Alternative Entry Points for Adaptation: Examples from Vanuatu

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ABSTRACT: As climate change accelerates, effective adaptation is an urgent and unavoidable priority. Bottom-up approaches such as community-based adaptation have been portrayed as the panacea. Recent studies are, however, highlighting the ongoing and inherent issues with normative ''community'' conceptualizations that assume a geographically bound, temporally fixed, and harmonious unit. Despite documentation on the negative impact these problematic assumptions can have on adaptation outcomes, adaptation at the community scale remains the preferred option for project delivery in highly exposed places such as the Pacific Islands region. More creative entry points that are less charged with problematic assumptions are needed at the local scale. This paper draws from three examples in Vanuatu to offer compelling alternative entry points for adaptation: 1) a rural technical college embedded within an Anglican mission village, 2) a whole-of-island approach, and 3) the ''collective of vendors'' at marketplaces. We offer hope by identifying ways to expand on and complement existing, restricted notions of community and, through this, to improve adaptation outcomes.

KEYWORDS: Social Science; South Pacific Ocean; Adaptation

1. Introduction

Climate change impacts are growing in magnitude and frequency with marked impacts across the globe (IPCC 2014). Effective adaptation is an urgent and unavoidable priority as climate change accelerates and makes it increasingly difficult for vulnerable countries to meet adaptation needs (IPCC 2014). Despite this urgency, adaptation activity in highly exposed regions like the Pacific Islands has made minimal progress toward intended objectives to date (Nunn and Kumar 2019), and there has been uncertainty around whether community capacities to cope in the long term have improved (Hay and Mimura 2013; McNamara 2013). In particular, top-down and state-centric approaches are generally considered ineffective and unpopular, rendering bottom-up, community-based approaches the preferred option for project delivery (Agrawal and Gibson 1999; Boyd et al. 2009). Community-based adaptation (CBA) is often a ''soft'' approach that, in principle, should focus on underlying vulnerabilities and have synergies with development, thereby taking into consideration the social, political, environmental, and economic spheres of communities (Heltberg et al. 2009; Barnett and O'Neill 2010; Buggy and McNamara 2016). CBA is considered to be people-centered, participatory, and grassroots, and it is the associated moral claim of ''working with the people'' that has given rise to a perception that ''it is difficult to do much wrong when involving the community'' (Titz et al. 2018, p. 72).

The portrayal of CBA as a panacea has meant that it can be uncritically implemented, whereby limitations, challenges, and nuances are overlooked (Buggy and McNamara 2016; Ford et al. 2016). One of the key challenges emerging from the growing body of studies assessing CBA effectiveness is the ongoing and inherent problems related to the concept of ''community'' (see, e.g., Yates 2014; Buggy and McNamara 2016; Clissold and McNamara 2019; Westoby et al. 2020; McNamara et al. 2020). Normative conceptualizations of community—as a small, fixed scale based on geography—are wrought with assumptions that can render adaptation ineffective or even maladaptive (Buggy and McNamara 2016; Ford et al. 2016).[1] To improve outcomes, we must move beyond normative conceptions and explore more meaningful and radical entry points for adaptation at the local scale (Mulligan 2015; Titz et al. 2018; Westoby et al. 2020). Alternative entry points are, however, rarely documented, especially for highly exposed regions like the Pacific Ocean area [see the exception in Remling and Veitayaki (2016)] that have many communities at the vanguard of adaptation. This paper explores some compelling alternative entry points for adaptation delivery and improved outcomes for local people in Vanuatu. In this way, we do not necessarily call for abandoning the use of CBA and community scales altogether but rather attempt to offer hope by identifying alternative entry points that can be used to expand on and complement existing notions of community in adaptation work.

A study of this nature is critical to Pacific Island nations as locally grounded responses—using local and traditional capital and knowledge—have been widely encouraged in the region (Warrick et al. 2017; Nalau et al. 2018; Dacks et al. 2019) and tend to be the adaptive preferences of locals (Narayan et al. 2020). Although CBA is often presumed to be a suitable approach in this context, evidence suggests that normative conceptualizations of community have not necessarily lent themselves neatly to effective adaptation practice at the local

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[1] Please note that herein, when we refer to ''community,'' we refer to its normative conceptualization and associated assumptions.

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scale in the Pacific Islands (e.g., see Buggy and McNamara 2016; Clissold and McNamara 2019; Westoby et al. 2020). We, therefore, need contextually appropriate alternative entry points that can be used to expand on and complement the traditional, rigid conceptualization of community that have proved problematic in the past. This requires actively engaging with the local cultural context and its unique complexities and diversities.

2. Literature review

There are a multitude of problematic assumptions around the normative notion of community employed by donors, implementing agencies, and other actors. This is hardly new with sociologists having agonized over the multiple meanings of community for decades (Mulligan 2015). In particular, there is a propensity to limit our construct of community to a small, fixed scale that is geographically circumscribed (Lane and McDonald 2005; Westoby and Dowling 2013). This is partnered with a tendency to romanticize them as unified and harmonious through assuming homogenous social structures (Yates 2014; Titz et al. 2018) or shared norms and common interests (Agrawal and Gibson 1999).

Although normative conceptualizations provide a convenient, readily identifiable bordered space for external actors, this has been considered a weak foundation on which to base policy and deliver programs (Agrawal and Gibson 1999). Such conceptualizations and their associated assumptions detach the community from the inherent sociopolitical context (Westoby and Dowling 2013), mask vested interests and relations of exploitation, and become a "totalizing mechanism" that conceals heterogeneity (Young 1990; Hudson 2012, p. 167). This can be misleading and dangerous because all communities encompass "fault lines" (i.e., preexisting vulnerabilities, divisions, and conflicts) that can worsen in the face of stress to diminish prospects for collaboration, unity and persistence (Mulligan 2015; Mulligan et al. 2016). Other problematic assumptions that emerge under this normative framing of community include "spontaneity instead of mediation, emotions instead of reasoning . . . and stability instead of change" [Young (1990); Wiesenfield (1996) as referenced in Mannarini and Fedi (2009), p. 212]. In sum, the complexity, diversity and multifaceted nature of places and spaces as well as the multiplicity of identity are being sidelined for fast policy that requires rapid and reductionist assessments (Cannon 2008; Titz et al. 2018).

There are some key emerging lessons from community-based research to consider when identifying alternative entry points beyond the small, geographically fixed scale. The first is the urgent need to reframe community as more than just the place where projects are operationalized, but as a site where the sociopolitical context and its multiple actors with multiple interests are understood, worked with and transformed (Agrawal and Gibson 1999; Buggy and McNamara 2016). This helps to ensure that community issues are not built into projects, that maladaptation is avoided, and that project goals and outcomes do not entrench existing inequalities (Buggy and McNamara 2016). This is important in the Pacific context as assumptions of undifferentiated identity and harmony within the community have previously led to elite capture (Buggy and McNamara 2016; Westoby et al. 2020), which hinders adaptation success by occasioning disagreements, strained cooperation, and loss of respect for initiatives (Buggy and McNamara 2016). To adequately integrate local sociopolitical contexts in the Pacific, studies also illustrate how we cannot overlook the role of religion, spirituality, and the church in shaping power relations and collective identity, as these can enable or constrain local agency and motivations to pursue adaptive outcomes (Kuruppu 2009; Clissold and McNamara 2019; Piggott-McKellar et al. 2019; Luetz and Nunn 2020). Differences in gender (Ensor 2016; Clarke et al. 2019), immigrant status, clans, household ancestral access to resources (Warrick et al. 2017), and peripherality (Nunn et al. 2014) can also give rise to heterogeneity in Pacific communities and should be considered in any alternative entry point at the local scale.

Community-based conservation research has taught us that small, territorially fixed communities may be inappropriate managers for resources that are spread over large geographical areas (Agrawal 1999; Agrawal and Gibson 1999; de Beer 2013). Researchers are increasingly championing alternative scales and focuses for community-based adaptation, such as the seascape, ecosystem (Jeans et al. 2014; Reid 2016; Girot et al. 2012) or, in the Pacific context, a whole island (Remling and Veitayaki 2016). These alternative scales remind us that demarcations between social and ecological systems are arbitrary (Berkes and Folke 1998; Berkes et al. 2003). The entry point or system boundaries for adaptation should depend on the problem context and encapsulate a series of interacting and linked elements (i.e., a social–ecological system), including ecosystems, local knowledge, people, and technology and institutions (Berkes and Folke 1998; Berkes et al. 2003). Focusing on larger, complex scales in this way can help transcend community and national boundaries and, through this, reveal negative externalities as well as better account for conflicts between communities (Chishakwe et al. 2012). Bringing together the resources of several communities in this way can also prove more effective in resolving intercommunity conflicts that could otherwise render adaptation untenable (Agrawal and Gibson 1999; Chishakwe et al. 2012). Alternative entry points focused on social–ecological systems may also be particularly relevant for Pacific Islanders whose relationships with nature and place influence behavior (Dacks et al. 2019) and whose livelihoods are significantly dependent upon their surrounding environments (terrestrial and marine) (Nunn et al. 2014).

Several studies also indicate that a focus on effective and legitimate local institutions—based on traditional forms of governance—is critical for activities at the local scale (Chishakwe et al. 2012; Reid 2016; Galappaththi et al. 2019) and can be a concrete entry point for intervention (Agrawal and Gibson 1999). This includes institutions at the community level but also those operating at the ecosystem level and the social or administrative structures in which they lie (Jeans et al. 2014; Galappaththi et al. 2019). Where devolution of authority is "institutionally exclusionary" (i.e., sidelines traditional institutional structures), community-based efforts can be ineffective and disempowering (Chishakwe et al. 2012, p. 56). This

is because capable local institutions are critical for local decision-making, ensuring active community participation (Reid 2016) and mediating as well as facilitating particular actions and outcomes (Gibson 1999; Agrawal and Gibson 1999). An institutional focus is relevant for the Pacific, where indigenous designed and operated institutions and governance systems are prevalent and can help mobilize resources, better use traditional knowledge and inform or support the management of sustainable adaptation (Nalau et al. 2018; Mcleod et al. 2019). Other studies add that it is not just about individual local level institutions but about partnerships and vertical linkages for governance, as higher-level institutions and policies can also shape local-level vulnerability and are critical for securing impact at wider scales (Reid 2016; Maskrey 2011; Galappaththi et al. 2019). Alternative entry points should, therefore, encapsulate local institutions that are conducive to developing constructive relationships between national, regional, and local domains, and between government and civil society (Maskrey 2011; Chishakwe et al. 2012). This is especially the case for Small Island Developing States like those in the Pacific where weak linkages between national adaptation efforts and communities or local governments have been identified as key barriers to reducing climate risks (Kuruppu and Willie 2015; Piggott-McKellar et al. 2019).

Adapting and working with existing local authority structures for adaptation efforts has also been identified as a key contributor to adaptation success at the local scale (McCarthy 2014; Remling and Veitayaki 2016) and should, therefore, be a key feature within any alternative entry point. Strong local leadership is critical for influencing local decision-making, for supporting the dissemination of information and technologies (Sekine et al. 2009), and fostering community participation and ownership over initiatives (Chishakwe et al. 2012; Remling and Veitayaki 2016). Relations of trust are critical here: the community must trust the traditional leadership to represent its interests, while the traditional leadership must trust project implementers (Sekine et al. 2009; Chishakwe et al. 2012; Remling and Veitayaki 2016). Donor and implementing agencies should, however, avoid the shortcut of selecting prominent members as default leaders and trying to mobilize rural people through them as this could, in effect, establish a power relationship that is open to abuse (Esman and Uphoff 1984; Abraham and Platteau 2000). Detailed and extended communication with community members in identifying local agents of change is critical (Platteau 2004).

Titz et al. (2018) indicate that the haziness of community conceptualizations is problematic as it generates difficulties for unpacking and addressing the root causes of vulnerability and livelihood insecurity. This is concerning given that a conceptual strength of CBA lies in its synergy with development and its ''no-regrets'' approach, whereby initiatives look beyond climate risks and seek to improve livelihoods more generally (Heltberg et al. 2009, p. 89; Barnett and O'Neill 2010; McCubbin et al. 2015). Several studies relatedly highlight that steering away from strict adaptation focuses and addressing other nonclimatic, shorter-term livelihood pressures at the local scale are important for motivating communities to approve adaptation actions (Chishakwe et al. 2012; Nunn et al. 2014; Ford et al. 2016; Remling and Veitayaki 2016). Future work at the community scale and within any alternative entry points, therefore, need to be conducive to understanding and addressing the wider problem context and (nonclimatic) root causes of vulnerability. In the Pacific, entry points focused on larger scales to the normative community, such as ''whole of island'' approaches, have previously proved useful for identifying and tackling a range of interrelated challenges (e.g., land and sea based), which ensured that the adaptation activity resonated with locals (Remling and Veitayaki 2016). Multiscalar assessments are also critical here as the root causes of community vulnerability are often shaped by processes that are external to community geographical boundaries (Barrios 2014; Kuruppu and Willie 2015; Reid 2016).

A key difficulty with normative community constructs is the assumption of stability, when in reality, communities and social–ecological systems are unbound and in a constant state of emergence and transformation over time (Berkes and Folke 1998; Barrios 2014; Titz et al. 2018). This dynamism should not be overlooked when identifying and working within alternative entry points in the Pacific context as locals have in the past, and continue to, experience fundamental transitions as a result of a range of external social, cultural, and political pressures (e.g., colonialism, World War II, and waves of donor-funded development assistance) (Kuruppu 2009; Barnett and Campbell 2010; Remling and Veitayaki 2016). Buggy and McNamara (2016) highlight how the influences of Western worldviews and capitalist systems on traditional governance structures and ways of life have given rise to specific social dynamics, tensions, and conflicts within communities that hinder adaptation initiatives. Assessments of context must, therefore, be iterative (Buggy and McNamara 2016) and it is critical that alternative entry points to community are less charged with assumptions of stability (Titz et al. 2018).

Others also argue that the unbound nature of communities means we need to put less emphasis on the creation of boundaries (Delanty 2010) and the sense of ''insiders'' and ''outsiders'' (Mulligan 2015, p. 347). This is especially true in a world where community constructions are becoming more fluid (Lane and McDonald 2005; Mulligan et al. 2016) and can extend to ''virtual,'' spatially extended networks or ''imagined'' communities without contact (Delanty 2010; Mulligan et al. 2016). People today belong to a range of communities that vary in geographic scale and composition, each fulfilling different needs and interests (Mannarini and Fedi 2009; Mulligan et al. 2016) that will also change over time (Agrawal and Gibson 1999). The dynamism of boundaries and its members has been observed in the Pacific by Remling and Veitayaki (2016) who illustrate how the scales and boundaries of their communities of focus grew and expanded during the duration of an adaptation project (i.e., people asked to join the projects and ideas/activities naturally diffused into other villages leading to an expansion of the project to the whole island). This reminds us that the community notion should be reframed as an outcome that can evolve (Oliver-Smith 2005). We should account for dynamisms and fluidity in boundaries and memberships in any alternative entry points to the geographically bounded community.

We must avoid adopting idealized notions of community that are simple, undifferentiated, and unproblematic in the Pacific (Cannon 2008) as this can significantly affect the outcomes of community-based initiatives (Lane and McDonald 2005; Buggy and McNamara 2016). Unique political and social dynamics and contexts must be critically analyzed to give rise to contextually appropriate alternative entry points that go beyond normative community constructs. It is these alternative entry points that we explore in the context of Vanuatu below.

3. Methods

This study utilized a field-based qualitative research approach and involved three core case studies: 1) Lorevuilko village in Espiritu Santo, 2) Pele Island, and 3) central and ring-road marketplaces (Fig. 1). The diverse sites chosen represent various points along a core–periphery gradient: from the capital of Port Vila to villages in Efate and islands off Efate to the more remote Espiritu Santo. The selection of sites was based on the research team's networks in Vanuatu as this was considered the most appropriate way to gain trusted access to communities and all data were collected during November–December 2018.

Focus groups were the primary method used in each of the case study sites to explore the multiple experiences and perceptions of people in relation to local adaptation initiatives. The choice in using focus groups was driven by a need for participants to own the discussion spaces so that richer, more complex, and deeper dialogue could unfold (Leavey 2014; Kamberelis and Dimitriadis 2013). Additionally, focus groups were deemed a culturally sensitive method for our study as the processes of ''collective talk'' and shared dialogue are appropriate for communitarian indigenous cultures (Madriz 2003) like those in the Pacific. The focus groups were generally split according to gender (and at times, age) where possible to help reduce the impact of entrenched power structures (Leavey 2014).

A small number of semistructured interviews and informal conversations were also undertaken with community members in two of the case studies sites (Espiritu Santo and Pele Island). Although not as conducive to extensive collective participant knowledge sharing and exchange, semistructured and informal approaches with individuals and smaller groups are highly beneficial in, and compatible with, the Pacific Islands context (Warrick 2009; Vaioleti 2006).

In Lorevuilko on Espiritu Santo (Fig. 1), the researchers engaged students from the technical college and members of the Anglican mission in focus group discussions, formal interviews, and informal conversations. One focus group was undertaken with local women (n = 15 participants), one with local men (n = 8 participants), and one with students (n = 3 participants). This was coupled with three semistructured interviews with the acting principal of the college, the minister of the Anglican Church, and a key informant who assisted in the implementation of adaptation projects (all men). The total number of participants was 29 (18 women and 11 men). In Piliura and Woreau on Pele Island (Fig. 1), the researchers undertook two focus groups with men (n = 8 participants) and one with women (n = 3 participants), along with two semistructured interviews (one woman and one man) and several informal discussions during the visit. The total participants on Pele Island were 13 (9 men and 4 women).

On both Espiritu Santo and Pele, the same gatekeeper, participant recruitment strategy, and focus group guide were used. The gatekeeper was a key person in the researcher's climate change network in Vanuatu and had been involved in the implementation of adaptation projects in these sites. The gatekeeper was critical for providing introductions, inviting participants to be involved in this study, and providing translations during the focus groups when required. Focus group guides (see Hennink 2014) were used to assist in the flow of discussions. Several key elements were included in the structure: introductions and participant consent, icebreakers to help foster rapport, questions around livelihood threats, experiences of environmental changes/events, adaptation responses (both local and external projects), and questions related to how externally implemented CBA responses performed in terms of appropriateness, effectiveness, equity, impact, and sustainability.

For the study focused on central and ring-road marketplaces, a series of focus groups (n = 10) were conducted in December 2018. This involved 55 market vendors (53 women and 2 men), who were all involved in the United Nations (UN) Women's Markets for Change program. Most participants were women because, in Vanuatu and the Pacific more generally, marketplaces are sites where women are central (Barnett-Naghshineh 2019; Busse and Sharp 2019), with women making up 75%–90% of marketplace operations such as vending (Pacific Islands Forum Secretariat 2013). Participants included those from larger, central marketplaces in Vanuatu such as the Port Vila central marketplace (n = 11), the Port Vila handicraft marketplace (n = 3) and Marobe marketplace (n = 6) (Fig. 1). Some vendors interviewed at these central marketplaces were from islands just north of Efate [Nguna (n = 2)] or even farther north (e.g., Emae, Tongariki, and Epi) but had traveled to sell their products. Participants from ring-road marketplaces included those selling at Paunangisu (n = 4), Epule (n = 5), Epao (n = 6), and Emua (n = 8) on Efate (Fig. 1). The remaining participants were from the Silae Vanua Market Vendor Association (SVMVA) executive team (n = 7) in Efate or vendors from the Luganville marketplace in Espiritu Santo (n = 3) (Fig. 1). A focus group guide was used and included the following elements: brief discussion of participant's backgrounds, history and production of marketplaces, benefits and challenges of marketplaces, and impacts of climate change and disasters on production and livelihoods. Instantaneous translations during the focus groups were provided by a local ni-Vanuatu (''of Vanuatu''; the indigenous people of Vanuatu) research assistant.

All focus groups and interviews were digitally recorded and later transcribed verbatim. From here, latent content analysis was conducted using NVivo. Latent content analysis is an interpretive technique used to code social data for both surface and underlying meanings of discussions, allowing findings to be more than just exact words spoken but also not diverging too

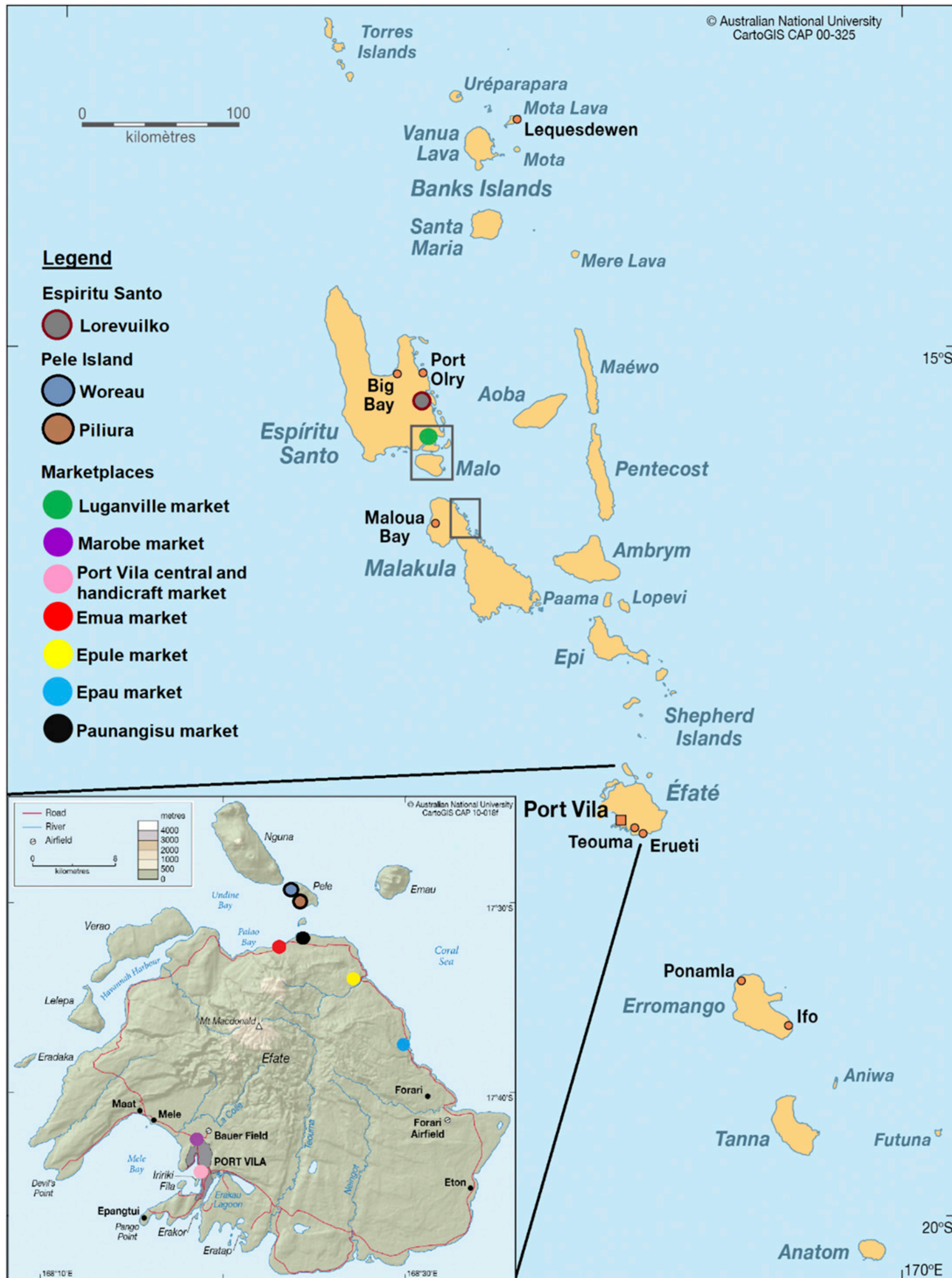

FIG. 1. Map showing Vanuatu and the approximate locations of the study sites. The figure is adapted from Australian National University (2018a,b).

far from original text (Bengtsson 2016). The essence of discussions was ascertained and represented as "themes" that are detailed in this paper. Ethics approval for this project was granted through the University of Queensland Ethics Subcommittee (approval number 2018001985) and a research permit was granted through the Vanuatu Cultural Centre.

4. Alternative entry points to community for adaptation

a. *Technical colleges: Sites for learning, innovation, and dissemination*

Rural training centers in Vanuatu are common, providing vocational skills to ni-Vanuatu in fields including agriculture,

hospitality, and automotive. One of these rural training centers (also known locally as a technical college), in the north of the country, is operated and financed by the Anglican Church and embedded within the Anglican Church mission. The village of families and students within this Anglican mission is composed of approximately 200 members, with the students traveling from across the country to attend the technical college and pay tuition fees. Land, which the mission currently informally leases from the local chief (who is three families strong), will soon be formalized. Life is largely subsistent with food grown predominately for consumption, albeit surplus produce is bound for the local marketplaces. Some village members work on copra or forest plantations or on livestock farms owned by other local villages or corporate entities. As freshwater access is limited and there is no nearby natural running source, water is largely harvested from the roofs of houses, the church, the technical college, and the primary school. During the dry season, when the freshwater runs dry, community members walk 15 km to collect water from other sources: ''I was always trying hard to catch water . . . there is no source of water, all the water is all dried up, we have to walk for the water, far'' (acting principal, 2018).

In 2017, the technical college—embedded within this Anglican mission village—hosted an adaptation project that involved a series of demonstration initiatives largely addressing food and water security. Specifically, the adaptation initiatives focused on 1) the protection of harvested water from pollution and insect-borne diseases through appropriate covering, 2) the establishment of a chicken coop and provision of training in chicken rearing for meat, and 3) the creation of a fish farm demonstration site and the provision of fish farming training. These initiatives, which are discussed in more detail below, were placed within the remit of the technical college, while the ownership of the project rests with the government that is responsible for curriculum accreditation. The success of this project in varying ways demonstrates how technical colleges may be appropriate and effective entry points for adaptation that go beyond normative community conceptualizations.

The goal of the first adaptation initiative was to safely store and secure water near the training college. This involved restoring a well that previously stored rainwater runoff from the church but had since been used for rubbish disposal. Restoration was relatively straightforward with only minimal resources needed for cleaning as well as building the covering and structure to protect the stored water:

> put the cover and net around it—that's the one where people had forgotten about it—they throw stone inside, rubbish . . . it helped us a lot as the well always fill up every time the rain came and it is protected so there's no rubbish in it, so we just use it and no mosquito (acting principal, 2018).

This initiative was simple yet very effective, and a significant portion of its sustained success could be attributed to the unique management through the technical college that had few internal disputes and was only located a few meters away. Staff at the technical college continue to ensure that the storage unit does not revert to being used for waste disposal, and there are regular checks to ensure that the covering does not need repairs.

For the other two initiatives—chicken rearing and fish farming—there were some successes, lessons learned, and exciting prospects to be incorporated into future demonstration sites. For the fish farms, for example, participants had a strong desire to reimplement the initiative and integrate core learnings (e.g., splitting female and male fish to avoid overbreeding and implementing fencing to mitigate theft). Although both initiatives were undertaken as food security initiatives, they also both became a source of income for the college and a useful training and learning exercise. In terms of the latter, it became clear that benefits were being transferred beyond the initial site itself as students took their learned knowledge and skills back to their home villages once they completed their studies. The acting principal indicated how one former student went home to his village and mimicked the fish ponds (using plastic sheeting in a big hole in the ground rather than the cement tanks that were built at the college), thereby providing his own family with a source of income and subsistence. The importance of knowledge and skill transfers in this way was summed by one participant:

> It's good to not just have the agricultural students [with the farming knowledge for example], share some of that knowledge—it should be shared to everyone, regardless of whichever [field they are in] . . . because it's a livelihood, when they go back to their various communities, they can learn, because this is not just for money, it is for subsistence use in their communities, it's a livelihood avenue (Key informant, 2018).

Apart from the automatic mechanism for knowledge and skill transfers beyond those directly involved, another key benefit of using a technical college as a local entry point was the existence of strong and stable governance structures. By utilizing existing structures, project implementers were able to secure effective management over, and ongoing commitment to, the adaptation project. According to a key informant, ''governance at a community level is complex in Vanuatu, many communities have multiple and competing claims as to who is the chief and internal conflict and power dynamics'' (key informant, 2018). This site was chosen because of the community cohesion and lack of internal Kastom—broadly meaning ''custom'' and ''tradition''—disputes. Such a dynamic was possible given the central role of the Anglican mission and the characteristics of participants who are all migrants from other parts of Vanuatu.

b. Whole-of-island approach: Crown-of-thorn starfish eradication initiative

In 2010–11, there was an outbreak of the crown-of-thorns (COT) starfish on important food-producing reefs and associated nearshore ecosystems on Pele Island, Vanuatu. Pele Island, located 7 km off the north coast of Efate Island, covers a land area of 4.3 km^2 and supports a total population of 400 members who are spread across four villages on the island. These villages are well connected through kinship relationships. The ways in which these largely self-sufficient communities maintain their livelihoods include fishing, tourism, small-scale

agriculture, and remittance from family members working in either Port Vila or overseas.

The COT outbreak significantly affected the community's vulnerability by damaging the marine resources on which their livelihoods depend: the ''reef is important for fishing and tourism'' (Woreau village focus group, 2018). In discussions with community members, it became clear that participants were aware of the outbreak but, having never experienced it before, lacked the knowledge for effective management. In 2013, a development partner, who was working in Pele Island on various adaptation initiatives, supported and trained the community members in effective management strategies. This involved training in the collection, appropriate handling (i.e., to not spread eggs), land-based killing, and composting of the COT starfish carcasses.

The initiative outcomes were positive with the successful containment of the outbreak. No further outbreaks have occurred up until the research was conducted in late 2018. A large contributing factor to its successful operation was the various incentivizing strategies (e.g., clean-up competitions involving prizes), as these strategies effectively motivated the local population to participate in the COT management process. Another important factor for the success of the project was its focus on the problem context and its whole-of-island approach, which was perceived as extremely equitable, involving everyone: ''all man, all women, all picinini [children]'' (Piliura village focus group, 2018).

Discussions highlighted the importance of passing down the knowledge on COT management to future generations. When asked about the project's sustainability, one participant highlighted the longevity as an ecosystem-based adaptation approach: ''We think it's great . . . we see the results and know it's our responsibility'' (Woreau village focus group, 2018). When questioned whether the community would need outside support again should the problem reemerge, another community member explained: ''We know our resources are the water, if the coral is dead there is no more fish, so we will collect and prevent, and we know how . . . so the Chief or conservation committee will encourage people to go out and collect starfish'' (Piliura village focus group, 2018). This approach was perceived as highly appropriate, equitable and sustainable, and was praised for having the impact desired by local populations. The success of this project also demonstrates how utilizing the problem context (i.e., an acute environmental problem) and larger scales than the normative community may be credible and effective entry points for adaptation.

c. *Marketplaces: Sites for enhanced adaptive capacity*

Marketplaces and their ''collective of vendors'' may also be effective entry points for adaptation. Typical products sold by these women at the marketplace include fruits, vegetables, nuts, and jam as well as handicraft products such as painted clothing, baskets, fans, and hats. Women vendors spend a large portion of their time participating in activities related to the marketplace, and this includes gardening, preparing products, packaging, transporting, and then selling. Some vendors travel long distances to sell products (i.e., interisland), which can involve sleeping for days or weeks at a time at the marketplace. Cyclones have been a particular threat to the marketplace and its vendors' livelihoods by destroying critical infrastructure and the gardens from which products are derived. There are two main reasons for putting forward marketplaces and their collectives of vendors as effective entry points for adaptation: the first is the extensive social networks among women vendors that result in diverse and multiple positive outcomes, and the second is the well-established governance system that brings voices and collective action to the fore. These key reasons are discussed in more detail below.

Women market vendors work together, and in times of crisis, this is particularly pertinent. The women vendors explained how their social networks extended across islands and how they have been fostered and strengthened by the interactive nature of marketplaces: ''We don't know each other because we are in different villages, but then we come over to the marketplace and then we started to talk together and we start sharing'' (Marobe focus group, 2018). These extensive networks have been a critical resource that can be drawn upon in times of stress (e.g., produce shortages). In the face of Cyclone Pam, for example, social networks acted as safety nets for women when they were temporarily low on stock for various reasons:

> She make orders to other islands, to other women. So family members that are in Palma or Ambrym that have nuts, or Epi . . . they send it over to her and then she resells it and gets her money, but she pays them . . . oh they do exchange with food. They pack them a box of food for that muma and that muma sends things over (Nguna women/central market, 2018).

These social networks are also critical for ensuring equity and inclusiveness in disaster recovery and adaptation as they consistently support those less abled (i.e., widows, disabled women) or those burdened by workloads and peripherality to recover following major events. For example, many women vendors who were badly affected by Cyclone Pam were able to maintain postdisaster income streams as other more-abled women would travel to marketplaces and sell their products for them.

Women's social networks encapsulated within the marketplace scale are also critical for supporting the transfer of knowledge, ideas, and skills beyond one household, community and island. This was demonstrated in the women's sharing of income diversification strategies and skills. As women vendors better recognized the risk of depending on climate-sensitive income streams, some diversified their livelihoods with the support of training provided by external agencies. Diversification activities involved either selling a wider range of products at marketplaces or using savings and loans to springboard into other livelihood activities (e.g., guesthouses, canteens, handicrafts, t-shirt printing, poultry, jam-making, sewing, and weaving). These diversification strategies and skills were shared across women's social networks: ''Having other information from other women, how they're actually earning money, she's doing [it] now [too] . . . she's doing other things to gain money'' (Emua market focus group, 2018). This means that women market vendors are teaching and exposing others in their networks to ways that develop financial resilience, boost adaptive capacity, and prepare for a hopeful future. This local-scale entry point, therefore, has an automatic

mechanism for enhancing the adaptive capacities and resilience of a larger population.

This transfer of knowledge, ideas and skills is further supported by the transient nature of marketplaces. It is common for vendors who travel to marketplaces from afar (e.g., other islands) to implement and further share their acquired knowledge, skills and ideas when they return home: "They are doing printing, painting and all this stuff just for money before they came back to their communities and they do the same thing as well" (SVMVA executive team focus group, 2018). While marketplaces and vendors offer an entry point for adaptation at a local scale, they also act as bridges across multiple communities and households and, by virtue, have a multiplier effect that can heighten the reach of adaptation interventions.

The marketplaces also have a well-established governance system that is conducive to bringing marginal voices to the fore, collective action and strengthening relationships with local authorities. Most market vendors are part of smaller marketplace associations that fall under an umbrella association (SVMVA). The umbrella association functions through a series of monthly general meetings where vendors at different marketplaces across Efate can make specific requests and express concerns to the executive team. The executive team is then responsible for finding avenues to meet needs. This structure is a key strength of this local institution as it ensures that local representatives from numerous marketplaces have equitable representation and a platform to voice concerns. As one participant who travels from a small island north of Efate to sell at central marketplaces stated, "it's an avenue that they can come through to raise concerns . . . They think this is the way forward to address their issues" (Nguna women/central market, 2018). Concerns raised are directly (e.g., table fees) but also indirectly (e.g., road conditions) related to marketplaces.

The marketplace associations have also acted as a foundation from which women can convene and lobby for their rights and needs or voice their concerns to external institutions. For example, following Cyclone Pam, groups of women associated with marketplace associations lobbied against local governments and aid agencies who they perceived as sidelining their priorities and participation in the distribution of aid relief. Through a good relationship with a local chief and local government representatives, the umbrella association has also supported women's abilities to voice concerns to local authorities, pursue sponsors for projects, and negotiate bylaws that give them more rights. The marketplace also enables improved flows of information across scales: "communication and information passes down [from the local government] all the way to the women, so the women are well informed about what's happening at the province level" (Emua market focus group, 2018). These inherent strengths render local marketplaces and the "collective of vendors" effective entry points that would support adaptation projects to have a wider reach and larger impact.

5. Discussion

The three distinct alternative entry points—all of which still occur at a local scale—offer insights and opportunities that may help overcome ongoing and inherent issues with the normative community notion in CBA. Some of these insights and learnings are unique to each case, while others have common threads.

The rural technical college, as an entry point for adaptation, is unique. Focusing on a rural technical college embedded within an Anglican mission allowed the project to overcome common problems associated with assumptions of community harmony. By having an entry point characterized by members of one religious domination, this intervention avoided the problematic and complex local power dynamics that can arise from traditional communities that cut across multiple religions and denominations (see Kuruppu 2009; Clissold and McNamara 2019). This also meant that Kastom disputes—where the complexities of sociopolitical context and local interests becomes a constraining factor (Agrawal and Gibson 1999; Buggy and McNamara 2016)—could be minimized through this entry point. Although the rural technical college is Anglican and within the mission, the core ownership of the project rests with, and is accredited through, the technical authority, which meant that there was also a preexisting overseeing local authority that could keep any internal disputes to a minimum.

Centering these initiatives in the remit of the technical college was also appropriate, effective and sustainable as it ensured that, once project funding has ceased, the project could continue to operate [e.g., pilot demonstration initiatives (chicken rearing and fish farms) could be started again by college staff]. Given the success of chicken rearing and fish farms as demonstration initiatives for training and learning purposes, the college plans to implement the demonstration initiatives again for future student cohorts.

The success of the whole-of-island approach can be found on several levels. The COT management approach was not defined by a traditional community boundary but rather by the social–ecological system in which the problem was situated (Berkes and Folke 1998; Berkes et al. 2003). This alternative entry point allowed for identification and tackling of seascape issues that resonated with islanders in diverse ways (Remling and Veitayaki 2016). Rather than a focus on one territorially fixed and exclusive community, focusing on the social–ecological problem context helped transcend boundaries and ensured that all people with diverse concerns, livelihoods and uses of the ecosystem (e.g., fishing or tourism) were involved and equally benefited. In this way, the project traversed gender and age barriers, which often exist in adaptation projects, to eliminate risks of exclusion and emphasize a shared responsibility. This alternative entry point may be particularly relevant in other rural Pacific Islands where there are complex and critical relationships and dependencies between people, nature, and place (Nunn et al. 2014; Remling and Veitayaki 2016; Dacks et al. 2019). The divergence from small, territorially fixed boundaries was also particularly important in this context as participants later shared that the two participating villages on the island were loosely defined and had fluid boundaries with families and kinship relations spread across both. Alternative entry points such as those focused on larger scales (e.g., socio-ecological systems and whole islands) are, therefore, also appropriate and critical for their conduciveness to the unbound nature

of local populations and their networks/kinship systems in certain contexts.

Another important factor in the COT project was that it was not implemented in response to a problem context concocted by an external entity, where problems and/or solutions are often borne from the implementing agency (Westoby et al. 2020). In this case, local people identified the problem context necessitating a solution. While the COT starfish management program was based on the implementer's technical knowledge, they also successfully used incentives, in the form of short-term, tangible benefits to encourage local people to ''own'' the action (Chishakwe et al. 2012; Nunn et al. 2014; Reid 2016; Remling and Veitayaki 2016). The project was sustainable because local people could see the success of their work, and therefore did not fall into the trap of other adaptation projects that often fail due to lost momentum, finance or maintenance problems (Buggy and McNamara 2016; Westoby et al. 2020).

One common and compelling attribute that binds all three alternatives was the importance of fluid boundaries that are not closed but open to anyone, thereby being less charged by assumptions of stability. The scale and boundaries of these entry points can, unlike the normative concept of community, expand and evolve (Remling and Veitayaki 2016; Oliver-Smith 2005), thereby having a multiplier effect. Both the rural technical college and marketplaces, for example, are transient spaces (e.g., vendors travel from afar to sell and migrant students also graduate and leave) and encapsulate social networks that transcend one household, village or even island. Fluid boundaries support extensive benefit, idea and skill transfers that enhance the adaptive capacity and resilience of a larger population, thereby having a wider impact than normative, fixed community notions. In this way, the marketplace and rural technical college are alternatives that act as demonstration and pilot sites for the introduction of new ideas and practices. From these demonstration sites, the reach of adaptation automatically expands as ideas and knowledge diffuse through social networks into other households, villages, and islands (see also Remling and Veitayaki 2016). This gives rise to a key lesson: implementers should consider ''alternative'' entry points that are fluid, open and conducive to transient members and benefit transfers beyond any strict, fixed geographical boundary. Less focus on ''boundaries'' and which members may be ''insiders'' or ''outsiders'' will, after all, become increasingly important as communities inevitably become more fluid (Mannarini and Fedi 2009; Mulligan et al. 2016). The whole-of-island approach also illustrated the importance of fluid boundaries by focusing on a problem context that was beyond one community; it was a wider social–ecological problem that required an integrated, wider-scale approach.

Another common attribute is that all the alternative entry points are conducive to understanding and addressing non-climatic root causes of vulnerability. All of the projects channeled through alternative entry points considered and addressed other underlying stressors, beyond climate risks, that helped to improve livelihoods more generally (Barnett and O'Neill 2010; McCubbin et al. 2015). The whole-of-island approach was a livelihood protection initiative, while the marketplaces and rural technical college focused on livelihood diversification. By producing tangible, immediate livelihood benefits, these initiatives were well received by local people and provided the appropriate incentives to motivate sustainable adaptation (see Chishakwe et al. 2012; Nunn et al. 2014; Remling and Veitayaki 2016).

Last, all alternatives utilized effective and legitimate local institutions based on traditional forms of governance, which was key to their success (Chishakwe et al. 2012; McCarthy 2014; Reid 2016). The whole-of-island approach based on a social–ecological system utilized the conservation committee and Kastom approaches as traditional governance structures that would ensure momentum and sustainable COT management activities beyond the project lifetimes (i.e., when funding ceases). Understanding and working with existing institutions operating at the ecosystem scale has previously been highlighted as critical for ensuring adaptation initiatives are effective (Jeans et al. 2014). The strong governance structure of the rural technical college was also a concrete local government institution, which increased the likely maintenance of the initiatives. The federated structure of the SVMVA in the marketplaces, with local representatives from other smaller marketplace associations, is another example of local institutional strength that can be used as an entry point for adaptation. This structure effectively helps mobilize resources toward particular outcomes, represents and considers the marginal voices of smaller marketplaces, and provides the capital from which vendors can draw on to fight for their rights. These are all elements of a strong, legitimate institution necessary for sustainable and effective adaptation (Agrawal and Gibson 1999; Nalau et al. 2018; Mcleod et al. 2019). Another related and compelling factor for using existing marketplace institutions as an alternative entry point to the community is their already well-established relationships with local authorities and higher governments (Maskrey 2011; Chishakwe et al. 2012). This has meant that multiscalar factors that are contributing to the local vulnerability of market vendors can be addressed (e.g., by negotiating bylaws for more rights as market vendors) (Reid 2016; Maskrey 2011). By using a local institution as an entry point for adaptation, we can take advantage of, and work with, existing capacities and strengths more effectively, and we are also incentivized to better understand local-level processes rather than make assumptions (Agrawal and Gibson 1999).

6. Conclusions

With community-based initiatives underperforming and criticisms increasingly emerging around the normative notion of community, future CBA initiatives would benefit from considering more creative and alternative entry points for interventions. We explored three alternatives in Vanuatu: adaptation demonstrations embedded into a rural technical college, a whole-of-island approach to COT starfish management, and marketplaces as sites for enhancing adaptive capacity for women vendors. From these cases, we offer compelling and valid entry points that are less charged with problematic assumptions. These alternatives are couched in fluid community boundaries and are not defined by traditional spatial structures based on geography. They are development

focused and support the diversification and/or protection of livelihoods, thereby producing tangible and immediate benefits that can enhance the sustainability of adaptation efforts. They also build on local and legitimate institutions, which are the bedrock for sustainability. While only a start, these alternative entry points offer hope and provide ways that we can expand on and complement restricted notions of community in adaptation, thereby improving adaptation outcomes in the future. We hope to stimulate the exploration of and debate around more spatially and temporally creative alternatives to traditional community-based initiatives in Vanuatu and beyond.

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