Study program "Climate Change"

# International benchmarking of the climate change construction

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Contents



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Methodology

The benchmark panel

A choice of ten different countries according to:

- Aspects of similarity and geographic development: Chile
- The specific medium, Netherlands
- Aspects related to renewable energy, Denmark
- Characteristics of leader continents: South Africa, Japan, United Kingdom, California
- Proximity issues: Spain, France, Tunisia

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Methodology

The seven themes of benchmarking:

- Context, climate change issues, vulnerabilities and impacts nature
- Provisions for GHG inventories
- Institutional provisions of governance
- Mitigation provisions
- Provisions for adaptation

- Provisions for cooperation and international negotiations
- Positioning in Copenhagen and beyond 2012

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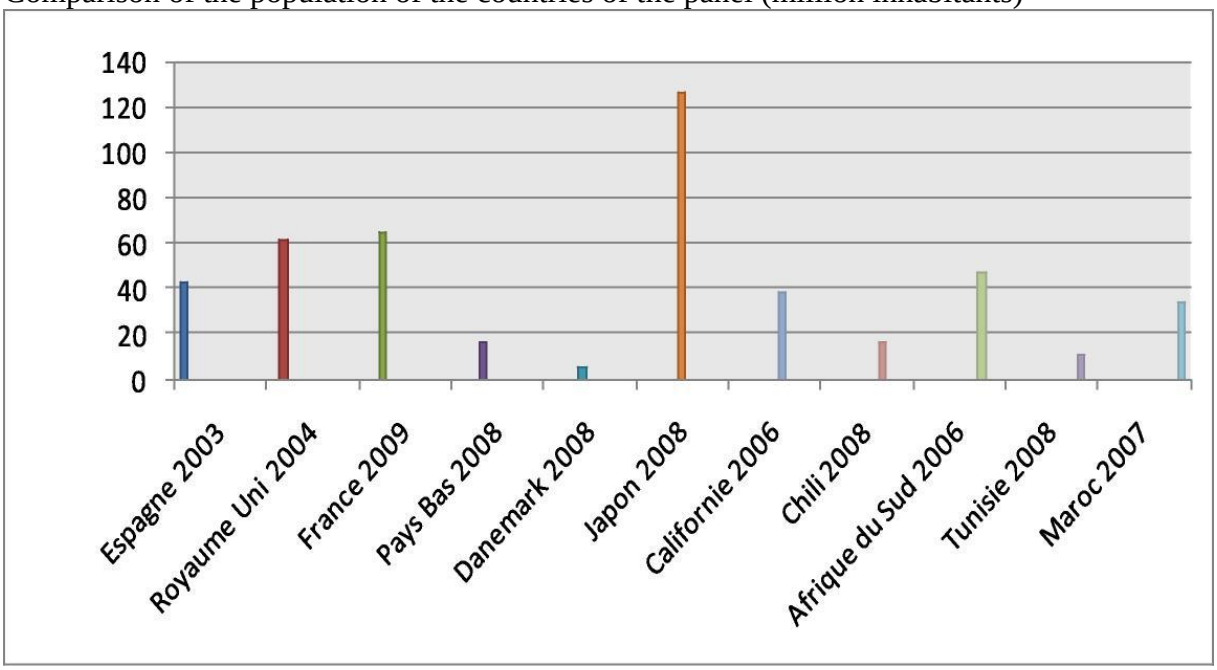
Synthesis

Comparison of the population of the countries of the panel (million inhabitants)

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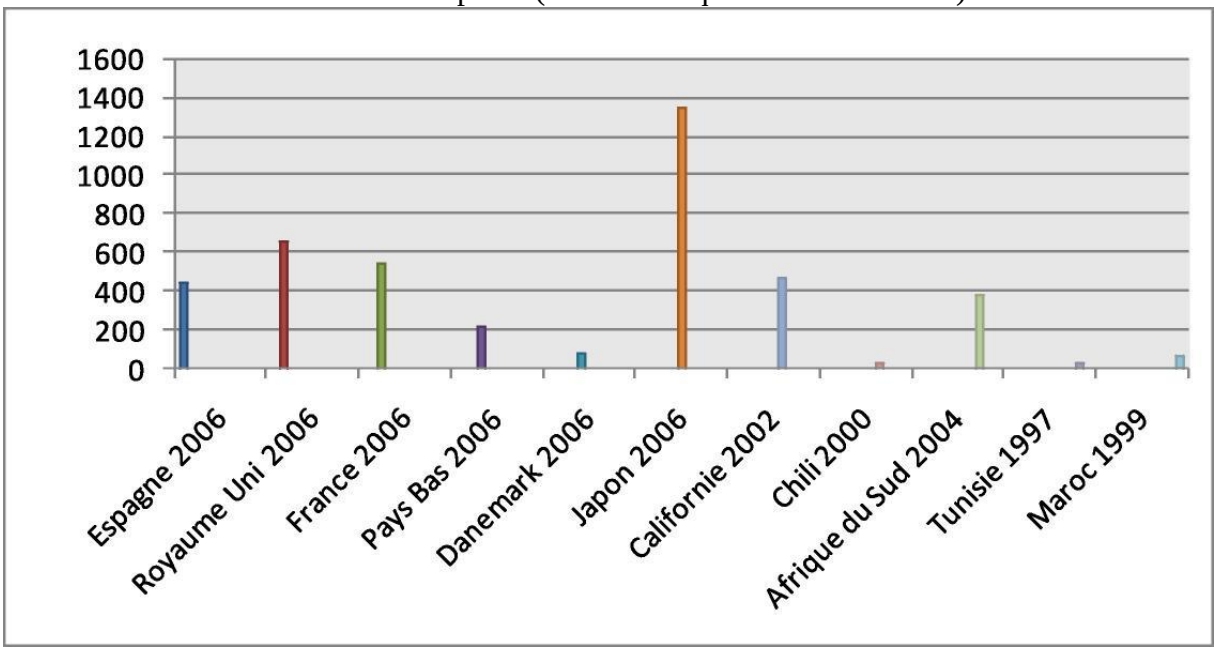
Synthesis

GHG emissions of countries of the panel (in million equivalent CO2 tones)

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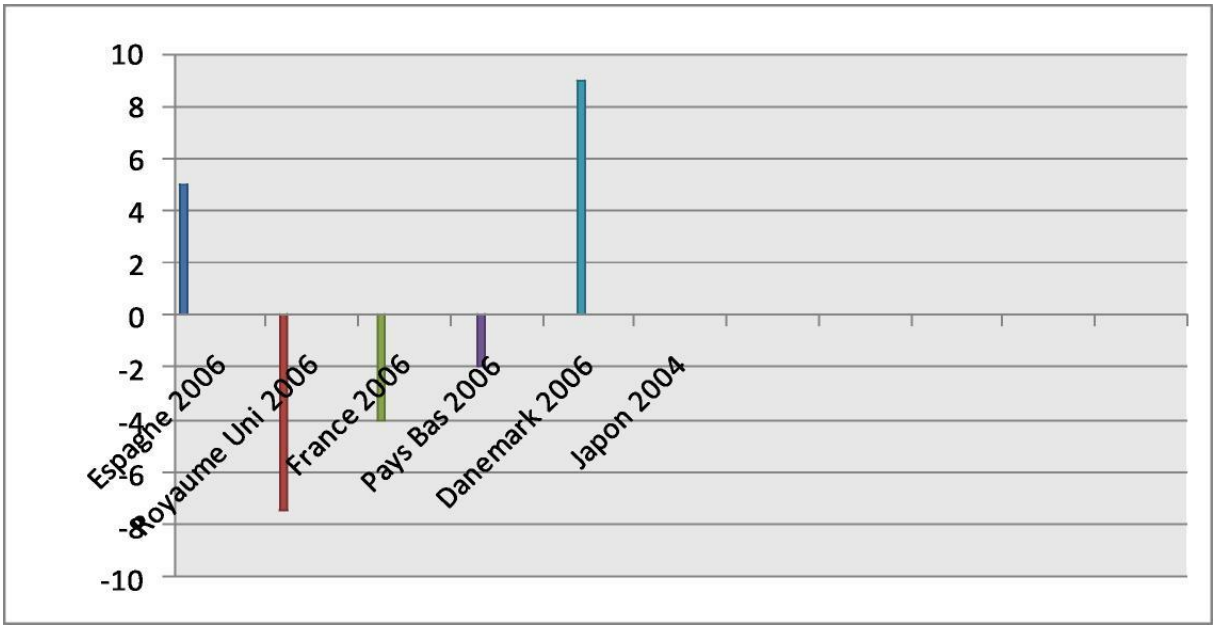
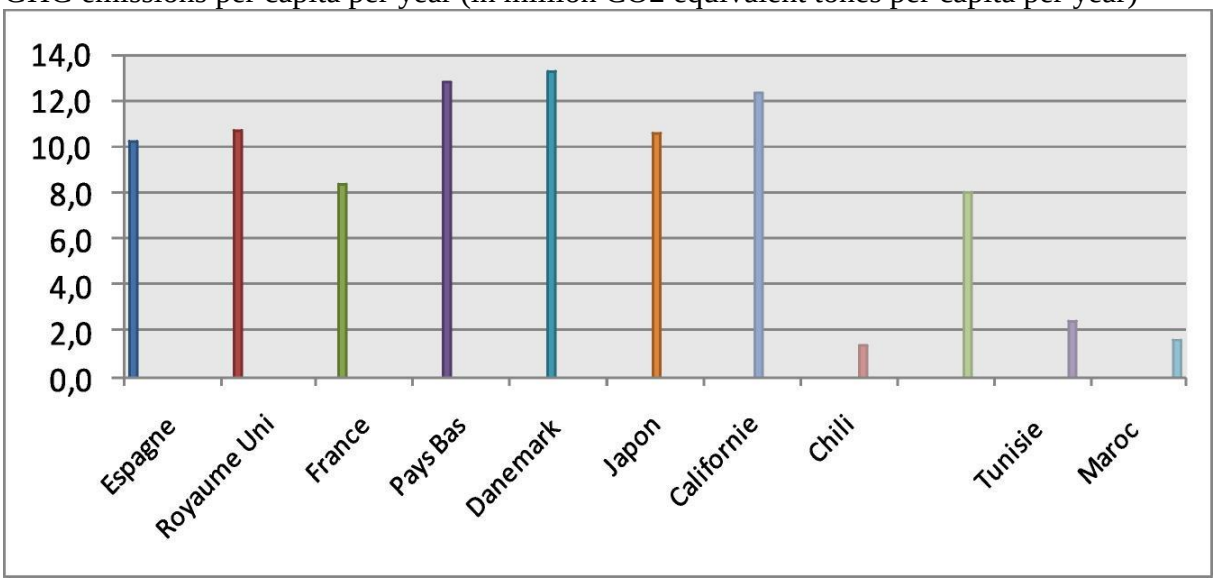
Synthesis

Deviations from the goal of Kyoto of Annex I countries (in%)




Synthesis

GHG emissions per capita per year (in million CO2 equivalent tones per capita per year)




## Global vision (1/2)

| | Spain | U.K | France | Holland | Denmark | Japan | California | Chili | S.Africa |
|---|---|---|---|---|---|---|---|---|---|
| Population in Millions | 43 in 2003 | 61 in 2004 | 65 in 2009 | 16.2 in 2008 | 5.3 in 200 | 127 in 2008 | 38 in 2006 | 16 in 2008 | 47.5 in 2006 |
| Energy consummation In MJD or watt for electricity | 4.242 in 2003 276ton of watts in 2008 | reading 9.6 348ton of watts in 2006 | 11.6 in 2007 480ton of watt in 2008 | 123ton of watts in 2007 | 34.7ton of watts in 2006 | 2003 في 16 1080ton of watts in2006 | | 1 in 2007 45.5ton of watts in2006 | 241ton watts in 2007 |
| Date of approvi the UNFCCC | December 93 | December 93 | March 94 | March 93 | March 93 | May 93 | October 92 | December 94 | August 9 |
| Date of approvi the Kyoto protocole | May 02 | May 02 | May 02 | May 02 | May 02 | May 02 | | May 02 | July 02 |
| Relief (Forests%) | % 50 | %12 | %30 | %10 | %11 | %66 | | %21 | %0.50 |
| Coastal surface | 4872-4964 | 12429 | 3427 | 451 | 7314 | 29750 | About 2000 | 6435 | 2798 |

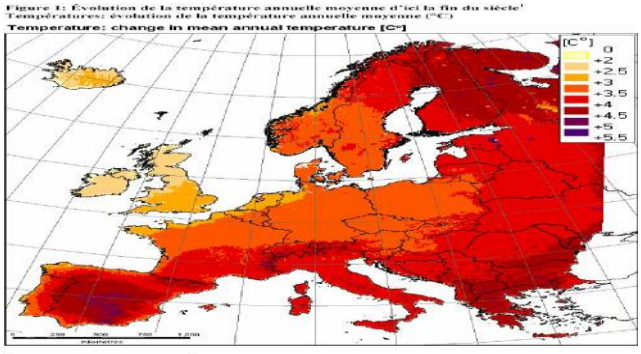
| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Climate | mediterranean ‹ Oceanic<br><br>Mountaineous | Oceanic windy | Oceanic to mediterranea | Moderate<br><br>Oceanic windy | Moderate Oceanic windy | Moderate to subtropica | mediterranean | Hot in the north, Moder in the middle damp and col in the south | Semi dry to subtropic |
| Natural vulnerability | Draught, soil depletion, seal leve decline | Storms, floods | Storms draught | Floods | Floods | Turnadoes, earthquakes, relaying on s | Earthquakes, fores fires | Earthquakes, volcanoes, floods | Draught |
| Climate change 2010 | 1.2+ to 1.6+C° | 2.5+ to 3° س | °2+to 4.5 C° | | | 1.06+ C° | | 2+ to 3 C° | 1+ to 3 C° |

## Tableau 2/2

| | Spain | U.K | France | Hollan d | Den mark | Japan | Californa | Chili | S.Africa | Tunisia |
|---|---|---|---|---|---|---|---|---|---|---|
| Points of strength | | | | | | | | | | |
| Institution of climate change | New commission of evaluation and prospective | New commission of evaluation and prospective | more resources and more transversality since 2008 | | | Inter-ministerial leadership | Increse in structures since the 2007 | Established structures since the 90s | Established structures since 1998 with consultation with relevant parties | Structures established since 1996 |
| Mitigation measures | ENR micro-production and landfill methane | ENR micro-production and landfill methane | Energy efficacy (energy certificate | | | Technology development (educational) | proactive approach to energy, industry (current ETS), transport | Engaging in multi-sectoral planning in 2008 | For implemented measures for development | Measures of energy efficacy since 1985, reinforced in 2005 |
| Adaptation | Regional designation | Regional designation | Recommendations for sectoral policies | | | Analysis and determination of sectoral adaptation measures | Detailed analysis of vulnerabilities | Planning of the first adaptation measures in 2008 | Detailed identification of an inventory of action | identificati on of measures against rising sea levels and against hydriquem esures stress |
| International measures | UNDP cooperation | UNDP cooperation | French Fund for world environment | | | Multi-funds cooperation in Asia | | Extensive use of CDM and the GEF | Well developed CDM and GEF use | Engaging in CDM and GEF use |
| Positioning after 2012 | European | extension of the GHG quota trading mechanism | | | | continuation of the Kyoto commitments and self- determined emission targets for developing countries | Monitor the emission of developing countries | Engaging in mitigation as well as adaptation | for the GHG reduction commitments for developing countries | behavior committed to cutting greenhouse gas emissions |

## Focus on the case of the European Union

493 million inhabitants




GHG emissions: approximately 14% of world emissions

Mitigation: "Climate Energy Package" December 2008
Adaptation: Green Paper (July 2007) and white paper (April 2009) on adaptation strategy to be implemented in 2013.
International Cooperation since 2000

Synthesis

Conclusions on GHG inventories
Countries in Annex I:

- An independent body under contract, centralizer
- Validating Ministry

Countries not in Annex I:

- A project structure funded by the GEF on the occasion of National Communications to the UNFCCC, without capabilities sustainability

Synthesis
Conclusions on the main provisions of the fight against Climate Change

- Most countries have set up a responsible entity within the Ministry of Environment
- Foundation of inter-entity sometimes (Japan and France until 2002)
- Inclination of Europe to climate and energy structures
- National-Local Links according to various national structures (see Spain)
- Links with various economic actors (see France and the Grenelle)
- Communication plans on the need for action (eg Chile, California)

Synthesis
Conclusions on mitigation provisions

- In all countries of the panel: renewable energy, energy efficiency
- Industry: quota system in Europe or CDM in countries not in Annex 1
- Transportation: Modest measures
- Building: measures Depends on climate and heating needs
- Agriculture: sensitive issue because of the nature of N2O and CH4 emissions
- Forestry: forestry encouraged measures (except Japan)
- Waste: recovery of methane emissions from landfills

Synthesis
Conclusions on the adaptation provisions

- The provisions are less developed than for mitigation
    - Countries of Annex I: studies as to determine the uncertainty
    - Countries not in Annex I: More deterministic Positioning
- The progress of any country is due to adaptation:
    - In terms of the four issues such country raises:
        - The complexity of urban society,
        - Local action, for efficiency,
        - Choice of strategy: fight, accommodation, abandonment,
        - Funding;
    - In terms of strong challenges such as:

- Avoid social disruption,
- Fight against the harmful effects,
- Advantage of new opportunities.

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Synthesis

Conclusions regarding

- Research and climate observation: All countries participate in the Global Climate Observing System, and expend efforts in terms of research in areas related to climate change;

- Education-training-awareness: All countries develop awareness programs about climate change, in various forms and implement education programs therefore in schools

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Synthesis

Conclusions on International Cooperation

- CDM Action (Spain, Denmark, Japan, Netherlands / Chile, South Africa)

- GEF – UNDP – UNEP

- Bilateral preferentially oriented cooperation with the developing countries in their area of geopolitical interest (i.e Spain and Latin America, Japan and Asia).

- Technological Cooperation (Japan)

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Synthesis

Conclusions on the 2012positioning post

European Union:

- global system of quotas
- 30% reduction in 2020 for Annex I countries
- emission limitation for non-Annex I countries
- adaptation
- Non Annex I Countries
- mitigating factor in development

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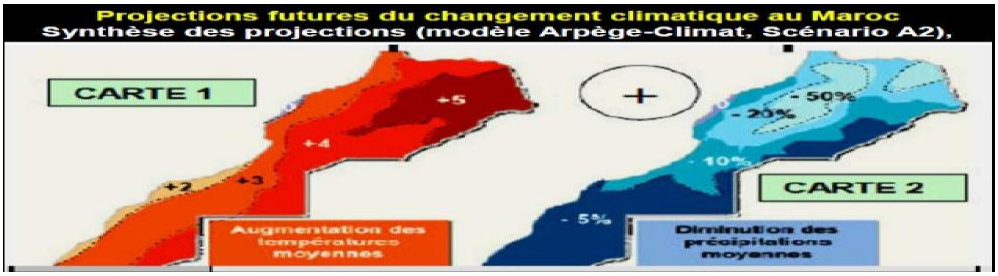
Specifics of the problem of climate change in Morocco (1/2)

- 32 million inhabitants in 2010
- Climate mostly arid to semiarid
- Natural vulnerabilities: Water stress, desertification
- Social vulnerability: Poverty in rural areas




Horizon 2100, Source: Directorate of National Meteorology

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- Climate change impacts on water resources, water shortage announced for 2030, and on agriculture (reduced cereal harvests)
- Strategy for Environment and Sustainable Development in 1995 and national action plan to implement the environment (PANE)
- National Charter for Environment and Sustainable Development in 2009, during the operationalization
- Greenhouse gas emissions: 54.6 Mt CO2e in 1999 and 63.4 Mt CO2 in 2004
- Climate Observation and climate research in systematic DMN
- Problem of Morocco: strengthening its climate activity, particularly in terms of adaptation that mainly deal with water stress and crop production

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Lessons for Morocco

The range of activities that all countries must exert to lead the fight against climate change (1/2)

1. Participate in international climate negotiations such as the meetings of the UNFCCC, and maintain a network of properly chosen relationships
2. Meet the commitments under the UNFCCC (National Communications and GHG inventories) and the Kyoto Protocol (CDM AND)
3. Leading a ministerial policy to reduce emissions
4. Leading a ministerial policy of adaptation to the impacts of global warming, which supposes having an assessment of these impacts

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5. Coordinate research and observation of climate and climate change
6. Leading a policy of education, training and awareness
7. Communicate on behalf of the Government
8. Provide a significant evaluation of the implementation of the above policies
9. Optimize international aid.

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Lessons for Morocco

The three issues leading the fight against climate change

A - The actions are based on several areas: a cross-sectoral coordination structure is generally more efficient. However, what counts is to get a good inter-ministerial cooperation for the implementation of national action plans

B - There should be coordination at the regional and local levels.

C - It is important to involve civil society and relevant environmental associations, or otherwise, in the development decisions

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Lessons for Morocco

First recommendation on institutional arrangements

Relate with all the activities and responsibilities of the parties involved in the construction of climate change to the 9acivities identified above.

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Lessons for Morocco

Second recommendation of the climate observations and projections

Strengthen the meteorological observation network and regional cooperation opportunities

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Lessons for Morocco

Third recommendation for GHG emissions
The benchmarking allowed us to measure that the current trend is to follow GHG emissions in developing countries. It then becomes essential

- to perpetuate the pattern of cooperation that is necessary for inventory development by:
- Consolidating the information channels and the necessary databases
- Maintain the collective skills in methodological inventory.

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Lessons for Morocco

Fourth recommendation for sectoral mitigation policies
Define a vision for long-term mitigation
This vision should render the quantity of the identified mitigation measures and define the entities responsible for their implementation.

The measures adopted shall take into account the policies already in place, including those related to solar and wind shots, and the energy effectiveness, including mitigation scenarios studied for the second National Communication submitted to UNFCCC.

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Lessons for Morocco

Fifth recommendation for a “hard core” of mitigation measures (1/3)

Benchmarking allowed us to identify a list of references or mitigation practices classified by sector, and analyze appropriate measures already adopted by Morocco, already launched in Morocco or is to be implemented ...

As a result, you can select references that appear the most essential part within the context of a national vision for mitigation, that is, a "hard core" of the following measures.

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Lessons for Morocco

Fifth recommendation for a "hard core" of mitigation measures (2/3)

- Introduce incentive provisions to promote the green economy (regulation or taxation "Green" energy saving ...)

- Strengthen the use of renewable energy, natural gas and clean coal
- Generalize energy audits (energy performance of large projects, homes ...)
- Encourage public transport, the fleet renovation
- Promote eco-responsible individual in terms of behavior (conduct effective ...)
- Optimize freight logistics
- Encourage voluntary reductions of GHG emissions

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Lessons for Morocco
Fifth recommendation for a "hard core" of mitigation measures (3/3)

- Adopt a green certification system
- Strengthen the reforestation and forest protection as a source of carbon
- Ensure effective management of waste by capturing and enhancing methane gas from landfills and waste incineration, etc.
- Increase awareness about energy conservation.

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Lessons for Morocco

Sixth recommendation for an economic study

A study of the economic benefits of mitigation for developing countries could be conducted.

This will demonstrate pro-activity on mitigation the same way as it was fulfilled in Chile and South Africa. These countries development highlighted that putting in place mitigation measures, not only allowed them to show their commitment with countries of Annex I in adopting significant behaviors, but still allowed them to attract aid to import the best technologies for their economic development.

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Lessons for Morocco

The problem of adaptation

-We shall not limit it to just a process of assessment of incurred impacts due to climate change
- We should adopt a framework for analyzing social and economic issues of adaptation, identify strategic or sectoral adaptation measures

Seventh recommendation for the process of adaptation in Morocco

Morocco can consolidate the ongoing process of adaptation (especially in sectors of water and agriculture), extending it to the minimum in the following areas, taking into account their vulnerabilities:

- Health,
- Urban coastal areas,
- Prevention of natural disasters (floods, fires),
- Tourism.

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Lessons for Morocco

Eight recommendation for adaptation hard core of (1)

Benchmarking has established a list of references or good adaptation practices classified by sector, and analyzed appropriate measures already launched in Morocco or still to be implemented in Morocco...

As a result, you can select references that appear most essential for a national adaptation plan, to be the "hard core" of the following measures.

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Lessons for Morocco

Eighth recommendation for an adaptation hard core (2)

- Define the relationship between national and local adaptation and widespread establishment of territorial accommodation's plans (approach being implemented at the oasis);

- Educate and inform citizens so they can make individual arrangements for adaptation;
- Encourage more water conservation (especially with regard to private use);
- Strengthen management of health risks, floods and fires (early warning, better coordination among actors);
- Protect or restrict construction in areas affected by rising sea level (possible synergies with the law draft on seashore);
- Protect tourism against water scarcity and rising sea levels in terms of resorts project.

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Lessons for Morocco

Ninth recommendation regarding the action of CDM within the international cooperation

Morocco is interested in:

- identifying the industrialized countries looking to invest in CDM projects to meet their Kyoto commitments (Spain, Denmark ...)

- seeking funding for its CDM actions by these countries, within the context of bilateral agreements.

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Lessons for Morocco

Tenth recommendation to fund a national plan for mitigation and adaptation by means of international cooperation

Following the work carried out for the second National Communication, Morocco can:

- -validate a comprehensive national plan for adaptation and mitigation,
- Seek optimized international funding to achieve this comprehensive plan.

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Lessons for Morocco

Eleventh recommendation for thematic bilateral cooperation with countries of the benchmark panel (example)

Each bilateral cooperation can naturally provide inputs for other subjects such as these basic themes.

- Spain: CDM and forest management;
- UK: PRECIS tool and waste policy;
- France: Agriculture and territorial plans;
- Netherlands: Water management, spatial plans, CDM;
- Denmark: CDM and offshore wind;
- Japan: Technologies for solar energy and energy efficiency;
- Chile: Planning and management of international financing;
- South Africa: Vehicle handling skills and use of clean coal;
- Tunisia: Energy efficiency and water management

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Lessons for Morocco

Summary

-the fight against climate change is a factor of development for Morocco;

-Morocco can assert its political will by developing a multisectoral national strategy to fight against climate change, with specific goals and a proven visibility in terms of financing needs; by capitalizing both the work for the 2nd National Communication and references provided by the benchmark; by defining the structures responsible for the implementation of this plan; and by communicating with the population to prepare for this fight;

Morocco will therefore have credibility to finance his plan through international aid provided for this purpose.

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**Thank you for your attention.**