

Community resilience implications for institutional response under uncertainty: Cases of the floods in Wayanad, India and the earthquake in Port-au-Prince, Haiti

Mrudhula Koshy¹ | David Smith²

¹Department of Architecture and Planning, Norwegian University of Science and Technology (NTNU), Trondheim, Norway

²Centre d'étude en responsabilité sociale et écocitoyenneté (CÉRSÉ), Montréal, Canada

Correspondence

Mrudhula Koshy, Department of Architecture and Planning, Norwegian University of Science and Technology (NTNU), Trondheim, Norway.
Email: mrudhula.koshy@ntnu.no

Abstract

While trajectories of community resourcefulness, solidarity, and mutual trust during and following environmental crises are abundant in the literature, how these trajectories are taken into consideration and influences spatial planners, humanitarians and decision makers working under uncertainty remains under documented. Our article explores the concept of community resilience in action to illustrate where community resilience in action is supported, hindered or ignored by the state and non-state organizations. Through an inductive epistemological approach, it draws examples from the exploratory fieldwork of two case studies and interviews in settlements in developmental contexts where the inhabitants, built environments and livelihoods have been severely affected following a hazardous event. Using observations and testimonies from Wayanad, a hill district in India affected by heavy monsoon floods in 2018 and 2019, and from marketplaces in Port-au-Prince, Haiti, following the 2010 earthquake, the article discusses how understandings of community resilience in action in post-disaster developmental contexts could contribute to enhancing institutional responses under uncertainty.

KEYWORDS

community resilience, earthquake, floods, Haiti, India, uncertainty

1 | INTRODUCTION: COMMUNITY RESILIENCE UNDER UNCERTAINTY IN DEVELOPMENTAL CONTEXTS

On August 9, 2018, Wayanad, a hill district in Kerala, a coastal state on the south-west of India, witnessed monsoon flash floods of colossal proportions. Considered the worst flood in Kerala in almost a hundred years, the intense rainfall affected 12 of Kerala's 14 districts due to the excessive inflow into a majority of the state's dams in the first 48 h (Indian Institute of Architects Calicut Centre [IIA], & District Town and Country Planning Office [CTP], Wayanad, 2018). In Wayanad, the opening of the dam floodgates released excess water,

triggering landslides, landslips and land subsidence. This affected several thousand acres of land, collapsed several hundreds of homes, caused enormous damage to property, infrastructure, and services, and resulted in the loss of 115 lives (ibid.). In August 2019, a similar intensity of cloud bursts and heavy monsoon floods turned Wayanad into the worst-hit district due to massive landslides in the village of Puthumala, mostly inhabited by laborers in tea estates.

On the 12th of January 2010, a 7.0-magnitude earthquake struck Port-au-Prince, the capital of Haiti. The earthquake, combined with the fragility of the metropolis's built environment, resulted in a disaster that claimed more than 200,000 lives, displaced 1.8 million Haitians, and destroyed more than 100,000 homes (Government of

This is an open access article under the terms of the [Creative Commons Attribution](https://creativecommons.org/licenses/by/4.0/) License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

© 2023 The Authors. *Sustainable Development* published by ERP Environment and John Wiley & Sons Ltd.

Haiti, 2010). Infrastructure and services were also severely affected: the main seaport and airport, national and local government institutions, half of the nation's schools and 30 hospitals were destroyed or severely damaged (ibid).

The above events, although vastly different in scale and nature of repercussions, both take place in contexts with 'weak institutional mechanisms, chronic vulnerabilities and scarce resources' referred to as developmental contexts (Koshy et al., 2022, p. 5) wherein unprecedented environmental crises are triggered by a combination of natural hazards and human actions. These types of events amplify the challenges for spatial planners (Maynard et al., 2018; Zandvoort et al., 2018), humanitarian actors (ALNAP, 2018; Campbell & Knox Clarke, 2018) and decision makers (Gersonius et al., 2013; Kwakkel et al., 2016) to embrace uncertainty while formulating long-term planning and disaster risk reduction measures. In recent planning literature, non-linear and dynamic approaches to deal with uncertainty are espoused through incremental policy measures (Abbott, 2005), strategic planning (Balducci et al., 2011) and adaptive planning (Rauws, 2017). However, these approaches tend to foreground perspectives of spatial planners and decision makers. They place less emphasis on the role, ownership, and solidarity among community members in navigating uncertainty to enable better institutional response (Moser & Satterthwaite, 2010). Uncertainty transpires therefore partly due to blindspots, conscious action as well as the difficulty of, and lack of integrating existing and novel actions of community resilience into long-term development perspectives (Adger, 2003).

The calls to harness the capacities of communities under situations of uncertainty are also echoed in global policy. For example, the Sendai Framework (UNDRR, 2015) emphasizes community-based disaster risk reduction approaches and outlines action-oriented principles for strengthening resilience through people-centered and gender-sensitive approaches. However, recent decision-making and emergency management literature acknowledges the difficulties of implementing these in practice due to a multitude of existing, newly generated, and compounded uncertainties (Campbell & Knox Clarke, 2018; Crisp et al., 2012; Imperiale & Vanclay, 2016).

In contrast with narratives that perceive affected communities as helpless and incapable of self-organization during crises, recent literature has provided evidence that even the most vulnerable communities can be resilient in times of crises and disasters (Carabine & Wilkinson, 2016; Imperiale & Vanclay, 2016) giving rise to long-term, contextualized planning and humanitarian approaches that favor putting communities and civil society at the center of decision-making processes towards recovery and transformational development (Imperiale & Vanclay, 2020; Koshy et al., 2022). Twigg and Mosel (2017) for example present how communities in post-disaster contexts in Nepal, Turkey, Indonesia, Sri Lanka, and Thailand became proactive first responders through spontaneous and ad hoc initiatives. This included emergency rescue operations, transportation of relief supplies, burying the victims, and distributing food, water, and clothing supplies to affected communities. Solnit's (2010) seminal work discusses similarly how in the aftermath of hurricane Katrina in New Orleans in the United States, the altruistic ability of the affected communities and

their solidarity in times of crises enabled them to emerge from the crises and "to move on".¹ Mutual aid, self-organization, solidarity, empathy, care, social responsibility, and social learning are therefore recognized as important positive cognitive and interactional dimensions within all these perspectives, and are emphasized as contributing to equitable and just responses to crises and long-term recovery and development (Berkes & Ross, 2013; Imperiale & Vanclay, 2016, 2021).

The above trajectories of community resourcefulness, solidarity, and mutual trust illustrate contextual understandings of 'community resilience in action' defined by Imperiale and Vanclay (2016) "as a complex of social processes that allow local communities to self-organize and enact positive collective action for community survival and wellbeing" (p. 207). We concur the need for a better understanding of intentional and spontaneous behavior of affected communities (Imperiale & Vanclay, 2021; Maynard et al., 2018; Twigg & Mosel, 2017), the extent of social capital that is mobilized (Adger, 2003; Morrison et al., 2017), and the relationship of communities with existing governance during unprecedented events in post-disaster contexts (Carabine & Wilkinson, 2016; Fan, 2015; Imperiale & Vanclay, 2020). In particular, despite valuable insights on the above aspects through cases in high-income contexts such as Italy analyzed by Imperiale and Vanclay (2016, 2020, 2021), the literature is still scarce on the reciprocal influence of community resilience in action to institutional responses in developmental contexts.

In response, the article addresses the following research question:

How can understandings of community resilience in action in post-disaster developmental contexts contribute to enhancing institutional response under uncertainty?

Firstly, the article combines insights on community resilience and social capital in post-disaster contexts.² Secondly, we describe the two developmental contexts of Wayanad and Port-au-Prince through everyday practices and actions of the communities during and after the floods and earthquakes respectively. We contrast the two contexts, and highlight some taken and missed opportunities that communities, civil society actors, and decision makers built on through spontaneous and ad hoc initiatives to deal with uncertainty due to the unprecedented events. We use these observations to better understand the potentials and limitations of community resilience in action in post-disaster contexts and conclude with perspectives that could enhance understandings of institutional response under uncertainty for spatial planners, humanitarians and decision makers.

2 | UNPACKING COMMUNITY RESILIENCE IN ACTION

Community resilience refers to "the ability of community members to take meaningful, deliberate, collective action" (Pfefferbaum et al., 2007,

¹However, it is to be noted that communities and community members in New Orleans continued and continue to struggle after the event, pointing to some of the structural injustices and lack of responsiveness in the US system in terms of crisis response and recovery.

²Hilhorst (2018) and Roepstroff (2020) have previously highlighted combined insights on community resilience and social capital in post-disaster contexts.

p. 349) through “networked adaptive capacities” towards “a positive trajectory of functioning and adaptation in constituent populations after a disturbance” (Norris et al., 2008, p. 131). In this article, we consider “community” as people bound together by common origins, values or interests, sharing a dedicated space or forming a network, and at the same time are heterogeneous with their own power structures that determine inclusions and exclusions. A community in a semi-rural agricultural-based context such as Wayanad therefore could encompass different aspects when compared to that of a dense urban market-based context such as Haiti. Community resilience is also described as “a subfield of social resilience” (Matarrita-Cascante et al., 2017) and perceived as an enabler of social change (Cote & Nightingale, 2012).

The associated features of social capital such as trust and obligation as “the primary base for community response” in post-disaster contexts (Twigg & Mosel, 2017, p. 449) have prompted renewed focus on “resilience at the communal level” (Aldrich & Meyer, 2015, p. 263). Social capital, encapsulating the “features of social life” such as “networks, norms and trust” (Putnam, 1995, p. 664) is perceived in terms of bonding, bridging (Putnam, 2000) and linking (Woolcock, 2001) wherein community relationships within, between and among various levels are characterized respectively (Claridge, 2018). This article delimits the explanatory scope of social capital to the lived experience of coping with risk and its capacity to facilitate resilience (Adger, 2003) and acknowledges that it is ‘a ‘necessary but not sufficient’ component of a community’s resilience’ (Norris et al., 2008 in Skerratt, 2013).

The influence of community resilience and “the social and cultural dimensions of vulnerability and sustainability” (Fan, 2015, p. 24) were often not incorporated in technical disaster recovery initiatives. Recent humanitarian literature has emphasized that the functional aspects of resilience will likely be limited if it is restricted to a top-down endeavor (Sanderson & Sharma, 2016). “Resilience humanitarianism” insists that resilience should instead attempt to manifest as a bottom-up, non-state process taking into account the self-organization capacities of the communities (Hilhorst, 2018; Ilcan & Rygiel, 2015). This has raised parallel discussions about the propensity to achieve resilience without external support or aid, and the dilemmas of operationalizing resilience under an apolitical response to disasters that is mandated by the humanitarian praxis (ibid.). Evidence from several post-disaster contexts illustrate how responses to disasters are rarely apolitical (Bankoff & Hilhorst, 2009; Imperiale & Vanclay, 2021; Tierney, 2012), and emphasize how an integrated response to disasters should take into account existing political dimensions and capacities. Resilience processes should ideally include maintaining or rapidly returning to previous activities (coping, surviving), adapting to post-disaster changes, and transforming the status quo that likely led to the occurrence of the disaster in the first place (Meerow et al., 2016).

Critiques on the concept of resilience as a social construction abound. Academics have criticized the concept for its lack of clarity, the difficulty of its implementation and the manipulation of resilience-driven programs by political and economic elites (Chmutina et al., 2016; Manyena, 2006). Others have also argued that the “techno-

academic” resilience narrative can be different from “vernacular” narratives, such as those around survival and attitude in the face of challenges, and that they can obscure in the process, issues of politics and responsibility (Lizarralde et al., 2020). A relevant one for this article is also that the concept does not always echo in local discourses and practices (Béné et al., 2012).

Recent literature has attributed the extent of community resilience to various factors. From an institutional perspective, these include the political will from various levels of government institutions (Ali & Jones, 2013), iterative social learning and “cross-scale institutional linkages” (Choudhury et al., 2019, p. 1761; Imperiale & Vanclay, 2021), and decision-making that is decentralized and flexible (Carabine & Wilkinson, 2016; Koshy, 2022). From a community perspective, how communities interact with each other, what kind of meaning they afford to their places of living, how they manage their resources, and what kind of social relationships they foster are considered immensely important to enable resilience (Skerratt, 2013). In addition, the presence of social entrepreneurs and the resulting boost in social capital (Morrison et al., 2017) as well as a focus on community engagement and participation (Carabine & Wilkinson, 2016) are emphasized. To understand these critical issues contextually and translate resilience into social terms, it is necessary to shift the epistemological approach from a deductive to an inductive approach.

Thus, rather than only conceptualizing resilience in conventional ways such as by an extended literature review, it is imperative to recognize, observe and describe how resilience plays out in action in the real world, often as a spontaneous strategy by local communities in order to cope with, adapt to, shape change, and act under uncertainty (Olsson et al., 2004; Skerratt, 2013; Smit & Wandel, 2006). Building on these insights, we describe our specific inductive epistemological approach in the methods section below. The empirical findings in this article sheds further light on how the combined presence or lack thereof of some of the above-mentioned aspects influenced community resilience in action under uncertainty and how this played out differently in the two contexts depending on the interactional aspects of the two communities.

3 | METHODS

This article emerged as a shared enquiry from our respective research projects in Wayanad and Port-au-Prince, which explored facets of community resilience in post-disaster contexts through an exploratory qualitative methodology with case study research as the dominant research design (Yin, 1994). The two contexts are vastly different in scale wherein the crises occurred at different periods, generating disparate repercussions with varying responses from the affected communities. However, similarities exist in terms of weak institutional mechanisms, scarce resources and chronic vulnerabilities and challenges in fostering long-term transformation following the severe unprecedented events. This initial premise formed the basis for an analysis to potentially explicate wider lessons for similar developmental contexts by contrasting the two cases.

Fieldwork for the Wayanad context was undertaken in December 2018 and was later extended from October to December 2019. It consisted of semi-structured, open, in-depth interviews and group discussions comprising 58 stakeholders, and focused on understanding the nature and scope of the personal capacity and collective collaborations between state and non-state actors during the floods. Thirty of the interviewees were government officials at the four levels of governance namely, state, district, tehsil and village levels. These include the Kerala State Disaster Management Authority (KSDMA), the District Administration (DA), the District Emergency Operations Centre (DEOC), the District Planning Committee (DPC), the Department of Town and Country Planning (CTP) in addition to line departments concerned with the conservation of the environment and soil, empowerment of women, geology, housing, poverty eradication and watershed management. The remaining 28 interviewees were project coordinators from international organizations such as UNDP and UNICEF, national disaster relief NGOs, elected representatives from local self-government institutions (LSGIs) called “village panchayats”; coordinators from local and national non-governmental organizations (NGOs) engaged in diverse initiatives including development work, disaster relief and sustainable tourism, representatives from local research organizations; and community volunteers. The primary data collection was based on recollection and recounting of decisions and actions undertaken before, during and after by the interviewees. The answers were written down, transcribed, coded, and analyzed using a qualitative content analysis software (NVivo).

The two 8-week fieldworks in Port-au-Prince took place in spring 2016 and in summer 2017. It consisted mainly of 55 semi-structured interviews with traders, market managers, local academics, and governmental and non-governmental stakeholders as well as 240 structured interviews with traders and customers in four marketplaces of the metropolitan region. The marketplaces host traders of basic daily commodities (e.g., food and charcoal), and present different infrastructure conditions (e.g., covered and open-air). One marketplace was managed by a company, two were governed by municipal representatives, and one was informally governed. They were also unequally affected by the 2010 earthquake; two of them collapsed and were rebuilt while the two others experienced minor damage. Interviews focused on the marketplaces' physical and social attributes, and the perceived needs, the undertaken actions, and the faced challenges of traders and their customers to recover, maintain and improve trade following the 2010 earthquake.

Quotes from the interviewees are used in this article as a narrative device to explore the interface between the potentials and limitations of community resilience, aspects of community resilience as perceived by the interviewees, and how it plays out in action. We seek inspiration from recent development and humanitarian studies literature that have used forms of storytelling to highlight interview data as story extracts that best exemplify the concept in question and also indicative of a general response from most people (Imperiale & Vanclay, 2016). In the sections below, we draw on everyday practices of communities from Wayanad and Port-au-Prince through a

storytelling approach in the aftermath of the earthquake and the floods respectively.

4 | COMMUNITY RESILIENCE IN ACTION AFTER THE FLOODS IN WAYANAD, INDIA

The state of Kerala is a coastal province on the south-west of India and was formed in 1956 in post-independent India. It has a poly-centric model of urbanization with highly dense urban cores in the midlands flanked by mountains and natural reserves, and backwaters and coastal areas on either side. The participatory model of governance in Kerala is widely touted as an example of translation of political rights to social rights supported by its high literacy levels, high development indicators³ and gender balance (Heller, 1996; Heller, 2001; Isaac & Heller, 2003). Democratic decentralization was experimentally carried out in the states of Kerala, Karnataka and West Bengal as per the 74th constitutional amendment in 1992 which required all the states in India to have a three-tier level governance. Following this, the Communist Party of India (Marxist) launched a People's Planning Campaign in 1996 on a local and national level.

In Kerala, the developments in participatory governance are aided partly by its political history which had witnessed a leftist movement following its formulation, and later a push for grassroots activism and empowerment through social movements inspired by Marxist thinking. This is perceived to have paved the way for empowering local self-governing institutions (LSGIs) called “village panchayats” and municipalities through fiscal decentralization and revenue-sharing schemes along with responsibility for physical development plans (Isaac & Heller, 2003). The state has witnessed intense political conflict in the ensuing decades between the two main political alliances, the United Democratic Front (UDF) and the Left Democratic Front (LDF) (Kjosavik & Shanmugaratnam, 2021). In spite of the political oscillations during the state and local elections every four years, the thrust provided by the initial social movements has continued to mobilize the working-class sections of the society including informal sector workers and agricultural workers (Bardhan, 2002; Kurup, 1988) (See for example, Figures 1 and 2). Social capital within the broad context of Kerala has therefore been characterized by Heller (1996) as a combination of “class mobilization and state intervention” (p. 1055).

Unlike other more economically developed districts in Kerala, Wayanad is sparsely populated (383 inhabitants per sq.km, (IIA & CTP, 2018)) and spatially dispersed, with few infrastructural and service facilities and low-rise mixed-use urban forms (See for example, Figures 3 and 4). Almost 90% of the land is reserved for forests, plantations, and agriculture (ibid.) as seen in Figures 5 and 6. The primary livelihood is agriculture. However, the shift to commercially viable crops such as bananas, tea and coffee, unsustainable building construction and deforestation has reduced the fertility of the soil, the capacity for water retention and destabilized hilly areas. The

³Development indicators as characterized by the World Bank (World Bank, n.d.) are related to life expectancy, levels of education, years of schooling, per capita and household incomes, and poverty levels.

FIGURE 1 Politics manifests as a part of everyday life in Wayanad: the flags of the incumbent ruling party. Source: Authors.



FIGURE 2 Politics manifests as a part of everyday life in Wayanad: sit-in protests for access to land by marginalized tribal communities. Source: Authors.



proliferation of the hospitality industry, and a conversion of paddy fields and flood plains into areas for real estate have seen an outgrowth of urban development with scant regard for the capacity of the land. This has resulted in fragile urban spaces which are ill-equipped to deal with unprecedented events like the heavy monsoon floods. Eighteen percent of Wayanad's population constitute marginalized tribal communities such as Kurichiyas and Kurumas (landholding) and Paniyas, Adiyas and Kattunayakans (non-land holding). In recent years, several tribal community members work as daily wage laborers in plantations owned by settlers from other districts and states.

When the floods first struck in Kerala in August 2018, international and national news reports and social media were replete with detailed accounts of solidarity among the communities during the rescue efforts. In the immediate aftermath of the 2018 floods, The New York Times details how “when the floods hit, the fishermen responded...Setting off in battered, brightly painted boats powered by little outboard motors, the fishermen pattered up and down the state's submerged streets, rescuing thousands”. Pointing to how some of the fishermen seemed to display extreme acts of solidarity, the news report further details how one of them “got down on his hands



FIGURE 3 Low-rise mixed-use urban forms in Wayanad. Source: Authors.



FIGURE 4 Low-rise mixed-use urban forms in Wayanad. Source: Authors.

and knees in the filthy floodwaters and insisted that people use his back as a step into an awaiting rescue boat” (Gettleman, 2018).

Similar observations were also highlighted by reports compiled within Kerala regarding “the cultural resilience of Keralites” (Thummarukudy & Peter, 2019, p. 69) at the time of the floods. The report details how “even in the relief camps, people in their own ways attempted to celebrate Onam”, a yearly harvest festival celebrated by all people in Kerala irrespective of their socioeconomic strata or religious preferences. “Floral decorations were made in front of several camps. Competitions and sadya (feasts)

were also organized in many places”. These spontaneous efforts of community gatherings were considered to have “helped alleviate the grief and distress of those who were affected by the disasters” (ibid.).

The above sociocultural insights at the state level exemplify how (perceptions of) community resilience in action appeared to manifest in the short-term in various ways during and after the Kerala floods. While empirical findings from Wayanad illustrate similar instances of solidarity and cooperation in the emergency response and handling of floods, aspects of community resilience

FIGURE 5 Tea plantations and paddy fields in Wayanad. Source: Authors.



FIGURE 6 Tea plantations and paddy fields in Wayanad. Source: Authors.



in action appeared to have limited influence in its present expression on long-term sustainable transformation (Koshy, 2022). The empirical findings below illustrate varying degrees of community resilience in action depending on the scale and nature of the challenges that were dealt with and the perceived duration and urgency of the challenge.

During and after the floods, the roles played by the communities as first responders for emergency rescue and relief appeared to complement the state and local government responses during the floods. Commenting on the spontaneous and organic handling of the floods in 2018, a state government official emphasized that “it was not a

coordinated response, it was a set of responses” that was not per se “coordinated by the government. In 2018, the response was spontaneous and was led by communities and then volunteers and local bodies and local groups. They also helped the government machinery” (KI 51, male, 50s). Another state government official agreed with these statements and acknowledged that “*the community resilience, how they came back and helped each other, unity in the community and how vigilant they are*” (KI 16, female, 60s) was a much-needed support to the state, district and local governments which were caught off-guard by the unexpected floods.

Several interviewees acknowledged the willingness of local communities, NGOs and faith-based organizations to help without expecting benefits in return. A municipal official highlighted how *“Lots of people who came to help us were also from the locality. They were daily wage labourers, and they helped us without expecting any benefit”* (KI 36, male, 40s). This included volunteering for rescue operations, transporting and distributing emergency supplies, logistics in relief camps, and post-disaster relief efforts such as cleaning houses, schools and contaminated wells. They further added that *“there were many people in the camps with a service mentality, this was a big relief for us. In most villages, this was the case”*. They also emphasized that if the local government officials are not familiar with the flood-prone and flood-affected areas, building and sustaining connections *“with the people in the area who have a service mentality”* was immensely useful concurring with findings from disaster risk reduction and emergency management literature emphasizing the need for more decentralized, community empowerment systems for recovery, relief and development efforts (Berkes & Ross, 2013; Imperiale & Vanclay, 2021). A municipal official from another village in Wayanad also shared similar views on building connections with locals. They mentioned that they *“store details of individuals who might be interested”* (KI 46, 40s, male) acknowledging that *“locals play a big part since the department has a limit. Once the camp is finished, the people's houses will be unclean. For example, there might even be snakes. For cleaning, NGOs, religious organizations, and volunteers did this as a free service including wells”*. In addition to volunteers from within the district of Wayanad, they mentioned that volunteers had also arrived *“from other districts, they came with all the materials to clean”*.

Spontaneous collaborations therefore appeared to manifest between decision makers, local community volunteers, and NGOs alluding to positive notions of linking social capital (Woolcock, 2001). In addition, decentralized governance structures continue to shape the perception of the communities towards governance and their increased accessibility to the local self-government institutions through the elected representatives at different levels of governance. In Wayanad, the presence of LSGIs has blurred the lines between communities and decision makers with informal ties, personal connections and networks forged through sustained reciprocal interactions and trust (Adger, 2003). Several decision makers also remarked on how they volunteered for flood relief activities along with community volunteers even though their job profiles entailed other duties. A state government official commented how in spite of a lack of a coordinated process, *“local community actions, DA, paramilitary, they all functioned, there were a lot of intersections, but we can't say this happened according to a coordinated process”* (KI 51, 50s, male, state government official). They were optimistic about how these ad hoc efforts point to ways of galvanizing existing resources and capacities, *“in retrospect, the positive thing is that people responded, people responded on humanitarian grounds, so we can create systems that can help us manage”*.

Various social media networks were also utilized for public outreach by the District Administration (DA) regarding emergency requirements. For example, *“We for Wayanad”* is a Facebook page jointly administered by the DA and local NGOs that came into

existence after the floods occurred in 2018. Their initiative ‘Donate a cow’ mitigated the loss of livelihoods of dairy farmers. They also launched online campaigns to collect school kits, books and bags for children. In parallel, community radio stations did live sets to cull the spread of fake news and to assure affected communities. A local community actor recounted how they *“sent out sound bites of 30 s, etc. as public service advertisements. We also did live sets for telling people not to be scared, so the Collector came for 2 h, then the Sub collector came, the tahsildar came, to assure people”* (KI 18, male, 40s).

Existing civil society organizations and community-based initiatives also played a supportive role during the floods. For example, *“Kudumbashree”*, roughly translated as *“Prosperity of the family”* is a poverty eradication and community network for women initiated by the government of Kerala in 1998 (Williams et al., 2011) for women entrepreneurs from low-income communities wherein formal and informal networks at the neighborhood level are activated for various microfinance initiatives. Following the floods, these women were trained to survey and record post-disaster damage on an app.

On a long-term perspective, a sustainable tourism initiative by a local NGO aimed for reviving traditional agricultural practices and finding ways to harvest climate resilient seeds. By bringing farmers, consumers, travelers and tribal communities together, it aimed to diversify the experience of the traveler while empowering local communities. Since many farmers suffered losses during the floods in 2018, this initiative was considered timely in 2019. A local NGO representative opined on the high levels of *“community adaptability”* (KI 38, male, 30s, local NGO representative). They further shed light on how the communities *“started farming after the flood. So they didn't suffer a loss”* in 2019. This interviewee complemented the local farmers' high *“entrepreneurial spirit. Some people, of course, might not be able to understand this if they are conventional”*.

The spontaneous volunteering was not spatially bound but also included expat communities. In all the districts in Kerala including Wayanad, expat volunteers contributed to rescue and relief efforts through social media platforms such as Facebook, Instagram, and WhatsApp. This included raising relief and recovery funds and essential commodities by mobilizing personal networks, and posting emergency contact numbers of psycho-social support, health care and rescue services. The crowdsourced information was also considered useful for rescuing people stranded in their houses or on their rooftops. This was covered by news reports (Elsa, 2018) and also attributed by interviewees to existing social capital in Kerala. A local representative of a national NGO opined that *“In Kerala, we have coping capacity because of social capital, because of 60–70 years of education and health sector investment increases coping capacity. For whatever happens, it is because of the social capacity”* (KI 14, male, 30s).

As shown through the empirical findings, decision makers at multiple governance levels, community actors and NGO representatives used terms such as *social capital, social capacity, (cultural) resilience, community adaptability, entrepreneurial, service mentality, and spontaneity* to

highlight how everyday practices of solidarity, mutual trust, cooperation, and forms of collective responsibility contributed to enhancing community resilience in action during the floods (concurring with Imperiale & Vanclay, 2016, 2021). Community resilience in action in the short-term in Wayanad appears to be influenced by the historical and traditional political, ethnic, communal, and familial bonds that makes for a high degree of social cohesion. While most interviewees indicated a cooperative and unified response, several interviewees also shed light on the challenges of dealing with the consequences of the heavy floods in the long-term. An NGO representative called the response a “*knee-jerk reaction*” (KI 1, male, 40s) that might not be able to anticipate long-term uncertainties and long-term consequences of the floods. Recent academic literature on the Kerala floods echoes similar perspectives highlighting the “spontaneous humanitarian intervention” (Raman, 2020, p. 325), synergies between the state and the communities, and “organic resilience” (ibid, p. 321) during rescue and relief efforts, but points to the lack of integrated and cross-sectoral spatial and water management strategies which is likely to inhibit sustainable recovery in the long-term. We elaborate on these limitations in the discussion section.

5 | COMMUNITY RESILIENCE IN ACTION IN THE MARKETPLACES AFTER THE EARTHQUAKE OF PORT-AU-PRINCE, HAITI

Port-au-Prince developed along the numerous geopolitical disruptions the country has faced since being the first slavery-based colony to free itself from domination in a revolution that ended in 1804. Since the American occupation (1915–1934), and through the Duvalier dictatorships (1957–1986), power holders centralized the country's political, social, economic, and cultural assets in Port-au-Prince (Goulet et al., 2018). The post-Duvalier urbanization has therefore mainly occurred in and around Port-au-Prince without dedicated planning, mostly by rural and low-income households seeking better opportunities (idem).

Like in other welfare spheres, the State of Haiti is only minimally involved in planning and infrastructure provision (Goulet et al., 2018). Urban regulations and plans, when existing, remain unenforced and unimplemented by authorities, and unfollowed by residents (Thérasmé, 2011). Despite the numerous and the magnitude of the needs to reduce urban poverty and precariousness in the city, the rare State interventions are usually “inefficient, insignificant, and inappropriate” (Holly 1999 in Thérasmé, 2011, p.16). The metropolitan area of Port-au-Prince, which reached 2.6 million inhabitants in 2016, has therefore developed both pre and post-earthquake intrinsically, mostly for and by the residents themselves. They arranged, agreed, built, argued and networked in order to provide homes and services for themselves, without the support and despite the troubles caused within and by the authorities (Goulet, 2006).

Marketplaces make no exception. In the municipality of Port-au-Prince, only a dozen official markets exist (see, for instance, Figures 7 and 8) and are administered by managers politically appointed by mayors. However, more than a hundred public spaces act as permanent de facto markets (Neiburg et al., 2012; see, for example, Figures 9 and 10) and more than 90% of the sidewalks downtown are occupied by trade and craft activities (Malebranche, 2000). In these marketplaces, services are organized into complex socioeconomic networks. At the end, markets form a rich interdependent web that provides livelihoods as well as services of proximity for the low-income urban population. It is, however, important to mention that traders regularly deal with a variety of challenges and risks, including currency devaluation, insalubrity, police harassment, gang violence, and extortions (Thérasmé, 2011; Neiburg et al., 2012).

Overall, the literature on the post-disaster planning and reconstruction following the 2010 earthquake focuses on the international community's response. Expert reports were generally critical towards the general approach adopted towards urban recovery, such as the transitional shelter approach (Sanderson et al., 2014) and the non-involvement of government authorities in decision-making. Many of them highlighted the need for humanitarian agencies to rethink their



FIGURE 7 Canapé-Vert market in Port-au-Prince (outside). Source: Authors.



FIGURE 8 Canapé-Vert market in Port-au-Prince (inside). Source: Authors.



FIGURE 9 Lalue market in Port-au-Prince (outside). Source: Authors.



FIGURE 10 Lalue market in Port-au-Prince (inside). Source: Authors.

approach in urban areas, such as better build on the existing ways the urban population access resources and livelihoods (Clermont et al., 2011; Kyazze et al., 2020). Research showed, for instance, how digital and non-digital emergent groups contributed to disaster assistance, how networked social capital has influenced access to construction resources, and how their positive aspects should be better integrated in post-disaster programs and planning in Haiti (Rahill et al., 2014; Starbird & Palen, 2011; Twigg & Mosel, 2017). The few exemplary cases of community or area-based planning where neighborhood citizens were actively involved are perhaps the urban projects that had the greatest positive impact because they build governance at local levels (Engle, 2016; Gill et al., 2020).

However, markets, as places where one can access basic commodities like food and other services, as well as the workplaces of many Haitians women and men, were generally outside the scope of humanitarian and planning interventions. Narratives on Haitian marketplaces following the 2010 earthquake generally focused on the positive coverage of reconstruction of the Iron Market (e.g., Forbes, 2011), later nuanced with further research (Smith, 2011, 2020) and on the apparent resilience of Haitian markets (Clermont et al., 2011). As an example, the following impression was reported by journalist Jonathan Katz a few hours after the earthquake as an example of the tenacity of local communities who try to build their lives following a disaster: “On the way to the embassy, under a working light beside a standing building, a woman was selling cooked food. The portly matron, still finding plenty to laugh about on that catastrophic night, was offering rice, plantains, and fried pork that she had cooked up that morning. People with pocket change were lining up to have some... mere hours after the disaster, ...as with cigarette man in Pétionville, commerce continued to function in spots. In the midst of near-total disaster, people were trying to go on” (Katz, 2013, p. 29–30).

Still, reports indicate that livelihoods and food access have severely been impeded by the disaster (IRC, 2010). Market traders also regularly deal with a variety of challenges and risks, including currency devaluation, insalubrity, police harassment, gang violence, and extortions (Neiburg et al., 2012). The following representation, drawn six and seven years after the quake, suggest alternative narratives to an apparent community resilience in action with regard to markets and their traders.

Firstly, many traders expressed their difficulties in recovering vital income-generating activities. Many traders are heads of households, and the money generated in the markets directly impacts their capacity to fulfill domestic needs. For a professor at a university in Port-au-Prince (K15), “*The market is a survival strategy...we can find a lot of people who do not have the choice to become traders*”. A trader (T79, female) explained: “*If I lose clients, I lose my business. I can eat thanks to them*”. Traders relied on their own productive capacities, on financial support from their immediate and extended family, friends, and on suspending household expenses such as school attendance (Smith, 2020). For instance, a trader (T120, female) illustrated the impact on her children: “*I lost a lot of my products at the market. It put me in a difficult situation. I could not pay the tuition of my children*”. Actions by many interviewed traders related to survival and financial

sacrifices to come back to trade activities as soon as possible to restore vital income-generating activities.

Marketplaces are more than economic spaces. Solidarity among traders is generally stronger than competition. For instance, a trader (T14, female) explained how they often help each other in maintaining stalls open despite absences due to business or family duties: “*We get on well, and we will sell for one trader in her replacement. We trust each other. We watch the merchandise of others*.” (also see Smith, 2019). Based on close spatial proximity, this solidarity is, however, limited to everyday circumstances and to traders' financial and time capacities and has proven tangential in influencing traders' capacity to restore trade. A trader (T57, female) explained: “*[The earthquake] has not affected our relationships...but we were in a situation where none of us could help each other, especially after the earthquake*”.

Moreover, the approach of the State towards markets tends towards a laissez-faire, even in covered municipal markets. There, the roles of managers remain restricted to collecting fees—without accountability measures—and to maintaining minimal waste collection, security, and a certain social order. A government representative (K12, male) explains how markets are managed within short time frames: “*I don't think there is a plan for the development of the marketplaces. For the market managers, it is only a presence, a strict minimum, to ensure cleaning when it is dirty, to collect fees, and that's it...It is management, a governance of the everyday*”. A professor (K15, male) also explains that the main benefit for having representations in the marketplace for municipalities is the capacity to understand and influence politics: “*...the importance does not come in terms of how to serve the population...it is in terms of accessing a capacity to influence... [that is] how to be able, from within, to act on certain things that do not have anything to do with the market...especially in Port-au-Prince, they have to...come to an agreement with the gangs*”. From the point of view of traders, the State's laissez-faire is quite frustrating. Many, as this clothing trader (T86, male), denounces the inaction of the appointed managers: “*There is a director, but it is like he is not there*”.

In the face of State inaction, some forms of organization appear but organized market associations remain in dormancy because of the State's lack of capacity or willingness to intervene. A food trader (T5, female) explains, “*There used to be a committee...Pèpè (second-hand clothes), food items, and new clothes traders have a representative in the committee. But the committee is in dormancy, as there is no State*”. The only studied marketplace not managed by a municipality or an institution had a self-appointed committee. Mainly organize themselves as savings groups, and such groups have proven useful in generating small initiatives after the quake, such as repairing a wall and organizing vigils. In the other markets, traders expressed they did not want to be involved in the affairs of the State. Several traders mentioned that trader associations exist but were not active following the earthquake. A professional working in a government institution (K10, male) explains that organizations can be formed in events of fires but not so much after the earthquake: “*Only in the case of fires, there can be a collective of traders to demand the State...financial compensation...When there are insecurity problems, there can be demonstrations beseeching better security in the marketplace...[but] one does not ask for*

fire services to assess fire risk in the marketplace". He explains how this limits community resilience in the country: "In Haiti, we are not in this tradition of association to solve problems with the authorities. Sometimes, when writers come to Haiti, they say this is a country with high solidarity, but this is a solidarity that is elementary, at the family level, individually with their own resources. It makes me laugh when one talks about a resilient Haiti. If there is no proper organized public, collective, how can it be?"

As demonstrated, the visible return of traders in the marketplaces of Port-au-Prince can conceal significant struggles and sacrifices made in the domestic sphere. Trade-offs were generally household-based and limited to sustaining short-term needs and restoring livelihoods. In the aftermath of the earthquake, the community aspects of the so-called resilience in action were in fact restricted by institutional laissez-faire and low financial capacity.

6 | UNDERSTANDING COMMUNITY RESILIENCE IN ACTION FOR ENHANCING INSTITUTIONAL RESPONSE UNDER UNCERTAINTY

The above observations and insights from the exploratory fieldwork in Wayanad and Port-au-Prince discuss community resilience in action in distinct ways depending on the social, political, cultural, and economic intricacies of the contexts. We further draw on these observations to exemplify how various initiatives have been supported, hindered, or ignored in post-disaster institutional recovery planning and how an understanding of community resilience in action could enhance institutional response under uncertainty.

6.1 | The extent of embedded community resilience

The empirical findings from Wayanad illustrate that community resilience in action did not manifest just when the floods happened. As echoed in recent literature on dealing with uncertainty (Sword-Daniels et al., 2018), embedded social, political, and cultural identities, and belief systems that have influenced past shared experiences and social cohesion of the communities enabled community resilience. A combination of these contextual factors appears to have enabled a capacity to self-organize, adapt and improvise (Imperiale & Vanclay, 2016), be spontaneous and act proactively (Twigg & Mosel, 2017), and bypass bureaucracy under uncertainty in the short-term following the floods. The spontaneous actions were also complemented and aided by the presence of decentralized governance and existing community initiatives. The findings from the Wayanad context therefore seem to concur with recent literature that places emphasis on a combination of proactive cross-sectoral, decentralized, flexible, and multi-scalar governance mechanisms along with entrepreneurial and engaged community members (Ali &

Jones, 2013; Carabine & Wilkinson, 2016; Choudhury et al., 2019; Morrison et al., 2017). The findings also show how cognitive (empathy, social responsibility, sense of place and sense of risk) and inter-actional (mutual aid and social sustainability – i.e., equity, participation, cohesion, etc.) dimensions that constitute the agency of community resilience in action enabled dealing with uncertainty due to the unexpected event (as illustrated by Imperiale & Vanclay, 2016, 2021). The quotes from the interviewees suggest awareness among decision makers from governance and planning institutions of the potential of formalizing the capacity of communities to deal with uncertainty. Ongoing initiatives to build on existing social capital include training local task forces for relief and recovery efforts and providing training and workshops for community-based disaster risk reduction. However long-term systemic challenges persist because of the absence of integrated water management and land use plans, a lack of precise weather and terrain data, specialized training and competency of decision makers regarding long-term planning, multiplicity of plans at various levels and siloed ways of working among the various departments as acknowledged by interviewees in Wayanad and concurred by later reports (Thummarukudy & Peter, 2019). Therefore, in spite of several short-term benefits regarding relief and recovery, community resilience in action appears to have limited influence on long-term sustainable urban and governance transformation due to systemic challenges. However, taking cues from the community-based responses towards the floods which complemented existing decentralized governance mechanisms, it is beneficial to consider enhancing institutional responses towards uncertainty in the long-term by building on existing community capacities, strengthening community empowerment systems, and fostering community resilience-building strategies.

In Haiti, however, the uncertain conditions are structural, embedded in governance of urban services and of the responses to crises. This case supports other studies showing the limits of the application of resilience to describe the response of communities to hazards and structural vulnerabilities and uncertainties (Lizarralde et al., 2020). Uncertainty was not only caused by the hazard per se but is rooted in the context in which the hazard occurred.

The case of Haitian marketplaces is not per se a strong market community-based response or of mutual aid. Market community initiatives were limited and restricted due to a lack of enabling support. Besides being delayed and hindered by the slow recovery of certain traders and the mobility of residents, socio-economic solidarity in the markets has remained in the everyday, with nearby traders and with regular clients. The sacrifices and the struggles at the domestic sphere are likely what supported the recovery of the marketplace system in Haiti—not the marketplace social capital. Traders used their resourcefulness and compromised on household expenditure to buy more stock to survive. This is considered to be different from the solidarity exhibited by the domestic, residential, agricultural and workplace communities that were more prevalent in Wayanad. This inherent contextual factor may also have contributed to an increased sense of social cohesion, resourcefulness, and political organization in Wayanad that

could have been a contributing factor for enhanced community resilience.

6.2 | Building on networked communities

These interrelated perspectives also prompt questions on the most appropriate scale for valorizing community resilience in action, and the level of governance for which community resilience in action would be most relevant. As echoed in literature (Aldrich & Meyer, 2015) and shown through empirical data in Wayanad, community resilience is perceived to be influenced by existing bonding, bridging and linking social capital which is a combination of social ties with kith and kin, and joint formal and informal levels of engagement and participation by the communities, state and non-state actors. This included tapping into the existing social, faith-based, friend and neighbor networks, and their capacity to spontaneously volunteer. We perceive the levels of action as scalar and temporal wherein every individual and collective effort contributes to relief and recovery in some form or other in the short-term, but in some situations, contexts and institutions seem more capable of recognizing and harnessing it for the long-term than others. For example, in Wayanad, the people residing in relief camps during the weeks of flooding were put in charge of managing the food distribution by the local government officials, so this brought about a sense of responsibility and solidarity among the affected communities. We argue that normatively, the existing potentials of community resilience in action could be tapped into for the long-term transformation buoyed by the evidence of social capital (Aldrich & Meyer, 2015) and the capacity of (local) government institutions to facilitate this through various means (Adger, 2003; Carabine & Wilkinson, 2016).

Parallel to this, we argue that it is vital to acknowledge that contemporary demonstrations of community resilience in action are not limited to spatially bound communities. In this article for example, the visible “resilience” of marketplaces (one could see that markets were recovering) overshadows “invisible” struggles and sacrifices of traders. Market recovery is made by trade-offs in households located far away from the market and not due to trader community resilience per se. We can also consider aspects of digital organization as a form of community resilience in action. In Kerala, the upsurge in digital volunteers and the resources that they generated were appreciated and acknowledged by the state administration which was often overwhelmed by the magnitude of the challenges. We and others acknowledge it might be difficult to follow a community-based approach in contexts where the civil society functions in complex networks (Rahill et al., 2014; Twigg & Mosel, 2017). The examples above, however, point to the benefits in complementing traditional neighborhood, residential and rural approaches with workplace and digital networks.

Finally, while in Wayanad, community resilience in action was supported by linkages between state and non-state actors, such “bridging” capital did not appear as clearly in the cases of markets in Haiti. The disconnection between the State and the Haitian society is documented and makes no exception in the Haitian marketplaces. In

the absence of state support, narratives in this article suggest that community resilience in action in markets appears limited to maintaining critical functions in a chronic state of uncertainty.

7 | CONCLUSION

Wayanad and Port-au-Prince, although different in scale and nature of repercussion, are both representative of developmental contexts with weak institutional mechanisms, scarce resources, and chronic vulnerabilities and prone to unprecedented environmental crises due to a combination of natural hazards and human action. Our reflection from contrasting sociocultural aspects, local governance and community engagement of the two contexts shed light on how the social, cultural, political, and occupational specificities of communities influence their possibilities for driving and engaging in ad hoc and spontaneous initiatives. We discussed the concept of community resilience in action through an inductive epistemological approach by drawing examples from the exploratory fieldwork and interviews to illustrate where it is supported, hindered, or ignored. The empirical findings helped to nuance the theorization of community resilience in action with contextual accounts, insights from practice, and actions on the ground. Through this, the article addresses some of the gaps in development and humanitarian studies literature wherein there is a limited focus on how community resilience plays out in action.

We acknowledge that problematizing community resilience in action in this manner does not mean that the concept should be interpreted solely in monotheistic, positive ways. Contextual accounts through the lens of community resilience in action could be useful for understanding and influencing the levels of participation and engagement by communities and decision makers at various governance levels, and subsequently aid flexible and decentralized decision-making processes (Carabine & Wilkinson, 2016; Cote & Nightingale, 2012; Koshy, 2022) under uncertainty. We argue therefore that operationalizing community resilience in action could enable reflecting on the resourcefulness of the communities for the long-term and incorporate the value of spontaneous, adaptable, and entrepreneurial actions at multiple governance levels. While self-organizing community capacities could result in the abdication of government responsibility in developmental contexts, the empirical findings in this article could serve as a reminder of the benefits of drawing on existing community structures and everyday practices of the communities to enhance governance responses, and of the downsides of not doing so. We conclude therefore by arguing that valorizing the cognitive and interactional aspects of community resilience in action could enhance institutional responses under uncertainty in post-disaster developmental contexts.

ACKNOWLEDGMENTS

The authors would like to thank Hilde Refstie and Rolee Aranya, the editors, and the anonymous reviewers for their feedback on the article. [Correction added on 27 July 2023, after first online publication: In the Acknowledgement section, the name ‘Hilde Restfie’ was corrected to ‘Hilde Refstie’ in this version.]

CONFLICT OF INTEREST STATEMENT

The authors hereby declare that they do not have a conflict of interest.

REFERENCES

- Abbott, J. (2005). Understanding and managing the unknown: The nature of uncertainty in planning. *Journal of Planning Education and Research*, 24(3), 237–251. <https://doi.org/10.1177/0739456X04267710>
- Adger, W. N. (2003). Social capital, collective action, and adaptation to climate change. *Economic Geography*, 79(4), 387–404. https://doi.org/10.1007/978-3-531-92258-4_19
- Aldrich, D. P., & Meyer, M. A. (2015). Social capital and community resilience. *American Behavioral Scientist*, 59(2), 254–269. <https://doi.org/10.1177/0002764214550299>
- Ali, F. M. M., & Jones, K. (2013). Negotiating community resilience in the city in a time of political change and deficit reduction. *International Journal of Disaster Resilience in the Built Environment*, 4(1), 9–22. <https://doi.org/10.1108/17595901311298973>
- ALNAP. (2018). *The state of the humanitarian system*. ALNAP & ODI https://www.alnap.org/system/files/content/resource/files/main/SOHS%202018%20Summary%20online_2.pdf
- Balducci, A., Boelens, L., Hillier, J., Nyseth, T., & Wilkinson, C. (2011). Introduction: Strategic spatial planning in uncertainty: Theory and exploratory practice. *Town Planning Review*, 82(5), 481–502. <https://doi.org/10.3828/tpr.2011.29>
- Bankoff, G., & Hilhorst, D. (2009). The politics of risk in The Philippines: Comparing state and NGO perceptions of disaster management. *Disasters*, 33(4), 686–704. <https://doi.org/10.1111/j.1467-7717.2009.01104.x>
- Bardhan, P. (2002). Decentralization of governance and development. *Journal of Economic Perspectives*, 16(4), 185–205. <https://doi.org/10.1257/089533002320951037>
- Béné, C., Godfrey Wood, R., Newsham, A., & Davies, M. (2012). *Resilience: New utopia or new tyranny? Reflection about the potentials and limits of the concept of resilience in relation to vulnerability reduction programmes* (IDS Working Paper No. 405). <https://doi.org/10.1111/j.2040-0209.2012.00405.x>
- Berkes, F., & Ross, H. (2013). Community resilience: Toward an integrated approach. *Society & Natural Resources*, 26(1), 5–20. <https://doi.org/10.1080/08941920.2012.736605>
- Campbell, L., & Knox Clarke, P. (2018). *Making operational decisions in humanitarian response: A literature review*. ALNAP and ODI. https://www.alnap.org/system/files/content/resource/files/main/ALNAP%20DM%20LR%20Final%20Int_1.pdf
- Carabine, E., & Wilkinson, E. (2016). How can local governance systems strengthen community resilience? A social-ecological systems approach. *Politics and Governance*, 4(4), 62–73. <https://doi.org/10.17645/pag.v4i4.746>
- Chmutina, K., Lizarralde, G., Dainty, A., & Boshier, L. (2016). Unpacking resilience policy discourse. *Cities*, 58, 70–79.
- Choudhury, M. U. I., Uddin, M. S., & Haque, C. E. (2019). “Nature brings us extreme events, some people cause us prolonged sufferings”: The role of good governance in building community resilience to natural disasters in Bangladesh. *Journal of Environmental Planning and Management*, 62(10), 1761–1781. <https://doi.org/10.1080/09640568.2018.1513833>
- Claridge, T. (2018). Functions of social capital—bonding, bridging, linking. *Social Capital Research*, 20(1), 1–7.
- Clermont, C., Sanderson, D., Sharma, A., & Spraos, H. (2011). *Urban disasters—lessons from Haiti: Study of member agencies' responses to the earthquake in port au prince, Haiti*. January 2010. Disasters Emergency Committee (DEC). <https://www.alnap.org/help-library/urban-disasters-%E2%80%93-lessons-from-haiti-study-of-member-agencies%E2%80%9399-responses-to-haiti>
- Cote, M., & Nightingale, A. J. (2012). Resilience thinking meets social theory: Situating social change in socio-ecological systems (SES) research. *Progress in Human Geography*, 36(4), 475–489. <https://doi.org/10.1177/0309132511425708>
- Crisp, J., Morris, T., & Refstie, H. (2012). Displacement in urban areas: New challenges, new partnerships. *Disasters*, 36(S1), S23–S42. <https://doi.org/10.1111/j.1467-7717.2012.01284.x>
- Elsa, E. (2018). UAE expats help Kerala victims through social media. *Gulf News*. <https://gulfnews.com/world/asia/india/uae-expats-help-kerala-victims-through-social-media-1.2267882>
- Engle, J. (2016). *Stories of tragedy, trust and transformation? Learning from participatory community development experience in post-earthquake Haiti* [PhD thesis in Urban Planning, Policy and Design]. McGill University. <https://www.proquest.com/openview/Obf0e9521b3c2279981687c348baad24/1?pq-origsite=gscholar&cbl=18750&diss=y>
- Fan, M. F. (2015). Disaster governance and community resilience: Reflections on typhoon Morakot in Taiwan. *Journal of Environmental Planning and Management*, 58(1), 24–38. <https://doi.org/10.1080/09640568.2013.839444>
- Forbes, P. (2011). *From Haiti's Ashes*. Film; BBC.
- Gersonius, B., Ashley, R., Pathirana, A., & Zevenbergen, C. (2013). Climate change uncertainty: Building flexibility into water and flood risk infrastructure. *Climatic Change*, 116(2), 411–423. <https://doi.org/10.1007/s10584-012-0494-5>
- Gettleman, J. (2018). Kerala floods: Rescuers use helicopters and even their own backs. *The New York Times*. <https://www.nytimes.com/2018/08/21/world/asia/india-kerala-flood-video.html>
- Gill, D., Smits, L., & Stephenson, M. (2020). Learning from community planning following the 2010 Haiti earthquake. IIED. <https://www.iiied.org/10857iied>
- Goulet, J. (2006). *L'organisation des services urbains: réseaux et stratégies dans les bidonvilles de Port-au-Prince*. PhD thesis. Université du Québec à Montréal.
- Goulet, J., Emmanuel, E., Bras, A., Joseph, O., Benoît, J. E., Paul, B., Lucien, G. E., Joseph, C., Hanin, Y., Simonneau, C., Lizarralde, G., Labbé, D., Thomas, I., Petter, A., Agenor, C., Jean Julien, O., Cherubin, D., Bodson, P., Goulet, J., ... Exentus, R. (2018). *Perspectives de développement de l'aire métropolitaine de Port-au-Prince, Horizon 2030*. Université Quisqueya, Université d'État d'Haiti, Centre de techniques de planification et d'économie appliquée, Université Catholique de Louvain, Université de Montréal, Université du Québec à Montréal. <http://synthese.larim.polymtl.ca:8080/xmlui/handle/123456789/222>
- Government of Haiti (2010). Haiti earthquake PDNA: Assessment of damage, losses, general and sectoral needs. In *Government of Haiti, United Nations, Inter-American Development Bank, United Nations economic Commission for Latin America and the Caribbean*. World Bank and European Commission <https://www.unep.org/resources/report/haiti-earthquake-pdna-assessment-damage-losses-general-and-sectoral-needs>
- Heller, P. (1996). Social capital as a product of class mobilization and state intervention: Industrial workers in Kerala, India. *World Development*, 24(6), 1055–1071. [https://doi.org/10.1016/0305-750X\(96\)00015-0](https://doi.org/10.1016/0305-750X(96)00015-0)
- Heller, P. (2001). Moving the state: The politics of democratic decentralization in Kerala, South Africa, and Porto Alegre. *Politics and Society*, 29(1), 131–163. <https://doi.org/10.1177/0032329201029001006>
- Hilhorst, D. (2018). Classical humanitarianism and resilience humanitarianism: Making sense of two brands of humanitarian action. *Journal of International Humanitarian Action*, 3(1), 1–12. <https://doi.org/10.1186/s41018-018-0043-6>
- Holly, G. (dir.). (1999). *Les problèmes environnementaux de la région métropolitaine de Port-au-Prince*. Port-au-Prince: Commission pour la commémoration du 250e anniversaire de la fondation de la ville de Port-au-Prince, Collection du 250e anniversaire, p. 221.
- Ilan, S., & Rygiel, K. (2015). “Resiliency humanitarianism”: Responsibilizing refugees through humanitarian emergency governance in the camp. *International Political Sociology*, 9(4), 333–351. <https://doi.org/10.1111/ips.12101>

- Imperiale, A. J., & Vanclay, F. (2016). Experiencing local community resilience in action: Learning from post-disaster communities. *Journal of Rural Studies*, 47, 204–219. <https://doi.org/10.1016/j.jrurstud.2016.08.002>
- Imperiale, A. J., & Vanclay, F. (2020). Top-down reconstruction and the failure to “build back better” resilient communities after disaster: Lessons from the 2009 L'Aquila Italy earthquake. *Disaster Prevention and Management: An International Journal*, 29(4), 541–555. <https://doi.org/10.1108/DPM-11-2019-0336>
- Imperiale, A. J., & Vanclay, F. (2021). The mechanism of disaster capitalism and the failure to build community resilience: Learning from the 2009 earthquake in L'Aquila, Italy. *Disasters*, 45(3), 555–576. <https://doi.org/10.1111/disa.12431>
- Indian Institute of Architects, Calicut Centre & District Town and Country Planning Office, Wayanad (2018). Rebuilding Malabar, Wayanad: Post disaster flood assessment of great flood of 2018. In *Indian institute of architects*. Calicut Centre & District Town and Country Planning Office.
- IRC (2010). The market system for Rice in Haiti: Emergency Market Mapping & Analysis (EMMA) report Port-au-Prince. In *International rescue committee, American red Cross, Haitian red cross, International Federation of the red Cross, save the children*. Mercy Corps, Oxfam GB, ACIDI/VOCA, World Food Program, FEWS/NET. <https://www.emma-toolkit.org/report/market-system-rice-haiti>
- Isaac, T., & Heller, P. (2003). Democracy and development: Decentralized planning in Kerala. In A. Fung & O. W. Wright (Eds.), *Deepening democracy: Institutional innovations in empowered participatory governance* (pp. 77–111). Verso.
- Katz, J. M. (2013). *The big truck that went by: How the world came to save Haiti and left behind a disaster*. Palgrave Macmillan.
- Kjosavik, D. J., & Shanmugaratnam, N. (2021). The persistent Adivasi demand for land rights and the Forest rights act 2006 in Kerala, India. *Social Sciences*, 10(5), 158. <https://doi.org/10.3390/socsci10050158>
- Koshy, M. (2022). “After the floods, he says he is an environmentalist”: Understanding blended roles and organizational boundaries in decision-making under uncertainty during unprecedented floods in Wayanad, India. *Frontiers in Sustainable Cities: Cities in the Global South*, 4, 1–16. <https://doi.org/10.3389/frsc.2022.836843>
- Koshy, M., Aranya, R., & Refstie, H. (2022). Handling compounded uncertainty in spatial planning and humanitarian action in unexpected floods in Wayanad, Kerala: Towards a contextualised contingency planning approach. *Planning Theory & Practice*, 23(5), 703–723. <https://doi.org/10.1080/14649357.2022.2143548>
- Kurup, K. K. N. (1988). Peasantry and the anti-imperialist struggles in Kerala. *Social Scientist*, 16(9), 35–45. <https://doi.org/10.2307/3517171>
- Kwakkel, J. H., Walker, W. E., & Haasnoot, M. (2016). Coping with the wickedness of public policy problems: Approaches for decision making under deep uncertainty. *Journal of Water Resources and Planning Management*, 142(3), 1–5. [https://doi.org/10.1061/\(ASCE\)WR.1943-5452.0000626](https://doi.org/10.1061/(ASCE)WR.1943-5452.0000626)
- Kyazze, L. M., Nsereko, I., & Nkote, I. (2020). Cooperative practices and non-financial performance of savings and credit cooperative societies. *International Journal of Ethics and Systems*, 36(3), 411–425.
- Lizarralde, G., Páez, H., Lopez, A., Lopez, O., Bornstein, L., Gould, K., Herazo, B., & Muñoz, L. (2020). We said, they said: The politics of conceptual frameworks in disasters and climate change in Colombia and Latin America. *Disaster Prevention and Management: An International Journal*, 29, 909–928. <https://doi.org/10.1108/DPM-01-2020-0011>
- Malebranche, S. (2000). *Consolidation et revitalisation des centres historiques: le cas du centre historique de Port-au-Prince*. Colloque du GIM.
- Manyena, S. B. (2006). The concept of resilience revisited. *Disasters*, 30(4), 434–450.
- Matarrita-Cascante, D., Trejos, B., Qin, H., Joo, D., & Debner, S. (2017). Conceptualizing community resilience: Revisiting conceptual distinctions. *Community Development*, 48(1), 105–123. <https://doi.org/10.1080/15575330.2016.1248458>
- Maynard, V., Parker, E., Yoseph-Paulus, R., & Garcia, D. (2018). Urban planning following humanitarian crises: Supporting urban communities and local governments to take the lead. *Environment and Urbanization*, 30(1), 265–282. <https://doi.org/10.1177/0956247817732727>
- Meerow, S., Newell, J. P., & Stults, M. (2016). Defining urban resilience: A review. *Landscape and Urban Planning*, 147, 38–49. <https://doi.org/10.1016/j.landurbplan.2015.11.011>
- Morrison, C., Ramsey, E., & Bond, D. (2017). The role of social entrepreneurs in developing community resilience in remote areas. *Journal of Enterprising Communities: People and Places in the Global Economy*, 11(1), 95–112. <https://doi.org/10.1108/JEC-02-2015-0020>
- Moser, C., & Satterthwaite, D. (2010). *Towards pro-poor adaptation to climate change in the urban centers of low-and middle-income countries* (Climate Change and Cities Discussion Paper No 3). IIED. <https://www.iied.org/sites/default/files/pdfs/migrate/10564IIED.pdf>
- Neiburg, F., Sergio, J. L., Fontaine, J., Braum, P., Montinaro, R., & Coutinho, B. (2012). *Les marchés du centre de Port-au-Prince*. NuCEC.
- Norris, F. H., Stevens, S. P., Pfefferbaum, B., Wyche, K. F., & Pfefferbaum, R. L. (2008). Community resilience as a metaphor, theory, set of capacities, and strategy for disaster readiness. *American Journal of Community Psychology*, 41(1–2), 127–150. <https://doi.org/10.1007/s10464-007-9156-6>
- Olsson, P., Folke, C., & Berkes, F. (2004). Adaptive comanagement for building resilience in social-ecological systems. *Environmental Management*, 34, 75–90.
- Pfefferbaum, B. J., Reissman, D. B., Pfefferbaum, R. L., Klomp, R. W., & Gurwitsch, R. H. (2007). Building resilience to mass trauma events. In *Handbook of Injury and Violence Prevention* (Vol. 347–358). Springer. https://doi.org/10.1007/978-0-387-29457-5_19
- Putnam, R. D. (1995). Tuning in, tuning out: The strange disappearance of social capital in America. *PS: Political Science & Politics*, 28(4), 664–684. <https://doi.org/10.2307/420517>
- Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. Simon and Schuster.
- Rahill, G. J., Ganapati, N. E., Clérisimé, J. C., & Mukherji, A. (2014). Shelter recovery in urban Haiti after the earthquake: The dual role of social capital. *Disasters*, 38, S73–S93. <https://doi.org/10.1111/disa.12051>
- Raman, K. R. (2020). Ecospatiality: Transforming Kerala's post-flood ‘risks-capes’. *Cambridge Journal of Regions, Economy and Society*, 13(2), 319–341. <https://doi.org/10.1093/cjres/rsaa023>
- Rauws, W. (2017). Embracing uncertainty without abandoning planning: Exploring an adaptive planning approach for guiding urban transformations. *disP - The Planning Review*, 53(1), 32–45. <https://doi.org/10.1080/02513625.2017.1316539>
- Roepstorff, K. (2020). A call for critical reflection on the localisation agenda in humanitarian action. *Third World Quarterly*, 41(2), 284–301. <https://doi.org/10.1080/01436597.2019.1644160>
- Sanderson, D., & Sharma, A. (2016). Making the case for resilience. In *World disasters report 2016: Resilience: Saving lives today, investing for tomorrow* (pp. 11–37). International Federation of Red Cross and Red Crescent Societies https://www.ifrc.org/sites/default/files/WDR-2016-FINAL_web.pdf
- Sanderson, D., Sharma, A., Kennedy, J., & Burnell, J. (2014). Principles, practice and lessons from haiti for urban post-disaster shelter recovery programs. *Asian Journal of Environment and Disaster Management*, 6(2), 131–151.
- Skerratt, S. (2013). Enhancing the analysis of rural community resilience: Evidence from community land ownership. *Journal of Rural Studies*, 31, 36–46.
- Smit, B., & Wandel, J. (2006). Adaptation, adaptive capacity and vulnerability. *Global Environmental Change*, 16(3), 282–292.
- Smith, D. (2011). *Learning from the Marche Hyppolite, Port-au-Prince, Haiti: An assessment of the philanthropic reconstruction of an urban place* [Dissertation]. Oxford Brookes University.
- Smith, D. (2019). The relational attributes of marketplaces in post-earthquake Port-au-Prince, Haiti. *Environment and Urbanization*, 31, 497–516. <https://doi.org/10.1177/0956247819865701>

- Smith, D. (2020). *Marketplaces as critical urban infrastructure: Relational attributes and disaster resilience from the perspectives of traders and customers in post-earthquake Port-au-Prince, Haiti*. PhD thesis in Architecture. Norwegian University of Science and Technology. <https://hdl.handle.net/11250/2686245>
- Solnit, R. (2010). *A paradise built in hell: The extraordinary communities that arise in disaster*. Viking.
- Starbird, K., & Palen, L. (2011). "Voluntweeters" self-organizing by digital volunteers in times of crisis. In *Proceedings of the SIGCHI conference on human factors in computing systems* (pp. 1071–1080).
- Sword-Daniels, V., Eriksen, C., Hudson-Doyle, E. E., Alaniz, R., Adler, C., Schenk, T., & Vallance, S. (2018). Embodied uncertainty: Living with complexity and natural hazards. *Journal of Risk Research*, 21(3), 290–307. <https://doi.org/10.1080/13669877.2016.1200659>
- Thérasmé, K. (2011). *Dynamiques sociales et appropriation informelle des espaces publics dans les villes du Sud: le cas du centre-ville de Port-au-Prince*. PhD thesis. Université du Québec à Montréal.
- Thummarukudy, M., & Peter, B. (2019). In M. Thummarukudy & B. Peter (Eds.), *Leaving No one behind: Lessons from the Kerala disasters*. The Mathrubhumi Printing and Publishing Company Limited. <https://reliefweb.int/report/india/leaving-no-one-behind-lessons-kerala-disasters>
- Tierney, K. (2012). Disaster governance: Social, political, and economic dimensions. *Annual Review of Environment and Resources*, 37, 341–363. <https://doi.org/10.1146/annurev-environ-020911-095618>
- Twigg, J., & Mosel, I. (2017). Emergent groups and spontaneous volunteers in urban disaster response. *Environment and Urbanization*, 29(2), 443–458. <https://doi.org/10.1177/0956247817721413>
- UNDRR. (2015). *Sendai framework for disaster risk reduction 2015–2030*. United Nations https://www.preventionweb.net/files/43291_sendai-frameworkfordrren.pdf
- Williams, G., Thampi, B. V., Narayana, D., Nandigama, S., & Bhattacharyya, D. (2011). Performing participatory citizenship—politics and power in Kerala's Kudumbashree programme. *Journal of Development Studies*, 47(8), 1261–1280.
- Woolcock, M. (2001). Microenterprise and social capital: A framework for theory, research, and policy. *The Journal of Socio-Economics*, 30(2), 193. [https://doi.org/10.1016/S1053-5357\(00\)00106-2](https://doi.org/10.1016/S1053-5357(00)00106-2)
- World Bank. (n.d.). *World development indicators*. <https://datatopics.worldbank.org/world-development-indicators/>
- Yin, R. K. (1994). *Case study research: Design and methods*. Sage.
- Zandvoort, M., Van der Vlist, M. J., Klijn, F., & Van den Brink, A. (2018). Navigating amid uncertainty in spatial planning. *Planning Theory*, 17(1), 96–116. <https://doi.org/10.1177/1473095216684530>

How to cite this article: Koshy, M., & Smith, D. (2023). Community resilience implications for institutional response under uncertainty: Cases of the floods in Wayanad, India and the earthquake in Port-au-Prince, Haiti. *Sustainable Development*, 1–16. <https://doi.org/10.1002/sd.2678>