



## **The water, energy and food (WEF) nexus project: A basis for strategic planning for natural resources sustainability-Challenges for application in the MENA region.**

Rabi Mohtar (1), Bassel Daher (4), Insaf Mekki (2), Thameur Chaibi (2), Rim Zitouna Chebbi (2), and Ahmed Al Salaymeh (3)

(1) United States (mohtar@tamu.edu), (2) INRGREF, Tunis, Tunisia, (3) WEEC, Amman, Jordan, (4) Qatar Foundation

The water, energy and food (WEF) nexus project: A basis for strategic planning for natural resources sustainability-Challenges for application in the MENA region.

Rabi H. Mohtar<sup>1</sup> ; Bassel Daher<sup>1</sup> ; Insaf Mekki<sup>2</sup> ; Thameur Chaibi<sup>2</sup> ; Rim Zitouna Chebbi<sup>2</sup> ; Ahmed Al Salaymeh<sup>3</sup>

1 TEES Research Professor, Texas AM University, College Station, Texas.

2 INRGREF, Tunis, Tunisia

3 WEEC, Amman, Jordan

### **Abstract**

Water, energy, and food (WEF) are viewed as main systems forming a nexus, which itself is threatened by defined external factors mainly characterized by growing population, changing economies, governance, climate change, and international trade. Integrative thinking in strategic planning for natural resources comes through recognizing the intimate level of interconnectedness between these systems and the entities that govern them. Providing sustainable solutions to overcome present challenges pose the need to study the existent inter-linkages and tradeoffs between resources. In this context, the present communication is to present the WEF-nexus project, a Tunisian - Jordanian - Qatari - USA project which is funded by the USAID - FABRI PR&D Grants program. WEF-nexus project seeks to explore the inextricable link between water resources and food security in both its geophysical and socio-economic dimensions. The project proposes to design, implement and test integrated resource management tool based on the water-energy-food nexus framework that i) includes the evaluation of the tool over a wide range of climatic and socio-economic zones represented by different countries in the MENA region, and ii) develop scenarios with variations of resources, demands, constraints, and management strategies for the chosen countries, which would be used as a foundation for guiding decision making. The approach is implemented and tested within Tunisia, Jordan, and Qatar. Beyond the obtaining of significant advances in the aforementioned methodological domains, and the understanding of the problems and challenges related to water and food that societies are experiencing or will experience in the future, outcomes are expected to :i) engage decision makers in the process of improving current policies, and strengthening relevant public- private collaboration through the use of the proposed tool, and ii) help in revisiting former recommendations at the levels of resource governance, and in identifying new in support of water and food policies, institutions and management.