

شبكة المعلومات الجامعية التوثيق الإلكتروني والميكروفيلو

بسم الله الرحمن الرحيم





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شبكة المعلومات الجامعية التوثيق الإلكتروني والميكرونيله



شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



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جامعة عين شمس التوثيق الإلكتروني والميكروفيلم قسم

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MANAGEMENT OF WATER, ENERGY AND FOOD IN KUWAIT

(A COMPARATIVE STUDY WITH CALLIFORNIA (USA)
AND NINGXIA (CHINA))

Submitted By Hamed Abbas Eidan Abbas

License of Arts (Sociology), Faculty of Arts, Kuwait University, 2000

Master in Environmental Management, Faculty of Graduate Studies,

Arabian Gulf University, 2008

A Thesis Submitted in Partial Fulfillment
Of
The Requirement for the Doctor of Philosophy Degree
In
Environmental Sciences

Department of Environmental Economics, Legal and Management Sciences Institute of Environmental Studies and Research Ain Shams University

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The Prophet Mohammad said: who does not thank Allah does not thank people.

To my mother and father soul. This journey would not have been possible without the support of my greiges kids, life partner, brothers, and my friends.

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Abstract

With the global population growing (over seven billion), accompanied by escalating economic crises, mismanagement of natural resources, climatic changes, and uncertainties, and growing poverty and hunger, the world is opposing critical periods of serious challenges. Water, Energy, and Food (WEF) are inextricably interrelated and interdependences system. These resources utilize for meeting the socio-economic demands as well as sustainable worldwide. This research aims to quantify the linkages and trade-off for WEF nexus for the different variables include environmental, sociological, and economic drivers. also, examines several statistical analyses which include; correlation, significant (ANOVA test), multicollinearity, and stepwise analyses through utilizing JMP software. Then investigate and build-up precise policies within WEF nexus by using Intigrated Environmental Assessemnt (IEA) approach. This research also developed an integrated mathimatical dynamic model for WEF system for the entire kuwiaiti governarates under defferent scenarios and interventions altirnatives. The model has built by interlink Water Evaluation and Planning (WEAP) and Long-range Energy Alternatives Planning System (LEAP) sofwares. Finally, the research proposed a theory of change as well as build up a baseline of proactive strategy actions.

The statistical analyses concluded the WEF nexus in Kuwait is highly interlinkage. Urbanization development, population growth, and increasing temperature degrees are the most variables that affect water, electricity, and food. The gross domestic product is an indirect effect variable. On the other side, the impact of climate change on

water, energy, and food not taken seriously by the leaders in State of Kuwait. This research recomanded to conduct integrated water, energy, and food strategy embedded low and regulation to demonstrate those resources as well as adopting social behavioral policies for water, energy, and food strategy. Grant the NGOs, private sectors, and academia more financing to adopting and implementing water energy and food programs. Restructuring the electricity and water sector and establishment public utility for electricity and water. This utility operating on a commercial and competitive basis, to improve the efficiency of the service, improve performance and reduce the cost of production by allowing the private sector to participate in electricity and water projects. Finally, this research proposed an action plan in order to help disection maker as an road map for integrated strategy for WEF management.

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