



WEATHER PACKAGE

Overview: Climate Services for Agriculture

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AIM for Scale
AI Weather Training

SEP 22-26, Abu Dhabi

Outline

- 1. What are Climate Services**
- 2. Why Climate Services for Agricultural?**
- 3. Time scales and decisions**

1. What are climate services

What are climate services?

Global Framework for Climate Services (GFCS) :

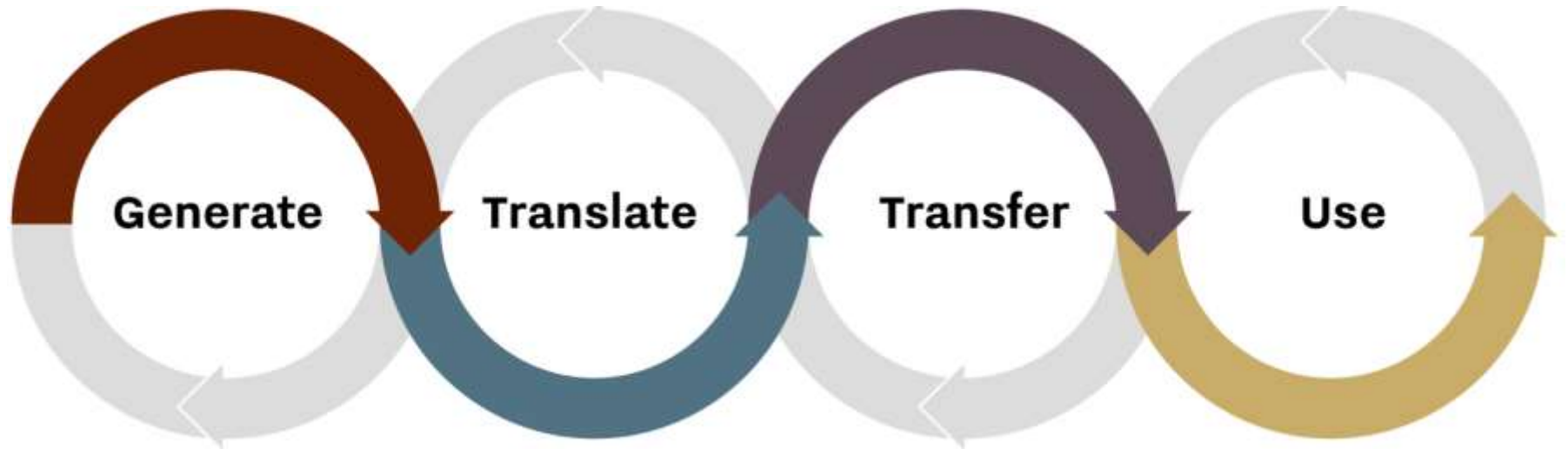
““A climate service is a **decision aide** derived from climate information that assists individuals and organizations in society to **make improved decisions**.”

Climate Services Partnership (CSP):

“Climate service involves the **production, translation, transfer, and use** of climate knowledge and information in **climate-informed decision-making** and climate-smart policy and planning.”

What are climate services?

Pillars

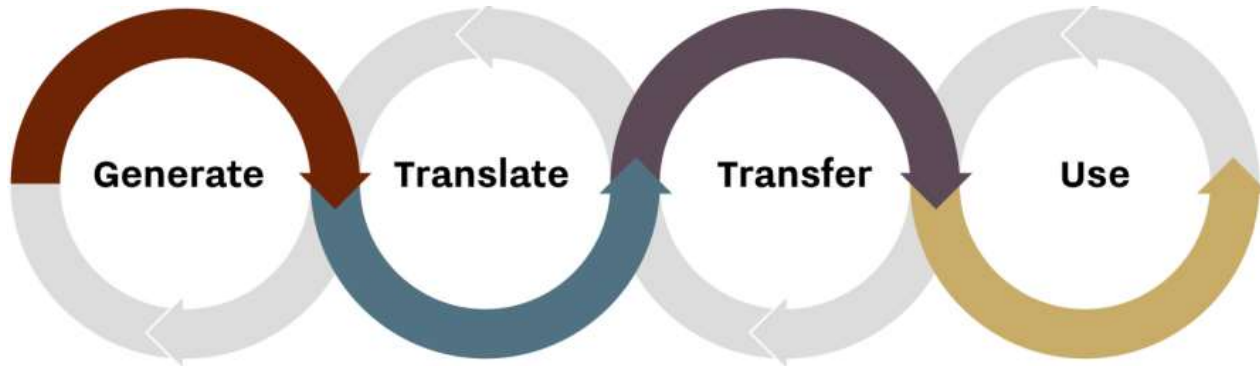


What are climate services?

Pillars

- ***Generation***

- Production of climate data, information, knowledge
- Forecasts at a range of lead times
- Collection, management and analysis of climate observation records
- Responsibility of NMS

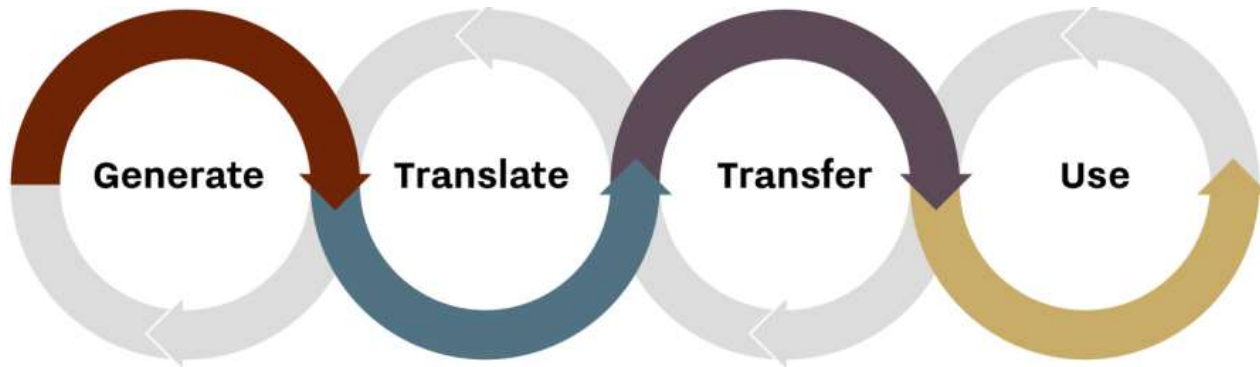


What are climate services?

Pillars

- *Generation*
- ***Translation***

- Combine climate and other information to increase relevance to decisions
- Climate impacts on crops, rangelands, water resources
- Climate informed agricultural advisories, decision support tools
- Role for agricultural research, extension

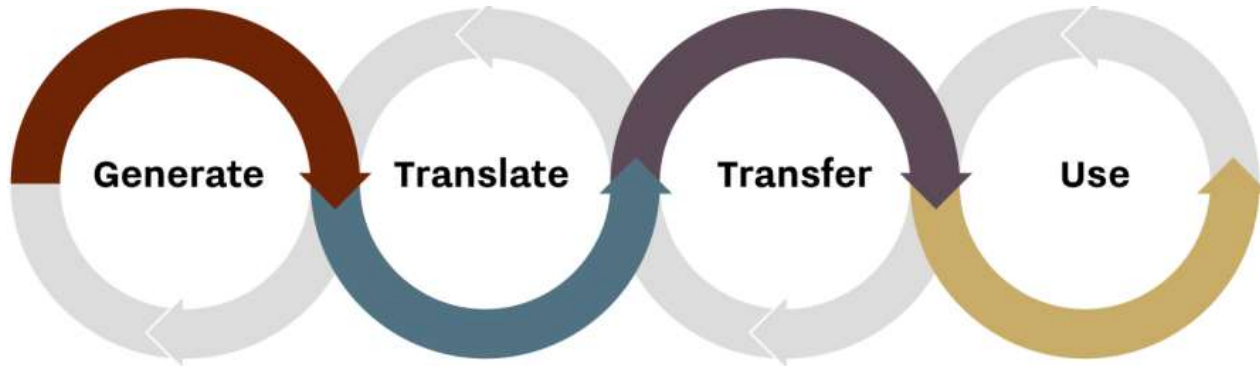


What are climate services?

Pillars

- *Generation*
- *Translation*
- ***Transfer***

- *Communication, not dissemination*
- Number, remoteness, constraints of farmers makes *transfer* pillar particularly important for agriculture
- Role for agricultural extension

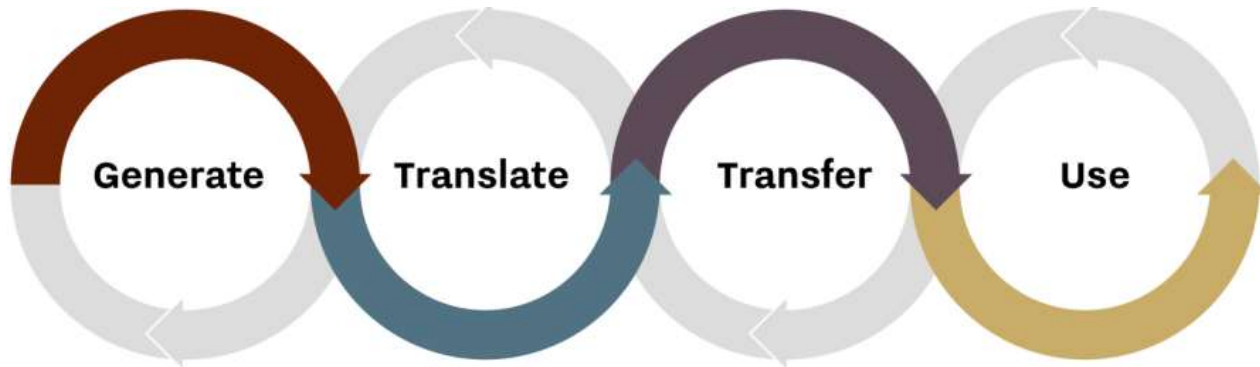


What are climate services?

Pillars

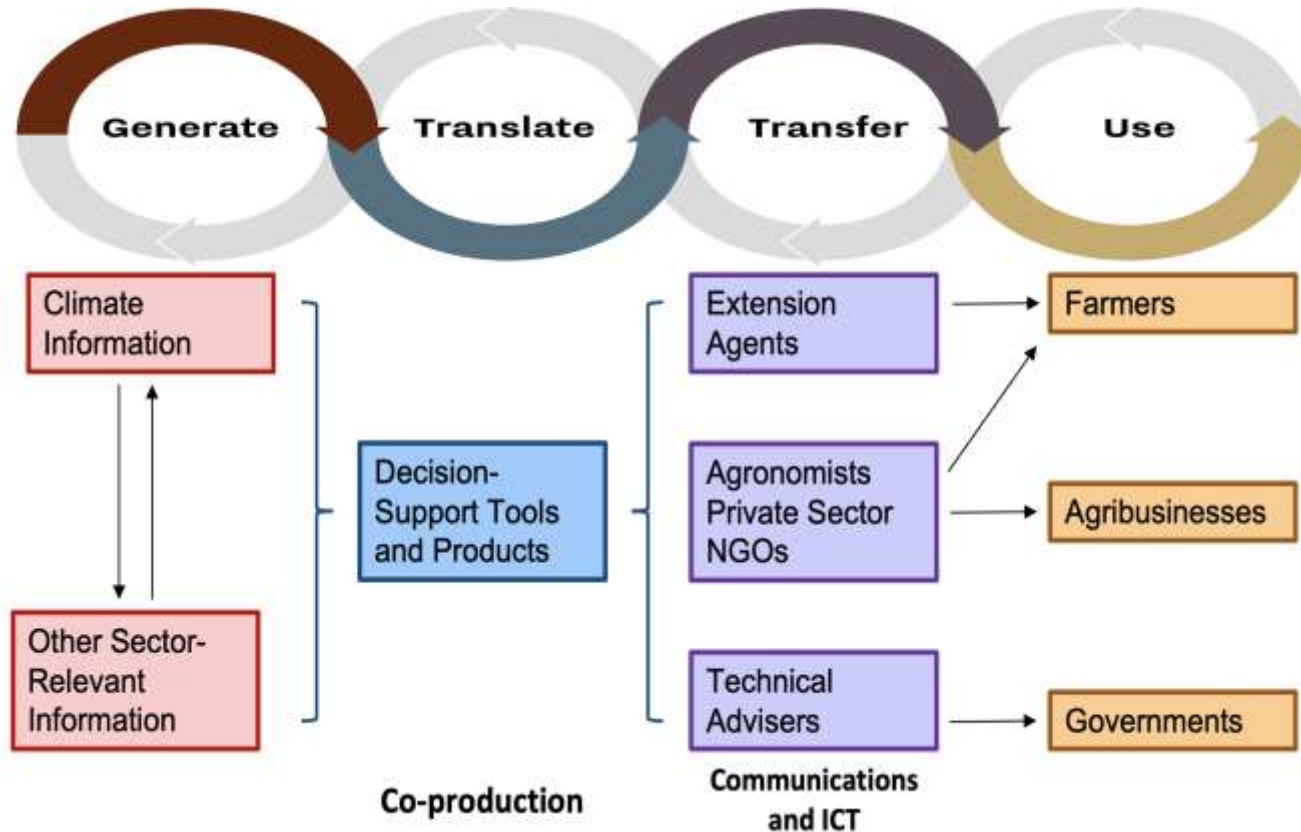
- *Generation*
- *Translation*
- *Transfer*
- ***Use***

- Incorporation of translated and transferred climate knowledge into decision processes and policies
- May involve training, other forms of support for agricultural decision makers



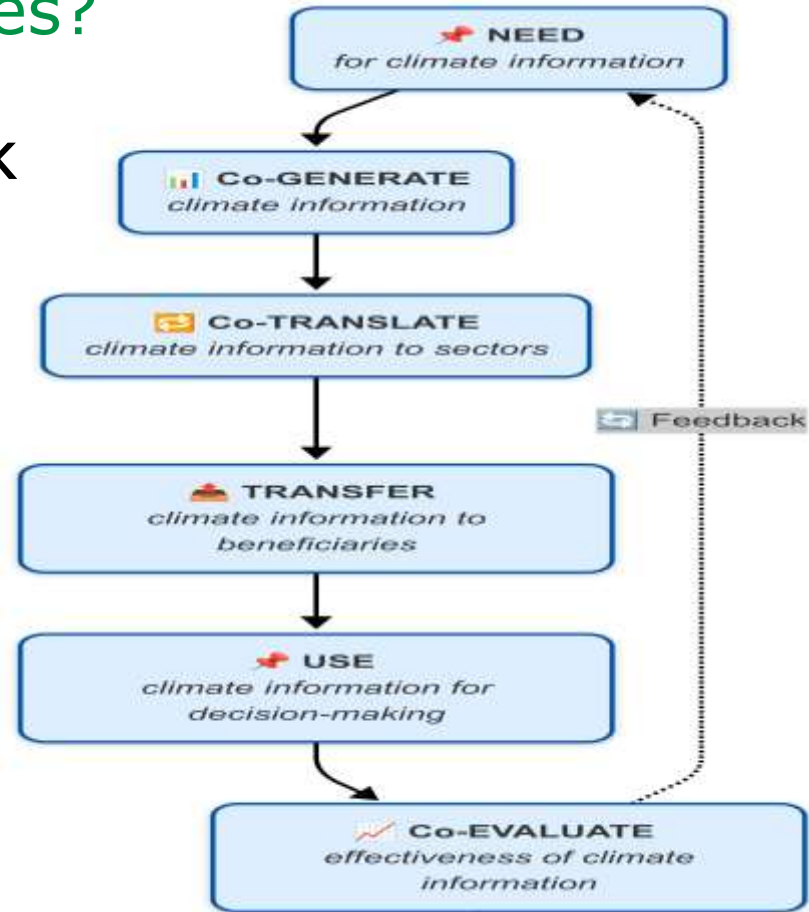
What are climate services?

Pillars: Summary



What are climate services?

Pillars: A different look



2. Why Climate Services for Agriculture?



Why CS for Agriculture?

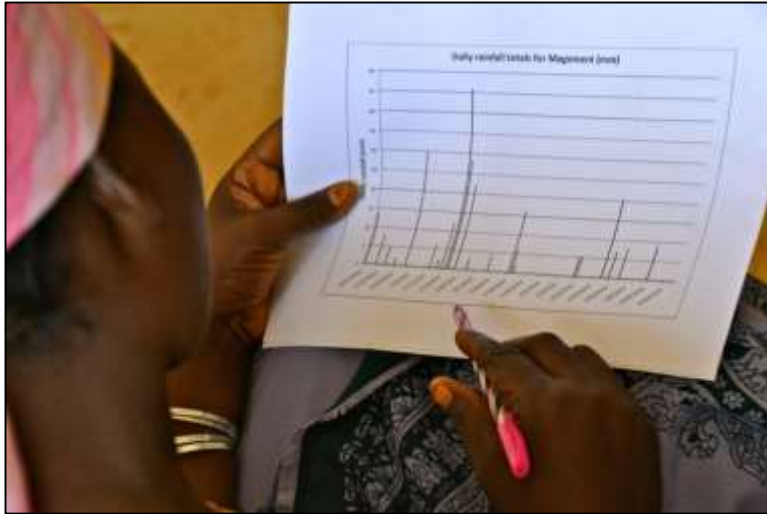
- Agricultural production and livelihoods are linked to climate.



- Farming and pastoralism are among the most weather-dependent sources of livelihood.
- Agriculture is among the most climate-sensitive economic sectors.

Why CS for Agriculture?

- Agricultural production and livelihoods are linked to climate.
- CS enhance resilience of agriculture.



- Managing climate risk requires understanding and anticipating climate risk.
- CS supports risk management decisions of farmers, governments, humanitarian organizations, value chain actors.

Why CS for Agriculture?

- Agricultural production and livelihoods are linked to climate.
 - CS enhance resilience of agriculture.
 - Part of an enabling environment for climate change adaptation.
- Most agricultural decisions are concerned with current climate conditions, not 30-50-year future projections.
 - Managing the present climate can reduce vulnerability, build capacity to adapt to a harsher future climate.

3. Time scales and climate information



Time scales

- Weather*

The state of the atmosphere at any given time.

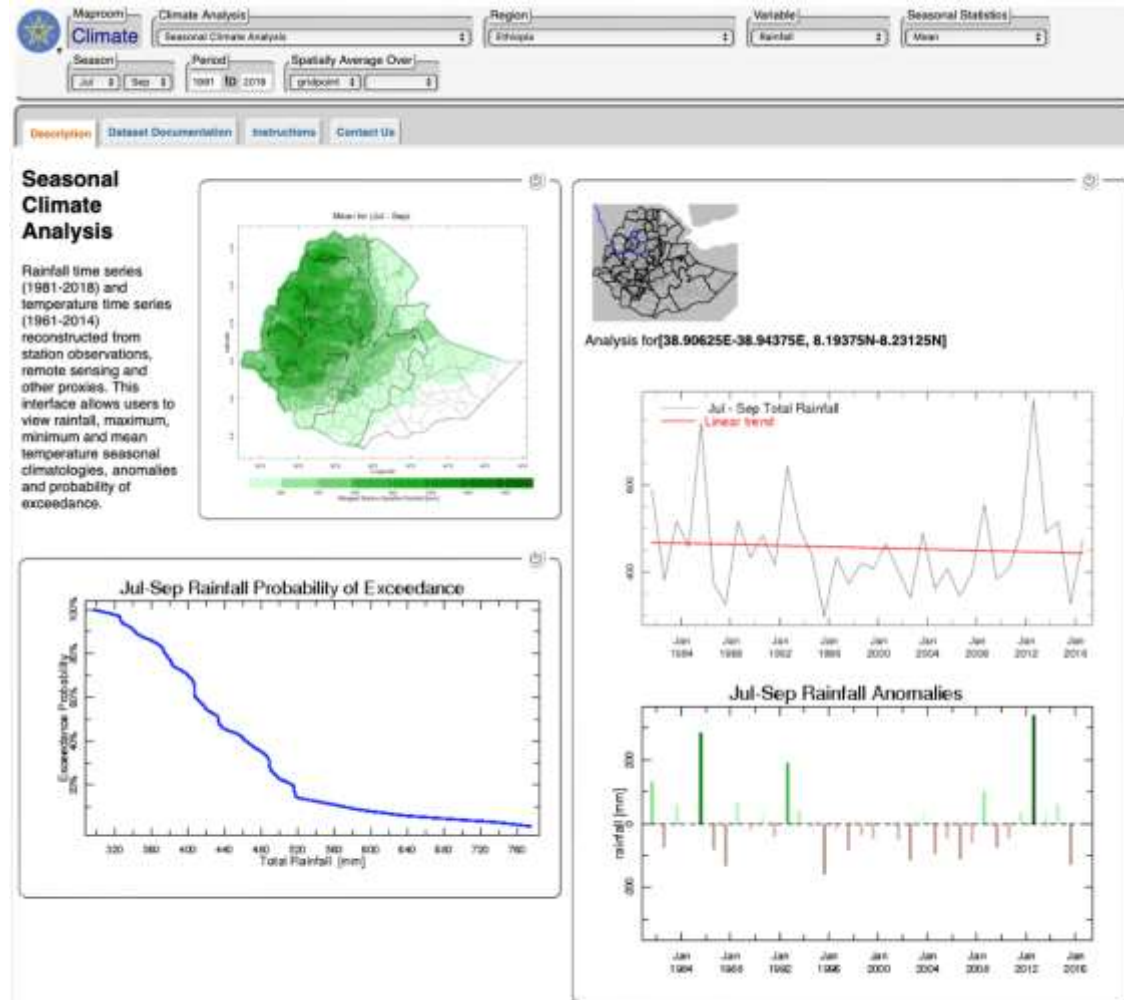
	Examples of	
	Information	Decisions
WEATHER Days to weeks	 • Observed rainfall and temperature • Daily forecasts up to one week ahead of time • Alerts on pests and diseases • Early warning of extreme weather events	 • Timing of planting and harvest • Timing of fertilizer, pesticide, and irrigation application • Protecting lives and property from extreme events

Time Scales

- *Weather*
- ***Climate***

The statistics of weather:

- long-term average
- probability distribution
- seasonal cycles
- long-term trends



Source:

http://213.55.84.78:8082/maproom/Climatology/Climate_Analysis/seasonal.html?region=bb%3A38.90625%3A8.19375%3A38.94375%3A8.23125%3Abb&resolution=0.0375&YearStart=1981&YearEnd=2018&seasonStart=Jul&seasonEnd=Sep&var=precip

Weather and climate: Practical perspective

<i>Weather</i> information	<i>Climate</i> information
Used frequently, needed quickly	Used at particular strategic times
Relatively simple information	Complex, probabilistic information
Users learn to interpret and act on information through repetition	Users need training and support to interpret and act on information
Simple messages, frequency of information fit mobile phone, broadcast media channels	Timing, training and support needed fit group participatory processes

Time scales

- *Weather*
- *Climate*
- ***Climate variability***

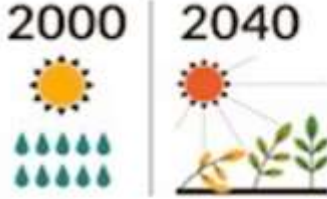
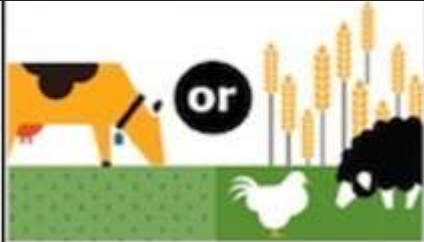
Natural fluctuations on
time scales from year-
to-year to decades

Examples of		
Information		Decisions
CLIMATE VARIABILITY Months to Years		
	• Probabilities for seasonal rainfall and temperature conditions • Seasonal climate variables targeted to particular agricultural risks (dry spells, rainy season start date, etc) • Historical variability of climate variables	• Selecting crops and varieties • Livestock stocking rates and feeding strategies • Intensity of input use (fertilizer, pesticides) • Labor or marketing contracts • Intensifying and diversifying crops • Diversifying sources of income

Time scales

- *Weather*
- *Climate*
- *Climate variability*
- ***Climate change***

Long-term changes in climate statistics, over decades to centuries, caused largely by human action

Examples of		
Information		Decisions
CLIMATE CHANGE Decades or longer		
	• Projections of future rainfall and temperature • Historical trends in rainfall and temperature • Historical changes in extreme events	• Major capital investments (buying or expanding landholding, irrigation systems, farm equipment etc) • Changing farming system or livelihood strategy • Deciding whether or not to farm

Time scales continuum

As time scale increases – from *weather*, to *climate variability*, to *climate change*:

- Information becomes more complex.
- Personal experience becomes less useful.
- Decisions become more farmer- and context-specific.

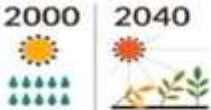


WEATHER Days to weeks	 • Observed rainfall and temperature • Daily forecasts up to one week ahead of time • Alerts on pests and diseases • Early warning of extreme weather events	 • Timing of planting and harvest • Timing of fertilizer, pesticide, and irrigation application • Protecting lives and property from extreme events
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Time scales continuum

*To be effective, climate services must therefore involve much more support for decision makers than merely disseminating information **at a climate time scale.***



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Thank you !



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