

Are Lebanon's Institutional Framework and Public Policies Ready for the Water-Energy-Food Nexus



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Climate Change and the Environment in the Arab World Program

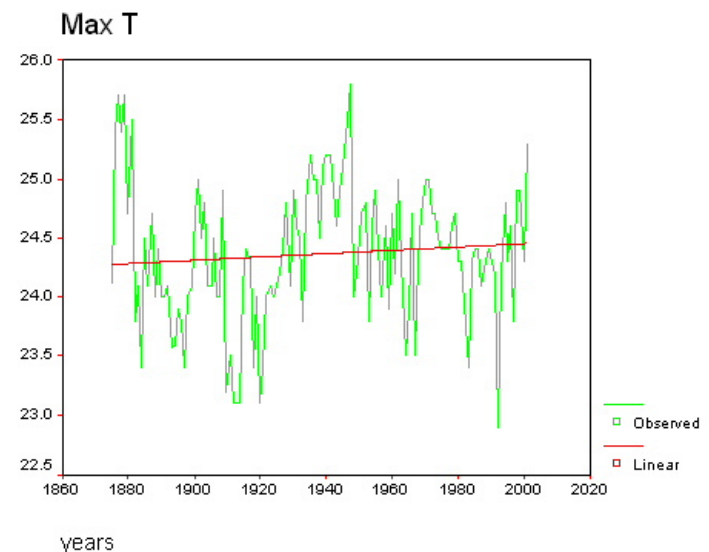
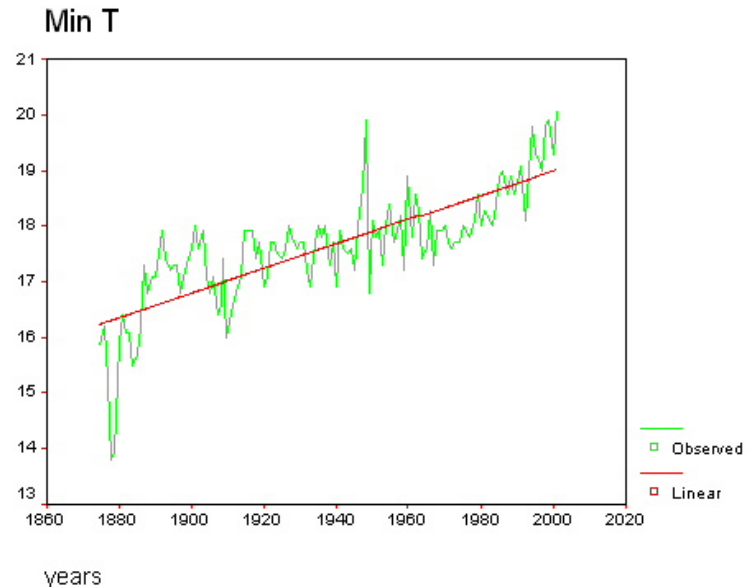
I – Lebanon - Stressors

- Population:
 - ~ 0.7% annual growth (4, 400,000 currently, 5,200,000 by year 2030)
 - Urban Population growth rate 0.9%
 - Rural Population growth rate -0.2%
 - Urban Population 87%
 - Population density 397 persons/km² – ranked 20th in the world
 - Syrian Refugees > 1,000,000 (registered, many more unregistered)
- Increasing economic growth
- Climate Change

I – Lebanon Stressors

- **Climate Change**

- Increase in temperature by 1°C along the coast and to 2°C in the mountains by 2040,
- Increase in temperature by 3°C on the coast and to 5°C in the mountains by 2090
- Reduction in precipitation of 10 to 20% by 2040 and 25 to 45% by 2090.
- Drought season to start earlier by as much as one month
- Snow might decrease by as much as 70%
- Snow line could start from 1900 m by 2090



I – Lebanon Overview

Water

- Demand:
 - 60% agriculture
 - 29% domestic
 - 11% industry
- Total annual renewable sources: 926m³/per. to drop to 839 m³/per. by 2015
- Discontinuous Supply
- Infrastructure - old or outdated in some areas and poorly maintained.

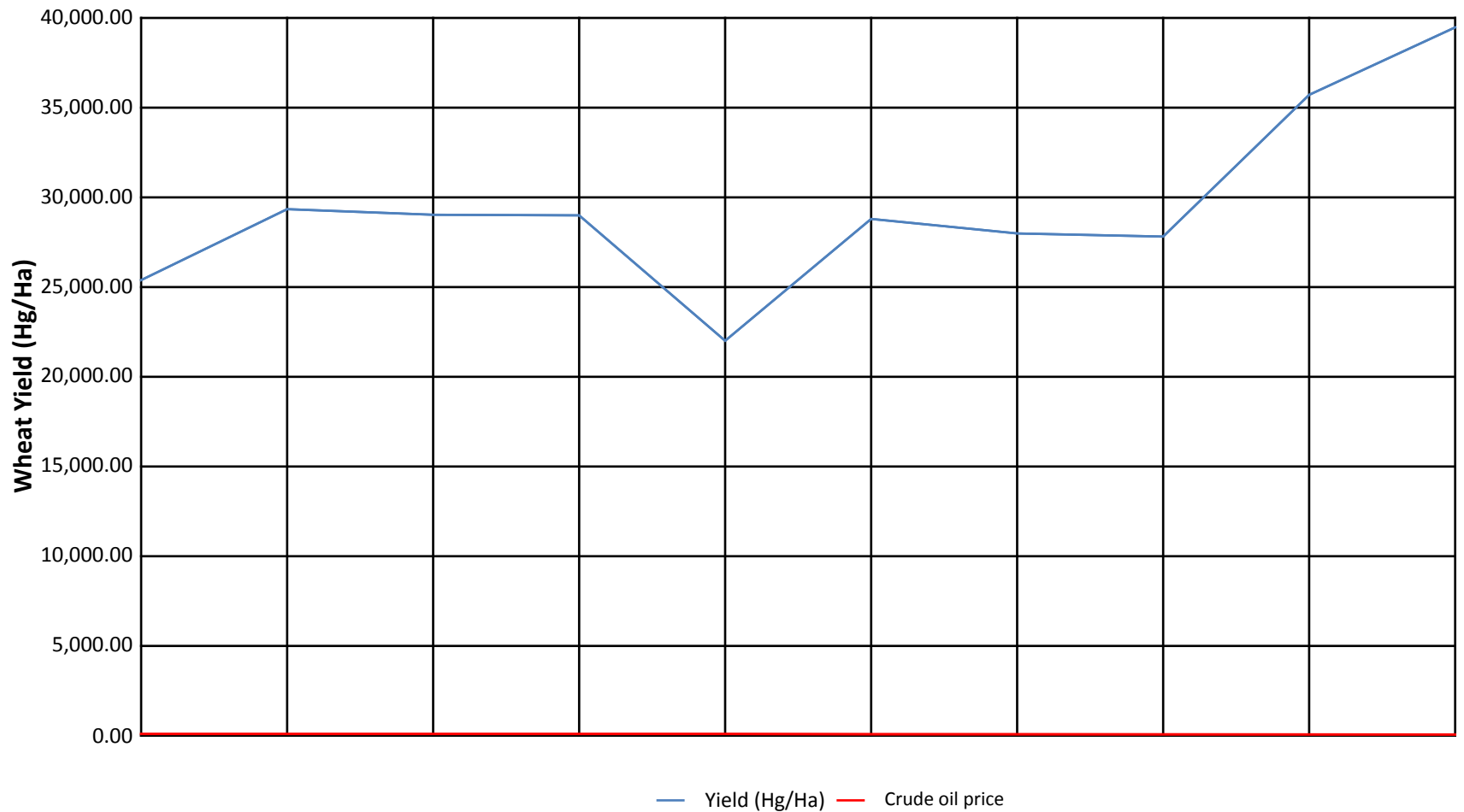
Energy

- Total supply:
 - 85% thermal power plants
 - 4.5% hydropower plants
 - 10.5% neighboring countries
- Supply is 77% of total demand; the remaining 23% are supplied by private generators.

Food/Agriculture

- Global Hunger Index <5 (range from < 5 low hunger level to > 30 alarming)
- The agriculture sector covers ~ 20% of the food demand
- Lebanon imports:
 - Cereals 80%
 - Red Meat 82%
 - Fish 75%
 - Dairy 37%
- Around 15 to 20% of people experiencing food insecurity

I – Lebanon Overview



II- WEF Governance

- Studying the WEF governance in terms of:
 - Policymaking
 - Institutional Set-up (Public)
 - Strategy production
- ... with a focus on:
 - The Cross-cutting policies and laws
 - The Coordination Levels

II – WEF Governance

	Institution	Function
Line Ministries	Ministry of Energy and Water Ministry of Agriculture	Direct management of the water, energy and food production sectors
	Ministry of Environment	Direct care for the preservation of natural resources
	Ministry of Economy and Trade	Subsidies, Food safety, Regulations
Indirect Ministries and Agencies	Ministry of Finance	Financing and Funding
	Ministry of Public Health	Quality of water and food safety
	Ministry of Interior and Municipalities	Link to smaller local communities for management of smaller projects
	Ministry of Industry	Use of energy and resources indirectly affecting water, energy, and agricultural lands. Food safety
	Council for Development and Reconstruction	Works on major water, energy and agricultural projects that promote development.

Water Governance

Laws

- Law 221/2000
 - MOEW strategy and policy making entity
- Distribution of drinking and irrigation water at national levels
- Build major water facilities including dams and hill lakes
- Protect water from pollution
- License wells

Structure



- MOEW
- Regional Water Establishments
- Litani River Authority
- Local Committees and Municipalities.

Strategies

- National Water Sector Strategy 2010
- Procedure was Inclusive
- Includes plans on increasing irrigated lands
- Accounts for Environmental Assessment
- Plans to build dams, but does not mention hydropower.

Energy Governance

Laws

- Law 462/2000
 - MOEW strategy and policy making entity
- Governs mostly the electricity sector (not the energy sector)
- Energy has been recently introduced under a new council for energy options

Structure

- MOEW
- EDL
- LCEC(alternative sources of energy)
- Private Concessions
- Private and Semi-private Hydroelectric
 - Litani River Authority

Strategies

- EDL policy paper
- Policy paper circulated around for approval
- 60% use of natural gas and more than 12% renewables by 2020.
- Followed up by the National energy efficiency action plan.

Agriculture Governance

Laws

- A lot of coordination with MOET on trade agreements
- Subsidies on beetroot and wheat
- Green Plan deals with smaller irrigation plans and the building of small sized reservoirs'

Structure

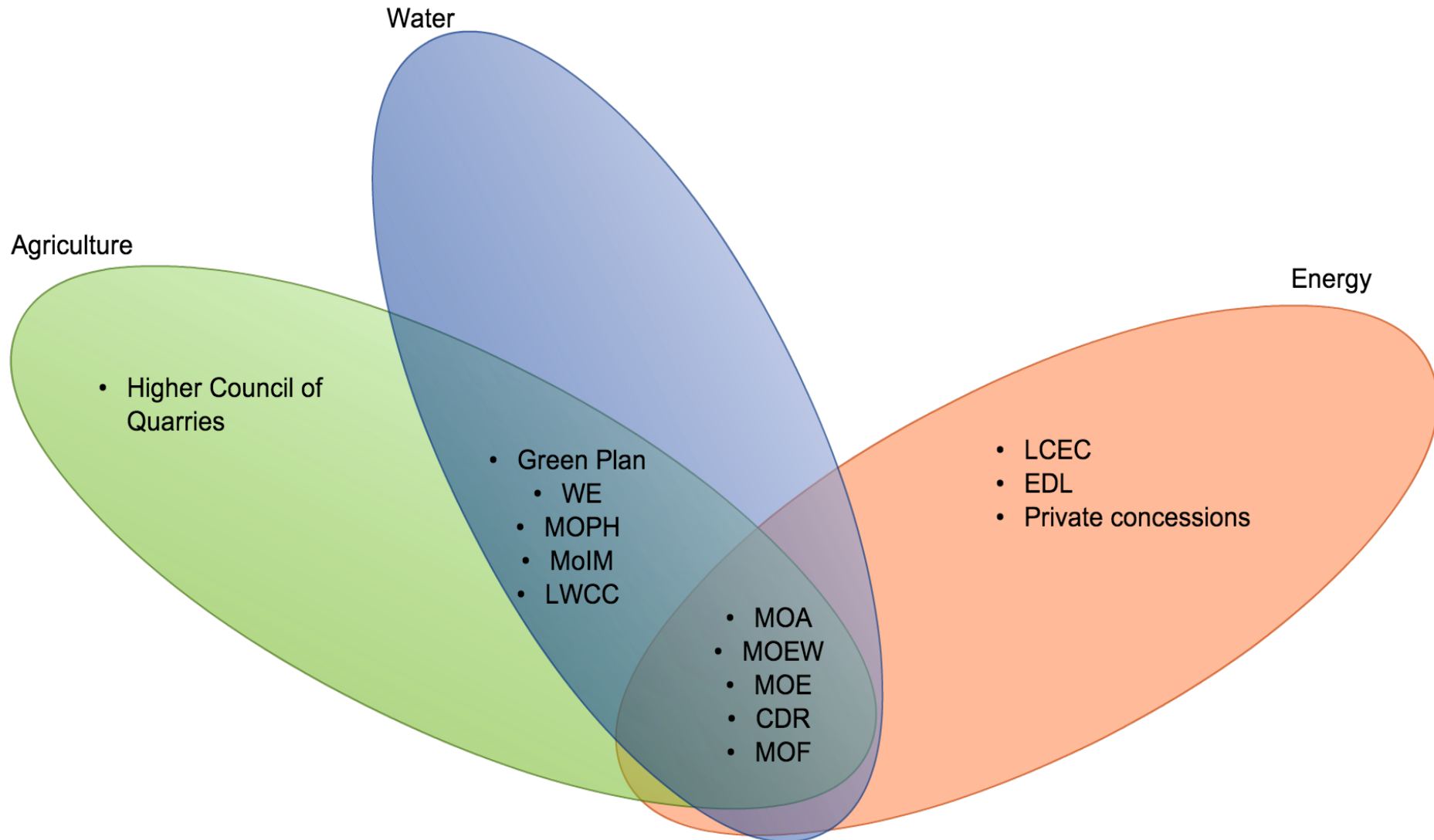


- MOA
 - MOET
- MOE
- Green Plan
- LARI

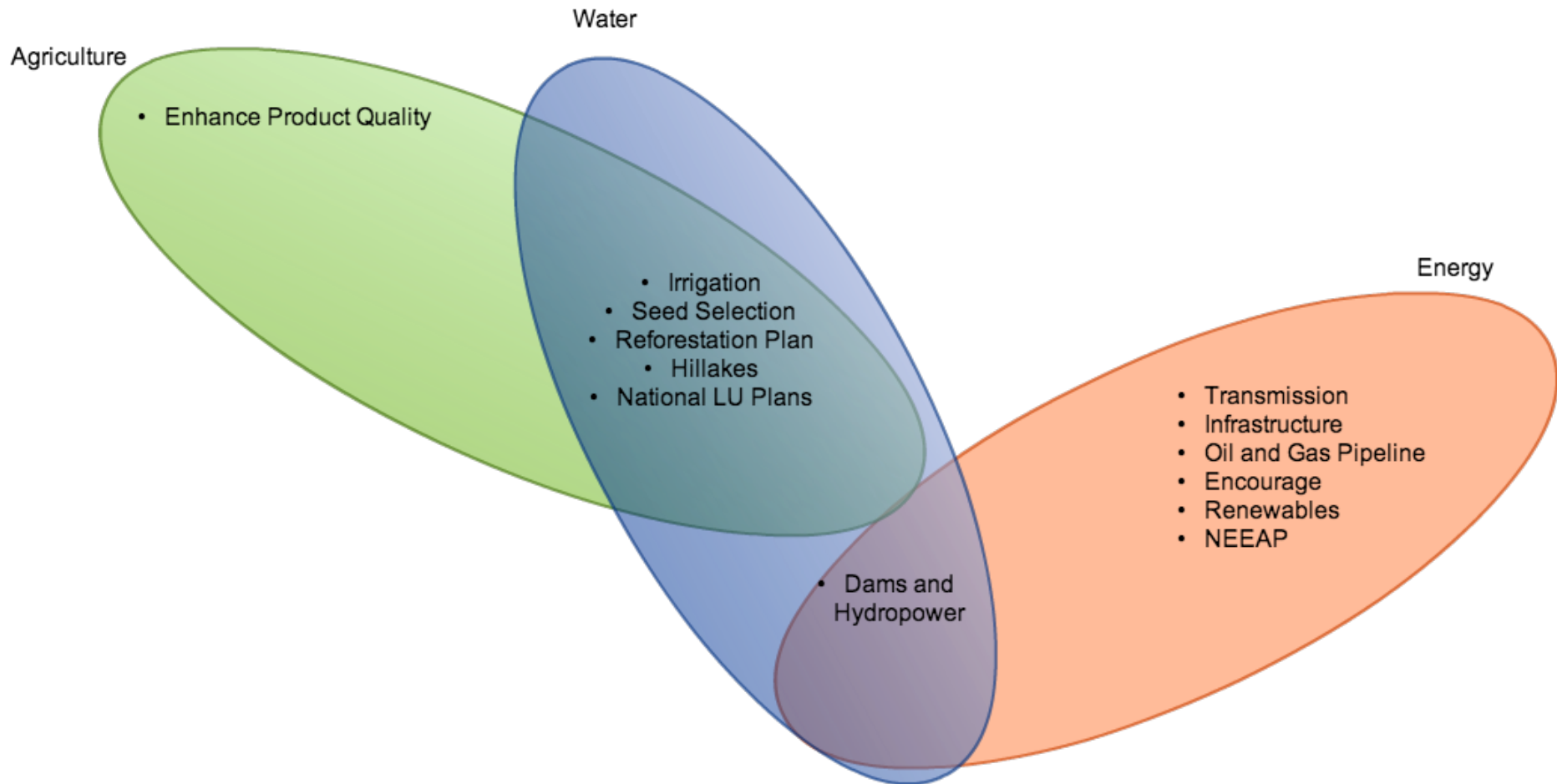
Strategies

- Agriculture Strategy for years 2009 – 2014
- Development of a new 5-year strategy under way
- Ratifying and updating Laws
- Enhancing MOA's internal structure and MoA's Relations with other governmental and non-governmental institutions and organizations.
- Improving agriculture infrastructure, and working on methods that reduce trade-offs across sectors.
- Protecting Natural Resources: Soil, forests, biodiversity, land management and marine life.

Distribution of Institutions by Sectors



Distribution of Actions by Sector



V - Analysis

- **Personnel:**
 - Many Vacancies (ex. MoEW 15% of positions occupied 77 out of 505)
 - Empowerment of personnel and freedom of expression
- **Functionality:**
 - Discontinuity: no institutional memory (reliance on donor personnel e.g. UNDP's role in many ministries)
 - No coordination protocol between institutions
 - No coordination within the same ministry
 - No common method for setting strategies
- **Legal:**
 - Communications between ministries have to pass through DG/Minister
- **Data:**
 - Quality
 - Sharing
 - Uniformity

VI – Recommendations

- **Institutional**
 - Reorganize and empower the existing planning bodies within ministries (through legal and institutional initiatives) to embark on a nexus approach to planning
 - Improve and decentralize communications between ministries
 - Create a planning body or develop the capacities of planning bodies such as councils and higher councils
 - Develop the capacities of concerned stakeholders in nexus planning
- **Policy**
 - Improve the level of integration of policies
 - Improve the resource efficiency factors in the different sector strategies

THANK YOU