Responding to Climate Change Impact: Water, Energy, and Food Nexus in Arab Cities

Al-Zu’bi, Maha1; Keough, Noel2

1, 2 Faculty of Environmental Design, University of Calgary

Research Area

The Arab Region, comprised of twenty two countries, will be clustered according to geographic location into four sub-groups for the purpose of this research:

**Mashreq**: (Egypt, Iraq, Jordan, Lebanon, Palestine, and Syria)

**Maghreb**: (Algeria, Libya, Mauritania, Morocco, and Tunisia)

**Gulf**: (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and UAE)

**Least Developed Countries**: (Djibouti, Comoros, Somalia, Sudan, and Yemen)

Arab Region Map

Research Question

What policies would support or undermine climate change, Water, Energy and Food Nexus in Arab cities?

This research examines climate change policy at the municipal level through the lens of the interactions between Water, Energy, and Food (WEF), from a water perspective.

Motivation

- Population
- Urbanization
- Water scarcity
- Precipitation (52% with ~100 mm)
- 90% Hyper-Arid
- Agriculture consumes ~80% of H2O
- Climate change

Water security
- Energy security
- Food security
- Sustainable development

Methodology

Comparative Analysis
- Literature review
- Framework analysis
- Comparative analysis between the 4 sub-groups (Mashreq, Maghreb, Gulf, and Least Developed Countries)

Design WEF Nexus Framework
- Literature review
- Interviews
- Focus group
- Design the WEF Nexus Municipal Policy Framework

Case Study
- Literature review
- Perform case study in Amman City, Jordan
- Interviews & questionnaire
- Establish focus group
- Test the framework

Expected Outcomes

The significance of this research through the following expected outcomes:

- Effective policy and decision-support tool
- Enhance city-level engagement in national policy dialogue

References:


