Initiative on sub-seasonal to seasonal (S2S) forecast in the agricultural sector

SONWA Denis[1], POKAM MBA Wilfried[2] YONTCHANG G.Didier[3], KABENGELA Hubert[4]

[1]Center for International Forestry Research,
[2]University of Yaoundé 1
[3]National Meteorological Service-Cameroon,
[4]National Meteorological Service-Democratic Republic of Congo,

Context

- In Central Africa agriculture is essentially rain-fed, and employs more than half of the population
- Agricultural production is tightly linked to weather and rainfall fluctuations.
- Observed changes are obvious in temperature and precipitation in Central African countries (Aguilar *et al*., 2009).

Main challenge : Provide climate information tailored to agricultural needs

Main challenges

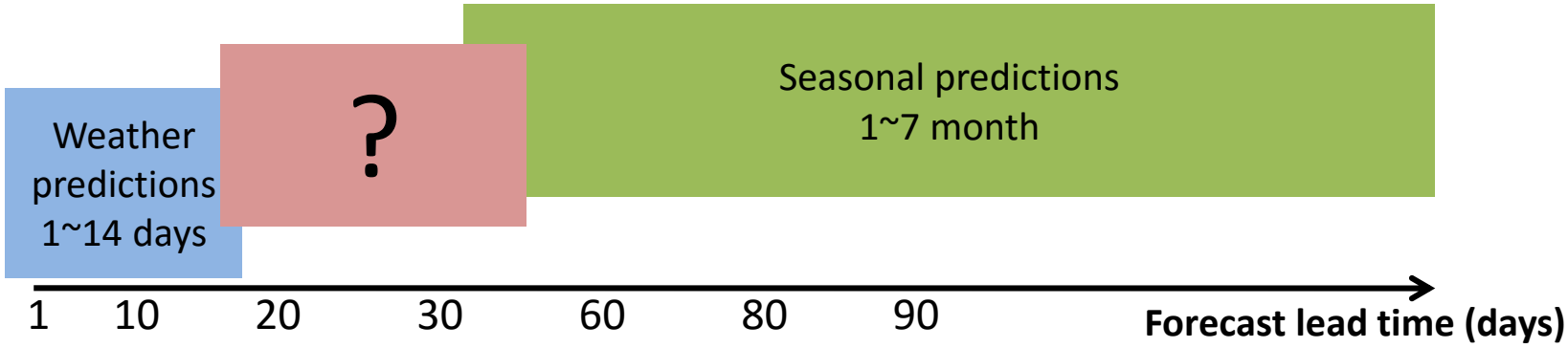
Time scale

Useful climate information should be provided enough time in advance to allow efficient planning *(at least 2 week ahead?)*

Detailed information

Need of finer time scale information to allow better management of crop development steps

What climate information is available over Central Africa



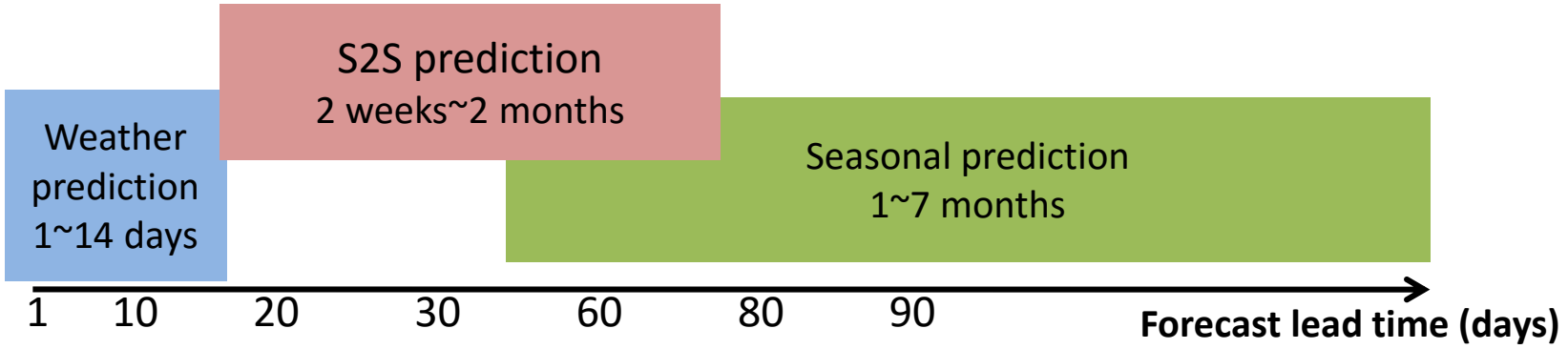
Weather predictions: provide **details** weather information, but **time** scale **too short** for agricultural **planning**

Seasonal predictions: indication of seasonal average conditions of weather parameters (normal, wet,dry)

Good time scale, but **information not detailed enough** for local agriculture Planning *(e.g. onset of growing season, dry episodes)*

Need to address **both time scale** and **detailed** information

Initiative on S2S prediction



S2S predictions contribute to fill the gap between weather and seasonal time scales

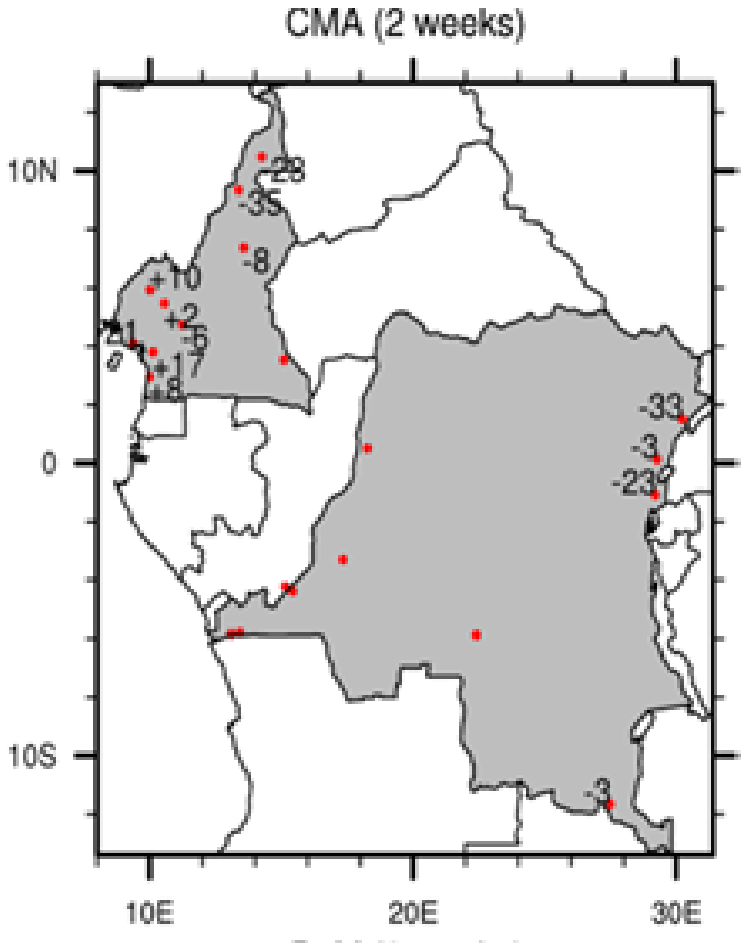
- Initiative within the framework of CR4D
- Countries :Cameroon and Dem. Rep. of Congo (DRC)
- Aim: assess the skill of available S2S predictions to capture seasonal characteristic useful for agriculture over Central Africa *(e.g. onset of growing season, occurrence of dry spells during the growing season)*

Project activities

- Present the current state of climate service for agriculture over CA
- Highlight climate information needed by farmers
- Define meaningful climate index related to information need by farmers
- Assess the skill of climate model predictions at S2S timescales over Central Africa

Event/shock identified by farmers	Climate information related to event/shock	Climate information needed by farmers
prolonged episode of drought	Length of dry spells during the rainy season	-onset of growing season -dry spells distribution during the growing season -dry spells duration

Detection of onset of rainy season



Comparison of onset of rainfall between CMA model and observations at 2 weeks lead time

Positive values : models predict onset date of rainy season **in advance** compare to station observation data

Negative values : models predict onset date of rainy season in **later** compare to station observation data

Conclusions

S2S predictions is still a **research** project

- Need of capacity building on S2S predictions

- Research and operational : Strengthen link between Met services and Universities

Thank you


CIFOR


UNIVERSITE DE YAOUNDE
THE UNIVERSITY OF YAOUNDE
SAPIENTIA
COLLATIVA
COGNITIO