



United Nations Framework Convention on
Climate Change

African Regional Workshop on Adaptation

M Plaza Hotel, Accra, Ghana,
21 to 23 September 2006

CC vulnerability & impact
assessment, Morocco case

Mohamed JALIL
Meteorologist & hydraulics Eng.
Member of the National Scientific & Technical
Committee on Climate Change, Morocco

Kingdom of
Morocco
Ministry of Land
Planning, Water
& Environment

Background picture
Rural Settlement in
Grand Atlas Valle
Southern Marrakech





Topics discussed

- State of knowledge on vulnerability to Climate Change (CC) in Morocco
- Lessons learned and best practices identified
- Remaining gaps, needs and concerns
- Role of local, national, regional and international actors
- How can the UNFCCC process better facilitate impact and adaptation assessments



UNFCCC

CC institutional framework in Morocco



- Ministry of Land Planning, Water & Environment (www.matee.gov.ma)
- CC National Council (CN-CC)
- CC Scientific & Technical Committee (CST/CC)
- CDM National Council (CN-MDP)



Some Milestones...



- Ratification of the UNFCCC in December, 28 1995.
- COP 7 in Marrakesh (2001). Presentation of Morocco's First National Communication.
- Ratification of Kyoto Protocol in January, 25 2002.
- Implementation of the CDM Designated National Authority along with the CDM National Council in 2002.
- Development of a first CDM projects diversified portfolio within a set of sectors representing quite important amounts of Certified emission reduction units (CERs) ;
- Launching of the Second National Communication works in February 2006.



UNFCCC



State of knowledge on vulnerability to Climate Change (CC) in Morocco

Unfccc Workshop on Adaptation in
Accra Ghana 21-23 september 2006.

Mohamed IALI



Key Sectors dealt with so far..



- Priority sectors :
 - Water resources
 - Agriculture
- Others sectors identified:
 - Coastal areas



Projects carried out



- ↪ UNDP/GEF RAB/94/G31 project : CC Capacity Building for the Maghreb Countries
- ↪ UNDP/GEF MOR/99/G32 project
« Implementing a National strategy to address the CC : Morocco's First National Communication to the UNFCCC »
- ↪ UNDP/UNEP project « Morocco CDM Capacity Building » Phase I [2004-2005]

























































Projects in progress







- ↪ UNEP Project « Climate Change Impacts and Adaptation Assessment in the costal areas »
- ↪ UNDP/UNEP project « Morocco CDM Capacity Building » Phase II
- ↪ UNDP/ GEF « Morocco's Second National Communication to the UNFCCC »

In-depth analysis



status

- Climate
 - Historical evolution      
 - Projections      
- Water Resources vulnerability
 - Surface Waters      
 - Underground Waters      
- Agriculture and related sectors vulnerability
 - Rain fed      
 - Irrigated      
 - Human Settlements
In Rural Zones      
- Coastal Areas vulnerability      
- Others      

-  Data availability
-  Documentation & studies
-  Modeling
-  Good
-  Average
-  Poor



UNFCCC



Lessons learned and best practices identified

Unfccc Workshop on Adaptation in
Accra Ghana 21-23 september 2006.

Mohamed IALI



Lessons learned

- The acquisition of endogenous capabilities in some specific areas such as performing climate projections, selecting and using models, impacts analysis, etc. is only effective through *«learning by doing»*



Lessons learned

- The knowledge capitalization is only effective if this process is managed in a continuous basis;
- The involvement of all the actors is absolutely required to give this process all the chances of success;



Best practices identified



- At the institutional level: Implementation of the CC National Council (CN-CC) to insure:
 - A best involvement and a wide awareness of the institutional actors.
 - The integration of the CC issues into National legislation and sectoral policies such as water resources, natural disasters and agriculture management
 - Perpetuating the CC vulnerability and impact analysis process.



Best practices identified



- At the organizational level: The implementation of the National Scientific & Technical Committee CNST-CC to insure:
 - The constitution of a national expert panel hard core representing different entities (public organizations, universities, Consulting firms, etc.)
 - Mastering the CC analysis methodological tools
 - Facilitating inter-Sectoral knowledge exchange
 - Perpetuating the CC vulnerability and impact analysis process.



Best practices identified



- Public Awareness: The CC issues, in particular the vulnerability & the CC impacts are becoming integrated bit by bit into universities curricula, research projects, water resources master plans, etc.
- The national experts and consulting firms are more and more involved in the CC related projects (coastal areas, SCN, etc.)



Best practices identified

- Gradual appropriation of the methodological tools and techniques such as:
 - Performing climate modeling (using MAGICC-SCENGEN for instance)
 - Initiating vulnerability assessment exercises, in particular, for the water related sectors
 - Use of GIS for impact assessment



UNFCCC



Remaining gaps, needs and concerns

Unfccc Workshop on Adaptation in
Accra Ghana 21-23 september 2006.

Mohamed IALI



Gaps (1)

- Data availability:
 - The existing observing and monitoring networks are not integrated and are weakly optimized.
 - Weak co-ordination at the institutional level
 - Lack in data availability
 - Problems of data quality



Gaps (2)



- **Baseline scenarios:**
 - The official governmental projections are not always easy to obtain for some sectors
 - Lack in specific prospective studies
 - The use of the « Expert judgment » based projections is often difficult to carry out because of the lack in relevant data
 - Lack of consistent socioeconomic scenario specific to the local/national context

Gaps (3)

- Vulnerability & Impacts:
 - The use of high resolution models or downscaling techniques is not easy because of their prohibitive cost and/or lack in human capabilities.
 - The use of consistent vulnerability & impact models needs a lot of resources (in terms of time and funding) for their coding, calibration and validation
 - The geophysical systems are often relatively better dealt with than the human systems.



Gaps (4)



- Impacts Integration :
 - The sectors (water, agriculture, socioeconomic, etc.) are often naturally linked due to the interactions between them
 - These interactions should be taken into account in the vulnerability & impact assessment using appropriate integration models

Others problems



- Concerns about the process continuity
- Lack of stakeholders & public awareness
- Lack of financial resources for
 - The systematic observation networks implementation, operation and development;
 - The funding of specific research studies
- Weak regional co-operation (Maghreb level)



UNFCCC



Role of local, national, regional and international actors

Unfccc Workshop on Adaptation in
Accra Ghana 21-23 september 2006.

Mohamed IALI



Local actors

- Who are the local actors?
 - Local Collectivities
 - Communes
 - Local Authorities
 - Decentralized governmental services
 - Watershed basins Agencies
 - Agriculture Offices
 - Waters & Forests Services
 - ...
 - Local NGOs acting in the areas related to environment & sustainable development



Local actors

- What roles could they play?
 - Local Collectivities
 - Integrating CC into legislation & land planning policies
 - Decentralized governmental services
 - Observing networks & basic data
 - Documentation et technical support
 - Local NGOs
 - Public awareness
 - Participation in adaptation projects & measures

National Actors

- Who are the national actors?
 - Institutional
 - People's Representatives
 - Ministerial Departments
 - Training & Research establishments
 - Research Centers & laboratories
 - Engineering Schools, institutes, universities
 - NGOs
 - Environment
 - Natural Resources
 - Sustainable Development

- What roles could they play?
 - Institutional
 - Integrating CC into governmental legislation & setoral policies
 - Facilitating the accessibility to data
 - Developing systematic observation and data gathering systems
 - Training & Research establishments
 - Carrying on applied research works on vulnerability & impacts issues focusing on sectors identified as a priority
 - Integrating & developing CC in the curricula
 - NGOs
 - Public and political power awareness
 - Participation in adaptation projects & measures



Regional Actors

- Who are the actors at the regional level?
 - UMA Region (MAGHREB)
 - Middle East & North Africa Region (MENA)
 - AFRICA



Regional Actors



- What would be the roles of the Regional Actors?
 - Enhancing & perpetuating co-operation activities:
 - Exchange of experiences, horizontal knowledge transfer
 - Benchmarking
 - Pooling resources, optimizing costs (for Training, Modeling, etc.)
 - Working together to achieve activities within similar contexts (Water resources in the Maghreb for exp.)



International Actors



- Who are these actors at the international level?
 - UN specialized Organizations
 - UNDP, UNPE
 - WMO
 - FAO, etc.
 - Foreign countries
 - International Research & Development Centers



International Actors



- What roles could they play?
 - Capacity building activities through bilateral and multilateral co-operation;
 - Providing Technical Assistance on methodological issues, modeling and analysis tools, etc.



UNFCCC



How can the UNFCCC process better facilitate impact and adaptation assessments

Unfccc Workshop on Adaptation in
Accra Ghana 21-23 september 2006.

Mohamed IALI



1. Training & information
 - Specialized Training Sessions Workshops
 - Dissemination of information materials
2. Enhancing experience exchange between countries
3. Making available Methodologies & tools
 - Guidelines
 - Models and standardized tools

A vibrant pink rose is the central focus in the foreground, its petals fully bloomed and showing some water droplets. The background features a traditional Moroccan courtyard with walls made of reddish-brown stone and plaster. There are several arches and a small alcove visible. Potted plants are placed on the ledges of the walls. The overall scene is bright and colorful.

Thank you

*Background picture: A
flower from Wirgan
Village
Southern Marrakech*