Climate Change Vulnerability and Adaptation: Voices from the Community Services Sector in Victoria

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Abstract: Cities around Australia are increasingly affected by the impacts of climate variability and climate change, such as heatwaves, flooding, bushfires and other climate change related trends and events. While it is widely discussed in the academic literature that climate change will exacerbate existing social and economic disadvantage of urban populations, evidence of such processes in Australia is still scarce. In this paper we present findings of a current research project conducted in Victoria that explored the notion of climate change vulnerability through the prism of community sector organisations. As part of the qualitative research, different types of community service and primary health care organisations were studied to ascertain the extent to which organisations and their clients perceived to be affected by climate change impacts; if and how they were learning to respond to such impacts; and if they had made progress to proactive climate change adaptation planning in the face of future climate change. Drawing on primary interview data, we provide an account of how community service organisations perceived climate change impacts, vulnerability and adaptation. Their views suggest that many organisations consider climate change impacts to be significant to their organisation and their clients, yet only few manage to make progress with adaptation. Factors that influence an organisation's capacity to adapt to climate change are often contextual and include the recent experience of extreme weather events, charismatic leadership and personal commitment, as well as drawing on strong partnerships and networks. The findings suggest that community-based organisations have a crucial role to play in adaptation as climate change impacts become more frequent and more intense, affecting increasingly large urban populations across Australia.

1. Introduction

In this paper, we examine some of the more obscure linkages between climate change impacts and their effects on the critical social infrastructure that subgroups of the urban populations in Australia rely on for their daily living. We discuss findings from ongoing qualitative social research conducted in Victoria[1], which investigates how primary health and community service organisations are impacted by climate change; how these impacts challenge existing health and well-being services provided to socially or economically marginalised and underprivileged people; and to what extent the organisations providing services are able to proactively plan for climate change through adaptation.

Plenty of evidence exists that climate change is increasingly affecting cities and urban populations, in Australia and elsewhere (Hunt & Watkiss, 2010; Satterthwaite, Huq, Reid, Pelling, & Romero Lankao, 2009). As climate variability increases and as the climate that cities have been built for is undergoing rapid change, governments, researchers and corporations around the globe have begun a process of gaining a better understanding of changing and newly emerging climatic risks and plan for the future impacts of climate change (Bassett & Shandas, 2010; Measham et al., 2011; Wheeler, 2008). In Australia, local governments are seen to be leading the charge. Over the past decade, the majority of urban and suburban local governments in Australia have put effort into climate change adaptation, typically with a focus on reducing negative impacts on the urban built environment and avoiding injury or harm to people living in, working in, and visiting the city.

It is not surprising that much of climate change adaptation at the city scale has been driven by local governments. They provide regulatory frameworks at the local scale as well as a raft of important services to local communities. However, while local government has an important role to play in identifying and realising local response to climate change, it is not the only entity with such agency. Many community functions are delivered by individuals and non-governmental entities, such as private businesses, community-based organisations and agencies funded by governments to deliver specific services. With regard to how climate change impacts manifest at the community scale, much less is known, for example, about to what extent community based organisations and individual householders are able to engage in climate change adaptation.

In the following we discuss the impacts of climate change on government-funded community service organisations (CSOs) and their clients and investigate the capacity of the community services sector to adapt to climate change. We contextualise the findings from our research within a discussion on the criticality of these organisations in supporting and maintaining the social infrastructure of cities during extreme weather events and slow-onset trends associated with climate change. Our findings support the view that critical social infrastructure, provided predominantly to serve underprivileged parts of the urban population, is at risk from increasingly frequent and severe climate change impacts. We argue for a concerted effort to support these organisations in planning for the short and long-term impacts of climate change through systematic and tailored climate change adaptation processes, to make cities and their most vulnerable segments more resilient to climate change.

2. Methodology

The arguments presented in this paper draw on findings of a 15-month qualitative social research project, called 'Implementing tools to increase adaptive capacity in the community and natural resource management sectors'. The ongoing project explores if and to what extent government funded agencies and service providers (i.e. in this case community service organisations (CSOs), primary care partnerships (PCPs) and catchment management authorities (CMAs)) are affected by climate change impacts, and how prepared they are for future climate change impacts through planned

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[1] The research project is called „Implementing tools to increase adaptive capacity in the community and natural resource management sectors". It is funded by the Victorian State Government through the Victorian Centre for Climate Change Adaptation Research (VCCCAR). This paper draws on findings from the primary health and community sector part of the research only.

adaptation. For this paper, we have chosen to adopt a primary health and community sector focus and have therefore ignored any findings related to CMAs for the purposes of this discussion.

In Victoria, over 600 CSOs are registered with the Victorian Department of Human Services (DHS) to deliver services to disabled people and to families and youth in need of support (Victorian Government, 2013). The DHS funds these organisations to deliver specialised and non-specialised services under the provisions of the Victorian Disability Act 2006 and the Children, Youth and Families Act 2005. This includes out-of-home care services, disability services, community-based child and family services, housing and other types of support for disadvantaged people. In addition, through the Department of Health, the Victorian Government funds 30 PCPs to improve access to services and continuity of care for people through improved service coordination, as well as chronic disease prevention, integrated health promotion, and partnership development. The overall aim of each PCP is to improve the health and well-being of the population through better co-ordination of health service planning and service delivery. PCPs are made up of a diverse range of member agencies, including organisations that fall within the CSO spectrum[2].

As part of the abovementioned project, we interviewed 54 staff members from CSOs and PCPs in Victoria, to gain an understanding of their organisations' experiences with climate variability and change and the perceived risk to these organisations and their clients in light of current and future climatic changes. The semi-structured interviews were inspired by social learning approaches and supported by tools for social inquiry developed as part of soft systems methodology (Checkland & Scholes, 1990; Checkland, 2000). Interviewees were asked to draw a 'rich picture' of their current situation within the sector, which shed light on their perceptions and experiences of climate change impacts affecting their organisation and its ability to engage in planned adaptation. The drawings formed the starting point and basis for the subsequent semi-structured interview. The interview phase was preceded by a stakeholder workshop, held in September 2012, involving over 40 participants from across the primary health, community and natural resource management sectors in Victoria, where the physical and social impacts of climate change were discussed in the context of their implications for the community services sector.

Interviewed organisations covered the entire spectrum of primary health and community service organisations, from disability service providers to family care organisations and women's health organisations. Staff from PCPs were interviewed to gain a better understanding of their current and potential coordinating role on climate change adaptation across a wide range of community service organisations. Organisations were selected for participation in the study using a non-randomised approach. All PCPs and CSOs listed in two databases were contacted and invited to participate in the study. Due to the large number of CSOs in the database, selection criteria (geographical location, type of services provided, and size of organisation) were applied to achieve as balanced, non-randomised a sample as possible. In almost all instances, the invitation to participate in the research was sent to a person within the organisation with formal responsibilities for climate change and environmental issues, or to someone with an interest in these areas. This is important to note as a limitation of the study. A large number of climate change champions and leaders within their organisations were interviewed, whereas only few interviewees considered themselves unaware of climate change issues. Interviews were conducted in rural and urban areas. The selected findings discussed here apply in particular to urban populations in the Greater Melbourne metropolitan area.

The empirical research was supported by a systematic review of peer-reviewed and grey literature on the topic of climate change impacts and adaptation and community well-being and an institutional analysis of climate change adaptation in the community services sector, with a focus on the Victorian institutional context.

3. The social consequences of climate change impacts on urban populations

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[2] There is significant overlap between CSOs and PCPs, because many organisations that fall under the definition of CSOs above are member agencies of PCPs.

Despite climate change adaptation being a fairly recent field of research, the impacts of climate change on the human health and wellbeing of urban populations are increasingly well documented and discussed in the academic literature. According to an estimate by the World Health Organization, over 150,000 people die annually due to the effects of anthropogenic climate change (Patz, Campbell-Lendrum, Holloway, & Foley, 2005). It is not surprising that some scholars consider climate change 'the biggest global health threat of the 21st century' (Costello et al. 2009: p.1693). Apart from directly changing global patterns of disease and mortality, climate change can be expected to affect human health and the way communities function in a range of ways, including by exacerbating food insecurity, making access to clean water and good sanitation more difficult.

Despite this growing awareness, many experts call for further research to better contextualise climate change impacts and adaptation within specific geographic and institutional contexts of place and to better link climate change impacts to existing fields of research, policy and practice, such as urban and environmental planning and social policy. The pervasive and interdependent nature of climate change impacts and adaptation compounds existing urban challenges in an already complex planning and policy arena. In the face of climate change, the social, economic and environmental challenges that are at the core of the primary health and community sector's efforts in urban areas, such as urban poverty, inequality and providing highly specialised services require more adaptive planning and management responses. In the context urban planning and development, it cannot be overemphasised that climate change is not only a physical or environmental phenomenon; but rather a deeply social one, with regard to its impacts on individual and society at large, its public perception, and the range of possible human responses (Adger, 2003; Hulme, 2009; Pelling, High, Dearing, & Smith, 2007; Reser & Swim, 2011). Due to a unique structural and geographic exposure to some climate change impacts, combined with factors relating to the change nature of urban settlements, such as population density, rapid urban growth, existing inequalities, cities at the coalface of climate change adaptation, in Australia and elsewhere.

Primary and secondary impacts of climate change on human health

In south-eastern Australia, the health of rapidly growing urban populations is at direct risk of climate change mainly from extreme weather events, in particular heatwaves, flooding and flash flooding, and bushfires (Ebi, Kovats, & Menne, 2006; Hughes & McMichael, 2011). Some of the most commonly reported human health effects include heat stress and heat exhaustion, respiratory illnesses due to poor air quality during bushfire events, and actual physical injury or death as a consequence of bushfires, flash floods and extreme storms (ibid.).

Less evidence exists regarding the more insidious, secondary impacts of climate change, especially impacts on individual mental health and well-being and their social ramifications on cities and their communities. In the published literature, the likely mental health effects of climate change are not as well established as the physical health impacts discussed above (Fritze, Blashki, Burke, & Wiseman, 2008). This may be attributed to many mental health effects being only indirectly linked to climate change (Horton, 2007), to the often delayed nature of such impacts (Berry, Bowen, & Kjellstrom, 2010), and to comparatively limited and inadequate resources made available for mental health services and research in Australia and in general (Horton, 2007; Jorm, Griffiths, Christensen, & Medway, 2002; Spickett, Brown, & Katscherian, 2008). Understanding the secondary impacts of climate change on urban populations is vital for planning better cities that reduce, rather than exacerbate, mental health and other secondary effects of climate change.

Health and community services: tertiary impacts

Most of the research on primary and secondary effects of climate change on human health focuses on the individual level. However, urban communities as collectives of individuals and as places of identity are already impacted by climate change events and trends in many indirect ways, from disruptions to vital infrastructure (in particular energy supply and transport) and a partial breakdown in health and education services during extreme events (see for example Queensland University of Technology, 2010). These 'tertiary' impacts of climate change are the social flow-on effects of human systems

being affected by climate variability and change. They can affect, and sometimes permanently change, the social fabric of community life.

For example, floods or droughts can disrupt normal water supplies, vector control and waste disposal as well as other services related to environmental health (Alston & Kent, 2004; Wisner & Adams, 2002). The severity of the social and health impacts of flood disasters can be related to the physical impacts of these events on infrastructure. Carroll et al. (2009a), in a qualitative study on the health and social impacts of flooding in Carlisle, UK, conclude that 'disasters do not merely make people become unsettled, they attack and break the bonds of continuity, familiarity and attachment to the home' (ibid: p.545). As in the case of the recent bushfires and floods in Victoria, impacts may be extremely localised and varied across geographic areas, severely affecting one community or parts thereof, while sparing another (Tapsell & Tunstall, 2008). In addition, not all communities will be equally well-prepared for climate change events or able to respond in the effective ways.

Against this backdrop, an important question that urban and social planners need to ask themselves is whether current health care and community support systems are able to deal with sudden and slow-onset climate change, including considering the geographic variability of climate change impacts and differences in the adaptive capacity of individuals and communities. The primary health and community sector plays a critical role in identifying changing social vulnerability in the context of rapid anthropogenic climate change and providing support to those most in need. How, though, can we know who will be most affected by the next extreme weather event, so these organisations can respond on a needs basis, in a fair and equitable way? To implement just climate change adaptation measures in the community services sector, a critical prerequisite is to understand and consider the geographically, socially and culturally unequal distribution of secondary and tertiary climate change impacts, and to take existing social vulnerability and disadvantage into account (Adger, Arnell, & Tompkins, 2005; Adger & Kelly, 1999). From the point of view of creating better cities that support the health and well-being of its citizens, it is of particular importance to ensure that climate change impacts and all adaptation responses are evaluated through the lenses of social equity and social justice – a notion that is increasingly referred to as 'climate justice' (Barnett, 2009; Fritze & Wiseman, 2009; Moss, 2009). Socially aware adaptation policies need to ensure that any adaptive measure reduces, and doesn't worsen, underlying social vulnerability.

Community services organisations and climate change adaptation

In Australia and other developed countries, various legal bills, such as the Victorian acts mentioned above, regulate how children, youth, families and other individuals with special needs are to be supported by government through services provided by community service organisations. In urban settings, webs of interconnected CSOs and primary health care providers play a pivotal role in monitoring and assisting those segments of communities that are most at risk from suffering the impacts of climate change; yet these organisations are also prone to experiencing the negative effects of climate change, which can affect their ability to provide timely and effective services.

Until recently, virtually no systematic studies existed that explored how the community services sector prepares for and responds to climate change impacts, and what consequences these efforts – or the lack thereof – have on the organisation's clients and the social infrastructure of cities and communities as a whole. To date, it has not been widely acknowledged that the community-level impacts of climate change do not only occur through primary and secondary health and well-being effects but also, and critically so, through the impacts of extreme weather events on the primary health and community service system, i.e. the very organisations, infrastructure and services intended to support human health and well-being (Alston & Kent, 2004; Few, 2007). As Few (2007: p 283) points out, the impacts of climate change events on the health care system can amount to a 'double jeopardy' for people affected by climate-induced disasters who are relying on services and infrastructure for meeting their medical needs. Not only those that need urgent medical attention due to the climate change impact itself may suffer from the breakdown in services; likewise, people with routine or chronic needs may find it impossible to access standard health care and social support services during such times.

4. Discussion: Climate change adaptation in community services sector in Victoria

In light of these observations, we present findings of the empirical research on current adaptive capacity in the primary health and community services sector, and discuss the experiences and potential effects of climate change on this critical part of urban social infrastructure.

Current experiences with climate change impacts and adaptation

The study showed that despite the increasing evidence of the causes and impacts of climate change on health and well-being discussed in the academic literature, many CSO respondents felt that it was challenging to motivate adaptation action within the community services sector because it remained difficult for organisations to link extreme weather events to climate change. The following quote is a case in point:

> "[Climate change is] 'just too big, too hard, don't know where I fit', and then [they] move onto the next issue." (r.11)

Across the CSO sector, many respondents talked about difficulty in understanding the specifics reasoning for carrying out climate change adaptation activities in their organisation. In these cases, individuals interviewed were well aware of climate change and its current and future impacts. However, they had difficulty to either see how climate change impacts most related to their organisation and its clients or found it challenging to consider a process for how the organisation could deal with climate change impacts and adaptation:

> "So kind of making that really clear connection between climate change and disadvantage and then more directly between climate change and our service delivery through whatever means. I guess if it comes from DHS [the Victorian Department of Human Services], well you know, that would get people thinking." (r3)

While a small number of CSOs and PCPs were actively working on climate change adaptation planning as an important strategic and programmatic area, the majority had not considered climate change impacts and adaptation in their work. Multiple drivers and barriers were highlighted throughout the interviews, which either enabled or constrained adaptation within the wider primary health and community welfare sector. Many organisations located in urban Melbourne had processes in place for heatwaves and bushfires, where the state government issued warnings and additional information on the development of these hazards and their impacts on human health. Such alerts promoted communication and action among CSOs, as well as between CSOs and their clients. While these preventative processes were important first steps to protect lives and assets during acute events, the activities were focused on, and largely triggered by, actual emergencies and often fell dormant again after an acute event had passed (e.g. when funding for bushfire recovery dried up). The majority of respondents talked about a lack of long-term planning with regard to climate change and the fact that most climate change responses were reactive rather than adaptive and anticipatory. While adaptation was a concern to many organisations in rural and regional areas that had experienced the recent floods or bushfires, the majority of organisations based in metropolitan areas considered climate change adaptation peripheral to their work. There seemed to be a correlation between the overall size of the organisation and considerations for climate change adaptation: while large organisations were increasingly considering climate change impacts as part of their organisational and client-based risk management, smaller organisations were less inclined, and less well equipped, to do so.

Organisational leadership and strategic planning for adaptation

The question of leadership for adaptation was discussed in many interviews with CSO and PCPs. Senior management leadership on adaptation was considered crucial for making substantial progress with adaptation. Many CSO respondents emphasised that, to be proactive in planning for climate change, they relied on support or directives from their senior management or a higher authority. CSOs

that had a supportive board or a single director, who considered climate change adaptation an important issue, saw themselves better equipped to plan for climate change:

> "And we have an Executive Director who supports [work on climate change impacts and adaptation] and supports the payment of those things to be occurring and the research that comes with that." (r7)

For smaller organisations with little core financial resources, lack of staff capacity was considered one of the main barriers to developing organisational capacity for adaptation. For most organisations, climate change adaptation was not considered part of their core business, and funding cuts or otherwise worsening financial terms almost immediately affected staff working on issues outside of the organisation's core business.

Contrasting perspectives existed among respondents on whether adaptation should be treated as a standalone priority, independent of other priority areas, or embedded across all priorities of a CSO or a PCP. Some respondents suggested a dual approach, where adaptation would become a strategic priority, while also being integrated in planning and decision-making across the organisation. Such a dual approach, they said, would have the greatest impact at the organisational level and also influence partner agencies. However, many respondents thought that the most appropriate response to climate change impacts was the inclusion of adaptation considerations within all strategic priorities and core business areas, given that climate impacts would affect most if not all services and was likely to exacerbate some existing vulnerabilities among service recipients. This process was often described as an 'organisational journey', as in this case:

> "We sort of started off with looking at how we could adapt our own building to climate change in terms of things like reducing our electricity usage and things like that. And then that led into us looking at things more broadly and we have actually ended up incorporating climate change into almost all of our other priority areas." (r67)

The study also showed that climate change adaptation was unlikely to evolve into a priority for primary health and community welfare organisations unless targeted information and guidance on climate change impacts and potential adaptation responses became available and more accessible. Respondents repeatedly asked for information on the specific links between climate change impacts and the associated social and economic effects. Specific request for guidance included clearer messages about climate change impacts, how adaptation can be implemented, and the associated provision of information and resources. The majority of participants in the study stated that for adaptive action to increase across the sector, a policy framework that provided guidance on adaptation was essential, like the following respondent:

> "We could do a lot more around climate change adaptability, but only if the Department […] provides something a bit more concrete, a bit more strategic and a bit more pre-planned, and increases the member commitment for the area." (r37)

Community drivers of climate change adaptation

Many participants in the study in rural and urban areas commented on the power of communities in driving adaptation actions relevant to the local area. In some cases, changes in community perception and specific community concerns regarding climate change impacts drove bottom-up action among CSOs, which could also be picked up by PCPs. Participants commented that the value of community networks was often not realised among CSOs and PCPs, and that climate change and its impacts could be better used as new opportunities for building community cohesion. CSOs could be supported to play a lead role in the process of harnessing the community-level potential and benefits of engaging in adaptation planning and implementation.

In urban and peri-urban areas, a suggestion for CSOs to better and more directly engage with community members was to provide 'safe community shelters' that community members could access during extreme weather events, such as heatwaves, bushfires and floods. Already, many

neighbourhood and community houses experienced increased use during heatwaves, by community members in search of cool spaces. In relation to providing safe shelter during acute events, the perception was that the community service sector should engage more broadly and more effectively in advocacy for influencing housing developments at the proposal stage, to cater for the changing needs of vulnerable people under the direct and indirect impacts of climate change. Various peak bodies already engaged in advocacy for housing policy could further strengthen their arguments by drawing specifically on latest information on future climate change impacts, to ensure that large residential developments and social housing can accommodate increasing average temperatures and other types of extreme events, rather that leaving it to residents to retrofit less effective solutions that are costly and energy-intensive to run. The findings of this study suggest that combining an increased understanding of the socio-economic impacts of climate change with the practical experiences of many CSOs was needed, to support a concerted push for stricter regulation for new and existing housing stock to reduce climate change vulnerabilities, grounded in the praxis of community services and care.

Moving from reaction to adaptation

The majority of participants held the view that any visible adaptation effort amongst CSOs and PCPs was largely focused on emergency response and recovery, as in the following quote:

> "I'd say […] it's more of a responsive thing. You know if something happens, then we deal with it as best we can at the time." (r6)

Across the sector, emergency responses could be taken greater advantage of as triggers for moving into preparedness and strategic adaptation planning work. Urban areas could learn from experiences made in rural areas, where interview participants noted positive changes in the community as a result of prolonged drought, extensive flooding, bushfires and other extreme weather events, which have already resulted in stronger community cohesion and improved collaboration among local networks of community service providers.

Some participants stated that although initial responses to climatic events being entirely reactive, there was a window of opportunity after events that needed to be better utilised to turn adaptation into a new "way of doing business". These views suggest that, rather than focusing solely on forcing a shift from emergency management to adaptation, part of the solution could be to develop mechanisms for enabling social learning in the aftermath of extreme weather events, from the individual to the organisational to the sectoral scale. These systematic efforts could consist of an integrated program of action that allowed for the sharing of experiences, problem solving, identification of gaps, and reflexive learning across the sector. More research is necessary to determine possible learning mechanisms for adaptation and how these can best be built into existing policies and processes.

5. Conclusions: maintaining community services in the face of climate change

In the context of urban climate change adaptation, community service organisations play an important role, because their primary focus is on identifying, better understanding and, importantly, addressing social vulnerabilities and various forms of social and economic disadvantage. This places CSOs in a unique position to consider the social implications of climate change in their advocacy and client-based work. In the empirical study, social justice and equity considerations stood out as a catalyst for considering climate change in CSO's strategies and operations. PCPs, on the other hand, could be supported to build on and extend their coordinating role towards peer-to-peer learning and capacity building for climate change adaptation.

Although the research covered only a small subset of the community services sector in Victoria, the interview data suggests that climate change adaptation is not currently well embedded in the sector. Below the surface, however, differences emerged with regard to the framing of this issue, and it became apparent that in a growing number of organisations, climate change issues were beginning to be linked to existing core agendas and areas of work. Many of the CSOs interviewed seemed to have

a good understanding of the indirect impacts that climate change will have on communities and individuals. Much of the interview data pointed to differentiated impacts, including disproportionate effects on people with disabilities, the role of social isolation in exacerbating climate change impacts, and regionalised and gendered impacts.

The study findings underline that primary health and community service organisations are a critically important part of the social infrastructure that support the functioning of cities, in particular with regard to reducing inequality and supporting people with special needs. For many of their clients, the services that CSOs provide are essential to their well-being and existential to people being able to sustain their lives in often difficult circumstances. Climate change poses many significant risks to already vulnerable residents, and, in the Australian urban context, community service organisations are one of the most important links in the chain of support to the disadvantaged and those with special needs. Urban communities, in particular the ones that are socio-economically disadvantaged, will need to rely even more on services provided by CSOs in the face of climate change. Climate change provides a range of threats to the functioning of CSOs, many of which are small and rely to significant degrees on volunteers for delivering their services. If community services are interrupted, even only for a brief time, many individuals' lives and health could be directly at risk.

It is not surprising that currently CSOs are mostly reactive when it comes to dealing with climate change impacts, as are many small organisations in other sectors. This puts them and their clients at increased risk of not being able to deliver important services or providing these at reduced speed or with lower quality. In the face of climate change and more frequent and more intense extreme weather events that can disrupt vital community services, a systematic and concerted effort is needed to develop the capacity of CSOs to adapt to climate change and to assist them with moving from reactive responses to disasters to proactive short and long-term adaptation planning. As one respondent concluded:

> *"In terms of the impact of climate change, there wouldn't be a client within our organisation who couldn't […] benefit from a greater understanding about what that is and how that's going to impact on them, and what their rights and responsibilities might be within it, and what they can do to equip themselves using a strengths-based approach to be able to navigate some of those things." (r41).*

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