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**Climate Information and Commodities Prices**

By

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The views expressed are those of the author and do not necessarily reflect  
the views of UNCTAD.



# Climate Information and Commodities Prices

UNCTAD-Multi-year Expert Meeting on Commodities and Development

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- Climate influences the quantity offered on the market
  - Most commodities production (especially cereal/food staple) is rainfed in Developing Countries
  - Climate variables influence yields and quality of productions
  - Current climate has a direct impact on supply

→ Climate information is playing a role to improve production

- Diffusion of climate information also
  - improves market integration
  - limits speculation

→ WHAT IS THE ROLE OF CLIMATE INFORMATION ALONG THE COMMODITY VALUE CHAIN ?

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## Definition: Climate information

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- This presentation is focusing of CLIMATE INFORMATION
- Climate information is different from WEATHER FORECAST or CLIMATE CHANGE projections
- Climate information can refer to past or forecast data produced on a longer time period than high frequency weather data and shorter period than decades for CC projections
  - Decadal, monthly and seasonal data are encompassed in the term
- The Future Climate projections and information will be presented in the last session



# Climate as a driver for the supply

- Clear link between climate conditions and cereal/food production
  - Especially in Developing countries : Irrigation agriculture costly/ non appropriated
  - Limiting factor for yield/quality
  - Direct link between climate variables and producer prices

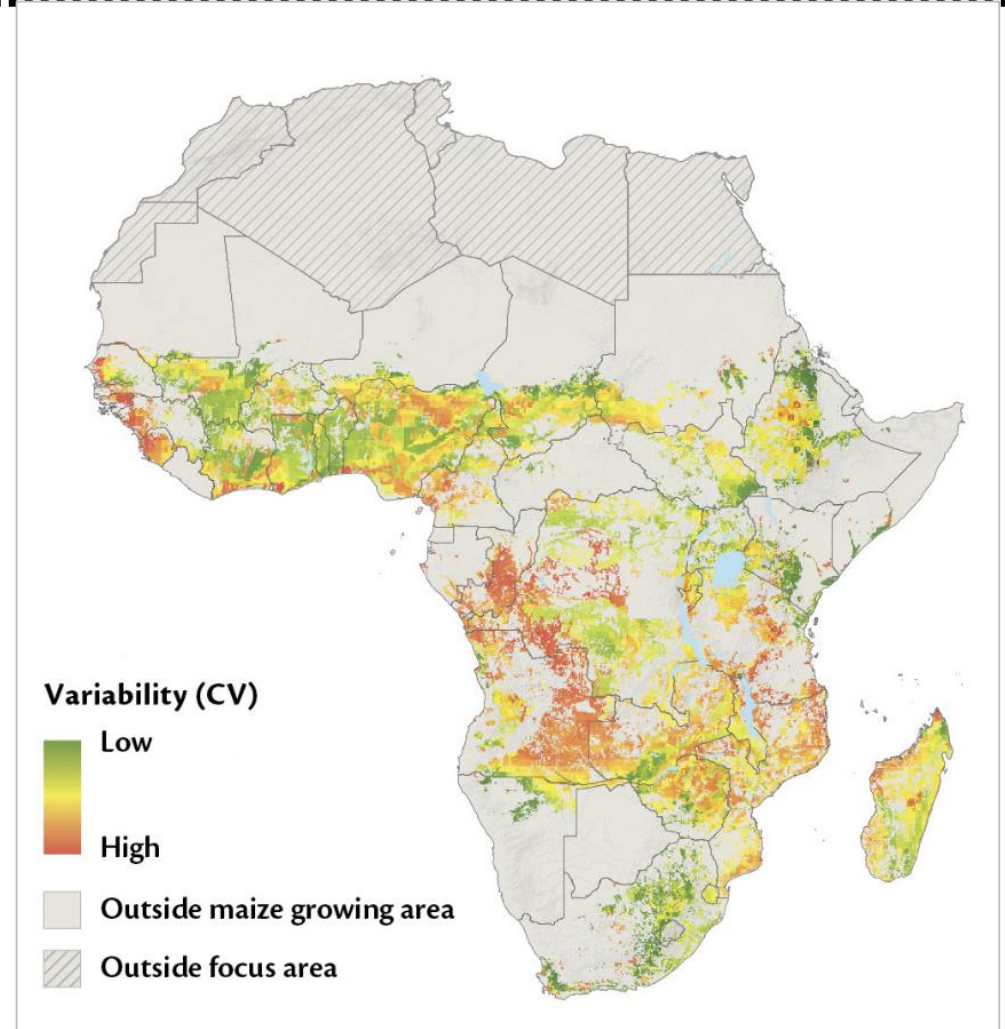
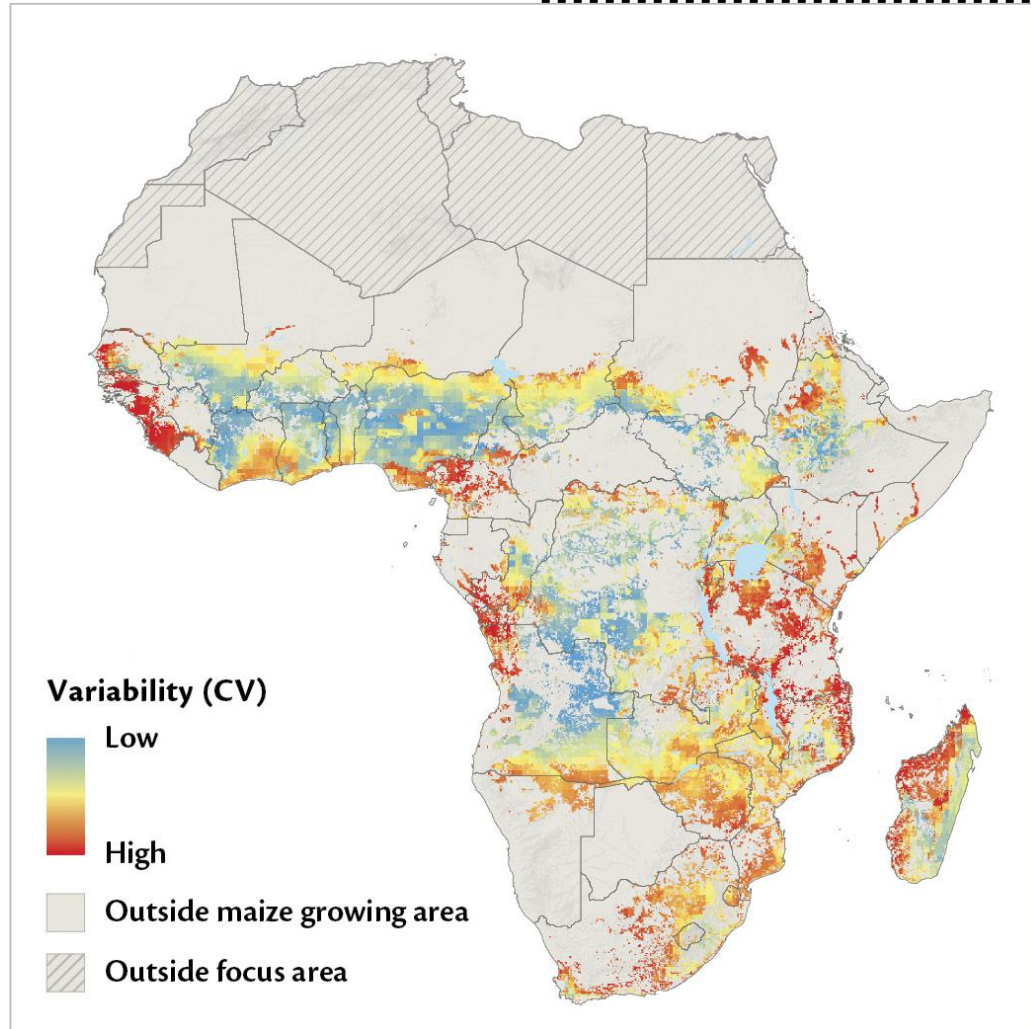
	(1)	(2)
	Ln price	Ln price
Ln Precipitation	<b>-0.094***</b>	<b>-0.096***</b>
	-0.028	-0.027
Variation coefficient		-0.043*
		-0.024
Fixed effect	P-C-Y	P-C-Y
R2	0.53	0.53
Observations	139293	139293

Producer prices (FAO)  
Annual Rainfall (CRU TS3.2)  
Standard errors clustered

Jouanjean, Le Vernoy and Simonet (2015)  
Preliminary results

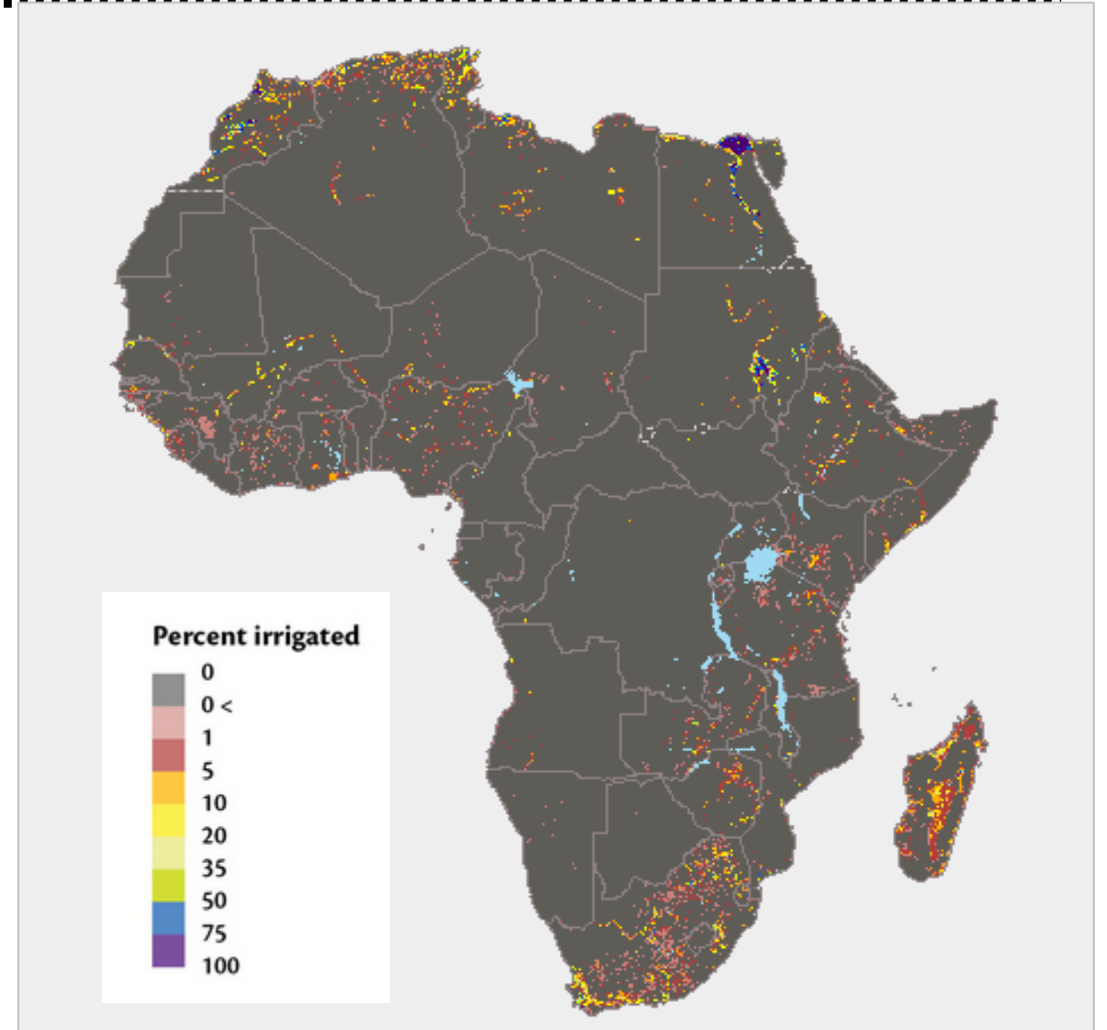
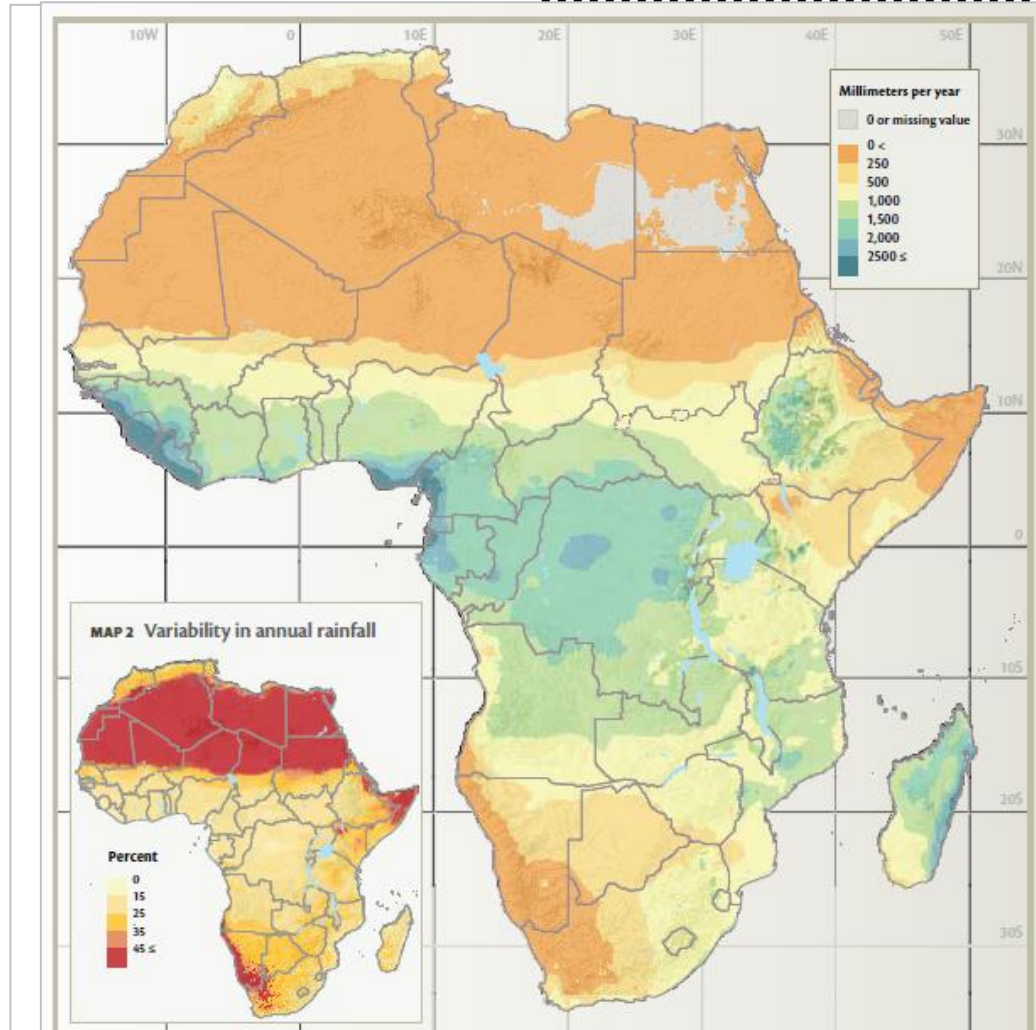


# Rainfall Variability and Rainfed Maize Yields



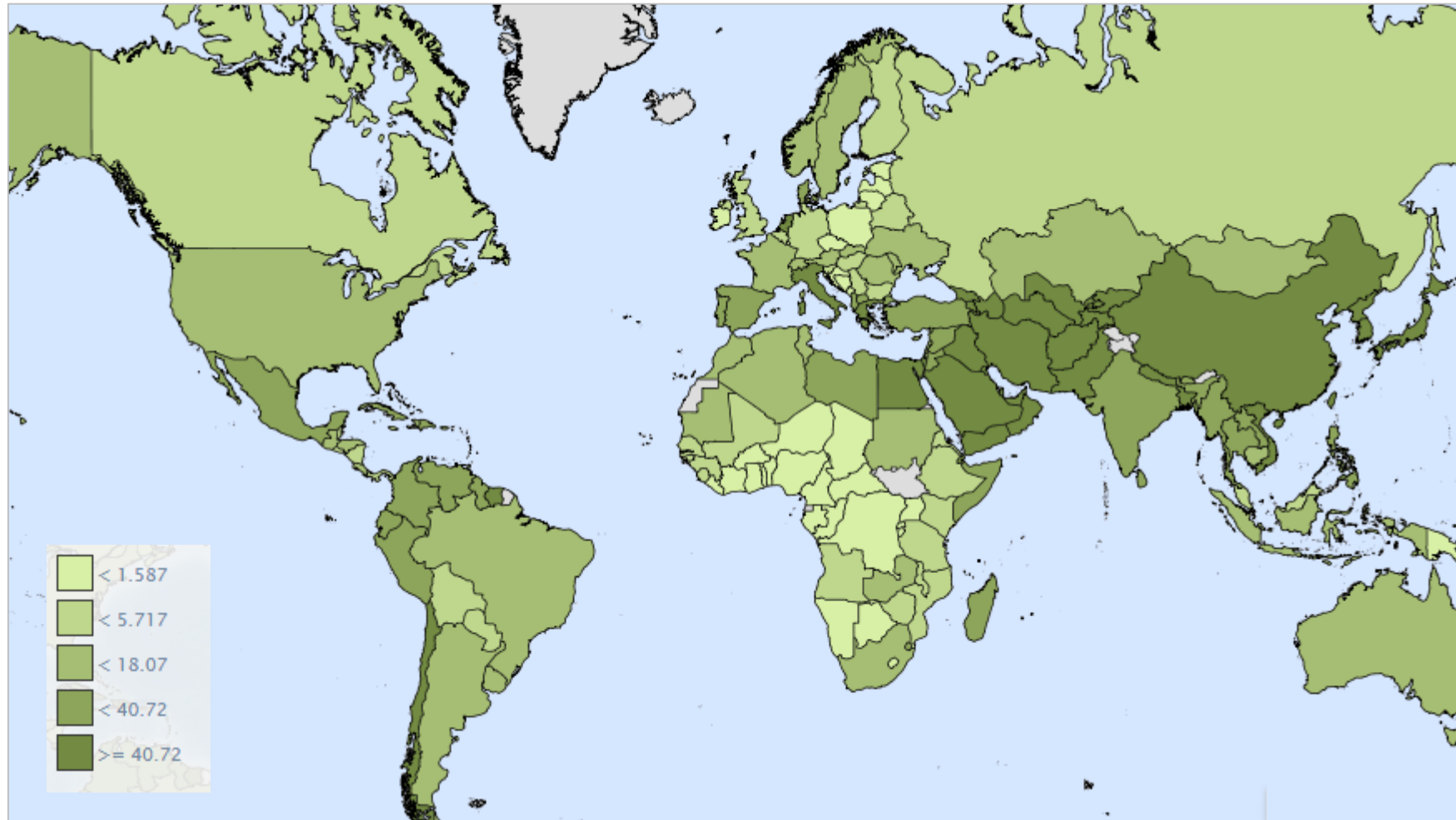


# Correlation important especially where rainfall variability is high and irrigation is low





## Part of cultivated area under irrigation (%)







## Climate information helps to improve production

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- At the producer level, the role of climate information help to improve
  - Sowing date and decision (Sultan et al. 2004)
  - Crop choices
- direct influence on Quality and Quantity Harvest and so prices (but relation is not perfect)
  - Studies on what is the key information to provide to the famers : Short term vs Seasonal forecasts (Roudier et al. 2011, 2014)
  - Initiatives to test on what kind of format the climate information has to be broadcasted  
Groupes Locaux d'Assistance Météorologique (GLAM) in Mali
- At National level climate information is used for
  - Seasonal production forecast (Aghrymet)
  - National Meteorological systems are costly BUT they help for DRM, Agricultural planning, Food Security policies and intervention
  - Weather based Insurances



- Building Resilience and Adaptation to Climate Extremes and Development
- BRACED is a project run by the DFID and ODI is part of the knowledge manager in charge of research
- Project over 5 years - 13 countries - 15 Implementation Partners running initiatives to build resilience
  - Most of the projects have a climate information module (testing key-variables and the broadcast methodology)  
Burkina Faso, Ethiopia, Kenya, Livestock producers in West Africa
  - Initiatives of “disaster in real time platform” to inform with new technologies (mobile phone) climate situation in real time



# Markets integration and efficiency

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- Climate information helps market integration (physical and informational)
  - Lack of connectivity between markets during the rainy season, CILLS report (2010)
  - Lack of real time data on the production
  - So climate information is a good proxy for current production and for future production (Roll 1994)

→ Better market integration
- Climate information diffusion could avoid speculative behaviors and asymmetries of information in the negotiations (Araujo et Simonet 2015)
- **BRACED**: module on the role of climate information in the behavioral changes in term of production but also marketing choices.
  - Hypothesis tested: Which kind of information provided by which institutions (scales) helps better market integration.



## What about Future Climate projections?

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- Climate Projections can help for preparing for adaptive agriculture/ Futures changes and transformations
  - Change in the crop choice more resilient to future
  - National Agriculture plan orientation needs to take into account this future change
  - Are climate change data/projections integrated in the international commodity prices?

### **PRISE and BRACED** studies:

How is the value chain vulnerable to climate variability and climate change?

Where are the weak links identified to prepare adaptation?

How CC projections can be used for policy makers to prepare for adaptation?

Is value chain integration an adaptive response?

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Clear correlation between prices and climate data (which is not perfect!)

Correlation between commodity production (mostly food staples) and climate data

Beyond the impact on climate production, climate conditions affect all level of value? chain from production to the market integration

- There is a huge interest for studying which kind of climate information is needed, for which purpose (role on the value chain) and how to share and broadcast it efficiently
- National Meteorological and DRM systems are often costly for Developing countries but the Cost/Benefits analysis of these institutions are often under estimating the potential benefits all along the value chain.



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