French strategy for flood risk management and climate change adaptation

Ministry of Ecology, Sustainable Development,
Transports and Housing
Directorate General for Risk Prevention
Department of Natural and Hydraulic Risks

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A responsible climate policy (1)

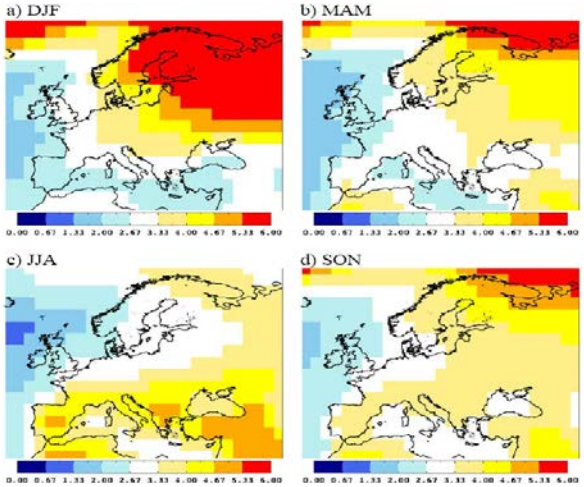
- French contribution to international efforts towards a responsible climate policy :
  - Scientific efforts,
  - Development of proposals, initiatives,
  - Ratification and implementation of agreements.
- Focus on mitigation of climate forcing by greenhouse gases : first component of the climate policy
  - Ambitious reduction targets
  - Elaboration of a strategy : « Grenelle » of the environment
  - Sustained commitment of all sectors (energy supply, housing, transports,...) and all territorial levels
  - Territorial climate-energy plans and sustainable country planning

A responsible climate policy (2)

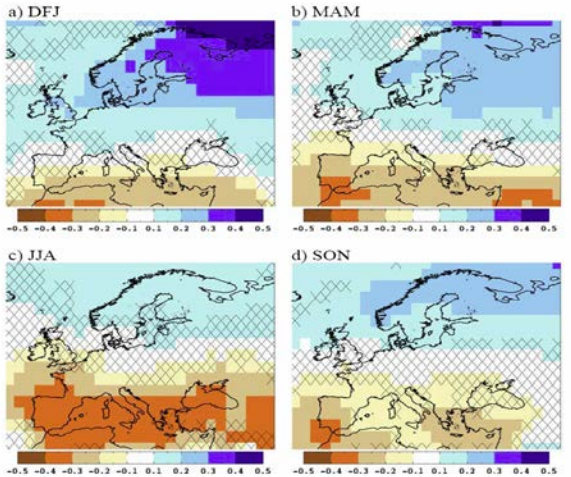
- Adaptation : the second component of the climate policy, equally important
  - To anticipate spontaneous reactions by living organisms and their societies
  - National Observatory on the Effects of Global Warming (ONERC) :
    - Attached to the General Directorate for Energy and Climate (DGEC) :
    - National strategy about adaptation to CC (2006)
    - « Analysis of climate change impacts, adaptation and associated costs » (2009) involving various sectors (health, tourism, infrastructures, energy supply, agriculture, water resources, biodiversity...and natural disasters)
    - Towards the adoption of a national climate plan (2011)

Disaster risk reduction and adaptation to climate change (1)

- DRR in the heart of current international focus both as a receiver (CC impacts on extreme weather events) and as a source of strategies and best practices in risk management
- Establishment of quantitative assessments, uncertain given the current knowledge :
  - Climate change scenarios difficult to apply to the small geographical scales
  - Uncertainty of scenarios vary depending on locations and variables chosen



Temperatures (°C) : seasonal changes between 2080/2099 et 1961/1990 (scale from 0 to 6°C)



Precipitations : seasonal relative changes between 2080/2099 and 1961/1990 (scale : -0,5 to 0,5)

Disaster risk reduction and adaptation to climate change (2)

- Preliminary conclusions
  - Importance of vulnerability
  - Major impact of the decline of low-lying coasts (coastal floods)
  - Climate variability evolution as a key factor (river flood)
  - Need for consistent and up to date refined studies of climate change impacts on hydrosystems for each major river basin, stakes and vulnerability datasets (more complete evaluations) and climate change impacts (on hydrology) observation networks
  - Need for research and development about extreme events (precipitations) and climate change, pluvial and coastal flooding, social-economic impacts of major events (different basins concerned simultaneously).

Flood risk management in France (2)

- Adapted tools : CatNat compensation scheme, prevention plan against flood risk, action plan for flood prevention, national service for flood forecasting, public information…

… but some gaps :

  - Partial management of pluvial and coastal flooding
  - Involvement of collectivities especially for protection measures : expensive, not always sustainable or adequate
  - Lack of a global piloting allowing to order and to prioritize the interventions of the State

- The flood directive as an opportunity to :
  - Focus on reduction of the potential negative consequences on human health, the environment, cultural heritage and economic activity of the floods, taking into account climate change
  - Identify objectives and priorities in a transparent way
  - Concentrate actions on priority territories
  - Involve all actors in the process

The flood directive (1)

- Different types of flood are concerned :
  - Fluvial flood
  - Stream flood
  - Groundwater flood
  - Pluvial flood – flash flood
  - Coastal flood
  - Tsunami
  - Embankment – dam break
  - Exclusion of flooding from sewerage systems
- Management Unit = the same as for the Water Framework Directive
- Public consultation on all the components of the implementation

FD Units of management = WFD UoM

Concluding remarks

- Adaptation to climate change has become an essential component of the French climate policy.
- Disaster risk reduction lies in the heart of the focus on adaptation to climatic extreme events.
- Adaptation is a good occasion to revisit and to reinforce our risk reduction policy, if necessary. As an example, the implementation of the European Flood Directive.