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Community-led initiatives for climate adaptation and mitigation

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ABSTRACT

Planning for climate change is complex. There is some uncertainty about how quickly the climate will change and what the anticipated localised effects will be. There are also governance questions, for instance, who has the mandate to make decisions around the management of collective resources (like council infrastructure) and private property. Underlying these questions are issues of justice, equity and agency – who pays for the costs of adaptation and mitigation, and how do decision-makers engage with communities when what is ultimately needed is transformational socio-economic change? We use a case study in Te Awa Kairangi – Lower Hutt, Wellington, to show how a community initiative called *Common Unity Project Aotearoa* (CUPA) is fostering everyday practices of adaptation and mitigation amongst people who have traditionally had limited participation in more formal planning processes. We use the example of CUPA to demonstrate the significance of local community-led development initiatives for adapting to a changing climate. We argue that local government engagement with people around climate change cannot be separated from broader community development and wellbeing initiatives, and needs to be understood as longer term processes, rather than one-off project consultations.

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Introduction

Climate change poses significant challenges to planning for the future. As the New Zealand Parliamentary Commissioner for the Environment (PCE 2014) notes, our warming climate will increase storm surges and extreme weather events (particularly around the coast), increase coastal erosion, affect water tables, and have many other flow on environmental and social effects (see also Royal Society Te Apārangi 2017). Given many towns and cities in Aotearoa New Zealand are located on the coast, there are significant implications from these changes for vital council infrastructure, private property, and communities. A recent estimate, for example, indicates that approximately $19 billion worth of infrastructure is exposed in Aotearoa if a future sea level rise of 1.5 m

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were to occur (PCE 2015). While these kinds of estimates tend to focus on future implications, climatic changes are already being experienced by some communities across Aotearoa New Zealand, prompting a growing demand for action (see for instance PCE 2014; Local Government New Zealand 2016; Radio New Zealand 2019).

Within the wider literature on responses to climate change, two key concepts dominate the discussion – *adaptation* and *mitigation*. We understand adaptation to be the ongoing process of adjusting to the felt and expected changes to the environment, in order to minimise the adverse effects of climate change (Climate Change Adaptation Technical Working Group 2017). Mitigation includes the actions that limit or reduce the effects of human-induced climate change. These actions can range from the individual (such as biking instead of driving a car or growing food in your garden) through to widescale societal and landscape changes such as re-forestation, and moving to low carbon economic activities (Fisher et al. 2007).

In Aotearoa New Zealand, adaptation to climate change has tended to prioritise hard engineering solutions and more linear policy approaches, such as increasing protection via sea walls and large flood control schemes. These adaptations privilege certain kinds of knowledge and have the potential to be maladaptive by giving communities a 'false sense of security', reducing flexibility, and actually exposing communities to greater risk (Lawrence et al. 2015; Royal Society Te Apārangi 2017). Recently though, research has moved to explore more nuanced discussions of the power relations and the diverse practices that can be understood as 'adaptation' (Hayward 2017). For example , Eriksen et al. (2015, p. 524) argue that adaptation should be 'seen as part of the dynamics of societies rather than simply being a technical adjustment to biophysical change by society'. This understanding frames adaptation as an ongoing process shaped by uneven power relations in society, and therefore raises questions of justice and social protection (Ribot 2014; Eriksen et al. 2015; Blake et al. 2017).

To reduce the chances of climate change adaptation being harmful, a number of authors have suggested that improved engagement with communities is needed (see for instance Bulkeley et al. 2013; Naess 2013; Holland 2017). These authors critique 'top down' approaches to adaptation that impose government policy or engineering solutions on local communities because they can ignore the specificities of place, use impractical technologies, involve little to no consultation, and create resistance in local communities. To address these issues, various authors advocate for a more 'bottom up' approach to adaptation that comes from communities (van Aalst et al. 2008; Rouse and Blackett 2011; PCE 2015; Bell et al. 2017). Potential benefits of this 'bottom up' approach can include: consideration of a wider range of options for adaptation, reducing the risk of policy implementation failure, increased on-the-ground understanding of the impacts of climate change, and increased trust between local government and communities. However, while many local government decision-makers might aspire to engage with communities using 'bottom-up' approaches, they face difficult questions about who to engage with, on what issues and terms, and how to support community initiatives in resource-constrained contexts.

In what follows we briefly summarise how local government in Aotearoa New Zealand has responded to the planning and engagement challenges posed by climate change. We then draw on research with a community initiative in Te Awa Kairangi – Lower Hutt called Common Unity Project Aotearoa (CUPA) to show how climate adaptation and mitigation are being fostered through more localised inclusive and everyday practices.

Engagement practices for climate change adaptation in Aotearoa

In Aotearoa New Zealand, local councils are obliged under various pieces of legislation (including the Resource Management Act 1991 and Local Government Act 2002) to plan and prepare for the impacts of climate change (PCE, 2014). While councils are legally required to do this work, it has been fraught, and in recent years local governments have called for more direction from central government (Radio New Zealand 2014). Since 2008 the Ministry for the Environment has issued a range of manuals and guidance for local government (see for instance Ministry for the Environment 2018). While this guidance has provided projections of the expected physical impacts of climate change, models for implementing risk-based approaches to planning, adaptive planning, and how to undertake community engagement, there is still a sense that more is needed. For instance, a recent survey of local government staff found that they want further direction from central government on the projected implications of climate change, so they can get on with taking adaptive actions rather than 'debating' the problem within their local communities (see Barth et al. forthcoming).

Where councils have taken action, most have used existing planning tools and legislative frameworks (primarily under the RMA 1991 and LGA 2002) to encourage climate change adaptation mainly in relation to coastal or lowland areas (see for instance Hanna et al. 2017). These tools often focus on communicating and better managing the risks associated with climate change on privately owned land and public/council owned land.[1] Some councils have gone as far as initiating managed retreat (see Radio New Zealand 2018), others have adjusted district plan designations,[2] while others have started dynamic adaptive pathways planning (see for instance Hawkes Bay Regional Council 2016; Lawrence et al. 2019). Most of the emphasis to date has therefore been on improving the planning policies and rules for adaptation, rather than mitigation.

The key ways councils have generally engaged communities around climate change in Aotearoa include: public meetings; stakeholder forums/advisory groups; submissions and comments on district/regional plans; community workshops; and specific tailored events (Barth et al. forthcoming). While there are exceptions (such as Hawkes Bay Regional Council 2016), these engagement methods tend to be one-off events, and often do not adequately connect with young people, those from lower socioeconomic backgrounds, or Pasifika and Māori communities. Respondents to Barth et al.'s (forthcoming) survey described how meaningful community engagement takes time and resources that many local councils just don't have. The inherent difficulties associated with engaging on climate change were also noted, including; the long-time scales involved, lack of interest and understanding from some communities, extreme or negative responses (particularly from climate change deniers), and the challenges of taking climate action while acknowledging the scientific uncertainty about localised effects. These difficulties are often compounded by complex internal dynamics within councils, which tend to be risk-averse organisations, and shaped by the electoral cycle and elected representatives' appeals to certain parts of their communities.

Work within community development and critical geography on climate change has drawn attention to these very issues – specifically uneven power relations, querying whose voices and knowledge is included and excluded, how conflict plays out, and whose visions of 'development' get prioritised (DeFilippise et al. 2007). Much of this

more critical work has argued that climate change is likely to exacerbate existing socio-economic inequalities, and that what is ultimately needed is transformative mitigation *and* adaptation (like de-growth and transition to a low carbon economy) that goes well beyond the tinkering adaptive engineering solutions like seawalls or flood protection banks (Wise et al. 2014; Manning et al. 2015; Pelling et al. 2015). Consequently scholars like Hayward (2017), Lawrence et al. (2015) and Rouse et al. (2017) argue that the existing council planning tools and engagement practices are not adequate for climate change, particularly given the transformative societal changes needed for meaningful adaptation and mitigation. Instead some authors argue that the best way to approach climate adaptation and mitigation is through local community-led development strategies that connect practices to livelihood concerns, including poverty alleviation (see for instance Eriksen and O'Brien 2007; Eriksen and Brown 2011). In what follows we contribute to this body of work to show how a community initiative called Common Unity Project Aotearoa (CUPA) enables people to engage with climate adaptation and mitigation in simple and everyday ways that promote holistic and collective wellbeing.

This article draws on empirical data that is part of a larger project titled *Climate adaptation, vulnerability and community well-being*. The empirical material is drawn from qualitative research undertaken by one of the authors. The research was approved by the Victoria University of Wellington Human Ethics Committee. Eight semi-structured interviews were undertaken with the founders and participants of CUPA, as well as three months of ethnography that involved volunteering for CUPA for between three and five days a week. The research methods were grounded in an activist scholar approach (Rocheleau 2008; Cameron and Hicks 2014; Derickson and Routledge 2015) that sought to amplify the work and ethos of CUPA. The interview participants varied in their level of involvement at CUPA. Some were paid staff, while others were regular volunteers. All interviewees were residents of Lower Hutt – Te Awa Kairangi and had either lived there for many years or grew up in the area. The interviews occurred onsite at CUPA and went for approximately one hour. The interviews were semi-structured and explored how CUPA impacts participants' lives and the wider community, their understandings of resilience, adaptation, mitigation and sustainability, and their perceptions of local government's engagement with their community. All interviews were transcribed and analysed using thematic coding.

Yin (1981) notes that case studies are particularly useful for exploring phenomena in real world contexts, and single case studies can provide important insights into wider social systems and processes. CUPA was chosen as a case study both because of the innovative work it is doing in community-led sustainability, and because it is predicted that Te Awa Kairangi – Lower Hutt will be significantly affected by climate change. Te Awa Kairangi – Lower Hutt is particularly susceptible to storm surges, coastal flooding and erosion, and freshwater flood events due to the river plain geography of the area. These kinds of events are already affecting, and predicted to further affect public transport, key council infrastructure and privately owned land, assets and community relations (see for instance Boyack 2018). The case study of CUPA and wider location therefore provides an important example of a community who are already facing the effects of climate change and attempting to respond and provides a potentially instructive example of what other communities around Aotearoa New Zealand may face in the near future.

Common Unity Project Aotearoa (CUPA)

CUPA is a registered charitable trust based in Te Awa Kairangi – Lower Hutt which began in 2012. The project started by converting a disused soccer field at Epuni Primary School into a garden that grew enough food to help feed the school children three times a week. From there it has grown to include a range of social enterprises, including; growing food on micro-farms; making meals for purchase to support meals for school children; a koha café; repurposing and reselling bikes at affordable cost; collective sewing from repurposed donated fabrics; a waste-free affordable grocery collective; and a beekeeping and honey collective. Each of these enterprises is led by key staff members or facilitators. CUPA also partners with people in the justice system, who are either currently in prison or serving probationary and community services. These participants may for instance, do their community service time by working on one of the micro-farms, or undertaking general maintenance and building work around The ReMakery (the building that houses CUPA).

CUPA focuses on developing people's practical skills and knowledge through community-based education, to improve people's wellbeing through supporting social and material needs, and improving peoples' sense of agency. A key value underlying the social enterprises is that they are done by the community *for* the community. The majority of resources (including human labour and raw materials) come from the surrounding community and all of the outputs are directed back into the surrounding community. CUPA's mission is 'to ensure Every Child has a Village. We believe that in order to achieve this, we need a collective response to meeting the needs of our children and developing our own resilient solution within our community' (CUPA n.d.).

CUPA does not describe itself as an activist group or publicly align with any specific political or special interest groups. Rather, it functions as a kind of networked community with staff and board members who invest time and energy in building and maintaining formal and informal partnerships with a wide range of other organisations and institutions, including government agencies. The project is funded through a range of philanthropic and community grants (including the Hutt City Council and Ministry for the Environment), as well as corporate donations. Individual people can also participate in CUPA by donating goods and resources or by purchasing products from the various enterprises. This kind of networked, community approach appeared to be important in attracting people to the ReMakery, some of whom described themselves as distrustful or disengaged from local and national electoral politics. While CUPA's mission is not primarily narrated as being about environmental concerns (like climate change), most of the social enterprises promote practices that enable people to live more sustainably and reduce their carbon footprints, while also building collective resilience. In what follows we outline two key themes that emerged through the research to illustrate how 'bottom-up' community initiatives like CUPA have engaged people in climate change adaptation and mitigation practices in accessible ways.

Learning together without being an expert

> We invite our parents and wider community to come to school each day and learn, share and educate one another. In turn, this has become a collective response to meeting the needs of our children and developing our own resilient solution within our community. (CUPA n.d.)

As the quote illustrates, CUPA prioritises collective learning through experiential participation that includes multiple generations. For example, on any given day at The ReMakery there may be a family bringing in its newborn, a group of teenagers coming by for community service work, or one of the regular elders dropping off knitting or helping with the odd fix-it job. The different social enterprises appeal to different ages and offer various ways to participate. This intergenerational aspect also helps to foster an acceptance of different physical abilities and skill levels and promotes the transfer of ecological-social knowledge across generations – focusing on reclaiming skills that have been lost, particularly around growing food. For example, Rose, an adult CUPA participant, began her explanation of how CUPA strengthens the wider community by saying:

> I think like, with Epuni school, the children learning about growing veggies because I grew up in an era where having a veggie garden was normal and mum doing preserves and freezing for winter, it was normal part of life. And so for children to learn those skills again is really good because they will learn that they don't have to rely on the supermarket for food and that there is enjoyment of being outside and growing. (Interview, 28 September 2018)

Emily, a younger CUPA participant reiterates Rose's comments, suggesting that knowing how to grow food is going to become increasingly important for people of her generation:

> So I think with climate change occurring … you'll need to learn how to mainly produce your own food, which I think builds loads of resilience. Because especially with this organisation … people are learning to do skills that back in the day, most people would have known. But you know, no offence to modern society and younger people, we don't know how to garden. (Interview, 13 October 2018)

While food security has not historically been prioritised within planning discourses in Aotearoa as an important climate adaptation practice, as Birkman (2006), Chan et al. (2015), and the IPCC (2014) note, increasing food security is a vital part of fostering urban resilience to climate change. This emphasis on growing food was described by many CUPA participants as important because it helped to shift their sense of agency from just being passive consumers who buy their food from shops, to becoming active producers of food. The food growing practices also help to connect people across social difference. For instance, seedlings are planted by men at Rimutaka Prison in repurposed takeaway coffee cups and then moved to mature at the micro-farm as part of the Urban Kai project. CUPA's Urban Kai project has significantly improved local community food security, serving food six days a week at more affordable prices that fund 'support' meals for children at Epuni Primary School.[3]

The way learning and teaching takes place at CUPA is done through hands-on learning that focuses on everyday skills that connect to people's livelihoods. For example, the social enterprise coordinators teach participants how to sew and mend their own clothes, fix their bikes, grow their own food, shop plastic-free, make beeswax wraps, preserve jams and make skincare products. This relatively informal approach to learning is not premised on, or constrained by, 'expert knowledge' but rather fosters and values more everyday knowledge. One CUPA participant, who recently arrived in New Zealand, described the personal significance of this approach in the following way:

> This is why the ReMakery is really good for finding new skills or experience. For somebody like for me too … I think I'm introvert but in here I am able to be more open and talk more. Before I was really shy, I wanted to say something but I was worried people wouldn't be able

> to understand what I say. But because of here, volunteering here, I meet different people and it teaches me and I learn a lot and I can improve … . so many different things. (Interview, 27 September 2018)

Many CUPA participants noted how the approach to teaching and learning was important as it meant they could bring their skills and knowledge that often wasn't valued in other spaces (such as waged work) and felt like they had something to contribute and gain in return. These findings reflect work by Berkes (2017), Barthel et al. (2013), Chan et al. (2015), and Pelling et al. (2015) about the importance of learning through doing. This approach helps to foster a sense of agency in the face of uncertainty as agency is shared across a group or community, and of the importance of *trying* is emphasised, rather than having to already know something before you can start. Learning by doing also fosters conversations that may lead to collaborative problem-solving.

Learning by doing was illustrated at CUPA as author (Katy), regularly observed people trying something new or working to develop a skill. She often overheard variations of 'I'm not sure how to do this' and encouragement from others to try anyway. As Bahadur et al. (2013) and the IPCC (2014) note, the ability for people to learn is key for adapting to, and mitigating the effects of climate change. Berkes (2017) argues that a focus on learning enables experimentation, trust building and co-production of knowledge for adaptation. Our research illustrates that CUPA is an important site of community initiated intergenerational learning that accommodates people's different ages, styles, skills and needs to prompt adaptation and mitigation practices.

Making adaptation accessible

While CUPA does not describe its mission and social enterprises in terms of climate adaptation or mitigation, the concept of 'sustainability' is important. By approaching sustainability as a learning process, which welcomes mistakes and provides social support, participants are able to engage with more sustainable livelihood practices from different starting points. CUPA's emphasis on sustainability is normalised through everyday practices. For example, there is a visible absence of both plastic and rubbish bins at The ReMakery. Apart from the two 'bin bags' sewn from repurposed vinyl billboards in the toilet facilities, there are no rubbish bins in any of the common spaces. Nor is there any plastic wrapping or single-use plastic visible. Waste is framed as something to be reduced and redirected from the landfill. Similarly, the goods sold at the Common Grocer and through other enterprises of CUPA help people reduce their waste and in the process, their carbon footprint.

Importantly, this focus on reducing consumption and waste is not premised on shaming, isolating, or requiring participants to 'ethically consume' (which usually involves spending money). Rather, in interviews and ethnographic work, CUPA participants described how learning to live more sustainably was essentially about getting back to basics and reclaiming lost knowledge. For example, Rose stated:

> Like with using people's back yards for veggies, the farms, and with sewing, and knitting. They all went out of fashion but now they're coming back in again. And again, that's the thing with technology, it's made life so much easier on one level, but losing the skills on another level. I think The Remakery is somewhere you can go back to basics if you choose to. (Interview, 28 September 2018)

CUPA participants described how learning how to sew, garden and knit had helped them to re-think their personal consumption and had enabled them to live more sustainably by reducing how much they consume. People connected these skills and practices, built through community, to their ability to respond to climate change. For example, Emily states:

> I think it gives you opportunities to learn skills as well, like the section where they do Sew Good … you could learn how to fix your own clothes. You could learn how to repurpose fabrics, which over time we can't constantly be consuming stuff because unfortunately, a) it's ruined our planet and b) you know, the whole climate change thing, you're just using lots of energy to produce things that you're going to throw away. Why not repurpose things you've already thrown away? (Interview, 13 October 2018)

Interviews and ethnographic work indicate that most CUPA participants found that learning how to live more sustainably was a positive, empowering, and often joy-filled experience. Participants described learning how to reduce consumption and waste at their own pace empowered them to learn and try other things.

While not dramatic, these kinds of everyday changes can be understood as climate change adaptation and mitigation practices that actually re-shape social and economic relations within communities. For as Pelling (2011) argues, transformative adaptation actually requires addressing the root causes of vulnerability, which include unsustainable consumption and production, and economic inequality. Our findings suggest that this sense of confidence and empowerment is closely connected to the collective support and feelings of social acceptance at CUPA that celebrates communal creativity and making. CUPA's emphasis on fostering social connections through everyday practices creates opportunities for people to participate in change who might not otherwise consider themselves 'political', or able to afford 'ethical consumption' or other middle-class forms of environmental action. The focus on creativity and making in joy-filled ways also appeared significant in attracting participants who may be experiencing fatigue, isolation or on-going trauma in other aspects of their lives. For instance, author (Katy), interacted with and observed many people who began participating at CUPA during a transitionary period in their lives and/or as a part of a healing or recovery process following ill-health or the breakdown of previously supportive relationships. These findings illustrate the importance of considering the emotional aspects of adaptation and mitigation practices in terms of *who* gets to participate in mitigation and adaptation practices at the community level.

Implications and conclusion

Shi et al. (2016) argue that a key part of equitable planning for the future around climate change includes considering pre-existing socio-economic inequalities to enable a wider range of people to participate. As noted earlier, this is challenging for local government, because they are effectively being asked to engage communities in a process that involves transformational societal change, riven with existing unequal power relations, as well as climate and socio-economic uncertainty. Our work with CUPA illustrates how community initiated, 'bottom-up' projects can effectively engage people in everyday transformational changes focused around meeting material needs like food, clothing and transport. While CUPA does not call its projects 'climate change adaptation and mitigation', most

of the social enterprises are designed to increase sustainability and practically illustrate aspects of both mitigation and adaptation. Importantly CUPA's projects also improve the collective resilience and knowledge of people who may not have traditionally responded to, or been excluded from, local government engagement processes, particularly around climate change. CUPA therefore illustrates how learning for climate change adaptation and mitigation cannot be separated from broader community development initiatives.

This research highlights two points local government practitioners and decision-makers could draw on for fostering climate adaptation and mitigation practices. Firstly, climate adaptation and mitigation encompasses more than infrastructure and 'hard' engineering solutions or one-off consultation exercises. As Eriksen et al. (2011, p. 17) argue, climate change responses are only sustainable if they go beyond 'one-time climate proofing measures'. Learning for adaptation is essentially a social process and will therefore need insights from education experts and community development practitioners, many of whom are more comfortable operating in a space of 'not-knowing' and not needing 'to have all the answers' before initiating a conversation. This sort of orientation is vitally important as councils and scientists struggle to communicate scientific consensus that climate change is happening, while acknowledging the uncertainty about what exactly this will look like in different places over time. We therefore suggest that local government planners, policy-makers and engineers look to and include community development practitioners, social service providers, health care workers and education specialists when developing engagement strategies or forming climate advisory groups. This is important if local government practitioners and decision-makers want to understand the community development initiatives already occurring within their jurisdictions.

Secondly, conventional planning engagement practices are generally based on individualised reading and writing, which is often required by New Zealand law as part of regulatory process. However, this kind of engagement and consultation can exclude, individualise and turn off many people. This might include for instance, incarcerated people and youth who are not eligible to vote or have limited literacy, or people from collectivist or oral cultures (such as Māori and Pasifika). As Baird et al. (2014) note, governance mechanisms are needed that link the potential for social learning with collaboration that enhances adaptive capacity. Notwithstanding a few exceptions, what we have seen to date in Aotearoa New Zealand with conventional planning approaches to climate change is that they tend to shut down social learning, are primarily based on individualised responses to engagement/consultation, and can result in adversarial and expensive litigation.

While local government is somewhat bound by legislative requirements around 'consultation' in relation to planning, our findings from CUPA suggest that social learning for transformative adaptation and mitigation can be effectively done through everyday activities that focus on collective practices that foster connection and joy (ie. not writing a submission). CUPA provides a useful example of how a community initiative includes a wide range of ages in this social learning to foster a greater sense of intergenerational connection that prompts people to consider longer time frames, which is essential for approaching climate change adaptation and mitigation. CUPA also usefully illustrates how learning for climate adaptation can be done in a collective way that helps shifts people away from the individualising discourses of private property and individual rights. While

property rights are an important consideration, planning consultation tends to be captured by landowners, excluding large numbers of a community, especially renters and young people (see Ellis 2018). As CUPA illustrates, engaging people about a changing climate need not rest on a shared concern around property rights. Instead, climate change engagement can coalesce around many other shared concerns, provide opportunities for sharing and learning, and may be enjoyable rather than adversarial and costly.

Notes

1. Examples include land zonings, minimum floor levels for buildings, restricting new developments, hazard identification and management plans, and large scale engineering projects such as stopbanks or flood control schemes.
2. A particularly well known example was in 2012 when the Kāpiti Coast District Council re-zoned 1,800 homes in a 'coastal hazard zone' (PCE 2014). These designations were vocally criticised by some who claimed it devalued their property and increased their insurance. The re-zoning was appealed by local property owners to the Environment Court and High Court. While the High Court ultimately dismissed the appeal (see Iorns Magallanes et al. 2018), the example highlighted the risks of costly litigation and the ability of wealthy groups to influence and shape planning processes (Innes and Booher, 2004; Barnes et al. 2007).
3. The project is based on the social enterprise model whereby consumers buy their meal, which then funds one meal for someone else.

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