Current Status of Climate Change Research and Policy in the Levant; The Jordan Case

A closed workshop on climate change, water, and the policy making process in the Levant and North Africa region was held by the Issam Fares Institute for Public Policy and International Affairs at the American University of Beirut, in August 2009.

Attending the workshop were leading experts on water and sanitation, and several countries were highlighted as case studies. This particular summary focuses on the case of Jordan, which was put together by Manar Fayyad from the University of Jordan.

Background

According to statistics from 2004, Jordan has a population of 5.35 million, inhabiting only 20 per cent of the total area. Approximately 80 per cent of the population live in urban areas, with 3.5 million divided between the governorates of Amman, Irbid, and Zarqa.
Although Jordan's government has been actively engaged in environmental issues for several years, with the 1995 law adopted to regulate various activities in an environmentally safe manner, and the establishment in 2003 of the Ministry of Environment, there has been no comprehensive national policy created to address the issue of climate change to date. The Ministry of Water and Irrigation went so far as to create a strategy for the years 2008-2025, but did not properly tackle the issue of climate change.
In the last couple of decades, a number of acts, regulations, policies, and strategies directly related to water scarcity and indirectly related to climate change have been developed and adopted, but there is an increasing need to develop a specialised policy specifically geared around the issue of climate in order to protect the more vulnerable sectors in the country and establish a definitive public policy.
Environmental indicators show that the percentage of wooded areas in Jordan has increase from 0.44 per cent in 1990 to 0.84 per cent in 2002, and that protected areas for biodiversity cover 0.44 per cent of Jordan's total land surface area. Furthermore, the proportion of the population with access to safe drinking water through a public network reached 97 per cent in 2002. Despite such progress, the complexity of Jordan's environmental problems call for a stronger commitment, especially regarding the institutional legislative framework, the amount of resources allocated to ensure environmental protection, and the availability of a comprehensive environmental database.

Considerations

Several issues need to be considered for the creation of a national policy to address climate change; in-depth research on climate change, improvement of the systematic observation networks, improvement of the system of data collection, enhanced weather forecasting, capacity building to strengthen institutional, technical, and human resources, health protection, and the implementation of specific projects on adaptation in priority areas related to the rational use of natural resources.

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If a national policy towards climate change was adopted, the expected outcomes include a reduction in vulnerability, promotion of sustainable development, reduction of poverty, protection of the environment, strengthening of institutions, establishment of a legal framework addressing climate change, and public awareness on the issue.

Barriers

There are several potential barriers to such a policy in Jordan. These include the lack of financial resources to implement adaptation measures for climate change, the lack of a clear and specific legal and policy framework, inadequate institutional pillars, the lack of awareness of the extent of the problem, and the lack of incorporation of climate change analysis in other developing policies. In addition, there is a lack of adequate tools and knowledge on the subject, and a lack of human resources with skills to translate such strategies into action. Furthermore, there is a weak private sector involvement on these issues, and a limited understanding of best practices and activities with regards to tackling the issue of climate change.

Jordan and Climate Change Conventions

In recent history, Jordan has been pro-active in climate change conventions. It ratified the UN Framework Convention on Climate Change in 1994, and then again the Kyoto protocol in 2003. The UNDP is currently helping Jordan incorporate environmental conventions into national policies through its Global Environmental Facility (GEF), which includes projects such as the construction of a biogas reactor at the Russeifa waste disposal site.
A report published by the World Bank in 2004 stated that, in Jordan, the most significant negative impact on health and quality of life was caused by water pollution at an estimated cost of 0.71- 1.24 per cent of the GDP. Diarrhoea and mortality damages were estimated at 31 million JDs annually, and are caused by the lack of safe drinking water, the lack of proper sanitation, and inadequate domestic, personal, and food hygiene.
In 2006, the project 'Enabling Activities for the Preparation of Jordan's Second National Communication to the UNFCC' began. The project included of an inventory of greenhouse gases, an analysis of potential measures to mitigate the increase in greenhouse gas emissions, and an assessment of potential impacts of climate change.

Vulnerability and Adaptation Study

With Jordan's short history with the environment in mind, a Vulnerability and Adaptation Study should be conducted with the aim of highlighting the implication of climate change on water resources, agricultural and health sectors, and the socio-economic factors that come hand in hand with it.
While adaptation to changing conditions in water availability and demand has always been at the core of water management in Jordan, climate change as its own entity challenges the assumptions that go together with water management, and has the potential to alter the reliability of water management systems and water-related infrastructure. The first step in adaptation is a shift in thinking.

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Jordan is one of the world's poorest countries in terms of water, with an annual per capita share of water for all purposes standing at about 110-150 m3, compared to the international water poverty line of 1,000 m3 of water per person annually. Climate change is expected to increase the water scarcity which will reduce the per capita water share for Jordanians, and it is projected to cause significant changes in the spatial and temporal distribution of precipitation.
Currently, the main objectives of the study are to evaluate the hydrological characteristics of the two major Amman-Zarqa and Yarmouk basins, to investigate the impact of climate change in these basins, and identify possible adaptation measures.

Joint Program on Adaptation to Climate Change to Sustain Jordan's MDG Achievements

Funded by the Spanish government, the JP had two main objectives; to secure reliable sources of water supply in spite of pressure and a rise in the scarcity of the resource as a result of climate change, and to adopt suitable mechanisms for adaptation to climate change in food production and health.

Climate change impact on varying sectors

Through studies, the impact of climate change on public health has revealed that climate change causes the emergence of many diseases, it affects the water availability for sanitary purposes in houses, and as income decreases, some urban people start reducing spending on health and education in order to cope with the rising commodity prices caused by climate change.
Through the same studies, the effect of climate change can also be seen on the livestock sector; it has an impact on the price of fodder as a result of its availability, and the lack of wild grasses in drought years increase the reliance on purchasing fodder.
With regards to the health sector, the actual disease burden attributed to climate change in Jordan is not known. The overall susceptibility of the Jordanian population to environmental health concerns has decreased over recent years, which may be attributed to an improvement in access to health facilities, or an improvement in environmental conditions. At the same time, most health outcomes are the result of a mix of directly and indirectly related cause, which may limit the assessment of climate change on health.

Adaptation policies

One primary conclusion from all the studies has demonstrated that tackling the issue of climate change should be done through its incorporation into other, already established, policies across a number of sectors, for example, the agricultural sector. This may include the modification of cropping patterns, the implementation of supplemental irrigation and water harvesting techniques, and the use of different crop varieties.
Other suggestions include the establishment of a Climate Information System to provide seasonal climate forecasts to policy makers and for disseminating climate information to users, including farmers.

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Enhancing the knowledge of those who currently do not have access to this type of information through workshops, trainings, and school education, will strengthen the need to include climate change in future policy decisions.
Establish a 'National Disaster Fund' for farmers and introduce policy measures to ensure equal access to water.

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