

# The Challenges of Climate Change in a Mediterranean in Transition

**Dr. Constantin TSAKAS**

General Manager Institut de la Méditerranée, General Secretary of FEMISE

**COP23 (BONN)**

**13H00 – 14H30 – PAVILLON/PAVILION ENERGIES 2050  
CGLUA ET DING TAI CO., LTD. – ZONE BONN**

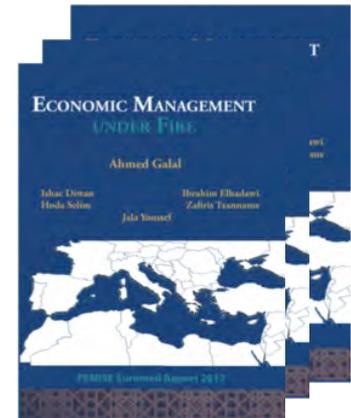


# WHO ARE WE ?

- ◆ **About FEMISE** : FEMISE (Euro-Mediterranean Forum of Economic Institutes) is a network of research institutes from the North and South of the Mediterranean, which promotes dialogue and research on socio-economic issues and advises Mediterranean Partner Countries on reform. Its General Objective is to reinforce dialogue between stakeholders and conduct research on priority EuroMed issues. It is coordinated by the Economic Research Forum (Egypt) and Institut de la Méditerranée (France).
- ◆ **About Institut de la Méditerranée** : Institut de la Méditerranée (IM, Marseille, France) is one of the founders and coordinators of FEMISE. IM was founded in 1994 by the PACA Region, the General Council of Bouches-du-Rhône, the City of Marseille and the Marseille Provence Chamber of Commerce and Industry and develops socio-economic expertise and projects related to the wider Euro-Mediterranean region.

# ACTIONS IN BRIEF

- ◆ Support to a network of **95 economic research institutes** from the North and South of the Mediterranean.
- ◆ Through a **common N-S voice**, providing a platform for dialogues and debates among different stakeholders of researchers, international community, private sector, media, civil society and decision makers on EU-MED priority issues through conferences & policy seminars.
- ◆ Conducting research on **priority issues of EU-Med economic cooperation**, as defined by a scientific program prepared in collaboration with different stakeholders on priority EU-Med issues.
- ◆ Disseminating the result of the research through research reports, policy briefs, articles, to ensure largest dissemination possible.



# OUR RESEARCH ON THE ENVIRONMENT



The objective of this collaborative report with the CMI-World Bank was to share sustainable economic options with decision makers and to present evidence from recent experiences in Mediterranean countries that green growth presents an outstanding opportunity to create good jobs and promote social cohesion. The goal was to open the debate and issue a call for action on environmental problems.



FEMISE research also includes :

The Impact of a Renewable Energies Cluster in Southern Countries: Viability and Economic Impact in Morocco (FEM35-05)

The Economic Costs of Climate Change in MENA countries: A Micro-Spatial Quantitative Assessment and a Survey of Adaptation Policies (FEM34-03)

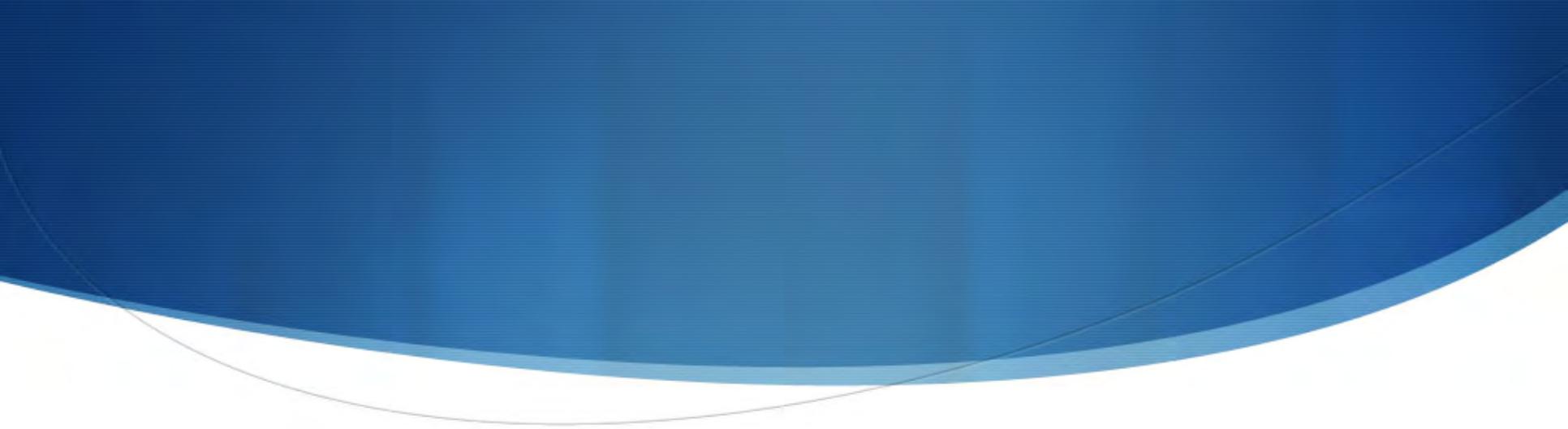
*and many others available at [www.femise.org](http://www.femise.org)*

# ENERGIES 2050 PARTNERSHIP to strengthen impact

The partnership with ENERGIES2050, a renowned partner in the field of climate change, aims to have an additional channel and strengthen our contributions towards meeting the challenges the EuroMed region to reaching out to policy-makers. This partnership allows:

- ◆ Common events to mobilize policy-makers, the academic community and private sector operators on these issues,
- ◆ Participation in forthcoming Projects on Climate Change,
- ◆ Contributing to a **Climate Change report**, updated annually during or after each COP.





# KEY FIGURES

(COP22 REPORT)

# South Med : Insufficient efforts and unexploited potential

The impact on agriculture would be considerable. Climate change would mainly affect agriculture through its effect on crop yields. A real danger for these countries, whose populations are increasing exponentially and where the agricultural sector may represent as much as 15% of the GDP.

**Variation des rendements potentiels des cultures dans un scénario de modification des conditions climatiques en 2050 (en%)**

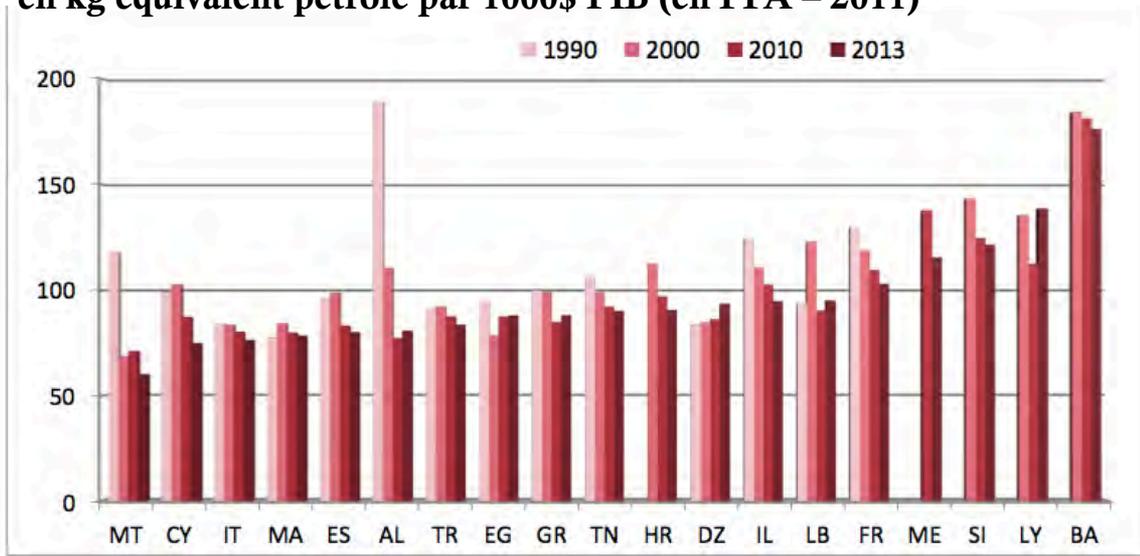
	<b>Blé</b>	<b>Céréales</b>	<b>Sucre</b>	<b>Légumes et Fruit</b>
<b>Turquie</b>	-8,7	-4,8	-0,6	-3,6
<b>Moyen Orient</b>	-2,5	-0,8	-0,6	-2,4
<b>Egypte</b>	2,2	-1,1	0,01	0,7
<b>Tunisie</b>	-5,7	-3,6	-0,05	-0,8
<b>Maroc</b>	-7,3	-3,6	-0,05	-0,8
<b>Algérie et Libye</b>	-0,3	-1,2	0	-0,7

# South Med : Insufficient efforts and unexploited potential

Hopes for energy intensity have not evolved as expected for South-Med countries. Between 2000 and 2014, we note a positive annual growth in primary energy intensity for countries such as Egypt (+ 0.8%), Algeria (+ 0.9%) and Libya (+2.6%). % suggesting that they remain increasingly energy-hungry economies in relation to their level of GDP.

However, countries like Jordan (-1.4%) and Lebanon (-1.5%), are approaching EU levels in terms of decline in energy intensity.

**Intensité énergétique dans les Pays Méd.**  
en kg équivalent pétrole par 1000\$ PIB (en PPA – 2011)

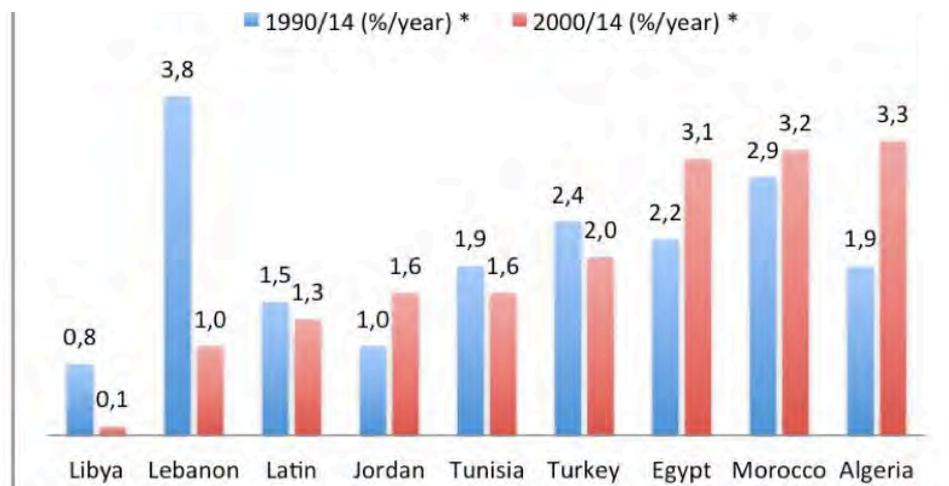


# South Med : Insufficient efforts and unexploited potential

- per capita CO2 emissions have increased significantly in many South-Med countries.

- This is particularly the case for Algeria (+ 3.3%), Morocco (+ 3.2%) and Egypt (+ 3.1%), which seem to pollute progressively more.
- Lebanon (+ 1%) and Libya (+ 0.1%) remain the only ones to have a growth rate of CO2 emissions lower than what is found in Latin America (+1.3 %).

## Croissance annuelle des émissions de CO2 par habitant



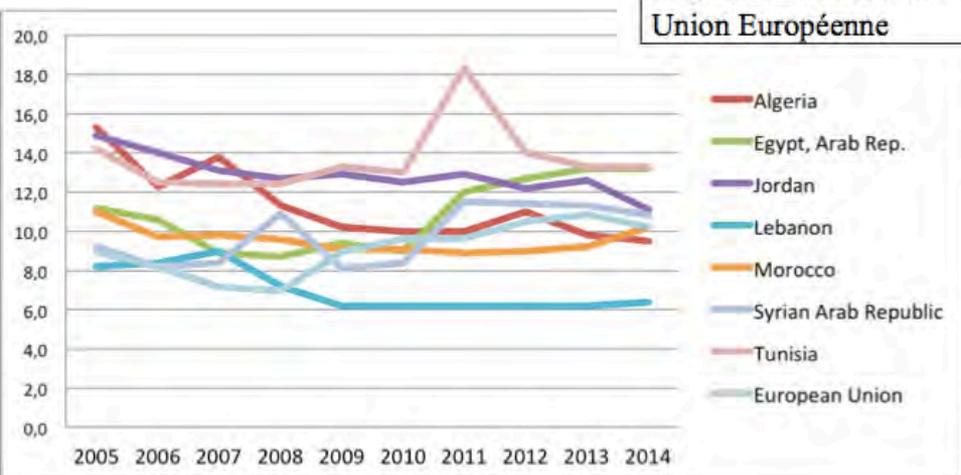


# A new economic and social reality following the Arab Spring ...

## GDP per capita rates

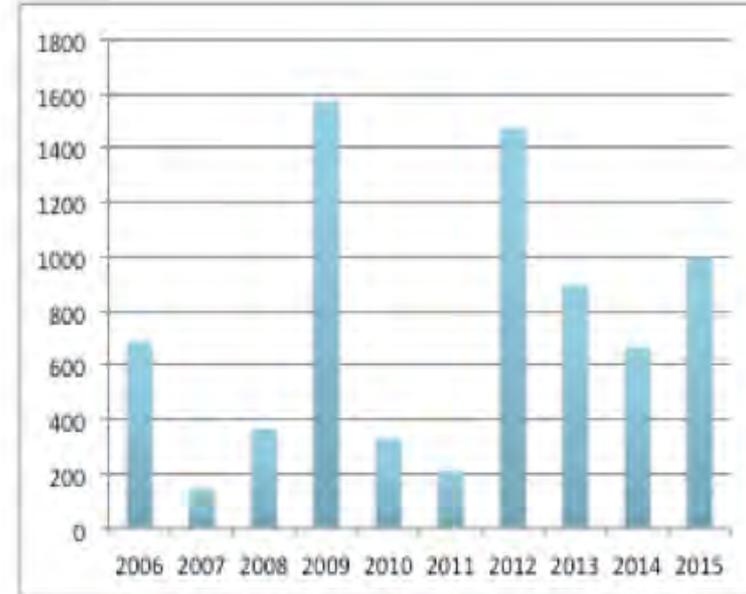
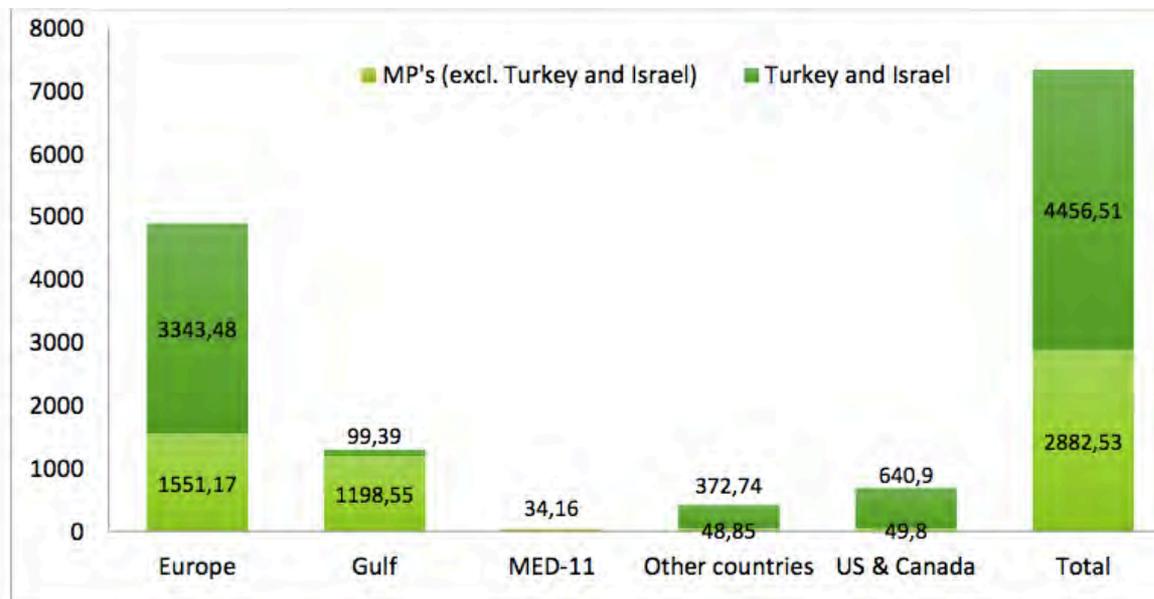
Pays	1990s	2000s	2010-2015
Algerie	-0,41	2,44	1,46
Egypte	2,29	3,00	0,76
Jordanie	0,98	3,47	-0,59
Liban	7,88	2,37	-2,83
Maroc	1,60	3,64	2,53
Syrie	2,75	2,25	
Tunisie	3,28	3,32	0,66
Moyenne Sud Med. (excl. Israel et Turquie)	<b>2,62</b>	<b>2,93</b>	<b>0,33</b>
Union Européenne	<b>1,94</b>	<b>1,27</b>	<b>0,93</b>

## Evolution of Unemployment



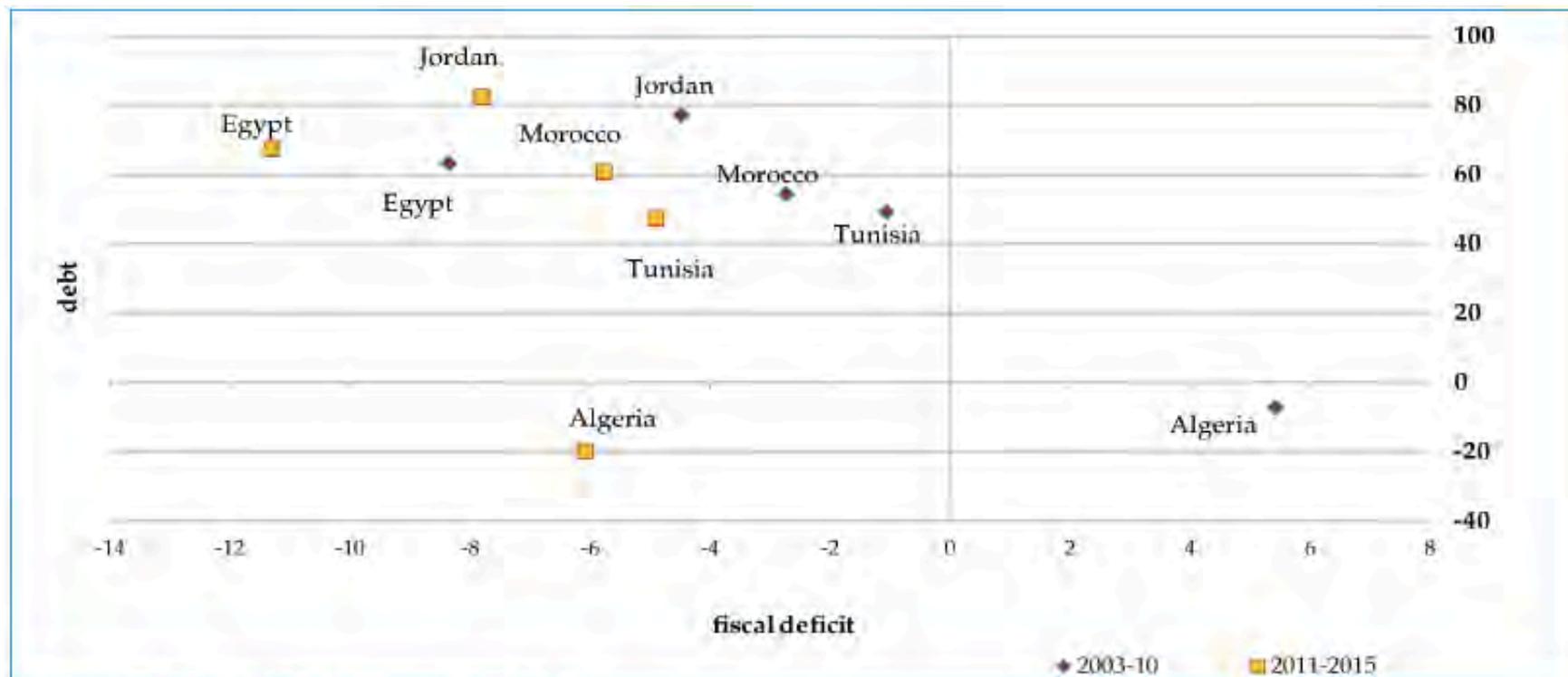
# A new economic and social reality following the Arab Spring ...

Valeur (en million d'euros) des IDE dans les énergies renouvelables des PM, (2006-2015)

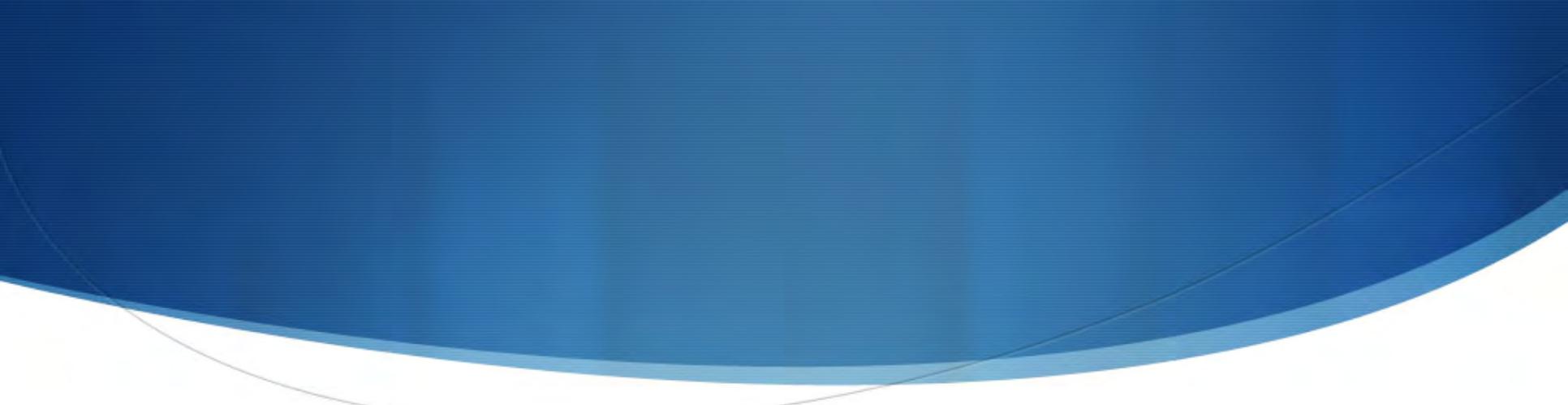


# A new economic and social reality following the Arab Spring ...

Net domestic debt and Overall Fiscal Balance (Source: FEMISE Euromed 2017 report)



Source: IMF Article IV Consultation data.



# ASSESSING CONSISTENCY OF ADAPTATION & MITIGATION ACTION

(2017-18 FORTHCOMING REPORT)

# Egypt

- ◆ Mitigation measures focus on more efficient use of energy, increased use of renewable and nuclear energy, and better management of energy subsidies. Far from suggesting concrete projects, Egypt is proposing lines of action.
- ◆ Despite significant vulnerability to climate change, adaptation measures are formulated in a very imprecise way and the record shows that Egypt lacks a clear strategy.

# Tunisia

- ◆ The mitigation plan considers intensifying the promotion of **energy efficiency** in all consumer sectors and for all energy uses. This plan also advocates the increasing use of renewable energies, in particular through the Tunisian Solar Plan. As for solar thermal energy, Tunisia tripled the diffusion rate of solar water heaters, which will increase to 220 m<sup>2</sup> sensors per 1000 inhabitants in 2030. Also, the mitigation plan considers increasing the CO<sub>2</sub> absorption capacity of forests and arboriculture.
- ◆ The proposed adaptation measures consist mainly in the implementation of projects for the transfer and re-use of treated wastewater and the strengthening and securing of water supply in major urban centers, including Greater Tunis, Cap-Bon, Sahel and Sfax. Also, planned actions in agriculture, essentially capacity-building and institutional strengthening measures.

# Morocco

- ◆ forecasts that, between 2020 and 2030, adaptation will cost at least 35 billion US\$ for the most vulnerable sectors (water, forestry and agriculture),
- ◆ With regards to mitigation, Morocco's GHG emission reduction targets will be achieved through economy-wide actions, coordination falling under the auspices of a low-carbon development strategy. The country commits to reducing its GHG emissions by 42 % **(Conditional Target)** below business as-usual (BAU) levels by 2030.
- ◆ Mitigation aims to reduce heavy reliance on foreign energy sources and increase the share of renewable energy. Morocco targets reaching over 52 % of installed electricity production capacity from renewable sources by 2030 and reducing energy consumption by 15 % by 2030.
- ◆ The total cost for mitigation objectives is valued at 50 billion US\$, of which 24 billion US\$ would be conditional on international support made available through climate finance mechanisms, including the Green Climate Fund (GCF).

# Morocco

## Summary of Morocco's key data regarding the mitigation scenarios

Mt CO <sub>2</sub> e	2010	2020	2025	2030	Total 2020-2030
Emissions—BAU	93,9	121,6	142,7	170,8	1584,8
Emissions — Unconditional Scenario (with AFOLU)	93,9	107,1	116,7	141,4	1326,9
Emissions — Unconditional Scenario (without AFOLU)	93,9	111,3	122,5	148,7	1390,5
Emissions — Conditional Scenario (with AFOLU)	93,9	97,2	91,6	98,9	1061,3
Emissions — Conditional Scenario (without AFOLU)	93,9	101,9	101,8	113,2	1172,1
Expected Reductions — Uncondit. Scenario (with AFOLU)	0	14,6	26	29,4	257,9
Expected Reductions — Uncondit. Scenario (without AFOLU)	0	10,3	20,3	22,1	194,3
Expected Reductions — Condit. Scenario (with AFOLU)	0	24,4	51,1	71,9	523,5
Expected Reductions — Condit. Scenario (without AFOLU)	0	19,7	40,9	57,5	412,7

Source: NDC under UNFCCC, available at

<http://www4.unfccc.int/ndcregistry/PublishedDocuments/Morocco%20First/Morocco%20First%20NDC-English.pdf>

## PRELIMINARY MAPPING

	STRENGTHS	WEAKNESSES	Ongoing efforts
<b>Algeria</b>	<ul style="list-style-type: none"> <li>- Governmental decrees for environmental protection</li> <li>- Creating National Agency for Climate Change (2015)</li> <li>- Encouragement to develop investments in renewable energies</li> <li>- Ratified the Paris Agreement (2016)</li> </ul>	<ul style="list-style-type: none"> <li>- Waste of water is high.</li> <li>- Not investing in human capital.</li> <li>- Economic interests are sometimes in the way, stalling discussions on climate changes issues.</li> </ul>	<ul style="list-style-type: none"> <li>- Construction of the biggest solar power plant in the world</li> </ul>
<b>Egypt</b>	<ul style="list-style-type: none"> <li>- National Energy Efficiency Action Plan (NEEAP) (2012)</li> <li>- Law of Renewable Energies (2014) to establish legal framework.</li> <li>- Ratified the Paris Agreement on Climate Change</li> </ul>	<ul style="list-style-type: none"> <li>- Water shortages in the Nile River, desertification</li> <li>- Alexandria potentially threatened</li> <li>- Economic interests are often in the way, stalling discussions on climate changes issues.</li> </ul>	<ul style="list-style-type: none"> <li>- Limited actual efforts on this field.</li> </ul>
<b>Jordan</b>	<ul style="list-style-type: none"> <li>- Established the long term policy: "National Climate Change Policy of the Hashemite Kingdom of Jordan" (2013-2020)</li> <li>- Ratified the Paris Agreement (2016)</li> </ul>	<ul style="list-style-type: none"> <li>- Economic interests are sometimes in the way, stalling discussions on climate changes issues.</li> </ul>	<ul style="list-style-type: none"> <li>- There are no actual projects or efforts on this field</li> </ul>
<b>Morocco</b>	<ul style="list-style-type: none"> <li>- Environmental legislation</li> <li>- Entered international long-term strategies</li> <li>- Long term "Climate Change Policy of Morocco" (2014)</li> <li>- Ratified the Paris Agreement (2016)</li> </ul>	n.a.	<ul style="list-style-type: none"> <li>- Plan to increase the use of renewable energies</li> </ul>
<b>Tunisia</b>	<ul style="list-style-type: none"> <li>- Environmental legislations + recognition of climate change in the Constitution (2014)</li> <li>- Established National Strategy on Climate Change.</li> <li>- Adopted "Renewable Energy Action Plan 2030" (2016)</li> <li>- Ratified the Paris Agreement (2016).</li> </ul>	<ul style="list-style-type: none"> <li>- Should work more on the awareness and education on climate change.</li> </ul>	<ul style="list-style-type: none"> <li>- Mitigation mainly aimed at strengthening capacities of actors and institutions and paving the way for technology transfer.</li> </ul>
<b>Lebanon</b>	<ul style="list-style-type: none"> <li>- Environmental legislation and governmental decrees.</li> <li>- Creation of legislative committee for the environment.</li> <li>- Projects on renewable energies (actually not applied).</li> </ul>	<ul style="list-style-type: none"> <li>- Did not ratify the Paris Agreement.</li> <li>- Projects, laws, decisions only on paper, no real work on the field.</li> <li>- Corruption, bureaucracy</li> </ul>	<ul style="list-style-type: none"> <li>- Ministry of the Environment trying to put in place laws and strategy to limit air pollution (still at the level of consultations).</li> </ul>
<b>Palestine</b>	<ul style="list-style-type: none"> <li>- Creation of National Committee for Climate Change.</li> <li>- Dressed the "Climate Change Adaptation Strategy and Program of Action for the Palestinian Authority" (2010)</li> <li>- Ratified the Paris Agreement on Climate Change.</li> </ul>	<ul style="list-style-type: none"> <li>- Israeli presence can limit the efforts of the Palestinian government.</li> </ul>	<ul style="list-style-type: none"> <li>- Preparing to submit to the UN the Intended Nationally Determined Contributions (INDCs).</li> </ul>
<b>Israel</b>	<ul style="list-style-type: none"> <li>- The creation of an inter-ministerial committee.</li> <li>- Dressed the "Climate Change Policy in Israel"</li> <li>- Investment in education (creation of the ICCIC) and information projects.</li> </ul>	<ul style="list-style-type: none"> <li>- Limited efforts in the field of renewable energy (but will-power to do better).</li> </ul>	<ul style="list-style-type: none"> <li>- Leading the way by recycling the vast majority of its water, puts solar water heaters in buildings and pushes for agritech innovations.</li> </ul>

# INITIAL THOUGHTS

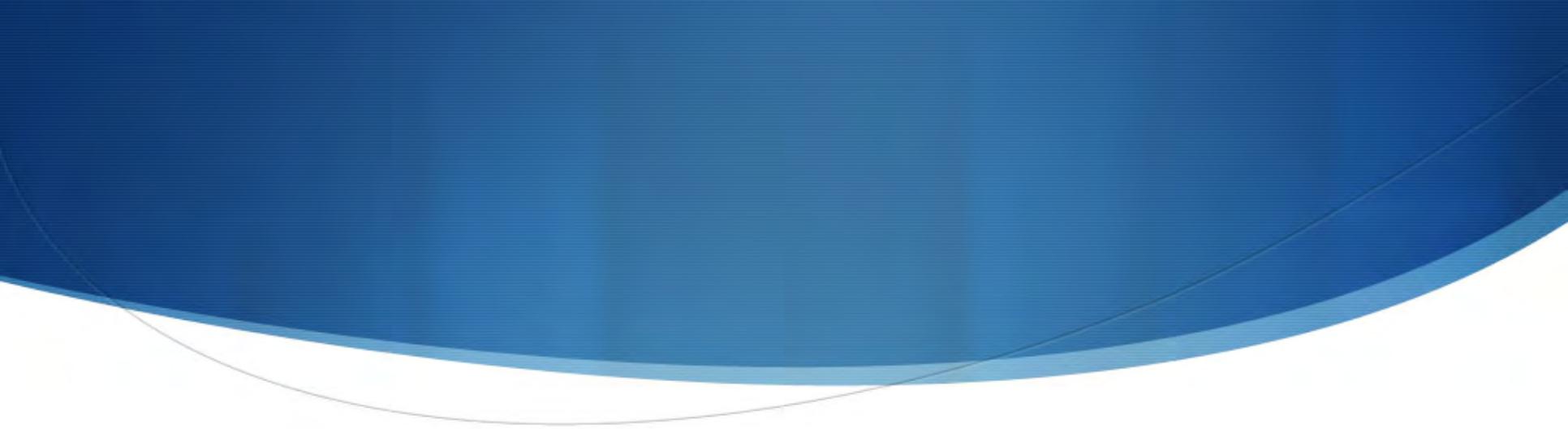
- ◆ MED countries should stop developing their strategies in isolation.
- ◆ Map at the local level the main regions vulnerable to climate change along with the major threats they are facing.
- ◆ Agriculture is one of the most threatened sectors from climate change in MED countries and also one that registers high CO<sub>2</sub> emissions. Yet, it can also be one of significant co-benefits with appropriate policies.
- ◆ Countries can take advantage of being regional instigators with regard to low-carbon practices .
- ◆ The economic and social reality of MED countries cannot be neglected as reducing carbon emissions may affect workers in energy-intensive industries.

# MARSEILLE WORKSHOP

- ◆ The 2017-18 edition of the report will be finalized after COP23 to include on-going debates.
- ◆ It will be launched during a Workshop organized by Institut de la Méditerranée in Marseille, France (Q1 2018).
- ◆ The Marseille workshop will also illustrate the dynamics generated by our three associations and allow presenting the latest research produced from our respective networks on climate issues.



We invite you to join this dynamic and participate in the Marseille Workshop. For more information contact : [c.tsakas@femise.org](mailto:c.tsakas@femise.org)



💧 THANK YOU !

To find our research :

[www.femise.org](http://www.femise.org)