

Challenges in Environmental Governance: A Case Study of Risk Perceptions of Environmental Agencies Involved in Flood Management in the Hawkesbury-Nepean Region, Australia

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The management of environmental resources requires engagement of a range of stakeholders including public/private agencies and different community groups to implement sustainable conservation practices. The challenge which is often ignored is the analysis of agencies involved and their power relations (Ford 2003). One of the barriers identified is the difference in risk perceptions among the agencies involved that leads to dis-jointed efforts of assessing and managing risks. Wood et al. (2012) explains that it is important to have an integrated approach to risk management where decision makers address stakeholder perspectives. This is critical for an effective risk management policy. According to Wood et al. (2012), in most cases, human dimensions to disaster management are identified but the process of how to integrate interests, knowledge and values of stakeholders remain underdeveloped.

The Australian climate is characterised by extreme weather conditions. Future unpredictability has placed pressure on government agencies to increase their effectiveness of managing adaptation to extreme weather events, and to increase coordination and improve risk assessment and its communication. The Australian Emergency Management Floodplain Management Framework signifies the need for a cooperative approach to managing flood risks; different tiers of governance need to work together and provide technical, financial, legislative and regulatory inputs to manage risks (COAG 2011). However, Berke (1989) identifies barriers to coordination between different tiers of governance and across jurisdictions. Lustiq and Maher (1997) also point out that the complex arrangement of agencies managing flood risks has led to poor coordination and management in Australia. It presents the complex nature of a multi-tier governance system that creates ambiguity in having multiple risk analysts, management of risks and sharing of risk-based information among a wide range of stakeholders.

This paper will look into barriers to flood management under a changing climate and intends to identify bottlenecks that create maladaptation. Experiences are drawn from international practices in the UK and examined in the context of Australia through exploring the flood governance in a highly flood-prone region in Australia, the Hawkesbury-Nepean Catchment, as a case study.

The Hawkesbury-Nepean Catchment covers an area of 22,000 km². It is one of the major river systems in New South Wales, Australia (Gillespie et al. 2002). Its unique geographical characteristics increase its susceptibility to significant flood risks. The problem is further exacerbated due to the development in the floodplains with an increase in population in the coming decades. New development plans indicate that approximately 180,000 dwellings are planned in the catchment with an investment of 7.5 billion AUD in infrastructure (Smart Consulting 2013). The estimated economic loss of 1.5-2.5 billion AUD under a 100 year Average Recurrence Interval flood is estimated (Ribbons 1997). A flood event of 2010-2011 in Queensland could impact the entire NSW economy by impacting transport routes facilities (Office of Water 2014).

In this research study several aspects of governance and management are explored: (1) the complexities created by the way different agencies are involved in assessing flood risks (2) different perceptions on acceptable flood risk level; (3) perceptions on community engagement in defining acceptable flood risk level; (4) Views on a holistic flood risk management approach; and, (5) challenges of centralised information system.

The study concludes that the complexity of managing a large catchment is exacerbated by the difference in the way professionals perceive the problem. This has led to: (1) different standards for acceptable risks; (2) inconsistent attempt to set-up a regional scale flood management plan beyond the jurisdictional boundaries; (3) absence of a regional scale agency with license to share and update information (4) Lack of forums for dialogue with insurance companies to ensure an integrated approach to flood management. The research takes the Hawkesbury-Nepean Catchment as a case example and draws from literary evidence from around the world. In addition, conclusions were extrapolated from eighteen semi-structured interviews from agencies involved in flood risk management in the Hawkesbury-Nepean Catchment of NSW, Australia. The outcome of this research is to provide a better understanding of complexity in assessing risks against a rapidly changing climate and contribute towards developing effective risk communication strategies thus enabling better management of floods and achieving increased level of support from insurance companies, real-estate agencies, state and regional risk managers and the effected communities.

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