



Opinion

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# Stakeholder's Perceptions to Natural Flood Management (NFM): a Descriptive Assessment of Cumbria County in England



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## Opinion

Several devastating floods have affected England in the past two decades, notably in 1998, 2000, 2005, 2007, 2009 and most recently in 2014 [1,2]. The impacts of such recurrent flooding, in essence, significantly affected the small-scale and insular agricultural communities. Since the year 2004, a new flood management approach has been adopted highlighting the need of espousing Natural Flood Management (NFM) as one of the core policies. The NFM can be categorized as a sub-branch of the emerging concept of ecosystem based disaster risk reduction (eco-DRR). Against the backdrop of global environmental and climate change, this opinion paper is highlighting the major issues need to be addressed in order to implement NFM from the local farming community's viewpoint in England.

The role of ecosystems in Disaster Risk Reduction (Eco-DRR) is increasingly well understood [1,3,4], well acknowledged [5-7] but subjected to limited practice at country level [2,8]. What is less discussed in this regard is stakeholder's perception towards Eco-DRR. Studies of stakeholder's perception might be crucial to define and facilitate the management rules and priorities for conservation, resource and disaster management [9] and promote bottom-up environmental decision making [10,11], however; not yet extensively practiced in ecosystem related management activities [12]. The paper is exploring the stakeholder's perceptions towards Eco-DRR in managing flood risk in the Cumbria County of Northwest England. Utilizing the NFM approach as an emerging sub-branch of the Eco-DRR, this opinion paper investigates the major concerns that shape the local farming community's perception towards deploying such approaches in the Cumbria, England.

The literature on ecosystem management and approaches has mostly been focusing on biophysical and economic aspects than stakeholder's perceptions [13]. Consequently, perceptions

of different stakeholders towards ecosystem and ecosystem services are seldom taken into account for decision making [14]. However; consideration of stakeholder's perceptions could greatly beneficial to formulate informed ecosystem management policies include people's needs, aspirations, ideas, knowledge gaps, opinions and suggestions. Perception studies allow predicting how community's attitudes are influenced by policies, effective resource allocation, best ecosystem management practices and assess the effectiveness of new policies [10,15,16]. Awareness and basic knowledge, advocacy, culture, and life experiences develop stakeholder perception, promote participation, assist policy making and develop commitment and motivation to implement policies and ideas of ecosystem services [11]. As far as Eco-DRR practices such as NFM is concerned, stakeholder's perception is still a fringe component and however, understandings of local community's perceptions are vital to proliferate NFM to ensure voluntary participation and engagement to minimize risk [17].

The investigation revealed contrasting perceptions about the NFM and its effectiveness among the different stakeholder groups such as government flood management organizations, affected farmers, community flood management organizations and local NGOs against the flooding for farming communities. The author's in-depth interview with the local communities and different level of stakeholders identified the six major drivers that seemed to shape stakeholder's perception, including future flood extent, flood policies, current flood and nature management, community heterogeneities, and farming future.

Respondents from local community believed that the catastrophic flooding would not happen again in their area despite the fact that frequent and intense flooding is projected for Northwest England in all emission trajectories. This is one

of the reasons that many community people are not attentive to NFM issues. Heterogeneous needs of communities and presence of diverse communities with conflicting interests encouraged local officials to perform more traditional structural flood management approach. Diversified needs of different communities prevent authorities to deliver catchment wide NFM projects. There is a common agreement that there is a poor level of information exchange and communication exists between the stakeholders on flood management. This resulted in developing a negative mind-set about flood management authorities, their policies and their practices. That is why new ideas such as the NFM are often unenthusiastically and skeptically received. Moreover, immediate flood management needs, ignoring farmer's priorities, economic, environment and biodiversity benefits were some of the major identified factors attached with current flood management practices influenced wider community's perception. According to the local community, NFM is a "good philosophy" although the long-standing tradition of structural flood management developed a sense of security against water, which the NFM could not produce. Current nature management practices grossly divided the wider community on the NFM. Non-governmental community opposed current nature management practices since it took away their livelihood resources such as agricultural land as well as exacerbated the current flood risk. Since nature management often implemented in cooperation with flood authorities, the NFM is often synonymous with nature management to the local community. In addition, fear of losing farmland, production and incomes drove the farming community to develop negative perception on the NFM. Farmers of the smaller communities often remained isolated and their needs of rehabilitation often remained ignored. In Cumbrian context, farmers are an insular community receives historical blame for nature and landscape destruction. Current flood and nature management programs often hinder farming e.g. restricting farming in their precious valley-bottom land and allowing gravel in their land and unmanaged rivers.

The findings have important implication to the uptake of NFM measures at local level from farming community's viewpoint. The analysis showed that among the communities, the NFM is not widely known, let alone be widely accepted. Whilst local flood authorities and other agencies are generally positive; communities especially the farming communities are generally negative and uncertain. Although, there are some signs of improved community engagement at local decision-making, prevailing negative conceptions on the NFM keep communities less motivated to participate in the NFM processes. At the same time, until widespread disputes and trade-offs between conservation, management, production and financial issues are coming to a balance through better communication and trust building, communities would be less committed and motivated in participating the NFM process [17]. At this moment, it is not only community's lack of knowledge contributing to fewer uptakes of the NFM but conventional and ineffective

communication, engagement and trust building mechanism along with unfavorable nature and flood management practices similarly hindering the NFM process to progress [18].

The study suggests that current flooding extent, flood policies, current flood and nature management, community heterogeneity and future farming concerns were some of the issues that define community's perception on NFM. While active communication and engagement with communities are vital, awareness and knowledge campaigns are also found important.

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### Disclosure Statement

The author declares no conflict of interests

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