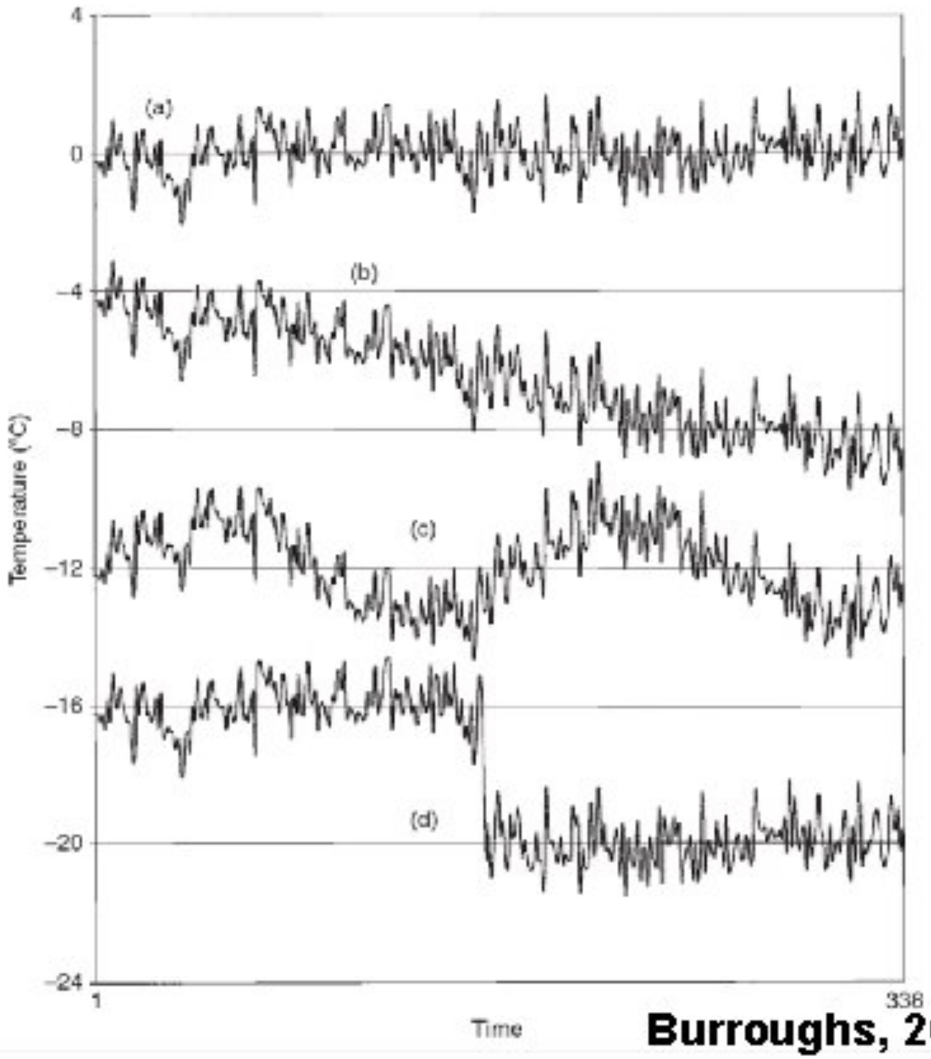
(e.g. global temperature time series, ENSO index, etc)

Climate variability – Stationary climate

Climate change – Downward trend (e.g. cooling)

Periodic change

Abrupt change



Burroughs, 2007

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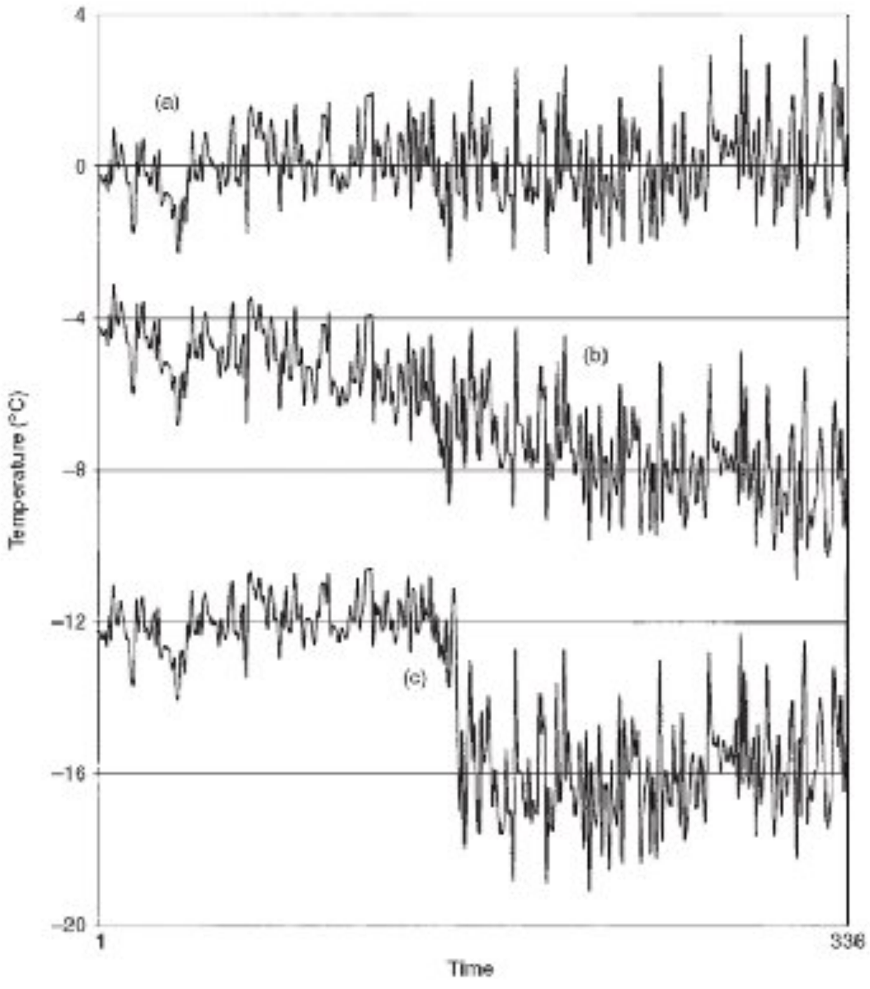
Climate change signals in time series

(e.g. global temperature time series, ENSO index, etc)

Stationary mean but doubling of amplitude of variability

Linear trend and change in variability

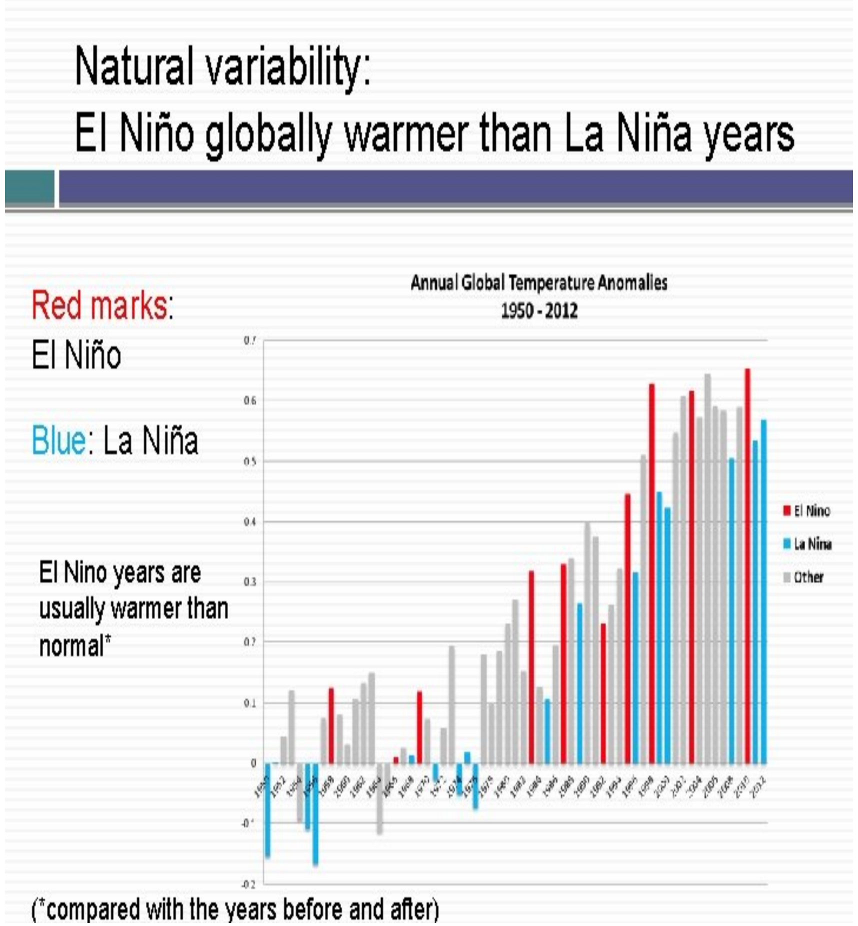
Abrupt change and change in variability

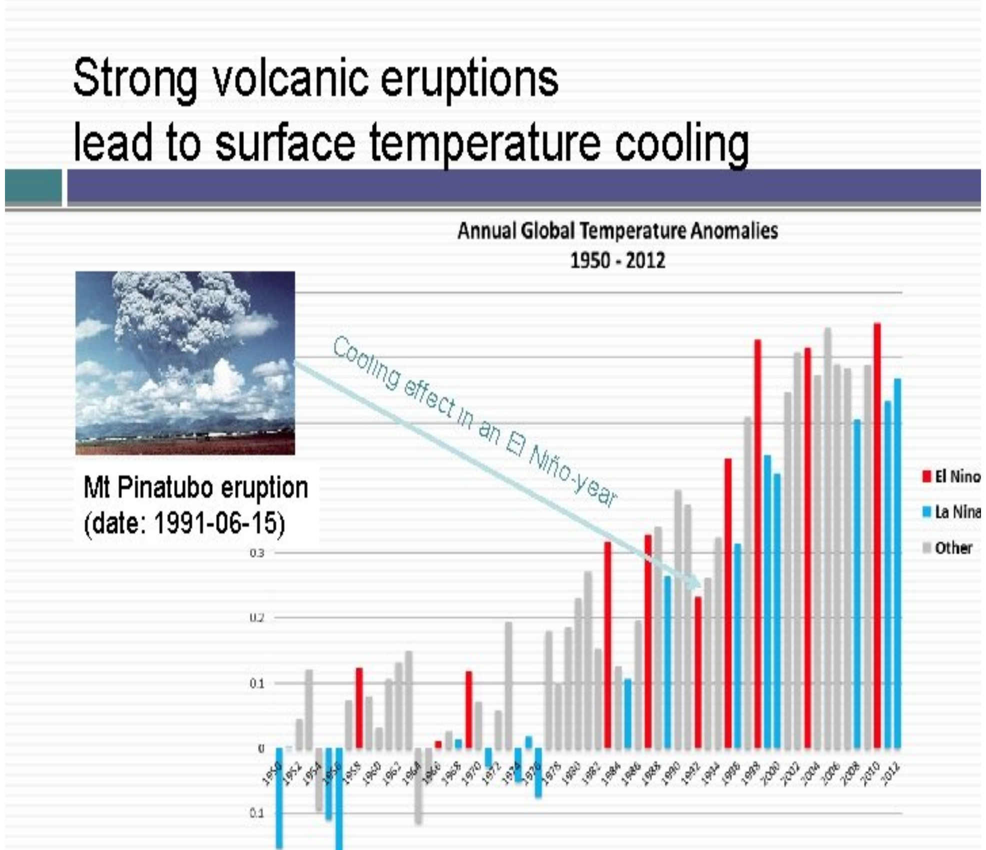


Source: Burroughs, 2007

Step 5: Explain any data gap and challenges

There must be a scientific explanation behind one or more data. [Reveal the ODD data in a time series and apply science to explain it better].





Source: Timm, 2016

Step 5: Explain any data gap and challenges *(contd.)*

The greater is the observational duration, the lesser is the uncertainty regarding investment decision-making. [].

The larger is the financial requirement of the project (i.e. size), the understanding regarding climate linkage deserves increased analytical rigor and greater certainty.

For micro-sized projects, the risks involved in decision-making generally is the minimum. Data duration requirement is low.

Step 6: Climate projection: Choice of a model

Assuming that the investment is about to be justified for addressing today's impact(s), projection for future climate is most relevant for the timeframe that matches "project implementation period".

However, future projection cannot be done without climate models.

ALL MODELS ARE WRONG, ONLY A FEW ARE USEFUL.

If a model (say, a general circulation model, GCM) can reproduce the climatology of the target region and its outputs match well with the observational data, then the model may be considered as a useful model.

Without country-specific "validation", GCM/RCM outputs are NOT acceptable for climate justification.

Step 6: Climate projection: Choice of a model *(contd.)*

GCM outputs provide only coarse climatological data, which cannot be used effectively for understanding climate-related phenomena for a country or a small territory, especially those involving rainfall.

It is always better to use validated Regional Climate Models (RCMs), having dynamic downscaling features in its algorithm.

In the validation process if the pattern projected by the model is out of synch with the historically observed trends, then the model is NOT validated. Another model should be chosen, starting the validation process again.

The methodologies used and the process of calibrating the model eventually chosen against the historical data should be fully outlined in the appropriate annex to the funding proposal, so that the validation of the model can be demonstrated.

Step 6: Climate projection: Choice of a model *(contd.)*

In a funding proposal, it is not sufficient to state that a particular model has been peer reviewed and published or utilized in a National Communication submitted by Government to the UNFCCC.

It is important to investigate the model in depth – considering how it was constructed and validating it using observed data in the specific area of intervention.

Step 7: Modelling future climate: Scenario & baseline

Scenario: IPCC used four potential pathways for the climate modelling and research for the IPCC fifth Assessment Report (AR5) in 2014.

The scenarios, called Representative Concentration Pathways (RCPs), are labelled after a possible range of "radiative forcing" values up to the year 2100, resulting from different concentrations of GHGs in the Earth's atmosphere. The mildest scenario RCP2.6 is no longer considered possible.

The RCP4.5 scenario for the year 2100 is often selected for use, as it is described by the IPCC as an "intermediate scenario", that can be achieved under the Paris Agreement.

Step 7: Modelling future climate: Scenario & baseline (contd.)

Baseline: If the analysis of trends involving observed climatology has already considered a minimum of 30-year time slice of 1991-2020, the same climatology should be chosen for the validated model to be run for future projections.

The baseline climatology then becomes the reference climatology for the modelling.

Step 8: A timeframe for applying the Model

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Climatology of a specific area represents an average of at least 30 years of meteorological data.

Today's climatology means at least 30 years of projection (by a validated model) that covers a timeframe where the current year is approximately around the centre. 2005-2035 represents an acceptable timeframe for the projection for the project.

If we are responding to the changing climatology and its current/ ongoing impacts, projection should focus a timeline that matches with the duration of project implementation.

The period will thus represent a project-relevant timeframe in which projected climatological changes can be discernable. The outcome will provide a sense of the urgency, based on the extent of change in the climate parameters in question, as a basis for deciding for/against mobilization of immediate financing.

Step 8: A timeframe for applying the Model *(contd.)*

The period will thus represent a project-relevant timeframe in which projected climatological changes can be discernable.

Step 9: Apply validated model to generate outputs

Once the appropriately downscaled model has been chosen, with an appropriate timeframe and scenario selected, the model can be applied. Model outputs can be generated for the key climate change parameters related to the project interventions.

The results in terms of the projected trends can then be compared with the observed data to see the extent of change likely to occur due to climate change.

The outcome will provide a sense of the urgency, based on the extent of change in the climate parameters in question, as a basis for deciding for/against mobilization of immediate financing.

Step 10: Extent of change & measures to address impacts

Once the extent of change (EOC) is revealed, the associated adverse impacts need to be established. Various methods, models, tools and techniques can be employed for impact analysis. [Examples: Hydrological model for flood analyses; use of Penmann-Monteith method and/or SPEI method for drought analysis; etc.].

The analysis needs differentiation between EOC due to climate change and non-climatic origin(s).

The funding proposal should make clear projections regarding the anticipated impacts of these climate change parameters on vulnerable communities, livelihoods, infrastructure and ecosystems, in the absence of the project interventions.
Project activities can then be designed to reduce these specific vulnerabilities. The proposed measures must be designed based on EOC caused by CC.

It is not enough to demonstrate with a validated RCM that there is going to be more or less rain in the future due to climate change to justify investments in adaptation measures.

It is needed to explain what general responses (i.e., interventions) **are proposed and considered to address the changes and related impacts** (for adaptation projects, emphasis should be on changing sensitivity to impacts and/or change in adaptive capacity)

Based on the known impacts, 'solutions'/responses are needed to be considered and prioritized, on the basis of their technical soundness, cost-competitiveness/financial viability, gender integration capacity and social/community acceptability

Towards establishing technical merit(s):

- Will the solution reduce sensitivity of the issue/problem?
- Is there evidence that the solution will enhance adaptive capacities at systemic level in a sustainable way? Has it worked before in the country?

It is important to explain whether there can be viable alternative responses/solutions/ interventions for the same CC-related problem(s)

For a known problem, there can be multiple responses
An analysis of rationale for prioritizing one response over the other alternative responses is important

An analysis of the barriers, as perceived within the prevailing context of the country/region, to the implementation of the chosen/proposed intervention(s)

This will explain what institutional/technical response(s) should be considered in order to overcome the barrier

Q & A

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