



CLIMATE INFORMATION AND SERVICES

A fast track course on application of climate information and services in decision making



WHAT IS THE ROLE OF CI/S FOR EFFECTIVE DEVELOPMENT PLANNING AND POLICY?

This section focuses on practical application of climate information and services in development planning and policy including sectoral policy and domestication of international agreements.

Climate is typically one of many factors one must consider in development planning. Climate information and services can provide valuable insight along the decision-making process.

Climate variation and climate impacts vary from country to country and sector to sector.



**DEVELOPMENT
PLANNING**



**AGRICULTURE
DEVELOPMENT**



**DISASTER RISK
REDUCTION**



**INFRASTRUCTURE
AND CONSTRUCTION**

In the face of **increasingly uncertain climate**, achieving medium and long-term development objectives will increasingly depend on climate predictions and the use of climate information.

Role for Climate Information and Services

Climate information can build resilience through informed decision-making across social, economic, political and ecological dimensions. It can guide adaptation planning and investments at various levels, and sectoral planning for key climate-sensitive sectors. Climate-smart development planning can **reduce the impacts of climate-related disasters, improve food security, enhance water resource management and build resilience.**



**DEVELOPMENT
PLANNING**

Agriculture is one of the most climate-sensitive sectors in economies around the world. As a rain-fed sector, the quantity of precipitation and climate extremes, such as droughts and floods, affect **sector productivity, food security and economic development**.

Role for Climate Information and Services

Predicting seasonal climate behavior can help stakeholders to **minimize impacts of hazards** through planning how to avoid the risk or taking precautionary measures as well as to **maximize on the predicted variability** such as building water storage tanks to store water for irrigation.



Majority of **disasters experienced in Africa are weather or climate driven**. For instance, weather parameters such as rainfall and temperature directly correlate with natural disasters such as floods, storms, heat waves leading to vector and waterborne diseases, pest outbreaks, famine, wild fires and land-slides.

Role for Climate Information and Services

Short-term weather forecasts, seasonal forecasts, early warning systems can be used to build reliable risk scenarios and, in turn, to **strengthen disaster preparedness**.



Infrastructure and construction are also vulnerable to weather and climate variability. Strong precipitation, wind and temperature extremes can physically damage buildings, bridges, railways and other forms of infrastructure.

Role for Climate Information and Services

Since infrastructure facilities typically have long lifetimes, scenario building is a key way of using climate information to climate-proof infrastructure. For instance, combining a range of scenarios and historic trend analyses can inform long-term infrastructure planning and many policy and investment choices.



Domesticating international climate agreements

Designing national contributions to international agreements, as well as their implementation, also requires the application of climate information. Climate services will have to **monitor the efficacy and relevance** of these contributions.

Climate information provides **a scientific basis** for international climate agreements and **determining global goals** for climate change mitigation and adaptation, as well as support for countries.

NDCs and climate information

BURKINA FASO 1st NDC

Mitigation Contribution

- Construction of GHG **emission scenarios** by key sectors
- Identification of **mitigation actions**



UGANDA 1st NDC

Priority Adaptation Action

- Expand **climate information** and early warning systems

ZAMBIA 1st NDC

National Circumstances

- 1.3 C **mean annual temperature** increase
- Decrease of average rainfall by a 1.9 mm/month/decade



WHAT TYPE OF CI/S IS NEEDED IN THE FIVE GFCS PRIORITY SECTORS

This section describes the climate sensitive sectors prioritized by the Global Framework for Climate Services, and the role CIS can play

GFCS priority sectors



**Agriculture and
food security**



**Disaster risk
reduction**



Energy



Health



Water

Agriculture and food security

- In an era of rapid population growth, food security remains a major concern.
 - Agriculture is vulnerable not only to market fluctuations but also to climate variability and climate change and natural hazards.
- Climate services can **improve delivery** and provides a set of actions that will improve, uptake and use climate services in this sector.

Disaster risk reduction

- Most natural hazards are caused by weather and climate.
- User-friendly climate services can help countries and communities build greater **resilience against floods, droughts, storms** and other hydro-meteorological hazards.

Energy

- Energy systems are the engine of economic and social development.
- Energy generation and planning of operations are markedly affected by meteorological events and **energy systems** are increasingly **exposed** to the vagaries of weather and climate affecting both the availability and energy demand.

Health

- Climate variability and climate change have important repercussions on public health.
- Temperature and rainfall conditions influence the spread of communicable diseases while extreme weather events cause **injury** and **death**.
- Demand-driven climate services can **empower** the **health community** to save lives.

Water

- Water is vital for life, but an over or under supply can threaten life, societies and economies.
- The amount and availability of water is strongly influenced by climate variability and change.
- Seasonal **climate outlooks** and other climate services and products can greatly **improve water supply management**.



HOW CAN DECISION- MAKERS STRENGTHEN CI/S AND THEIR USE?

This section introduces how climate information and services can fulfil their potential toward the achievement of development objectives. What can policy-makers do?

Effective Climate information for decision making must be:

1. **Responsive to user needs and priorities:** practical application to decision makers, communities and other stakeholders.
2. **Downscaled:** to draw effective localised conclusions for plans and policies and to identify uncertainties, opportunities and barriers.
3. **Accurate:** so as to clearly define risks to be accommodated
4. **Accessible:** easy to find and interpret by users
5. Have been collected over a long period of time (historic trends) and frequently updated
6. **Cost effective:** since there are limited resources to manage information systems
7. **Tailored:** to respond to specific needs of users, risks, vulnerable populations and ecosystems, in order to avoid information overload.

Challenges

Currently, climate information and services are not utilized to their full potential in decision-making in Africa.

Various factors affect this outcome:

1. Lack of climate information infrastructure
2. Limited technical capacity to manage weather information systems
3. Lack of capacity to disseminate climate information systematically
4. Lack of enabling policies and practices for climate services



Challenges contn

1. Underinvestment in national and local weather stations results in poor and often obsolete physical infrastructure.
2. Climate data and models require highly skilled technical personnel. Many countries find it difficult to attract and retain such human resource due to limited resources.
3. Many countries lack capacity to follow systematic processes for climate information packaging, translating and disseminating. For this reason, users of the information don't receive it in time to utilize it effectively for early warning or proactive planning.
4. Climate data and information can have positive impacts on the ground only when integrated with policy and practice.

Other Challenges include:

- **Pressing short-term development challenges:** ‘forces’ decision makers to focus on shorter time scales
- **Lack of clear communication between producers and users of Climate Information:** Climate Information shared with decision makers is highly technical and could easily lead to misunderstanding of the uncertainties.
- **Needs of decision makers are rarely communicated to climate scientists** – information should be aligned with needs of decision makers

Addressing these challenges requires the design of a framework for climate services at national level that would lay the foundation for effective climate information and services.



- Assist decision-makers to make informed decisions despite uncertainty about the future climate: Can be done by
- creating awareness about CI,
- consulting decision makers to determine their needs and priorities hence align CI in their context,
- simplify CI so that it is easy to interpret etc

Opportunities for decision-makers

CLIMATE
INFORMATION
AND SERVICES

Investment
&
Budgeting

Private sector
Incentives

Capacity
Development

Standards
&
Regulations

Mainstreaming

Investment and Budgeting

There is very serious need to invest in Climate Information in Africa:

- Africa covers a fifth of the world's total land area, but has the least developed land-based observation network of all continents, and one that is in a deteriorating state,
- This amounts to only 1/8 of the minimum density required by the World Meteorological Organization.
- Exacerbated by a stagnant pool of human and financial resources and obsolete technologies that limit capacity to produce the best services needed by decision-makers

- Underinvestment in Climate Infrastructure:
 - Results in low quality and unreliable data for making management decisions related to climate change induced disaster risks
 - Limits a country's ability to plan for slow-onset climate hazards that will require a transformational shift in economic development and risk reduction efforts.
 - A Climate Information and Early Warning Systems is an important part of adapting to Climate Change related impacts, as it increases resilience to future changes in climate/weather-related hazards.


- CI/S are considered a public good as they are expensive to produce but relatively cheap to reproduce
- Increasing budget for Climate Information can be justified by linking Climate Information/Climate Information Services directly to national development goals, such as:
 - the linkage between Climate Information/Climate Information Service & Early Warning Systems
 - food security
 - water resources management
 - health risk management
 - terrestrial and coastal ecosystem resilience

- It is vital for Africa's governments and policy makers to:
 - Increase budgetary allocation to National Meteorological & Hydrological Services to socio-economic planning and development,
 - integrate CI in national development programmes
 - Public Private Partnerships can be used to boost investments and increase funding for National Meteorological & Hydrological services.



Approaches to Mainstreaming

The following general approaches can be adopted when mainstreaming climate change into developmental policies



Climate Proofing
Approach

Climate First
Approach

Development
First Approach

The Climate Proofing Approach

- Targets climate-proofing development initiatives that have been planned without considering Climate Change and variability.
 - Done by increasing capacity to cope and recover from effects of climate change and variability.
 - Suitable for nations that use project-based approaches to development planning: entry point is project based intervention
 - An example is the USAID which aims to integrate climate resilience into the design of its country assistance development portfolio.

The Climate First Approach

Seeks to increase a society's ability to cope with effects of Climate Change and variability.

Entry point is stand-alone Climate Change policies/strategies.

- Examples are provided in:
 - Initial National Adaptation Programmes of Action (NAPA)
 - Pilot Program for Climate Resilience (PPCR) guidance documents, which allow Least Developed Countries (LDCs) to identify priority activities and projects that responded to their urgent and immediate climate adaptation needs.

Development First Approach

- Ensures climate resilience is incorporated in all development initiatives – from decision making to implementation to the outcome of the development initiative.
- Entry point for integration is often a national, local or sectoral development planning framework.

Mainstreaming Guidelines

1. Advocacy and awareness raising
2. Enabling policy environment
3. Development of tools
4. Training and technical support
5. Change in operational practice
6. Learning, experience sharing and networking





Climate information and services have the potential to build Africa's resilience to climate change impacts. The quality, accessibility and scale of climate information has significantly improved over the years. Yet, gaps in terms of quality, coordination and analysis of the information and in its dissemination and communication still exist.

The climate mainstreaming efforts by governments across Africa have also increased. However, decision-makers and political leaders have not yet utilized them to their full potential in development planning. Concrete actions to addressing challenges are available for decision-makers and can boost the reliability and usability of climate information and services and ultimately lead to climate-smart decisions among all user groups.



Thank You!

Ideas
to
Action