

Secrétariat d'Etat auprès du Ministère de l'Energie, des Mines,
de l'Eau et de l'Environnement, chargé de l'Eau et de l'Environnement

Département de l'Environnement

المملكة المغربية
ROYAUME DU MAROC



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Motivation, Rationale and Approach for developing a Regulatory Framework for Environmental Protection of Soils in Morocco

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Motivation and Rationale : Legal Framework (1/2)

- Environmental Laws and Regulations in Morocco:
 - 1995 Water Law with more than 50 regulations regarding management, consumption, pollution, etc.;
 - 2003 Environment Protection and Conservation Law;
 - 2003 Air Pollution Law with regulations regarding ambient air quality and stack emissions;
 - 2003 Environmental Impact Assessment Law with regulations;
 - 2006 Waste Management and Disposal Law with regulations regarding landfills, medical & pharmaceutical wastes, planning, hazardous wastes, etc.;
 - Littoral Law (in progress);
 - Access to Information Law (in progress);
- National Charter for the Environment and Sustainable Development (to be adopted in April 2010 during Earth Day Celebrations in Morocco).



Motivation and Rationale : Institutional Perspective (2/2)

- Grouping of Water and Environment sectors under a single Ministry;
- Increased awareness at the ministerial level to protect soils;
- Importance of protecting soils to better protect other natural resources, mainly water.

Complexity & Constraints

Factors related to soil (itself) subject to regulation:

- Soil position as interface of the environment;
- Soil provides several functions (physical medium, feeder, reservoir of biodiversity, platform of infrastructures, filtering, etc.).

Institutional Factors:

- Contradictions and “conflicts” in terms of soil use and intervention modalities;
- Insufficient coordination between concerned institutions;
- Responsibilities and tasks between the various actors not well defined with respect to Soil Protection.

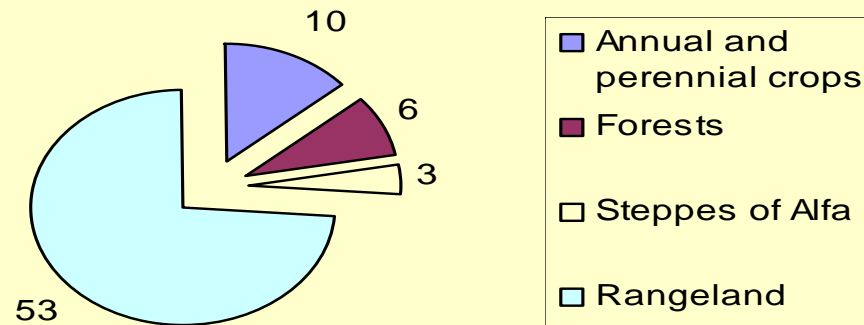
Methodological Approach

- Conducting integrated legal and technical studies;
- Analysis of various legal frameworks (Germany, Belgium, Switzerland, Canada, Tunisia and Algeria)
- Participative approach : involvement of concerned institutions and sectors;
- Organizations of workshops to discuss and validate the findings.



Key Data on Moroccan Soil Resources

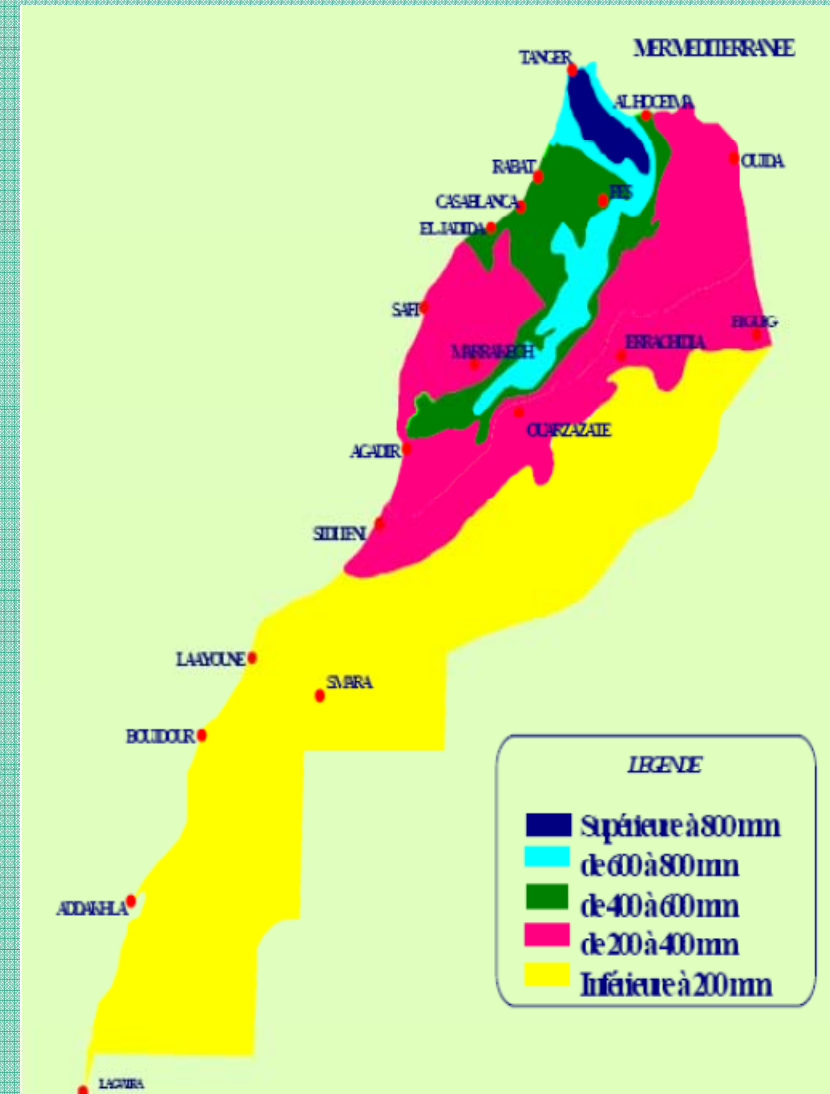
- ✓ **Climatic conditions:** More than 85% are under semi-arid, and arid climate
- ✓ **Soil types:** a big diversity of soils because the diversity of soils genesis factors (Rock material, climate, topography, vegetation, etc.)
- ✓ **Land use and Ecosystems Distribution**
- ✓ **Irrigated land:** 1.2 Millions ha



Relative proportions of land use

Total area: 71 085 Millions hectares

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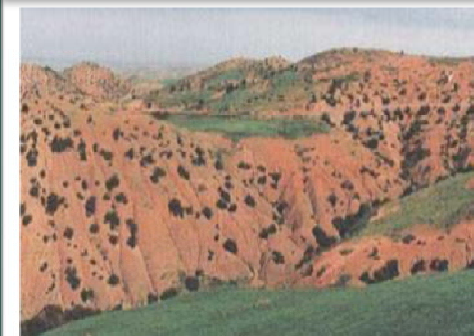


Main Soil Degradation Processes (1/4)

Urbanization pressure: 3000 to 5 000 ha of agricultural land are lost every year to urbanization

Water erosion: More pronounced in the Rif mountains, and pre-Rif where specific degradation exceeding 3 000 tons/km².yr

Wind erosion: Very active in southern and south-east



Main Soil Degradation Processes (2/4)

Deforestation: More than 250 000 hectares were lost between 1985 and 1995 (close relationship between soil degradation and clearing forests)

Over – grazing and rangeland cultivation: starting factors of biodiversity loss and soil erosion

Salinization: More than 200 000 ha are affected by salts at different levels of severity

Soil organic matter loss: It occurs under intensive cultivation and after rangeland cultivation (more than 2% loss per year in irrigated areas of Morocco)

Soil compaction: improper tillage of soil in which excessive tillage result in the deterioration of soil structure



Main Soil Degradation Processes (3/4)

Desertification: caused by natural and anthropogenic factors



Landslides: pronounced in the North region due to certain factors (excessive rains, marly soils, steep slopes, etc.)



Land flooding: several events are observed and more than 300 sites were identified as sensitive and vulnerable



Main Soil Degradation Processes (4/4)

Recent, increasing and emerging soil deterioration processes:

- **Point Source Pollution** : industrial liquid discharges, deposition of solid waste (municipal and hazardous), accumulation of non-biodegradable materials ...
- **Diffuse Pollution** generated by agriculture and livestock activities
- **Mining Pollution**: Many mineral substances of mining land including Phosphate, Lead, Zinc and Copper. About 10 650 km² of mining land;
- **Quarrying**: an intensive phenomena in several regions of Morocco

The Proposed Soil Act: Ten chapters

Chapter 1: Purpose, scope and definitions

Chapter 2: Principles and common obligations

Chapter 3: Soil monitoring, promotion of research and public information

Chapter 4: For sustainable development

Chapter 5: Soil protection against pollutions

Chapter 6: Contaminated Sites

Chapter 7: Liability (Responsibility) for damage to soil

Chapter 8: Incentives

Chapter 9: Control and sanctions

Chapter 10: Coordination of actions and measures taken to protect soil

Chapter 2: Main Principles and Obligations

Article 4: Principle of integration

Article 5: Principle of land vocations

Article 6: General obligations

Article 7: Preventive actions

Article 8: Prevention Thresholds

Chapter 5: Soil Protection against Pollutions

Article 16: General obligations of the operator

Article 17: Information to provide for the authorization

Article 18: Environmental Impact Studies

Article 19: Prevention of risks from quarries

Article 20: Prevention of risks from mining

Article 21: General obligation on mining

Article 22: Application for mining permit or license

Article 23: Contingency plans

Chapter 6: Contaminated sites

Article 24: The inventory of contaminated sites

Article 25: Obligations of Municipalities

Article 26: Rehabilitation thresholds

Article 27: Rehabilitation measures

Article 28: Responsibility for rehabilitation

Article 29: The obligation of the owner

Article 30: Rehabilitation plan

Article 31: Content of rehabilitation plan

Article 32: Information of concerned persons and/or institutions

Article 33: Regulation



Next Steps

- Receive feedback from Intersol 2010, if possible;
- Review of the Draft Soil Act by concerned institutions;
- Preparation of a final version;
- Submission of the Soil Act to the Government and Parliament for approval

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THANK YOU

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