Impact of Syrian Refugees on Jordan’s Water Management

Research Questions:
What impact has the influx of 590,000 refugees had on water resources?
How can Jordan improve refugee and water management planning?

Research Design:
1. Literature Review
2. Water Budget Analysis
3. Interviews

1. Literature Review:
   - Water management in Jordan
   - Environmental impact assessments of refugee camps
   - Water resource assessments for refugees in Jordan

2. Water Budget Analysis:
Excess available water budget = Annual Average Precipitation + Total Surface Inflow + Total Groundwater Inflow - Evaporation - Surface water and Groundwater Outflow - Water Withdrawal from Surface water Supply - Water Withdrawal from Groundwater Supply

Water Budget (2004) = 246 MCM
Water Budget (2009) = 231 MCM
Water Budget (2012) = 221 MCM

*data from Ministry of Water and Irrigation

Recommendations:
1. Refugee Camps in Jordan should not be located in areas experiencing severe water shortage or groundwater exploitation
2. UNHCR Environmental Guidelines
   - Environmental Impact Assessments should be mandatory and conducted in the pre-planning phase
3. Cross-sectoral approach to water management planning in Jordan
   - land use planning and design should incorporate objectives of water policies
   - implementation of water demand management policies
   - educational campaigns on water conservation practices

Interviewees in Jordan:
Maysoon Zoubi, Ministry of Water
Ali Subah, Ministry of Water
Thomas Polo, UNHCR
Catherine Sherwood, UNHCR
Andy Needham, UNHCR
Gian Melloni, ACTED
Vicente Palacios, ACTED
Ghassan Hazboun, Mercy Corps
Marwan Al-Raggad, University of Jordan

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