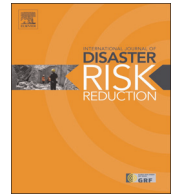




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Towards local disaster risk reduction in developing countries: Challenges from Jordan

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ABSTRACT

Disasters remain one of the main challenges facing nations of the developing world, as they not only cause high mortality and suffering, but also damage local economies that are in process of formation and thwart development achievements. The Hyogo Framework for Action emphasized the significance of making disaster risk reduction a national and a local priority with a strong institutional basis for implementation. However, local governments may not have the capacity yet to address this need.

Therefore, this inquiry investigates the current status of disaster risk reduction in a local Jordanian municipality to understand the current limitations facing this approach. Such an investigation will help in understanding the challenges facing local governments in non-capital cities of the region. The study provides several recommendations for initiating disaster risk reduction on the local level, stressing that the political culture and governance style in the region creates many obstacles. Further, the limited capability of local governments, the serious social and economic problems, and misleading natural disaster cognition create handicaps should the approach be implemented. The legal opaqueness in identification of jurisdictions and responsibilities compounded by the status quo of high dependency on the central government, in addition to fixation on a para-military approach to disaster management calls for reassessment of disaster management policies and related laws in Jordan.

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1. Background

On January 07, 2013 Jordan experienced severe weather that left streets waterlogged and citizens stranded. Houses in low-laying areas suffered flooding, while civil defense response capacity was stretched to the extreme. The storm continued for two days of heavy rain before covering most Jordanian cities with snow for three additional days resulting with complete failure of parts of the infrastructure and the consequential request by civil defense for military support. Accusations of municipal corruption and poor urban management surfaced as citizens became angry about the infrastructure failure [12,22]. The situation underlined the gaps in the emergency response system and the need to address climate change more earnestly.

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1 According to United Nations International Strategy for Disaster Reduction (UNISDR) the last twelve years (2000–2011) have
 3 witnessed natural disasters that killed 1.1 million people, impacted 2.7 billion, and had an escalating cost of \$1380 trillion
 as Jordan.

5 The Hyogo Framework for Action, intended to address “Building the Resilience of Nations and Communities”, identified
 7 the following action priorities: (1) ensure that disaster risk reduction is a national and a local priority with a strong in-
 9 stitutional basis for implementation, (2) identify, assess and monitor disaster risks and enhance early warning, (3) use
 knowledge, innovation and education to build a culture of safety and resilience at all levels, (4) reduce the underlying risk
 factors, and (5) strengthen disaster preparedness for effective response at all levels [46]. This framework offered the main
 input for the assessment of the case study below. As indicated by the results, all of these priorities are lacking on the local
 level, although some of them have been addressed by the national government.

11 The local government is typically the first responder responsible for managing the emergency and its aftermaths, in
 13 addition to its central role in development, hence playing a central role in disaster reduction activities. This prompted
 UNISDR to run a campaign for promoting municipal initiatives for disaster risk reduction (DRR), with several successes and
 lessons learned [48]. The campaign did not include any Arab city, which prompted this investigation to understand the
 status of a local municipality in this region.

17 Community-based disaster management requires local capacity and a culture of decentralization so that the local
 community functions within a supportive structure of government and non-government organizations [6]. Although lit-
 19 erature stresses the significance of local governments in introducing, managing, and implementing disaster risk reduction
 initiatives [25,32,35], disaster risk reduction at the local level in developing countries has been understudied, especially for
 cities in the Middle East.

23 Governance style and institutional failure has been identified as root causes for underdevelopment and vulnerability to
 disasters [1]. Col [8] identified risk assessment, decision making, operations, information sharing, and communications as
 important variables for local government capacity in disaster management. More investigations into the capacity and
 challenges facing community-based disaster reduction and management are needed, especially in the Middle East and Arab
 nations where governance style is mostly centralized.

27 1.1. Disaster risk reduction

29 Mirza [30] clarifies how climate change is making cities in developing countries more vulnerable than ever, and although
 at risk for extreme economic losses due to natural disasters, developing countries focus on disaster recovery rather than
 preparedness and adaptive capacity.

33 Disaster risk reduction (DRR) includes the systematic development and application of policies, strategies and practices to
 avoid (prevention) or limit (mitigation and preparedness) the adverse effects of hazards [45,47,48]. Therefore inter-
 35 disciplinary strategies, tools and approaches are required to ensure proper management and resourcing of risk reduction
 efforts [17].

37 The past few years witnessed a plethora of research on DRR, often linking it to Climate Change and development
 practices (e.g. [40,43]). This paper investigates DRR as a comprehensive approach and underlines the main challenges facing
 such an approach locally in Jordan, as a case study for the Middle Eastern region.

39 There are basic principles for disaster risk management, which tackle all risks in a comprehensive approach. Some of the
 basic principles for such plans are hazard, risk and vulnerability assessment, coordination, preparedness and response
 measures. The ability of local governments in this regard can vary, yet it is important to change the roles of local level
 players from ‘implementers’ to ‘innovators’ [25,35].

43 The developing world faces several challenges in applying DRR strategies, due to the complexity of socio-economic,
 45 environmental, political, and technological challenges [48]. This reflects the significance of incorporating disaster risk re-
 duction components in all development strategies at national and local government levels [24]. Issues of lack of capacity for
 DRR at the local level and lack of governmental will towards integrating DRR in development practice have been cited [25,9].
 Analogously, Jordan is one of the countries receiving top international humanitarian aid, taking smaller but regular assis-
 49 tance for the period 2000–2009, but sadly, only 0.05% of that was used towards disaster risk reduction [23].

51 1.2. Disaster management in Jordan

53 Hazards in Jordan have been investigated by diverse scholars (e.g. [2,7,27,42]). Such investigations focus mostly on the
 natural and physical science approach and few studies attempted to investigate disaster management or risk reduction.

55 Natural hazards are significant due to their impact. In Jordan, the most number of reported deaths are due to Flash
 floods (33%), floods (20%), snowstorms (12%) and cold waves (11%). The most damage and destruction of houses is caused by
 57 snowstorms (57%) and earthquakes (13%), while roads are mostly damaged due to snowstorms (43%), rains (28%) and floods
 (22%). Economically, frost (42%), epidemics (40%) and drought (15%) have the most impact, while the educational sector is
 59 most impacted by snowstorms (91%) and frost (4%) [49].

61 Through the UNISDR, Jordan has been able to create and submit systematic data on disaster losses and prepare reports on
 Disaster Reduction strategies [16,20]. Such strategies remain highly centralized, focusing on the roles of key stakeholders in

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