Special Issue: Building back better? Lessons from disaster recovery in the Caribbean

Prioritising wellbeing and resilience to Build Back Better: insights from a Dominican small-scale fishing community

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Abstract

Climate change is increasing the severity of extreme weather events, particularly hurricanes, presenting a significant challenge to Caribbean coastal communities. In the aftermath of a major disaster government interventions typically prioritise infrastructure, assets, and the economy through rebuilding roads, reviving economic sectors, and providing financial compensation. This is driven by a focus on macro-level quantitative indicators rather than local, multidimensional subjective and relational factors, closer to lived experiences and livelihoods. Using frameworks outlining social wellbeing and agency, this paper explores strategies used by a fisheries-dependent community in Dominica to recover from Hurricane Maria in 2017 and pursue wellbeing. Findings highlight the importance of multi-dimensional wellbeing, particularly relational and subjective dimensions, including existing social networks, and personal relationships critical for recovery post-Maria. Further, we demonstrate how recovery initiatives solely focused on material wellbeing such as employment, can undermine agency in the capacity of a community to recover and build resilience.

Key Words: agency, Caribbean, disaster risk managements, environmental hazards, small-scale fisheries, social wellbeing

1 Introduction

Despite the concept of 'Building Back Better' becoming increasingly prominent in calls to build more resilient and sustainable communities to disaster risk, local voices and priorities are often not central to hazard response and recovery efforts (Mannakkara and Wilkinson, 2014; Collodi et al., 2021). Alongside the promises of the Building Back Better agenda, stemming from the Sendai Framework for Disaster Risk Reduction 2015-2030, there is growing recognition that other, more intangible indicators capturing lived experiences relevant at smaller sub-national levels, such as wellbeing and agency indicators, are critical components for interventions supporting recovery and future resilience to environmental hazards and climate change (e.g., Imperiale and Vanclay, 2020; Prayag et al., 2021). Wellbeing constitutes a process and an outcome that includes material resources (e.g., from income and assets) and non-material aspects comprised of the social, cultural or psychological factors fundamental to how people live, and the ways in which they pursue their wellbeing goals (White, 2010). Particularly, the role of the intangible social and relational components of wellbeing in facilitating or hindering post-disaster recovery needs greater attention (Prayag et al., 2021). It is argued that in some cases, the intangible losses may be equal to or of greater significance than tangible losses for those affected by disasters (Alston et al., 2018).

Understanding multidimensional wellbeing requires a deeper understanding of the complexity encompassed within lived experiences (White, 2010). For example, national level government recovery processes typically focus on economic recovery or development at macroeconomic scales,

with less focus on smaller businesses and local community livelihoods (Mannakkara and Wilkinson, 2014). Livelihoods operate at smaller scales and rely on complex social relationships, therefore engaging with successful recovery for these livelihoods and relationships require governments to interact meaningfully with local communities and civil society organisations (Jigyasu, 2012).

Complex livelihoods, particularly those dependent on natural resources that typically engage in multiple activities such as fishing and agriculture, are often over-looked in recovery and assistance efforts (Wiles et al., 2005). For example, following Hurricane Ivan in Grenada (2004) the Red Cross assisted small-scale farmers with agricultural inputs, and farmers were able to take advantage of higher prices for agricultural goods following the hurricane to recoup losses and recover livelihoods. However, this effort was focused on single rather than mixed livelihood strategies and not all those in need were provided support (IFRC, 2008).

Fisheries and fishery-dependent communities, particularly small-scale fisheries in tropical latitudes, are considered particularly vulnerable to disasters triggered by natural hazards, fluctuating environmental conditions, and climate change (Coulthard, 2008; Naskar et al., 2021). This stems from being both physically vulnerable to the hazards themselves, but also economically and socially vulnerable to e.g. impacts or changes to fish stocks, resource access, and market systems which can then lead to poverty (Seara et al., 2020). For this reason, supporting fishers and their communities following disruption or disaster must be informed by a fuller appreciation of complex livelihoods, specifically because mixed livelihood strategies are commonplace for fishers, who switch between fishing and other sources of income (such as construction, tourism and agriculture) during the year when adverse weather or extreme events render fishing dangerous or impossible (Forster et al., 2014; Karlsson and Mclean, 2020). However, addressing measures of wellbeing that are further removed from what people do and why, to the way a person feels, is less frequently derived from routinely collected data following disruption or disaster (Morgan et al., 2015). For fishing communities, there is long standing evidence of the importance of subjective wellbeing. Being a fisher is a way of life, not just an occupation and fishers attain social and psychological wellbeing by being able to fish (Pollnac et al., 2001). Similarly, there is mounting evidence of the importance of having strong pre-existing relational wellbeing, derived through social networks and community cohesion and cooperation, and strong social capital, which influences a fishing community's ability to recover after a disaster (Marin et al., 2015; Gillam and Charles, 2018).

By analysing the intersections and interactions between these wellbeing dimensions and how these relate to recovery and future resilience, we can improve our understanding of individual and collective actions and responses following hazard events. Strategies for responding to hazards are multiple and interconnected and can reflect resilience at different levels – and a key factor in social resilience is agency. Previous research has called for increased attention to be given to understanding adaptive strategies and resilience, and how it relates to agency of those at risk (e.g., Adger et al., 2008; McLaughlin and Dietz, 2008; Coulthard, 2012a). Agency has been referred to as the blind spot in social-ecological systems resilience, and other frameworks can be useful in bridging this gap in understanding social resilience (see Calderón-Contreras and White, 2020). This is important for disaster recovery as there may be trade-offs between strategies to improve resilience and individual wellbeing, for example actions that may make an island more resilient by moving people away from vulnerable coastal areas may reduce individual wellbeing if important social networks are disrupted.

This paper aims to explore, through a typology of agency (Lister, 2004), how response strategies are chosen following a disaster and how these strategies impact social wellbeing and resilience. We direct our enquiry to The Commonwealth of Dominica (hereafter Dominica), which experienced the devastating impacts of Hurricane Maria in 2017, while still recovering from Tropical Storm Erika in 2015. The study focuses on three small fisheries-dependent communities on the island's exposed east coast, providing an ideal context to explore multiple response strategies and what these mean for recovery and wellbeing. This includes moving recovery beyond a focus on physical infrastructure and livelihoods to highlight the importance of social and relational elements.

2 Approach and Methods

2.1 Exploring wellbeing and agency in hurricane responses

We applied the multidimensional concept of wellbeing (Gough and McGregor, 2007; White, 2010), also referred to as social wellbeing, to understand how wellbeing influences recovery and resilience and vice versa, to frame our enquiry and analysis of actions and responses following a disaster. Social wellbeing has three interrelated dimensions, which exist within an 'enabling environment', providing the conditions and structures where wellbeing is pursued. The three dimensions comprise: i) a *material* dimension which considers the resources people have and the extent to which their human needs are met; ii) a *relational* dimension to address the extent to which social relationships enable, or disable, the person to pursue wellbeing; and iii) a *subjective* dimension which assesses their own level of satisfaction with the quality of life they achieve (Figure 1; McGregor, 2007; White, 2010).

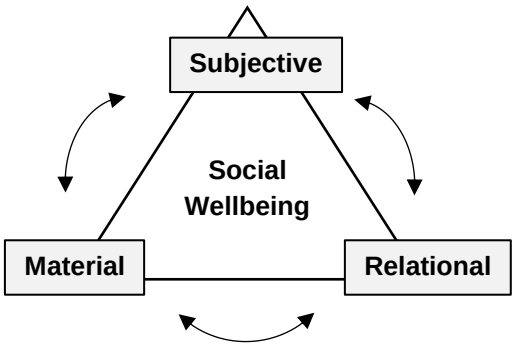

Figure 1. Social wellbeing.

Source: adapted from McGregor (2007) and White (2010).

The social wellbeing approach considers both a person's objective circumstances, which may be measured quantitatively, as well as the subjective evaluation of one's satisfaction with their quality of life, which can be measured qualitatively (Gough and McGregor, 2007). Social wellbeing can be defined as 'a state of being with others and the natural environment, where human needs are met, where one can act meaningfully to pursue one's goals, and where one enjoys a satisfactory quality of life' (Armitage et al., 2012). This conception of wellbeing recognises that living well is more than fulfilling basic survival needs, income or happiness and includes social and physiological needs constructed between an individual and society. This collective or 'social' conception of wellbeing, where perceptions not only reflect individual preferences and aspirations, but shared values and understandings of society which affect individual and collective choices driven by the pursuit of

wellbeing, is central to this approach (Gough and McGregor 2007). The relational dimension recognises that material and subjective dimensions of human lives do not occur in a social vacuum; wellbeing is dynamic and framed by complex social relations (Gough and McGregor, 2007; McGregor et al. 2007).

Strong relational wellbeing can increase community resilience (Gillam and Charles, 2018) in a disaster context, where this refers to the community responding to change by drawing on communal resources, to overcome adversity and take advantage of new opportunities (Berkes and Ross, 2013). This focus on community resources emphasises the collective nature of adapting to change, in contrast to household or individual level approaches to social resilience.

Social networks are recognised as important before, during and after disasters (e.g., Akbar and Aldrich, 2018; Carstensen et al., 2021). The multidimensional wellbeing framework provided the structure in our enquiry to explore not only material assets lost or damaged as is typical in post-disaster needs assessment (CoD., 2017), but also these critical subjective and relational dimensions of wellbeing and the context in which they were impacted or changed following Hurricane Maria. However, we also recognise that tensions can arise due to cultural and social practices. In particular, power associated with relationships (at differing levels) can hinder people's agency and cause tensions. These tensions have the capacity to strip individuals and communities of personal choice and can lead to power differentials, exploitation or exacerbation of poverty (McGregor, 2007). This is where considering the concept of agency is particularly important in understanding social wellbeing.

The way agency is expressed is inextricably shaped by social factors, such as values, risk perceptions and culture that influence who is able to make decisions, and how (Lister 2004; Adger et al. 2008). How people exercise their agency following a disaster is influenced not only by these factors but also how people perceive and pursue their wellbeing, i.e., their aspirations and constructions of wellbeing. As Deneulin and McGregor (2010) note, the role of power in determining the extent to which wellbeing can be pursued highlights the need to understand people's agency. We unpack different expressions of agency using Lister's (2004) framework (Figure 2), examining the types of strategies people took in the immediate aftermath and subsequent two years following Hurricane Maria. While originally developed to explore people's responses to poverty, Lister's agency framework has since been adapted and applied to a fisheries context (Coulthard, 2012a, 2012b; White, 2015) to better understand how people respond to changes in their social and physical environment.

The four types of strategies outlined in Figure 2 refer to different levels of agency, e.g., from the personal reflecting individual choices to the political/citizenship which is related to the capacity for people to effect wider change. Whether a strategy is considered 'everyday' or 'strategic' often reflects whether actions are aimed at addressing short-term issues or whether they are concerned with longer-term strategic goals (Lister, 2004). Lister describes the four categories as '*getting by'*, *'getting out'*, *'getting (back) at'*, and *'getting organised'*. 'Getting by' refers to actions such as continuing to engage in current livelihoods, diversifying livelihoods (e.g., by adding value to agricultural or fishery products), and changing preferences to better meet conditions. Coping strategies and 'getting by' are often used interchangeably, and 'getting by' can also be thought of as one example of coping (Lister, 2004). Coping broadly refers to how people act within the limits of resources they draw upon and their own expectations for what is needed, which can include wellbeing (Wisner et al., 2004). Coping strategies and capacities are commonly discussed in the

context of hazards and resilience as the ways in which people deal with hazards and their after-effects, and their capacity to anticipate and respond to a hazard (Wisner et al., 2004; Tierney, 2014).

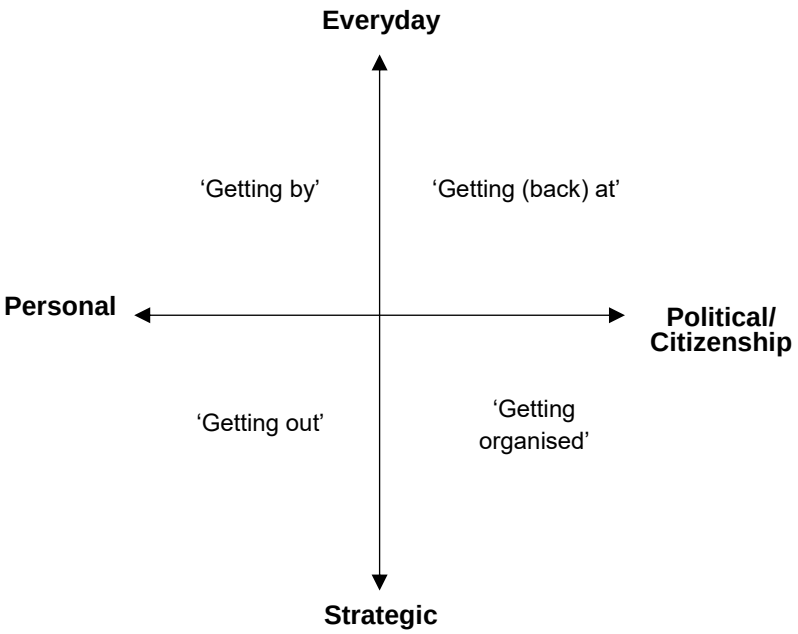

Figure 2. Forms of agency exercised by people in poverty.

Source: Lister (2004, p. 130)

'Getting out' refers to actions and strategies that are more focused on long-term strategic goals, such as migration or changing livelihoods altogether. 'Getting (back) at' encapsulates forms of resistance and can include circumventing formal institutions and structures or engaging in illegal activities for income. 'Getting organised' is agency exercised to effect change, such as collective action to obtain access or property rights or to mobilise civil society. Many of these actions, especially the more strategic, rely on social networks and personal connections, either to find new employment and income opportunities or to collectively engage at political levels (Lister, 2004; Coulthard, 2012a). The framework dimensions of 'everyday-strategic' and 'personal-political/citizenship' are considered as continua rather than dichotomies, and any one individual may be exercising all four forms of agency in their lives at a given time (Lister, 2004). While coping strategies are frequently discussed in literature on disasters (see Wiser et al., 2004), using the framework by Lister helps to elucidate the motivations for specific strategies and the way these are shaped by available resources and driven by goals for achieving wellbeing.

2.2 Dominica

Dominica is an island nation in the Caribbean Sea with a population just over 71,000. Its landmass of around 750km^2 is surrounded by approximately 180km of coastline (Pinnegar et al., 2019). On land, volcanic peaks create a precipitous central mountain range, and steep topography (Barclay et al., 2019). Along the coast seagrass, mangrove and coral reef habitats are found but tend not to be particularly extensive. The most productive coral colonies and associated fisheries are found within 250m of the shore (Pinnegar et al., 2019).

Dependence on fishing for consumption and income is relatively high in Dominica, compared with global averages (20.5kg) with fish consumption at 27.1kg/yr per capita (FAO, 2018; FAO, 2020). In

2017, it was recorded that 912 people (17 women) were engaged in fishing in Dominica (FAO, 2018), operating from 31 ports/landing sites (including undesignated sites) (FIC, 2012). The majority of these are situated on the west coast (23), with two in the south, and six on the east coast (FIC, 2012). It is estimated the sector employs around 2200 people overall (CoD, 2017). Fisheries mainly target pelagic species, such as tuna, marlin and dolphinfish through the use of Fish Aggregating Devices (FADs), first introduced in 1987 to improve catches of large migratory species (Theophille, 2016). There are also minor reef-related and demersal fisheries using traps and nets (Pinnegar et al., 2019). Fishing in Dominica is described as small-scale and artisanal, and often for subsistence purposes. According to the 2011 Fisheries Industry Census (FIC), many fishers perform multiple roles in the industry, such as gear or boat builders/repairers, and outboard engine mechanics, while some also act as vendors. The local vessels are small open boats, powered by at least one outboard engine and usually operated by two fishers (FIC, 2012).

Dominica's climate is characterised as tropical maritime, with dry (December to May) and rainy (June to November) seasons. Hurricanes can occur anytime during the rainy season (with August and September as peak months; CCKP, 2022). The most recent major hazard affecting the island was category 5 Hurricane Maria, on 18th September 2017 (CoD, 2017). The impact left catastrophic destruction across Dominica, affecting 80% of the population and destroying or damaging over 90% of the buildings and infrastructure. According to the Post-Disaster Needs Assessment (PDNA) 30 people lost their lives (CoD, 2017) and 37 people are still declared missing (S. Joseph 2022, pers. comm), and thousands more were injured from flooding and landslides (Schnitter et al., 2018). Tropical Storm Erika preceded Maria by two years, and despite being categorised as a less intense storm, resulted in large loss of life (14 confirmed fatalities and 17 missing, with over 500 people rendered homeless) and substantial impacts for the island's infrastructure and natural environment (Heron, 2018; Barclay et al., 2019, S. Joseph 2022, pers. comm). Based upon an assessment of impacts across sectors (including agriculture, fisheries, forestry and tourism) the Government of Dominica PDNA concluded that Hurricane Maria resulted in total damages of 931million USD and losses of 382million USD, amounting to 226% of GDP (for 2016; CoD, 2017). The fisheries sector was estimated to have suffered combined damages and losses of 3million USD, and the sector is highlighted to be particularly vulnerable to future hurricane activity due to myriad of climate change impacts (Pinnegar et al., 2019). In response to the devastation wrought by Hurricane Maria, the Government of Dominica committed to becoming the *'world's first climate-resilience nation'*, through the adoption of ambitious strategic initiatives across all sectors to *'build back better'* (CoD 2017).

2.2.1 Case study context: San Sauveur, Petit Soufrière and Good Hope

The village of San Sauveur, in the Parish of St David, on the exposed east coast, is the primary focus of this study, together with the twinned villages of Petit Soufrière and Good Hope, collectively totalling a population of around 800 (Figure 3). There are approximately 10 fishing boats that regularly use the San Sauveur landing site, and in most cases, boats are operated by two fishers (estimated there are around 20 fishers in this locality; Fisheries Division, 2016). These villages were severely impacted by Hurricane Maria; roads were damaged or impassable leading to transport and communications links cut off from neighbouring villages, larger towns, and the capital Roseau. The local agricultural sector surrounding these villages was devastated, with wind damage impacting banana and bay crops, and landslides and flooding, leading to loss of mainstay ground provisions, dasheen and cassava. As a result, the fisheries sector emerged as particularly important to recovery

efforts in the immediate aftermath of the hurricane, through the local provision, and delivery by sea, of emergency water and food (Turner et al., 2020).

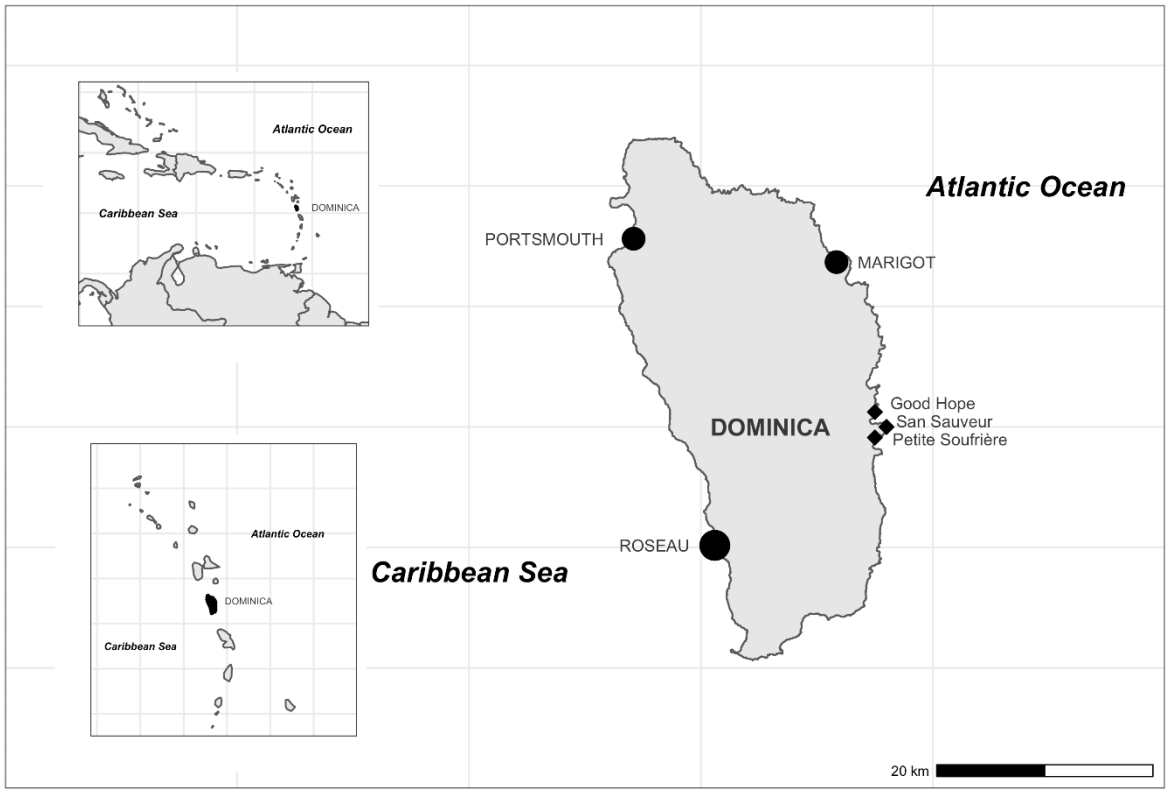

Figure 3. Map of Dominica in the Eastern Caribbean. Location of the three study site communities (diamonds), the capital Roseau (large circle) and two major fish landing sites (medium circles). Source: Authors.

2.2.2 Data collection and analysis

Fieldwork was conducted during October 2019, two years after Hurricane Maria, with the aim of providing a snapshot (rather than longitudinal assessment) of recovery responses post-Maria. The methodology allowed us to explore the immediate and short-term responses as well as strategies that people engaged in over the medium-term (>1 year) that reflect more strategic expressions of agency, and how this affected social wellbeing. Meetings with national level key informants together with community profiling was used to gather contextual information and enabled a 'snowball sampling' approach for further interviews (Coulthard et al., 2015). These initial scoping activities allowed us to build a picture of the community structure, initiated our snowball sampling method (whereby respondents recommended further potential interviewees) and provided us with a list of invitees to the initial community meeting. This meeting was held in San Sauveur village (9th October) with 25 participants and provided the opportunity to meet people living and working in the case study villages (Figure 3), discuss the study aims and learn about major changes and events that have impacted the communities.

Semi-structured interviews at community (n=12) and national levels (n=10) (Table 1), as well as three community focus groups with 2-5 participants each (Village Council (2), Fisheries Cooperative (2), and a local youth group (5)) were held to gather a wide range of perspectives. At the community level, interviews and focus groups took place at fish landing sites, in communal areas or in people's homes, with individuals involved in the fishing industry (past and present) or prominent members of

the community (e.g., health professional, school principal). The fishers who took part in this study included individuals who had worked as fishers all their lives and continued to do so in a full-time capacity, to those who worked part-time and supplemented their income with other activities such as farming or construction. Some fishers owned their boat and either fished alone or with friends and family members, while others shared ownership of their boat and worked together in crews. We interviewed several women in the fishing community, including individuals who participated directly in fishing as well as those who sold/marketed fish at the landing site. The community interviews and focus groups included questions to explore what is meant by recovery and how hurricane impacts affected different dimensions of wellbeing (material, subjective and relational). The questions allowed discussions exploring the important relationships within the community and externally, how people feel, the choices they make and why they make them, about their lives and livelihoods, their homes and wider community infrastructure. We also asked questions about future aspirations for individuals and for the community.

At the national level, interviews comprised representatives from relevant government departments (see Table 1), plus other key national level stakeholders. These interviews provided the opportunity to gather information on wider factors and at varying scales that relate to recovery post-hurricane, such as policies or initiatives on community development, disaster risk management, fisheries management; and country-level economic, social, and cultural information to further contextualise the community level data. Table 1 provides a summary of participants who contributed to the study.

Table 1: Details of community and national level interviews (numbers in brackets denote separate individuals).

	Community	**National**
Dept. of Fisheries (3)		X
Dept. of Gender Affairs (1)		X
Dept. of Local Government & Communities (1)		X
Climate Resilience Execution Agency Dominica (1)		X
Red Cross (1)		X
Community Development Officers (2)		X
Academic historian (1)		X
Health professional (1)	X	
School Principal (1)	X	
Parish Fisheries Cooperative (2)	X	
Fishers/ex-fisher (6 total; 2 women, 4 men)	X	
Fish Vendor (1)	X	
Hospitality/coastal tourism (1)	X	
Totals	**12**	**10**

All interviews and focus groups were undertaken in English, and the majority were recorded and transcribed verbatim (lasting between 30-90 minutes), and where recordings were not possible detailed notes were made. Transcriptions were coded in NVivo 12 (NVivo, 2020). The coding used both a deductive and inductive approach: codes were generated deductively in the first phase informed by the social wellbeing and agency frameworks described in Section 2.1. to assign response categories for coded text. Phase two explored the data inductively, allowing for a more explorative

approach and opening-up of issues and concerns, and analysis of where responses cross-cut issues of recovery, wellbeing and agency – a critical analytical step to enable identification of a broader and more complex array of responses. Trends and emerging response themes are presented in the analysis using Lister's (2004) four categories of agency detailed in Figure 2, which provides a structure to capture the complexity described by the qualitative data.

3 Results: Agency and wellbeing after Hurricane Maria

People's strategies and responses in the immediate aftermath and longer-term following Hurricane Maria demonstrate nuanced responses to the event itself (namely the destruction of homes, livelihoods, and the trauma of the hurricane) as well as to the efforts to support emergency relief and recovery by charities, aid agencies and the government. The forms of agency expressed by participants are summarised in Figure 4 and discussed in Section 3.1.

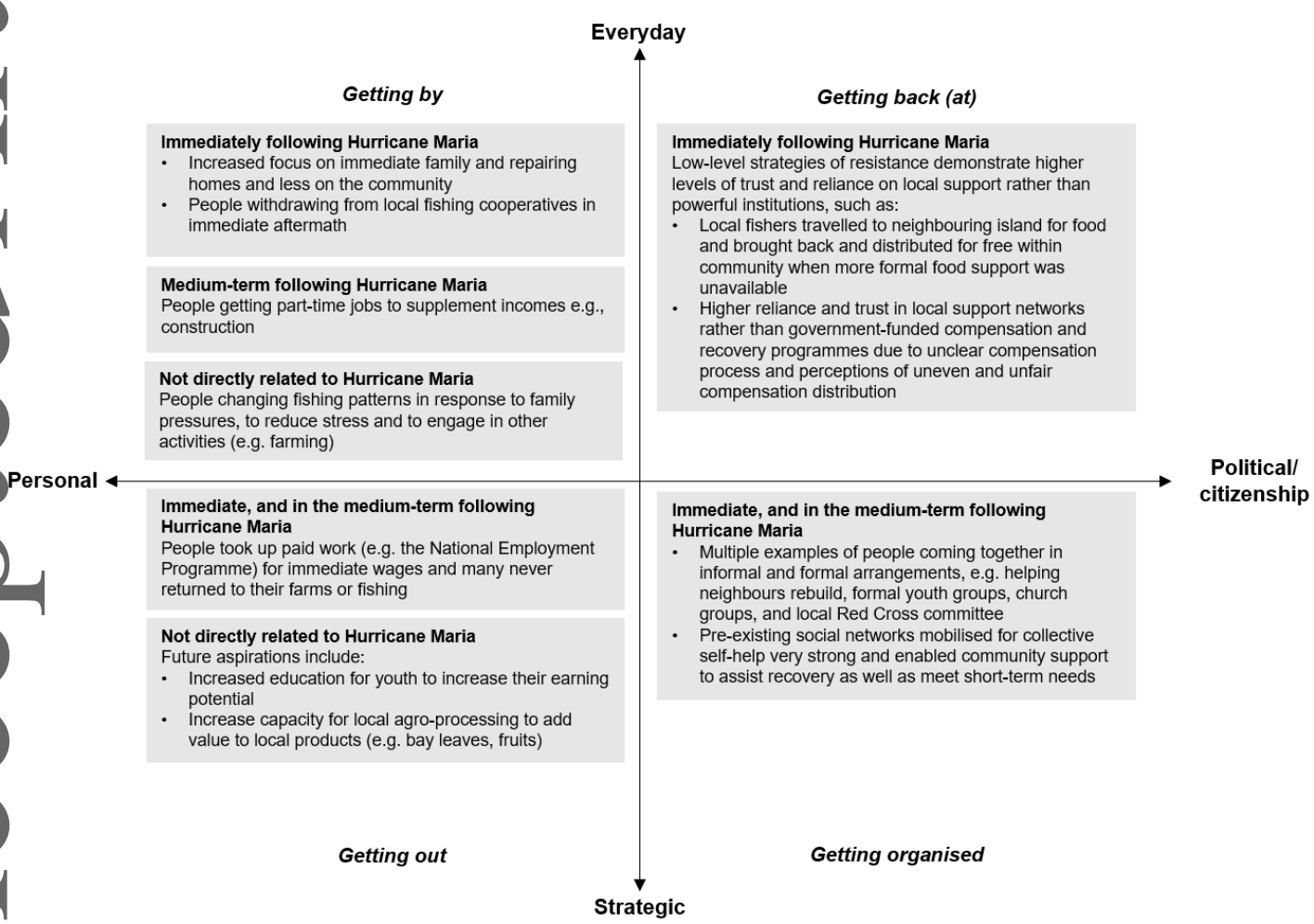

Figure 4. Forms of agency exercised in coastal Dominica post-Hurricane Maria**.**

Source: Authors, adapted from Lister (2004).

3.1 Forms of agency

3.1.1 'Getting by'

'Getting by' can easily be taken for granted, however it is an active process that involves complex use of various resources, such as social, cultural, material, and personal (also referred to as coping). Different levels and access to these resources shape individual ability to get by. In the aftermath of Hurricane Maria participants reported a variety of strategies that enabled them to cope, drawing on various resources to deploy these strategies.

For example, many participants reported that people shifted their focus from the wider community to their immediate family and homelife. This included a strong focus on rebuilding their own homes and ensuring that they and their family were able to eat, rather than participating in collective activities such as the fishing cooperative or other groups. Other strategies after Maria involved rebuilding homes using different techniques and materials, for example using tiles and screws rather than nails and galvanised tin for roofing materials. Participants reported more people going into part-time work to supplement incomes (e.g. construction) and seeking employment away from the villages as a reaction to income loss. The permanency of this shift for some individuals straddles the line between 'Getting by' and 'getting out'. This represents a trade-off between different dimensions of wellbeing, whereby certain areas of wellbeing are prioritised at the expense of others (e.g. income generation to rebuild family home over community activities).

Participants reported noticing more people leaving the villages in search of other non-fishing or farming employment post-Maria, however this phenomenon began prior to Maria. *"You find everybody is getting like a part time job, like the grocery stores in town, like the supermarket.* [Before] *They wouldn't go to get part time jobs, they would come back to do fishing with their father" Government worker A*. Participants commonly referenced livelihood changes post-Maria, however, and many of these changes are in relation to the National Employment Programme (NEP), a government-funded training programme established in 2013, to assist people obtaining training or jobs[1]. Many people used the NEP as a safety net in the immediate aftermath of Maria, but it was never intended as a long-term employment programme. This change in livelihoods, with people seeking part-time paid employment reflects wider changes in society (e.g., shifting to a more cash-based economy, changes in educational attainment by younger generations). As stated, these wider changes began prior to Maria and the NEP, however the shock of Maria combined with the opportunities presented with the NEP appear to have accelerated this shift.

The experience of Maria meant that the strategies and resources that people relied upon previously had to change. *"It's different because everybody had to find something different to do, because it is not the same life we used to have" Fisher A*. For many participants Maria marked a changing point in lives and livelihoods due to the monumental impact it had on individuals, community, and country. In addition to physical changes in the land and seascape, the social and livelihood landscape changed. Participants discussed drawing on personal resources such as creativity and flexibility (see

[1] The National Employment Programme (NEP) has existed since 2013 and is a training programme targeting youth (18-25 years old) offering internships, community employment and education mentorships. Internships target graduates to work with government or private employers, and the community employment component involves three days per week of work beautifying communities, roadside maintenance or working in tourism. Since 2016 at least 2000 people annually are employed in the scheme (Beazley, 2018; Nature Isle News, 2021).

Turner et al., 2020), as well as social resources such as friends and family networks to diversify their livelihoods to maintain their day-to-day functions. While some of these strategies were focused on the personal (e.g., the individual and immediate family) and everyday survival, some strategies demonstrated more strategic and longer-term expressions of agency, and individuals and households engaged in multiple strategies simultaneously.

3.1.2 'Getting out'

'Getting out' refers to someone working consciously to change their livelihood and/or exit fishing (or mixed agriculture and fishing). In our study context, we also use 'getting out' to refer to aspirations to substantially improve livelihoods, meaning that the livelihoods category may not change but there is a substantial difference in how that strategy is pursued to improve income earning potential, e.g., via education for individuals, or their children. When livelihood strategies change (e.g., exiting a fishery), the transitions between different livelihoods can be complicated, particularly if paid work is insecure or incomes are volatile (Lister, 2004). This can mean that while people are 'getting out' of their coastal livelihood, that does not always mean these strategies are aiding them to achieve their wellbeing goals (see Section 3.2).

Participants reported short-term responses to Maria that involved both 'Getting out' of fishing, and the community itself. One of the reasons for this was the lack of appropriate compensation from government sources. *"There was government intervention where they provided the farmers with a stipend or some financial assistance monitoring, but that in itself did not do anything much, because […] those crops are crops that take anywhere between nine months to pick up again. So, it's like, you have to wait nine months to start to make some money" Fish vendor.* This lack of support over the period it takes for crops to grow was also mentioned as a reason for people to take up employment elsewhere, especially with the NEP (the NEP budget was doubled following Maria to allow it to absorb additional unemployed people; Beazley, 2018). However, in the two years since Maria many individuals who left the study villages with jobs supplied by the NEP have not returned. *"When they implemented it, it was a good thing. Because then, just after Maria, everyone's out of work and everyone wants to make something, it was a good thing. They probably intended people to go back, to their farms and all that, after we recovered. Most people have not" Fisher B.* While the initial NEP employment take-up may well have been a coping action, the choice to stay away and 'get out' of their original livelihoods demonstrates for some individuals a strategic action.

Aspirations for the future, to improve the local economy and earning potential were also discussed. Participants talked about aspirations for education and more general hopes for the community expressed as ways of 'getting out' of fishing livelihoods, as well as very specific examples of actions to improve local earning potential while maintaining mixed fishing and agricultural livelihoods. Many participants expressed aspirations for the community to improve educational attainment as a mechanism to improve earning potential. *" …I would like to see the* [younger] *people go to college, and then come home and do some work here. Because most of them get the good jobs and they have to go and live there, and go to the town. So I would like to see, if we have some factories or some things here, so we can have more persons employed in the area" Health professional*. These education goals were related to ways to improve earning potential within the community, while maintaining current livelihoods (and existing social networks, see Section 3.2 for discussion of their role and importance). However, other participants described wanting different livelihoods for their children: *"I would like to see persons engaged in reasonable professions, reasonable jobs, that can generate decent money and then be comfortable in their lives…I would like my children to be more*

educated than I am, a lot of parents are like that" Fish vendor. Two participants mentioned specific strategies, building agro-processing plants (for bay oil or local fruits) to add value to locally grown produce and diversify community employment opportunities. Not all participants have the same aspirations for the community, some envisaged a place where future generations could engage in the same livelihoods but earn better incomes, while others wanted their children to 'get out' of fishing and farming altogether.

3.1.3 'Getting (back) at'

'Getting (back) at' in this context includes behaviour that includes everyday challenges or acts of resistance to power structures. Everyday acts of resistance offer individuals a chance to resist the constraints placed upon them and 'get (back) at' those in power (Lister 2004). While a number of participants reported that the government did not help enough to get everyone back on their feet, not all participants shared that view.

Some participants seemed resigned to the situation, reporting both an acceptance that at least the government gave some support, as well as expressing frustrations at the opaque decision-making around compensation. *"And some people get very little. Like it wouldn't even cover a quarter of what they lost. And then again, at least they get back something" Fisher C.* At the same time, other participants felt that a lack of political connections, or being affiliated to the party in power, was a barrier to accessing resources*. "Right now, if you're not in politics, you won't get nowhere you have to" Fisher D.*

Participants shared concerns around the lack of transparency in compensation decisions and what was viewed by several participants as unequal or puzzling amounts distributed in the wake of the hurricane. For example, one full-time fisher with several decades of experience reported getting a third of the compensation compared to other part-time fishers who had only been fishing for relatively short periods. Participants reported that personal connections (e.g., personally knowing the individual liaising compensation claims) were some of the major factors in whether compensation was received, and for how much. Other participants more familiar with the administration of the compensation programme described how political motivations were less at play than an overall lack of organisation or centralised planning, meaning that compensation was handed out in an ad hoc fashion. Nevertheless, the resulting outcome that many local people felt they could not trust in the programme may have contributed toward feeling they could not fully trust in the government and those in power to take care of them post-Maria, leading to behaviours that circumvented formal institutions for recovery.

Prior to Maria, strong local networks supported community members and were, and continue to be vital (see 3.2). These networks were key to people in the immediate aftermath as well as in the medium-term following Maria. Local fishers with intact boats travelled to neighbouring islands and brought back food – often for free – to distribute within the community: *"A lot of boats went to Guadeloupe, to Martinique – for food stuff…Even for free…Boats can just go… get stuff and then come back to their villages" Fisher E*. They did this rather than waiting on official assistance from either government or external aid agencies, demonstrating higher trust in their community and their own agency as opposed to the government. These strategies, combined with the attitudes to compensation above demonstrate that there is at varying levels a high value placed on self- and community-reliance and independence, as well as a lack of trust that the government or those in more powerful positions will provide support. Further still, a key informant reported that the

constituency of San Sauveur is marginal in terms of political allegiances, and so it would have been expected that even before the recovery efforts and compensation, trust may have been an issue among a large portion of the community. Taking care of oneself and the community therefore not only demonstrates that these local community identities resonate more strongly than anything aligned with the government, it also shows evidence of agency expressed as subtle resistance. While there was no direct challenge to, or desire to challenge, the government or to those in power, trust in formal structures set up by those in power is superseded by trust in local communities.

3.1.4 'Getting organised'

'Getting organised' here refers to collective self-help and political action. Collective self-help is an important expression of collective agency and can sometimes act as a starting place for political action (Lister, 2004). Participants reported multiple examples of people coming together in both formal and informal ways to support each other. Traditionally in Dominica, this expression of coming together to help each other is known as *'koudmen'* (a Creole word derived from the French 'coup de main' Macfarlan et al., 2013) and has been described as the 'social glue' that keeps communities together. Understandably, koudmen is prominent when there is a disaster, as it shapes how the community supports each other in building back lives and livelihoods.

Formal examples of collective action included local youth groups who undertook activities for the benefit of the community such as cleaning beaches, as well as the local Red Cross and church-based groups. There were numerous examples of collective actions demonstrating the strength of local relationships and networks (e.g. sharing resources and human capacity), to work collectively and individually to support individuals in need, in the aftermath and continuing months and years post-Maria: *"And it's important for community, is that everybody gets involved. You see, even if you're not talking to me, something happens and you will be around to come, that is the thing about our community, yes. It's small, but we have everybody involved in whatever. If there is a little accident or a little landslide, everybody comes together" Health professional*. Coming together collectively to support each other (koudmen) continues to be an important component of the community post-Maria.

3.2 Wellbeing

Social relationships at multiple levels (i.e. between participants and another individual in the household, community or even at a national level) emerged as important to understand how they achieve 'a good life'. People repeatedly mentioned the importance of family, friends, neighbours, crew, other fishers, respected members of the community, the church and other prominent community groups as instrumental in their ability to cope and to build back following Maria. These social relationships (encompassed by the relational wellbeing dimension) have emerged as powerful means of dealing with and living through the trauma of a hurricane, providing resources to bolster social resilience (Heron, 2018). Succinctly put, one fisher commented *"For any community to thrive properly, they need to be able to interact with one another" Fisher B.* The importance of strong social networks and self-organisation leading to enhanced resilience led to some communities being described "a nation within a nation" as they relied on important transboundary relationships with communities on other nearby islands supporting recovery (see 3.1.3 and Turner et al., 2020). There were examples of people coming together informally, expressions of trust and unity within the community to help one another after Maria, and the importance of this for a person's general sense of wellbeing *"Someone's doing well, isn't really based on what they have….It's how you treat other*

people in the community…You see, here to help out, develop their place, develop their self" Fisher B. These informal networks are vital for community functioning, as another fisher describes: *"What we usually do is if we see someone who is in need of something. Okay, such as a fisherman, I've got the fish, I know that this person hasn't got money to buy the fish, and I see that they need it, I will give them." Fisher C*. These statements demonstrate not only the importance of social relationships, but also how participating as a community member is key to how a person lives a 'good life' and ties in with the Dominican tradition of 'koudmen'. As well as informal relationships, more formal arrangements were also referred to, ranging from community youth groups, the local Red Cross chapter and government organisations such as Parish Councils. Notwithstanding the importance of these wider parish and national support networks, it was noticeable during interviews that they were mentioned less frequently than the local social relationships that aided recovery following the hurricane.

What it means to be well for participants, or have good subjective wellbeing, included a range of values and emotions for participants. These included feeling grateful, comfortable, healthy and happy, not feeling lonely, and having independence, and choices in how they live their life. However, specifically in relation to Hurricane Maria, several participants mentioned changes in subjective wellbeing due to a renewed, or new, fear of hurricanes: *"…now that we're in the hurricane season, so you'll be thinking like 'anytime hurricane can come and you can lose everything again'. But like before you'd be like 'okay, it's hurricane season'. They would say to be careful, okay, they would say the hurricane is coming but in your mind, you'd be like ' that might pass'" Youth Focus Group.* This ties in with several other comments that were made describing a wider feeling in the community of fear and worry post-Maria, and an associated decline in mental health for some, both young and old: *"Every time we hear a storm coming, we get shaky… and we're traumatized, we never really got like, counselling for that…my mind, my mental state isn't the same anymore. I'm scare of everything now" Village Council Focus Group*. The importance of exercising agency was highlighted many times during these discussions, with the realisation that "*anything can happen at any time"* and thus the assertion that you always need to be prepared.

The ability to prepare, and having financial independence, was commonly referred to in terms of material wellbeing factors, but also reflects values participants deem important for achieving a 'good life'. This includes having the financial assets and ability to bounce back after the hurricane. People commonly referred to having a range of high value assets (e.g., house, vehicle) but also employment, and importantly not needing to rely on friends and family for financial support.

For participants engaged in fishing-related activities, loss and damage to boats and gear (including FADs) post-Maria was a major contributing factor to people leaving the sector and taking up alternative employment. More indirect issues also contributed, such as lack of electricity for storing fish, meaning for up to seven months after Maria fish vendors had no way to store fish so could only buy what they could sell that day and fishers were not guaranteed to sell their catch. Compounding this was also the loss of the largest fisheries complex on the island (in Roseau), which suffered extensive damage and has not to date been rebuilt to full capacity, as explained by another *"...most of my fish used to go to the complex in Roseau… since Maria it was destroyed, and they haven't fixed it back. So that put a strain on us, we have to look for other customers to buy the fish from us" Fisher A.*

3.2.1 Top-down aid, recovery efforts and initiatives

Critical to recovery efforts for these communities, as a lens through which wider lessons for Dominica can be learned, is the interplay between individual strategic agency, how personal choices can affect wellbeing, and the decisions and actions of government and aid organisations. The first relief activities carried out by government and the international community included the provision of in-kind support (food, water, and non-food supplies; Beazley, 2018). It is not the purpose of this study to critique the social protection response to Hurricane Maria, but it would be remiss not to mention here the relevance of applying a social wellbeing and agency lens to the response and recovery actions of national and international aid.

At the country level, it became clear that the NEP became a large influence on individual actions and responses following Maria. This programme provided much needed immediate financial support, but in some cases undermined personal and collective agency and wellbeing, through myriad of outcomes. These range from declines in physical health and wellbeing, due to increases in the community of illnesses typically associated with poor diet and nutrition such as hypertension and diabetes, because NEP assistance directed employment away from farms, so healthy fruit and vegetables are now harder to buy locally. Several others also mentioned concerns relating to this programme because people have had to work further away from home, often completely abandoning farming and fishing livelihoods. As one local academic familiar with the programme described, *"…wages are so low that the families in the country villages had to send food to the children who were working in this factory, and therefore it was not actually creating income at all."*

Movement of people out of the community for employment has led to changes in the social structure of the community (such as younger people moving out to seek work, or fishing and farming livelihoods changing as people became more reliant on the NEP; e.g. see 3.1.1 and 3.1.2), and undermined vital relational wellbeing – as people clearly articulated the importance of community cohesion and social ties (e.g. also through koudmen) as part of how they define 'living well' (see Section 3.2). For some, this programme has not only impacted physical and mental health (subjective and relational wellbeing), but years after the impact of Maria, people are not necessarily more financially stable because of it either (material wellbeing).

4 Discussion: Resilience and wellbeing after Hurricane Maria

The challenges of building resilience to future environmental hazards and climate-related disasters have been recognised nationally and regionally across government, research, and development organisations in the Caribbean. Against the backdrop of Hurricane Maria, the Government of Dominica commenced its attempts to transform the island into the world's first climate resilient country, by establishing the Climate Resilience Act (CoD, 2018); providing the mandate to create the Climate Resilience Execution Agency for Dominica (CREAD), established in 2018 (with a four-year mandate until 2022). Drawing on the National Resilience Development Strategy 2030 (NRDS) which outlines the policy framework to guide the island's recovery (CoD, 2020a), the Climate Resilience and Recovery Plan (CRRP; CoD, 2020b) was developed, under the leadership of CREAD, and published in 2020. The NRDS stipulates that the CRRP should reflect three 'pillars of resilience': i) climate resilience systems; ii) prudent disaster risk management systems; and iii) effective disaster response and recovery – across key target areas that include support for communities, the economy, infrastructure and institutional systems.

Specifically, for Caribbean coastal communities and the fisheries sector, various large-scale initiatives have also been established at the regional level. These include the United Nations Food and Agriculture Organization's (FAO), Climate Change Adaptation of the Eastern Caribbean Fisheries Sector (CC4FISH) project which seeks to increase resilience and reduce vulnerability to climate change through fisheries adaptation measures and capacity building for the fisheries sector (McConney et al., 2015; Turner et al., 2020); and the Caribbean Catastrophe Risk Insurance Facility (CCRIF) launching the first parametric insurance for fishers in 2019 in neighbouring islands of Grenada and St Lucia (CCRIF SPC, 2019).

Set within this broad policy context, our findings build on a growing body of literature which emphasises the need to identify and place value on the more intangible social and relational components that matter in recovery following disaster or adapting to change (Gillam and Charles, 2018; Turner et al., 2020). Often these critical dimensions of social organisation and cohesion, vital for community structure and capacity to adapt, re-build and foster resilience, are missed by large-scale recovery, policy or climate resilience initiatives. Recovery efforts in the aftermath of Maria were facilitated through the activation of the Regional Response Mechanism (RRM) coordinated by The Caribbean Disaster Emergency Management Agency (CDEMA) with support from other international aid agencies, such as the Red Cross, Samaritan's Purse and the World Bank. However, at present CREAD is spearheading Dominica's efforts to improve future resilience through several of their key themes which specifically emphasize strengthening communities, supporting them to absorb stress through resistance or adaptation, and by enhancing collective consciousness, to create the space to share experiences and the spiritual and cultural values that underpin how people live well, and how this can support Building Back Better (CoD, 2020b).

Using agency as an entry point to understand wellbeing after Hurricane Maria enabled this study to unpack key elements to building resilience at both individual and community scales. People use multiple income streams and livelihoods, demonstrating flexibility in finding new and alternative opportunities, drawing on significant personal and social resources, as well as the strength of relationships (pre-existing local social networks) and personal resilience (coping and processing trauma) to recover from Maria's devastating impacts. The fact that people consistently reference social relationships demonstrates that not only are these vital for wellbeing, but also for recovery; as supported by research demonstrating the importance of social networks for recovery after hazards (e.g., Béné et al., 2016; Marin, 2019).

Some of the strategies pursued may have undermined people's wellbeing and negatively impacted resilience (e.g. the unintended livelihood implications of the NEP). Further to this, well-meaning government and external initiatives can also undermine wellbeing. For example, the donation by a charitable organisation called '*Food for the Poor*', of a replacement boat with the name of the organisation on the side may have served to remind people they were viewed as victims by others in more privileged positions. Scholarship in development and poverty studies has critiqued the categorisation of 'poor' as one that may not be salient for individuals (e.g., Horner, 2020); rather individuals may use categories such as gender, age, national identity, while 'poor' is a socioeconomic position or category ascribed to them by 'powerful' others (Lister, 2004). People in these communities commonly spoke about values associated with independence, community cohesion, and reciprocal giving of time and goods in the recovery process, still ongoing to this day, and not once labelled themselves with negative socioeconomic connotations or as passive victims. Our analysis demonstrates that people are active agents, exercising their agency via multiple strategies

to pursue recovery in line with wellbeing goals, and external messaging from more powerful actors may negatively impact individual pride and self-esteem.

Local social support networks were vital in the immediate and medium-term response to Maria, and people moving away has the potential to disrupt these networks and community structural functioning. While young people leaving rural areas for employment is not a new phenomenon (e.g., Glendinning et al., 2003; Trimble and Johnson, 2013; Nandi and Nedumaran, 2021), the aspirations reported by community members demonstrate that for many they see young people staying and working within the community to build better lives for everyone (this perspective is also seen in other rural areas, e.g., Guilani et al., 2017). Some of the NEP placements actively undermined relational wellbeing, but also physical health and material wealth. The fact that some people who have left to take up employment still needed assistance from their families in rural areas is counter to the value people placed on independence for wellbeing. This movement of people further negates aspects of the relational wellbeing and resilience for those who remain in the villages.

Some participants' experiences and views with the compensation process post-Maria likely strengthened the value placed on independence and reliance on local social networks, as well as these actions demonstrating low levels of resistance against those in more powerful positions (e.g., government). In addition to the social networks, individuals embedded in the community who work for local change or community benefit, also known as social entrepreneurs, play important roles in recovery efforts (Rayamajhee et al., 2022). The individual examples in this case (e.g. fishers travelling to neighbouring islands for food aid) and the key role they played in local recovery efforts highlights the importance of understanding local communities and facilitating bottom-up recovery efforts that use the existing strengths of communities (a core theme in CREAD's mission; CoD, 2020b).

Building Back Better involves multiple forms of agency exercised simultaneously over the short-, medium- and long-term. While the more personal/everyday forms of agency are focused on coping in the immediate aftermath of the hazard event, no form of agency was exercised in isolation. 'Getting out' and 'getting organised' represent longer-term responses, and 'getting (back) at' represents important context for future design of Building Back Better policies and support. Understanding the interaction between all forms of agency and wellbeing is vital context for resilience. Furthermore, understanding this context in which people exercise their agency, and the trade-offs they may make between wellbeing and resilience, are important to consider for policy aimed at enhancing resilience to hazards. While criticisms of resilience highlight the challenges in answering the question 'resilience of whom and to what?' and how resilience does not always capture social dynamics (e.g., Brown and Westaway, 2011; Cote and Nightingale, 2012; Béné et al., 2014), the approach used here has attempted to highlight this challenge as well as demonstrate how explicitly including an agency lens can offer an entry point to unpacking the diversity in livelihood strategies, decisions and choices taken by individuals, families and communities to recover after a disaster. Understanding this diversity is crucial for understanding resilience, in its fullest sense – taking account of the material aspects of people's lives and livelihoods, as well as the relational or subjective dimensions of wellbeing to improve the design of emergency response and recovery programmes.

5 Conclusion

Hurricane Maria marked a turning point for many people – it was a hugely significant event for individuals, communities, and the nation of Dominica. A focus on macro-level economic recovery

indicators is a critical component to post-disaster recovery, as highlighted in Dominica's extensive Post Recovery Needs Assessment (CoD, 2017) and the expansion of national social protection initiatives which provided additional employment to those in need (Beazley, 2018). However, we demonstrate here that while these efforts may fit with goals for national-level resilience, they have the capacity to undermine individual and community (local) wellbeing and resilience by influencing nuanced responses of agency (Lister, 2004). A key example is the NEP, which met short-term emergency response goals in the provision of a necessary safety net for many hundreds of people after Maria. However, our study exposes how this created disincentives for people to return to previous livelihoods, such as fishing or farming, with subsequent consequences for food security. Such trade-offs between the immediate recovery response had implications for longer-term recovery. The ability to 'Build Back Better' is greatly diminished while people are locked-in to a social protection programme which disincentivises a return to previous livelihoods. Furthermore, a lack of other support, e.g. insurance schemes for fishers to support building back when government compensation programmes are limited either in terms of amount of compensation or what is perceived as unequal or opaque decision-making processes, may have contributed to changing or leaving livelihoods.

The strategies evidenced in this study, including the flexibility of livelihoods shifting between different income earning options, informal transboundary food aid, the employment of multiple response strategies and the vital role of collective community action are important to document. Using agency and wellbeing to understand the motivations and context behind these responses provides insight for recovery processes and the ways in which resilience at different scales plays out. This is crucial for Building Back Better policies that aim to support recovery and promote wellbeing yet involve trade-offs at different levels. While these are not always straightforward to address or reconcile, applying conceptual frameworks that help elucidate these complex social factors is a critical first step.

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Data Availability Statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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