

# **Modeling and Predicting Climate Impacts**

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# **talks on climate-sensitive sectors**

**climate and health**

**climate and crop modelling**

**climate and livestock**

**climate and economy**

**climate and water resources**

# Summary of the State of Knowledge

All of the climate-sensitive sectors represented in the presentations (health, agriculture, water resources, civil infrastructure, energy) have quantitative tools that are used to translate climate data (historic, monitored, predicted at various lead times) into analyses or predictions that more directly relate to climate-sensitive operational and policy decisions : CLIMEX (agriculture), VECTRI (malaria model) HyVic (hydrology)

# Summary of current Gaps

Several issues arose under the general theme of interaction between uncertainty and decision-making

Incorporating uncertainty into decision-making : not strong examples of how that uncertainty enters into decision-making or recommendations.

Certainty thresholds for decisions : research on thresholds of certainty required for particular types of decisions. How much certainty is required for action? Do all decisions have certainty thresholds?

Validation : validation in modeling studies, scarcity of data, and specifically data cost recovery policies of NMS

Platforms and methods for processing and sharing climate data efficiently across applications seem to be a gap.

# Proposed Strategy

“epiclimatology” (climate-epidemiology) : receive attention and investment as a Grand Challenge.

Initiate a structured dialog process to articulate and begin to address the tension between the immediate needs of decision-makers in the climate-sensitive sectors, and the more conservative approach of the climate research community (time to build credibility).

engaging sectors at both the level of “end users,” and research and technical advisory processes within the sectors that may already be providing support for the use of climate information for decision-making.

# Two innovative studies

- on impact of cc on road infrastructure in Ghana – temp/sun cracks asphalt; rain creates and deepens potholes; rise in sea level erodes coastal roads – attempt to quantify economic impact by either adapting (planning) or not adapting.
- On impact of cc on electricity production : consumption in 11 central sahelian countries