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From Reaction to Resilience: Preparing for Climate Multi-Hazards in Kuwait

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An abandoned couch in the desert during a heavy Sandstorm – Waffra, Kuwait. Source: Stephan Geyer, Flickr.

The Middle East is warming at nearly twice the global average, with countries in the Arabian Peninsula expected to experience temperature increases of 3–4°C nearly three decades earlier than much of the world. This rapid rise is no longer a distant threat – it is already unfolding. In 2016, Kuwait recorded a staggering 54°C (129°F), one of the highest temperatures ever documented globally. These extreme heatwaves are intensifying demands for cooling, placing a strain on water resources, worsening dust storms, and threatening public health. At the same time, climate change is contributing to more intense rainfall which, combined with socio-economic and management challenges, is leading to increasingly frequent and severe flash floods across the region – many of which are unprecedented events. In arid countries like Saudi Arabia, the UAE and Kuwait, unseasonal heavy rainfall has overwhelmed drainage systems, causing destructive flash floods in cities like Jeddah, Riyadh, Dubai, and Kuwait City. These countries have been shown to be unprepared for the growing magnitude of such events.

Therefore, Kuwait – like many of its neighbours – is becoming increasingly exposed and vulnerable to multi-hazard scenarios, where different climate hazards, such as extreme heat and flooding, may occur in quick succession and within the same geographic areas.

## Shift from Reactive to Proactive

Kuwait's current disaster management system is largely reactive. Following the devastating 2018 flash floods, public discourse largely blamed poor drainage infrastructure. As a result, the government's response focused on cleaning and maintaining drainage systems – important steps, but not enough to address the root causes or reduce long-term risk.

The main coordinating body for flood response in Kuwait, the Flood Committee, which includes representatives from various government agencies such as the Municipality, Ministry of Public Works, Ministry Civil Defence and others, is only activated when the Meteorological Office issues a warning. Its role is largely confined to short-term emergency response. However, effective risk management must go beyond this, incorporating long-term planning, integrated governance, and proactive measures that address climate risks before disasters happen.

# Coordination, Policy and Planning Challenges

Key informant interviews carried out as part of our research in Kuwait identified that roles and responsibilities for addressing extreme heat are not clearly defined. There are no governance groups with specific responsibility for managing extreme heat risk or developing comprehensive plans to address it; instead, the issue is handled on an ad hoc basis. For example, the Ministry of Public Works has issued a policy to reduce the working hours of outdoor workers during the hot season. While Kuwait's National Adaptation Plan (NAP) 2019–2030 acknowledges the negative impacts of rising temperatures on water and marine ecosystems, there appears to be no comprehensive strategy to respond or prevent the effects of extreme heat on society.

There is an urgent need to implement effective heat governance and planning, particularly within the building and urban planning sectors. Kuwait's primary responses to extreme heat are limited to a heavy reliance on air conditioning and the use of energy-intensive desalination plants to meet water demand. These solutions, while effective in the short term, are insufficient on their own and are not compatible with efforts to reduce greenhouse and emissions. Current urban planning policy is also leading to unintended consequences. Our analysis shows that recent urban planning decisions – particularly those supporting Kuwait's low-carbon economic restructuring – have unintentionally increased flood risk. Kuwait's Vision 2035 aims to diversify its economy by heavily investing in the construction sector, transforming into a financial hub for the Northern Gulf. This aligns with the global decarbonisation goals under the Paris Agreement. However, these economic shifts are driving rapid population growth, largely through labour immigration, and many new development projects are emerging in flood-prone areas. Without proper spatial planning, this can significantly increase the exposure to floods and extreme heat, especially among vulnerable, non-citizen populations. Urban planning, and wider economic policy, must support climate-informed decision making, ensuring that urban development which is designed to contribute to Kuwait's low carbon economic restructuring, does not lead to increases in climate risks including flooding and extreme heat.

### Implement Comprehensive Adaptation Strategies for Multi-Hazards and Develop Locally Led Resilience

To effectively address the interconnected nature of climate risks, including those affecting urban planning, Kuwait must adopt a comprehensive and forward-looking adaptation strategy. This means moving beyond isolated, short-term solutions and embracing a multi-hazard, multi-sectoral approach to 'resilience'. A holistic risk assessment — spanning sectors such as health, water, energy, and communications — is essential for identifying critical vulnerabilities and designing integrated adaptation strategies that address the double jeopardy of compounding events.

Resilience is often framed in relation to specific hazards – such as floods or heatwaves – but it is increasingly clear that many underlying resilience factors overlap across multiple hazards, and therefore resilience interventions aimed at one hazard can often offer co-benefits for others, even if they weren't designed that way. Collaboration across Government departments and sectors is needed to identify co-benefits and prevent unintended consequences.

The Zurich Climate Resilience Alliance provides a tried and tested framework and tool to assess community resilience to climate hazards like floods and heatwaves. This framework distinguishes between:

- General sources of resilience, such as healthcare access, first aid knowledge, and transportation continuity, which strengthen resilience across multiple hazards, and
- Hazard-specific sources of resilience, like flood protection infrastructure or heatwave preparedness plans, which target particular threats.

The tool is currently being implemented with local communities in Kuwait City, and the results will be used to prioritise adaptation actions that consider local vulnerabilities, existing capacities, and potential leverage points for impact across multiple hazards. This approach helps identify actions Date PDF generated: 29/05/2025, 15:14 Page 3 of 5 that offer the greatest co-benefits while minimising unintended consequences. These locally informed adaptation measures should be implemented alongside strong national and local policies that address the common root causes of climate risks – such as poor land-use planning and social inequality in Kuwait.

Overall, Kuwait must move from reactive responses to isolated hazards toward a proactive, multihazard approach that integrates urban and spatial planning, inclusive governance, community-led resilience, and targeted support for vulnerable groups – particularly non-citizens in high-risk areas. It is also essential to emphasise the need for holistic, multi-hazard assessment and planning to effectively inform national policy and decision-making.

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