

# Climate Justice and Gender: A Study of Metropolitan Sydney Local Councils' Climate Policy

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## **ABSTRACT**

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Empirical evidence shows that men and women have different capacities to cope with climate change. Accordingly they are affected by, and act differently during, climate events such as floods or bushfires, raising concerns for climate justice. However, research suggests that these ‘climate sensitive gender differences’ have not been addressed adequately in climate policies. Moreover, there has been little research considering the relationship between climate change and gender in developed countries. In this context, this research aims to explore how and why gender issues are incorporated within local councils’ climate policies in Metropolitan Sydney and the implications for climate justice.

Through desktop mapping across all local councils in Metropolitan Sydney and policy analysis and interviews in three case study councils, the research considers how councils are approaching climate issues in policies, how gender is currently addressed and the opportunities and challenges for addressing gender in climate policies. The research shows that local councils in Metropolitan Sydney are at various stages in terms of formulating climate policies. While many of these climate policies have identified vulnerable populations, there is little consideration of gender within their policies. In practice, however, the councils do address gender issues, such as domestic violence or skills provision. In conclusion, the research shows that there is while there is ‘no climate justice for gender’ in the climate policies of Metropolitan Sydney’s, the practices of local councils allows for ‘limited climate justice for gender’.

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## **STATEMENT BY THE AUTHOR**

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I hereby declare that this thesis has not been previously submitted to any other institution or university for a higher degree. Except where otherwise acknowledged, this thesis is comprised entirely of my own work. In addition, Ethics Committee approval (5201500406) has been obtained for this study.



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**Niru Gurung**

**October 9, 2015**

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## LIST OF ABBREVIATIONS

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ABS	Australian Bureau of Statistics
AWHN	Australian Women Health Network
BCCAAP	Blacktown Climate Change Action and Adaptation Plan
CALD	Culturally and Linguistically Diverse
COP	Conference of the Parties
CSIRO	Commonwealth Scientific and Industrial Research Organisation
IPCC	Intergovernmental Panel on Climate Change
LEP	Local Environment Plan
LGAs	Local Government Areas
MCCCP	Marrickville Council Climate Change Plan
NGO	Non-Government Organization
NSW	New South Wales
UNFCCC	United Nations Framework Convention on Climate Change
WHGNE	Women’s Health Goulburn North East



# 1 INTRODUCTION

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Research undertaken by Women's Health Goulburn North East (WHGNE, 2011) after the 2009 Black Saturday bushfires in Victoria (Australia) shows that domestic violence against women increased in the aftermath of the disaster. The report shows that those who have experienced violence before the disaster reported an increase in its occurrence; for others it was a new event or pattern following the disaster. Other research by Alston (2010) in the Murray Darling Basin, Australia, shows that men and women have different approaches to coping with climate crises such as drought. While men tend to isolate themselves from society and are more likely to become suicidal, women take the role of primary caretaker of their family and tend to compromise their own health. Research done by Quinn (2009) in Victoria, Australia shows that women are more likely than men to retire at a younger age, be part time or casual workers and be single parents and primary carers and hence have less resources to cope with climate risks issues. These are just a few examples which highlight that issues of gender are important while considering climate change. In short, climate change is experienced by all people, but its impacts, causes and solutions are gendered (Quinn, 2009; Bjornberg and Hansson, 2013). As such, it is clear that climate change is an issue for justice.

At present, climate change is one of the most significant global issues. It is causing widespread land, food and water insecurity, negative health and welfare issues, including higher mortality rates, increasing malnourishment, an increase in climate-related health consequences, human settlement and migration problem, and negative impacts in the area of energy, transport and industries (Parry et al., 2009; UN Women Watch, 2009; IPCC, 2014). This is true for both developed and developing countries (Hemmati, 2005). Much research that considers the gender issues associated with climate change focuses on the experiences of women in the Global South. But climate vulnerability is not limited to developing countries only (O'Brien and Leichenko, 2007). Empirical evidence suggests that climate change will hit women disproportionately harder than men, due to lack of political power, fewer economic resources, gender-bound patterns in the division of labour, entrenched cultural patterns and possibly biological differences in heat sensitivity. These factors combine to make women and girls particularly vulnerable to extreme weather and other climate-related events in all countries (Alber, 2011; Bjornberg and Hansson, 2013).

The gendered nature of climate change is thus also apparent in developed countries such as Australia (Alston, 2009; Quinn, 2009; Rohr, 2009; 1Million Women, 2015). However, there is

comparatively little research present in developed countries which considers the relationship between climate change and women, and even less research on how gender issues are incorporated into climate policies. This is despite the clear existence of gender inequalities in developed countries. For example, data shows that women in developed countries are less often found in decision making positions (such as in politics, industry or businesses) compared to their male counterparts, and earn comparatively less money as they take part-time in less responsible jobs, mostly to fulfil their responsibilities of children and family care (Rohr, 2009). These are vital factors to be considered as they determine women's capacity to cope with adverse climate impacts. Research has shown that men and women are affected and respond differently to climate crises such as floods, bushfires or hurricanes in developed countries due to gender-based differences, unequal power relations between women and men (including access to assets and resources), as well as intra-household inequities and related vulnerabilities (Hemmati, 2005; Quinn, 2009; Alston, 2010; WHGNE, 2011).

Alongside a lack of research on climate impacts on women in developed countries, it is also clear that there has been little consideration on how issues of gender have been addressed in climate policies (Hansson, 2007; Rohr, 2007; Alston, 2010; MacGregor, 2010). Policies are a vital guidance tool for governance and it is important to address gender issues in climate policy as it draws on larger pool of ideas and builds consensus. Ignoring this perspective would not only lose ideas, vision and potential solutions, but also lose wider support for strong climate policies (Gender CC, 2009). As MacGregor (2009) has aptly argued "attempts to tackle climate change that exclude a gender analysis will be insufficient, unjust and therefore unsustainable" (p.124).

Considering this lack of research in developed countries on women, climate justice and policy representation, this research will explore these issues in the context of Metropolitan Sydney, which comprises 43 local councils within the state of New South Wales (NSW), Australia.

## **1.1 RESEARCH AIM**

The overarching aim for the research is to explore how and why gender issues are incorporated within local councils' climate policies and the implications for climate justice. In so doing, it addresses the following questions:

- 1) How are councils approaching climate change issues in their policies?
- 2) How is gender addressed or incorporated in these policies?

3) What the opportunities and challenges for gender to be addressed in these policies?

To address these questions, the research draws on the concept of ‘three dimensional justice’ proposed by Nancy Fraser (2005, 2007b). The three components are recognition, distribution, and representation. Recognition justice identifies that women can be prevented from interacting as equal due to institutionalized hierarchies of cultural value. Distributive justice identifies the existence of resource allocation towards different genders to enable adaptation to future climate scenarios. The third dimension of justice – representation – considers whether women are consulted or not during the process of policy formulation in the council.

The research focuses on local councils because they are the key government actors who are in direct contact with the local people, thus serving as the link between local people and national government and with the responsibility of implementation of policies on the ground including climate policy. Moreover, as a primary contact point, they work as a key player in providing measures to adapt to the local impacts of climate change (Fallon and Sullivan, 2014).

## **1.2 STRUCTURE OF THESIS**

The thesis is structured as follows. Chapter 2 sets out the literature review. It gives information about climate justice, explores the relationship between climate change, justice and gender, sets out the importance of climate policy to address gender and finally identifies an analytical framework to address issues of gender and climate justice in climate policy. Chapter 3 explains the methodology used for the research and provides brief information about Metropolitan Sydney as research field area. Chapter 4 and chapter 5 set out the findings from the research. Chapter 4 focuses on Metropolitan Sydney as a whole and sets out the findings from the desktop mapping, while chapter 5 focuses in greater depth on three case study local councils, presenting the findings from climate policy analysis and interviews conducted with council staff and related stakeholders. Chapter 6 sets out the discussion, where the research outcomes are considered in relation to the climate justice analytical framework. Finally, chapter 7 sets out the conclusions and opportunities for future research.

## 2 LITERATURE REVIEW

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The literature review is divided into four interrelated sections. First, it discusses the concept of climate justice and its significance. Secondly, the relationship between climate justice and gender is considered in terms of gender vulnerability to climate risks and work done by feminist climate scholars in the area of climate justice. In the third section, the current climate policy context is studied in the context of Australia, in relation to gender. Finally, an analytical framework is identified to as a means to explore justice for gender in climate change policy.

### 2.1 CLIMATE JUSTICE

In order to understand climate justice, the term ‘justice’ needs to be understood. The concept of justice goes back to the time of Plato who defines justice as a virtue to establishing rational order, based on two principles: the principle of ‘Functional Reciprocity’ and the principle of ‘Proportional Equality’. The first principle, Functional Reciprocity is concerned with equal rights of people to the benefits that they require to perform their role in society. Proportional Equality states that justice exists when goods are distributed to people according to their merit or desert (Cuguero-Escofet and Fortin, 2014). In a later period, Rawls in his prominent book ‘Theory of justice’ (1971) defined “justice” with two major principles: first, “Each person is to have an equal right to the most extensive basic liberty compatible with a similar liberty for others,” and “social and economic inequalities are to be arranged so that they are both (a) reasonably expected to be to everyone’s advantage, and (b) attached to positions and offices open to all” (p:53). The second principle means that in a situation where one socioeconomic class is somehow privileged over another, the situation is only just when this more privileged class is motivated to work harder in order to benefit everyone in society, including the classes that are underprivileged. In this way, inequalities in class structure eventually result in benefits for everyone. Kowarsch and Gosele (2012) define “justice as an ethical, not juridical, concept which provides reasonable, prescriptive criteria for dealing conflicting interests and claims between persons. It covers the process of allocation of goods, legal rights and duties, benefits and burdens, generally mediated by political and social institutions” (p: 74). It is important to recognize that ‘justice’ does not have one single definition but changes depending on its geographical context (Campbell, 2013).

The concept of justice in climate change debates has emerged as a result of introducing the ‘ethics, equity and rights’ approach to the challenges posed by climate change (Agostino and Lizarde,

2012). The main principles of climate justice comprise linking human rights and development to achieve a human-centred approach, safeguarding the rights of the most vulnerable and sharing the burdens and benefits of climate change and its resolution equitably and fairly by all walks of people and countries (Mary Robinson Foundation, 2013).

Research on climate justice has mainly focused on the just distribution of resources to the victims of climate change. Various justice theories have been proposed. Retributive justice, for example, considers the obligation for countries with higher contemporary and historical emissions to transfer financial and technological resources to support the adaptation of those likely to be most severely affected by climate change impacts (Fritze and Wiseman, 2009). Procedural justice provides opportunities for those facing the impacts of climate change to be consulted and their opinions represented within policy responses and measures (Grasso and Sacchi, 2011). Inter and intra generational justice, advocate to protect the rights of future generations and also to seek equality between current generations (Forsyth, 2014).

There is an emerging body of research which is developing the scale and concepts of climate justice beyond the nation-state ideal (Fisher, 2015) focusing on other aspects of climate justice. For example, Hillier et al. (2013) and Bulkeley et al. (2014) tried to understand climate justice in various urban spaces in the world. In their research, Bulkeley et al. (2014) proposed five faces of justice, namely distribution, procedure, rights, responsibilities and recognition. Similarly, researchers have also started to explore climate justice in other arenas, such as NGOs (Campbell, 2013), local government and gender.

## **2.2 CONNECTING CLIMATE JUSTICE AND GENDER**

Climate justice as a way to achieve gender justice started gaining recognition in recent years. Feminist and development NGOs raised the issue at the Bali conference in 2007 and Copenhagen conference in 2009 with the slogan “no climate justice without gender justice” (Terry, 2009; MacGregor, 2010). Nevertheless, according to many feminist researchers, gender mainstreaming is not yet adequate in action and policies (Rohr, 2009; Alston, 2014).

### **2.2.1 Gender as an issue for climate justice**

The International Panel for Climate Change (IPCC) (2007) states that climate change impacts will be differently distributed among regions, generations, age classes, income groups, occupations, and

gender. It further adds that poor populations within all countries (developing and developed) will hit by climate change harder. Throughout the world, 70% of women are considered poor (Rohr, 2007; Quinn, 2009; UN Women Watch, 2009) which increases their vulnerability towards climate change. There is more literature on gender and climate in developing nation contexts than in developed nation. These are mostly centred on identifying the issues of climate impact on women and providing adaptation measures. For example, in developing countries, women are more dependent on their surrounding natural resources such as agriculture, biofuel, fodder, fisheries etc. for their survival and hence considered more vulnerable than their male counterparts (GTZ, 2010; UNEP, UN Women, PBSO and UNDP, 2013).

Nonetheless, even in developed countries, research suggests that women generally have less capacity than men to cope with the effects of climate change due to their lower income levels, their primary role as caregiver of households, their lack of political power in decision making and biological differences towards climatic change (Rohr, 2007). For example women and the elderly are more sensitive towards increasing temperature and pregnant women more vulnerable to malarial disease (Rohr, 2007). Moreover, men and women respond differently to disasters. In most cases women are the most affected. For example in the 2003 French heat wave, about 70% from the 15,000 affected people were women (Hansson, 2007). Furthermore, in the United States during the Hurricane Katrina, poor African-American women, already the most impoverished group in the nation, were affected the most and the event led them into deeper levels of poverty (WEDO, 2007).

In developed countries, research considering gender and climate change has been more focused towards identifying women as those most concerned about environmental sustainability and hence less responsible for climate change (Arora-Jonsson, 2011). For example, in the context of transportation behaviour of men and women in Sweden, Polk (2003) found that women show more support for ecological issues and are more positive towards measures which entail reductions in car use, such as improving and expanding public transportation. Further, women are more prepared than men to participate in ecological activities, included reducing car use.

Moving specifically to the context of Australia, it is a developed country that is recognized as one of the most vulnerable to the threats of climate change as the majority of its population lives in coastal areas, with poor soil quality, variable and dry climate (with scarce water) and extreme weather events such as bushfires (Saul et al., 2012). Further, Australian women are more vulnerable

to climatic changes as they possess less economic resources than men and are less present in decision making positions. Comparing the earnings of the man versus women, the Australian Bureau of Statistics shows that full time working women's earnings are 17.1% less per week on average than full time working men's earning which equates a difference of \$262.50 per week (WGEA, 2015). Moreover, women are more likely to retire at younger age, work more as part time/casual worker or work in less responsible roles than men, as they have to care for their children and family members. Further, they comprise the greater number of single parents and primary carers than men (Quinn, 2009). This leaves them with little finance during their lifetime or superannuation at their old age and thus they are more susceptible than men in case of climate related emergencies as they do not possess enough financial resources to tackle climate change.

Little research has however been done on the issues of women's vulnerability to climate change in Australia. Research done by Women's Health Goulburn North East (WHGNE, 2011) after the Black Saturday bushfires in Victoria on 7<sup>th</sup> February 2009 shows that domestic and family violence increased in the aftermath of the disaster. The report shows that those who have experienced violence before the disaster reported an increase in its occurrence, and for others it was a new event or pattern following after the disaster. It also pose threats to women's status and equal rights. This research shows the behavioural changes and the changes in relationships (where women have to suffer more negative consequences) caused by increased levels of stress triggered after climate disasters. Other research by Alston (2010), a prominent feminist climate scholar in Australia, shows the effect of draught on farm families of the Murray Darling Basin. The research shows that gender have different approach to cope with post climate disaster. Men are likely to isolate themselves from the society and become more suicidal in nature as they are not able to fulfil their traditional/social role as primary breadwinner. On the other hand, women take the role as primary caretaker of their family and compromise with their own health during post disaster time. The Australian Women's Health Network (AWHN, 2014) have tried to link economic and climatic disaster with women's health. They argued that economic and climatic disasters are inextricably linked and affect women most. They show that due to economic constraints, women live in the cheaper peri-urban areas of metropolitan cities where there is greater threat of bushfire. Their mobility is further restricted due to lower car ownership than men, and increasing cost of fuel. Additionally, heatwaves cause more deaths of women than men and also the mortality rate of women in bushfires is gradually becoming similar to that of men (AWHN, 2014).

### 2.2.2 Feminist approaches to climate justice

Climate change and justice issues are fairly new in social science (Terry, 2009) including in the area of feminist geography. Hence, there is lack of feminist orientated research in the study of climate change and justice; where this research project seeks to make a contribution. As Sultana (2014) argues “feminist geographers and feminist political ecologists can add much to the ongoing debates in the climate change and adaptation literatures, explicitly the textured ways that space, place, identities and lived experiences are intersected by the range of processes and social relations” (p:374). For example, Agostino and Lizarde (2012) and Tschakert and Machado (2012) argues that right-based frameworks will address the persistent gender and other inequalities by adding fairness, responsibilities and engagement.

Two of the most prominent feminist scholars who have worked intensely to understand and give a clear meaning of justice are Iris Marion Young and Nancy Fraser. Iris Marion Young (1990) argues that the concept of justice begins with concepts of domination and oppression, rather than distribution. She proposes five aspects of oppression: exploitation, marginalization, powerlessness, cultural imperialism and violence. She suggested that such oppression determines poor distribution of resources which cause distributive injustice. This distributive injustice is the basis of lack of recognition. Further, she argues that social group differences exist, where some groups are privileged and others are oppressed. She further adds that recognition of such groups is needed to overcome such oppression and that assigning specific rights to such groups is the only way to promote their full participation.

On the other hand, for Nancy Fraser (2005, 2007a, 2007b) the most general meaning of justice is “parity (equality) of participation”. From this perspective justice requires social arrangements that permits all people to participate as equal in social life. Fraser rejects an economic view which reduces recognition as secondary to distribution (Fraser and Honneth, 2003 cited in Garrett, 2010). She suggests a three dimensional framework for justice comprised of ‘recognition, ‘distribution’ and ‘representation’ (set out in greater detail in section 2.4). This ‘three dimensional justice theory’ is adopted for this research as it is considered relevant as a way of understanding different dimensions of justice in relation to climate change, particularly examining justice and gender in climate policies. However, as with other justice approaches, Fraser’s justice approach is not without critique. It has been critiqued in that it fails to recognize the state as a source of oppression (Garrett,



2010). Further, it creates a clear demarcation between culture and economic injustice (Young, 1997 cited in Bulkeley et al., 2014).

In summary, while some feminist scholars are working towards understanding gender and climate change linkages and other related issues, most of their work is centred in the developing countries context and very few in developed countries. Most of them have identified a gender silence and urged for gender inclusion in all climate policies. However, there is still a lack of adequate literature which has explicitly considered theories of climate justice that take gender into consideration (Backingham and Kulcur, 2009).

### **2.3 GENDER, CLIMATE CHANGE AND POLICY ISSUES IN AUSTRALIA**

At the policy level, climate justice has become embedded within the United Nations Framework Convention on Climate Change (UNFCCC) through the principle of ‘common but differentiated responsibilities’ (Fisher, 2015). Most climate justice concepts are focused on providing justice in terms of the distribution of ‘rights’ and ‘responsibilities’ (mainly economic) for emissions caused by the Northern developed countries and the impacts on the Southern developing countries who are the primary victims of this development. Policy is more centred at the international and national level through the UNFCCC (Fritze and Wiseman, 2009; Bulkeley et al., 2014). However, climate equity issues such as gender have been explored much less at the regional or local levels in developed countries such as Australia.

Research by Magnúsdóttir and Kronsell (2015) found that policy makers are largely unaware of gender differences on climate issues in Scandinavian countries and identified that the involvement of women during policy making does not automatically result in gender sensitive climate policy making.

In the context of Australia, local policy research by Fallon and Sullivan (2014) in New South Wales (NSW) found that the overall response towards climate change is progressing. Larger and better resourced councils are working more on climate change than their smaller counterparts. This creates an urban bias in the overall response due to policy pressures and funding availability. Earlier climate policy were more focused on reducing emissions, but gradually more adaptation measures are being included in the climate policies. Nevertheless, the research failed to give any information about the gender dimension in local climate policies.

Furthermore, in their research on Australian cities, Hillier et al. (2013) re-emphasized the fact that vulnerable communities/social groups will be the most affected by climate change not only in poor developing countries but also in developed countries like Australia. The research shows that the Australian Climate Adaptation Strategies/Plans have become locked into a particular model of “risk assessment, policy formulation, and technical response in how they respond to global environmental change” (p.6). This constrains the ability of local government actors to respond in context-sensitive ways and hinders their capacity to think in alternative ways. The authors further state that such models tend to exclude social and ecological concerns and impacts, potentially leading to inequitable outcomes. However, the research does not specifically locate women as a vulnerable group or consider climate justice for women in the policy context of Australian cities. This is similar to Quinn (2009) who identifies in her research that the “Australian Government is active in responsibilities to climate change nationally and in the global arena. But, its policies, programs and publications are gender blind” (p: 12).

In summary, most research in the context of climate policy in Australia shows a peculiar silence towards gender recognition and other gender issues. Hence, the present research seeks to address this gap with a focus on local councils.

## **2.4 CLIMATE JUSTICE AND GENDER: AN ANALYTICAL FRAMEWORK**

This section sets out an analytical framework for assessing climate justice and gender in the context of Metropolitan Sydney. The analytical framework for the research draws on Fraser’s (2005, 2007b) three dimensional model of justice. This is comprised of the following elements:

- Recognition: recognition of socio-cultural difference
- Distribution: advocates the just distribution of resources
- Representation: participation of women in all decision making activities (Fraser, 2005, 2007b)

These dimensions are set out in more detail below.

### ***Recognition***

According to Fraser (1997, 2007a), gender, from a recognition perspective, is considered as a status differentiation, rooted in the status order of society. Androcentrism or masculinity is considered as a major cause of gender injustice. It devalues and subordinates everything coded as “feminine,” or related to women. This causes ‘status subordination’ towards gender which includes sexual

harassment, sexual assault, and domestic violence, objectifying women and giving them less priority, exclusion or marginalization in public spheres; and denial of the full rights and equal protections to them. This causes an injustice to the recognition of gender.

For this research, recognition provides a mechanism to understand whether climate policies in Metropolitan Sydney have acknowledged any social/cultural differences between men and women in relation to coping with and adapting to climate change and its risks. Further, it also helps to understand whether issues of 'status subordination' towards women, such as domestic violence, marginalization or unequal rights (which increase during and after climate disasters) are being addressed in climate policy or not.

### ***Distribution***

The distributive dimension of justice identifies gender as a class-like differentiation, rooted in the economic structure of society (Fraser, 1997, 2007a). This primarily lies in the division of labour, between paid 'productive' and unpaid 'reproductive'/domestic labour, the latter generally done by women. In paid labour structures too there is gender discrimination, as men dominate high-paid "blue collar"/ "white collar" manufacturing and professional jobs while females are dominant in lower-paid "pink collar" and domestic service occupations. Further, women are often the victims of 'work exploitation' where they don't get enough credit or promotion for their hard work. They are often denied an adequate standard of living (Lovell, 2007). These unequal economic benefits result in a structure that generates gender-specific forms of distributive injustice.

In this research, the distributive perspective considers that women fulfil their socially/culturally given role as primary carer for their family which is unpaid labour. This social/cultural division of labour causes a higher probability of vulnerability towards climate risks, as women possess fewer resources to cope with climate risks. Hence, the research will seek to understand whether such distributive justice is considered in climate policies and further, if any provisions are made in policy to address such injustice.

### ***Representation***

The final dimension of Fraser's three dimensional approach is that of representation. The representation perspective states that misrepresentation occurs when political boundaries/decisions wrongly deny some people the ability to participate in social interactions including political arenas. It can occur even in the absence of 'distribution' and 'recognition' justice, although it generally is

connected to them. Two types of representation injustice are identified by Fraser. The first is ‘ordinary political misrepresentation’, where political decisions rules wrongly deny some people the chance to participate fully. The second is ‘misframing’, where injustice arises when the community’s boundaries are drawn in such a way as to wrongly exclude some people from the change to participate at all (Fraser, 2005, 2007b).

For this research, the representation perspective allows an exploration of whether and how women community members or related organisations are being consulted or asked to participate in climate policy of not and if the outcome of such participation ensure justice for women in climate policy.

The thesis now turns to set out the methodology which identifies the methods applied for the research and introduces Metropolitan Sydney as the empirical focus for the research.

### **3 METHODOLOGY**

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This chapter gives information about the research questions, the research approach, the field area of Metropolitan Sydney and the methods (desktop mapping, policy analysis and semi-structured interviews).

#### **3.1 RESEARCH QUESTIONS**

The overarching aim for the research is to explore how and why gender issues are incorporated within local councils’ climate policies in Metropolitan Sydney and the implications for climate justice. In order to address this aim, the main questions for the research are as follows:

- How are councils approaching climate change issues in their policies?
- How is gender addressed or incorporated in these policies?
- What the opportunities and challenges for gender to be addressed in these policies?

#### **3.2 RESEARCH APPROACH**

The research falls under the discipline of feminist geography. Feminist perspectives in geography date back to the 1970s, drawing inspiration from women’s movements of the 1960s (Johnston et al., 2000). Feminists are spread across numerous subdisciplines in geography – including

economic, cultural, environment, historical, political – and their lives, practice and research have created feminist geography (Moss and Al-Hindi, 2008). Feminist approaches believe in social, political, and economic equality of the sexes and seek to analyse complexities of power, oppression and representation of women in the study of the human environment, society and geographical space and across scale (England, 2006). They try to improve women's lives by providing and documenting strategies of resistance (Dixon and Jones III, 2006). Further, they critique existing knowledge and contribute feminist perspectives to the analysis and interpretation of various sub-disciplines of geography including climate change (England, 2006; Moss and Al-Hindi, 2008)

For this research, a critical approach is used to understand gender and climate justice in policy. This approach is oriented toward critiquing and changing societal view as a whole, in contrast to traditional methodologies which oriented only to understanding or explaining it (Wodak and Meyer, 2009). This approach provides an opportunity to fulfil the research questions which need to not only understand climate justice towards gender in climate policies but also a deeper meaning of why gender is included or excluded in policies and the reasons/factors that affect such outcomes.

This research primarily takes a qualitative approach which focuses on the meanings, traits and defining characteristics of events, people, interactions, settings/cultures and experience. Thus, it explores meanings, concepts, definitions, characteristics, metaphors, symbols, and descriptions of things (Tewksbury, 2009). It is collected directly from the affected population by the researchers. It is mostly collected through face to face interviews or discussions with related people or communities, but can also be gathered through phone interviews, email exchange, direct observation. This research uses desktop mapping, policy analysis and semi-structured interviews.

### **3.3 FIELD AREA: METROPOLITAN SYDNEY**

Due to time constraints (one year), the research focused exclusively on the area of Metropolitan Sydney, New South Wales (NSW). Geographically, Metropolitan Sydney extends from Wyong and Gosford in the north to the Royal National Park in the south and follows the coastline in between. Towards the west, the region includes the Blue Mountains, Wollondilly and Hawkesbury. Metropolitan Sydney covers 12,367.7 square kilometres and the estimated resident population is 4,605,992 (City of Sydney, 2015). This is comprised of 49.2% males and 50.8% females. Metropolitan Sydney is a multicultural area where 40.1% of the total population was born overseas. Most of them are from England (3.5%), China (3.4%), India (2%), New Zealand (1.9%) and Vietnam (1.6%) (City of Sydney).

From 1950, Metropolitan Sydney has experienced warming of around 0.8°C mostly due to human activities like industrialization. It also experienced a significant drop in annual rainfall at a rate of approximately 55 mm per decade (Preston, 2007). The future climate of the Metropolitan Sydney is likely to be warmer and drier. Such trends would also increase evaporation, heat waves, extreme winds and bushfire risk. Moreover, there is also possibility of increases in extreme rainfall events. The climate change impacts in the region are more likely to be felt through extreme weather events, such as hot days, bushfires, droughts and intense storms. These can all place human life, property and natural ecosystems at increased risk (Preston, 2007).

Metropolitan Sydney is comprised of 43 local councils<sup>1</sup>. These are as follows: Ashfield, Auburn, Bankstown, Blacktown, Blue Mountains, Botany Bay, Burwood, Camden, Campbelltown, Canada Bay, Canterbury, Fairfield, Gosford, Hawkesbury, Holroyd, Hornsby, Hunter's Hill, Hurstville, Kogarah, Ku-ring-gai, Lane Cove, Leichhardt, Liverpool, Manly, Marrickville, Mosman, North Sydney, Parramatta, Penrith, Pittwater, Randwick, Rockdale, Ryde, Strathfield, Sutherland Shire, Sydney, The Hills Shire, Warringah, Waverley, Willoughby, Wollondilly, Woollahra, and Wyong shire.

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<sup>1</sup> While some literature identifies 38 councils in Metropolitan Sydney, this research takes 43 councils as the official number for Metropolitan Sydney as identified by the City of Sydney (City of Sydney, 2015)



Figure 1: Map of Metropolitan Sydney (City of Sydney, 2015)

### 3.4 METHODS

In order to understand climate policies in Metropolitan Sydney, empirical data has been gathered in the following three phases, as set out below.

#### 3.4.1 Desktop mapping and case study selection

The first phase of the research was a desktop mapping exercise of all 43 Metropolitan Sydney council's environment and climate policies. The main source of investigation for the desktop mapping method was individual councils' websites.

The mapping first investigated the presence or absence of environment or climate related departments in the councils by identifying their presence in the website, using words like environment or climate change as indicators.

Secondly, the climate policy/plan/strategies were identified. The word "policy" is not a tightly defined concept but a highly flexible one, used in different ways on different occasions. It can be defined as a deliberate system of principles to guide decisions (by government, institution, group or individual) from among alternatives and in the light of given conditions to guide and, usually, to determine present and future decisions and achieve rational outcomes. A definite course or method of actions are selected to full the given goals. It is a statement of intent, and is implemented as a procedure or protocol. It is an operating rules that can be referred to as a way to maintain order, security, and consistency (Noruzi and Irani, 2011). Policies are an active concept which can initiate or change the characteristics of ongoing management activities (Wies, 1994).

In this research the term *policy* is used to refer to any local government official long term climate document which includes climate strategies, climate plans and climate policy. In the local councils of Metropolitan Sydney, climate polices were normally a short guiding document for their respective councils which provided brief information such as purpose, objectives, context and policy statement. This type of policy did not give the detailed information required for the research such as which groups of people were identified as vulnerable and the specific adaptation measures. Therefore the research focused on the climate *plans* of the local councils as the relevant guiding document to understand in detail about local government planning towards climate change, its impact, mitigation/adaption measures, vulnerable groups etc. Further, as climate *strategies* provide directions and guidance to the formulation of plan (State Government of Victoria, 2004), they were used for the research only in the absence of a climate plan (as in the case of Ku-ring-gai council).

After the identification of the relevant climate policies, an initial desktop analysis of the policy was done to check the presence of the three justice criteria- recognition, distribution and representation. For the first criteria, recognition, the policy was diagnosed on three basis of: i) whether it has identified any key climate change or disaster issue such as bushfire, flooding or extreme heat ii) whether it has identified any particular groups (such as the elderly, children, women etc.) as vulnerable to the impacts of climate change and iii) whether it has specifically identified women or gender in any form. For the second criteria, distribution justice was diagnosed by identifying



any written allocation of funding or relief measures towards these vulnerable groups and gender or women in particular for adapting to climate risks. The final criteria, representation, was identified by looking at the policy or plan and detecting whether they have given any evidence about the participation of any community group or population in general and any women's groups or women in particular.

Following the desktop mapping, three case study councils were identified to provide a more in depth analysis on the incorporation of gender issues in local climate policy. These were selected on the basis of the following criteria:

- Councils with a specific climate change policy, plan or strategy
- Climate policies that had identified any vulnerable groups/community (such as disabled, refugees, gender, elderly, children etc.) suggesting that there may be the opportunity for a consideration of gender within policy.
- Councils located in different geographic locations in Metropolitan Sydney, on the basis that these councils would face different climate risks depending on their geographical location.

Out of the six local councils with a specific climate policy/plan (Blacktown, Parramatta, Marrickville, Leichhardt, Ku-ring-gai and Pittwater), only Pittwater council had not identified any vulnerable groups in its climate plan. Further, geographically four of the six councils lie in western Sydney. Therefore two case study councils were chosen from western Sydney – one from the far west (Blacktown) and from the central west (Marrickville) – and one council was selected from northern Sydney (Ku-ring-gai)

The three case studies complemented the Sydney-wide desktop mapping by first enabling in-depth analysis of the climate policy to understand the area, the climate risks, the vulnerable groups identified by the policy (including gender) and how these groups are incorporated into the policy and secondly, by understanding the opportunities and challenges for the inclusion of gender in climate policy by semi-structured interviews.

### **3.4.2 Climate policy analysis**

The second phase of the research comprised a policy analysis. For each council, one specific policy was identified and the analysis was conducted on the basis of three criteria. First the main aim of all three policies was identified. Secondly, the climate risks of each area were identified as pointed

out in the policy. This was done using terms such as ‘climate risks’, ‘climate change’, ‘flood’, ‘bushfire’, ‘heat’, ‘temperature’, ‘storm’, ‘hail’, ‘rainfall’ etc. as key words. Finally, the presence of the three justice criteria (recognition, distribution and representation) were explored in the policy, both in the context of general vulnerability and specifically in relation to gender. The following key words were used:

- Recognition: ‘vulnerable groups’, ‘vulnerable community(ies)’, ‘elderly’, ‘child’, ‘children’, ‘women’, ‘gender’, ‘female’, ‘family’, ‘disabled’, ‘non-English speaking’, ‘CALD’, ‘older people’, ‘disadvantaged’, or ‘migrant’.
- Distribution: ‘distribution’, ‘allocation’, ‘budget’, ‘adaptation measures/options’, ‘community workshop’, ‘training’, ‘shelter’, ‘resource’.
- Representation: ‘representation’, ‘participation’, ‘consultation’, ‘meeting’, ‘discussion’, ‘workshop’.

After analysing these criteria of all three case study areas’ climate policy, their similarities and differences were drawn out.

### **3.4.3 Semi-structured interviews**

The third phase of the research comprised semi-structured interviews. Semi structured interviews means an interview with a fairly open framework which allow for focused, conversational, two-way communication. Not all questions were designed and phrased ahead of time but instead some of the questions were created during the interview, allowing both the interviewer and the person being interviewed the flexibility to probe for details or discuss issues (CGG, 2005).

Semi-structured interviews were conducted with a) council staff working in the field of climate change/environment and related fields such bushcare/flood/hazard etc. and b) related organisations, such as women’s groups and community organizations working with the council in the field of climate change. Interviewees were identified through emailing to the council’s office requesting to forward the email to related council staff. Afterwards, the identified person was further communicated through mail or phone for setting an interview schedule. A total of seven interviews were conducted. Identifying respondents and arranging interviews was challenging, as some council departments and non-government organizations did not respond or took a very long time to respond. Others were reluctant to be interviewed as their organization did not work on both

gender and climate change issues. Furthermore, as the main focus for the interviews was on gender, the initial request for interview was often sent only to female staff in the organisation.

The interviews were audio recorded, with the consent of the interviewees, for the purpose of interview transcription and analysis. The interview questions covered three main areas (see Appendix 1). The first part was a general inquiry about the interviewee in terms of position and roles and responsibilities in the council which not only provided information but also helped in rapport building with the interviewees. The second part of the interview questions sought information about the specific climate risks of the case study area, how the councils were trying to address these risks and the most affected vulnerable group affected by these climate risks. The third part of the interview questions was oriented towards understanding the interviewees views on gender related climate issues, such as the climate risks for gender, whether gender was considered while making climate policy or not and the challenges and opportunities for incorporating gender into climate policies.

The analysis of the interviews was undertaken by through coding. Coding is a way of evaluating and organizing data in patterns and categories to understand meaning in a text (Cope, 2010). For the research different codes of interview responses were used. They were perceived climate risks of the area, vulnerable participants of climate workshop, mode of calling participants, related stakeholders, any women organizations as stakeholder, adaptation measures, climate risks for gender, gender issues in climate polices, reasons of gender exclusion/inclusion, and future plan for inclusion of women. After categorizing the interview responses from all respondents, the main points, similarities and differences from each category were identified.

The following chapters set out the key findings from the research. Chapter 4 sets out the findings from the desktop mapping of Metropolitan Sydney, while Chapter 5 sets out the findings from the case study analysis.

## 4 FINDINGS: CLIMATE POLICIES IN METROPOLITAN SYDNEY

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The desktop mapping, undertaken across all 43 local councils in Metropolitan Sydney, was divided into two sections. The first section provides general information on whether the local councils are working in the environment sector or not, which areas they are working on and whether any activity on climate change was present. Section two gives information about the presence of specific climate policy and other related policies in the council.

### 4.1 EXISTENCE OF ENVIRONMENTAL AND CLIMATE CHANGE ACTIVITY

The first phase of the mapping comprised identifying the existence of environmental and sustainability sections or departments within each of the local councils, and assessing if and how climate change was an issue as part of this. This first involved searching for the words environment or sustainability in the local councils' websites. The main-heading means the fixed 'title bar' that is present in the home/main page of the councils' webpage, whereas the sub-heading means sections that comes after navigating the main title bar.

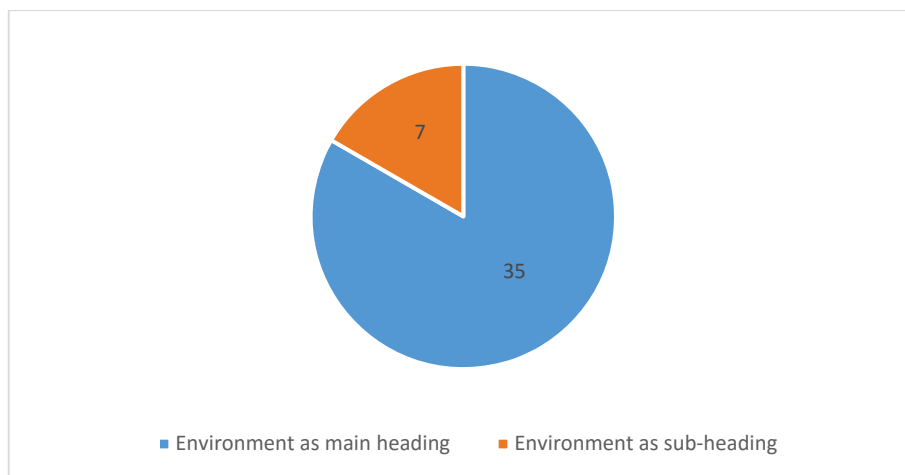


Figure 2: Local councils with 'Environment' as a main heading or sub-heading

The mapping shows that 42 out of 43 councils in Metropolitan Sydney had a main section or subsection in relation to the environment. Out of the total 43 local councils, 35 councils had 'Environment' as a main heading at the initial page of the councils' website whereas seven of the

local councils' incorporated 'environment' as a subheading (Figure 2). Rockdale was the only council without any main section or subsection on environment.

This environmental activity was named differently by the local councils. The most common term was 'Environment or my/our Environment' with 29 councils using it as their title. The other six titles given by the local councils were 'environment and sustainability' (5), 'waste and environment' (4), 'sustainable city/sustainability' (2), 'environment and health' (1), environment management (1). Figure 3 shows the terms used by the local councils in their website for environment/sustainability sector.

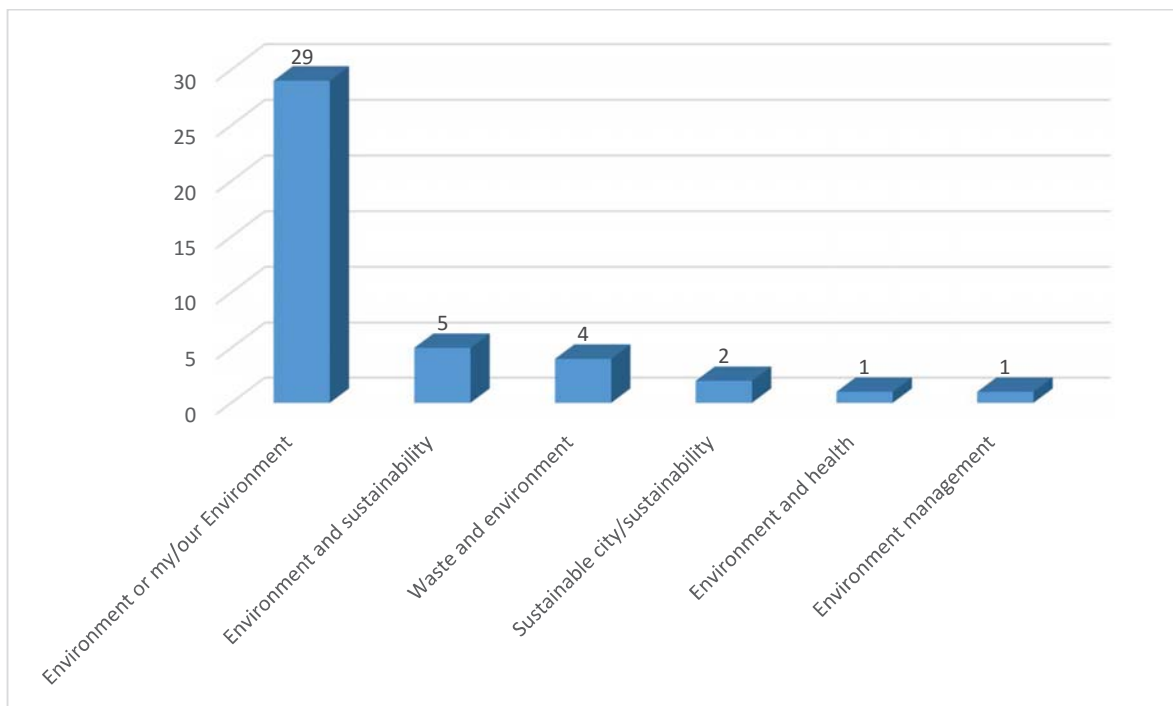


Figure 3: Terms used by local councils for environmental activity

All the local councils in Metropolitan Sydney were working on a wide variety of issues under the heading of environment. The main areas were: bush care/management, waste management, water management, biodiversity (flora-fauna), public health, recycling, and sustainable community/living. This initial phase of the mapping therefore shows that the majority of local councils in Metropolitan Sydney are extensively working in various sectors of the environment.

The research also shows that all the local councils have a Local Environment plan (LEP), which was a compulsory document to be prepared by councils in response to the State Government's requirement for all NSW councils to adopt a new planning controls based on state-wide standards from 2006 (Planning and Environment, 2015).

In identifying climate change activity in the local councils, the research shows climate change activity was located as part of the environment sector. In total, it was found that out of 43 local councils only 20 local councils have sub-section on climate-change in their website, which was 47% of Metropolitan Sydney (figure 4). This indicates that even though that all councils were working in the sector of environment, not all of them have started working in the sector of climate change.

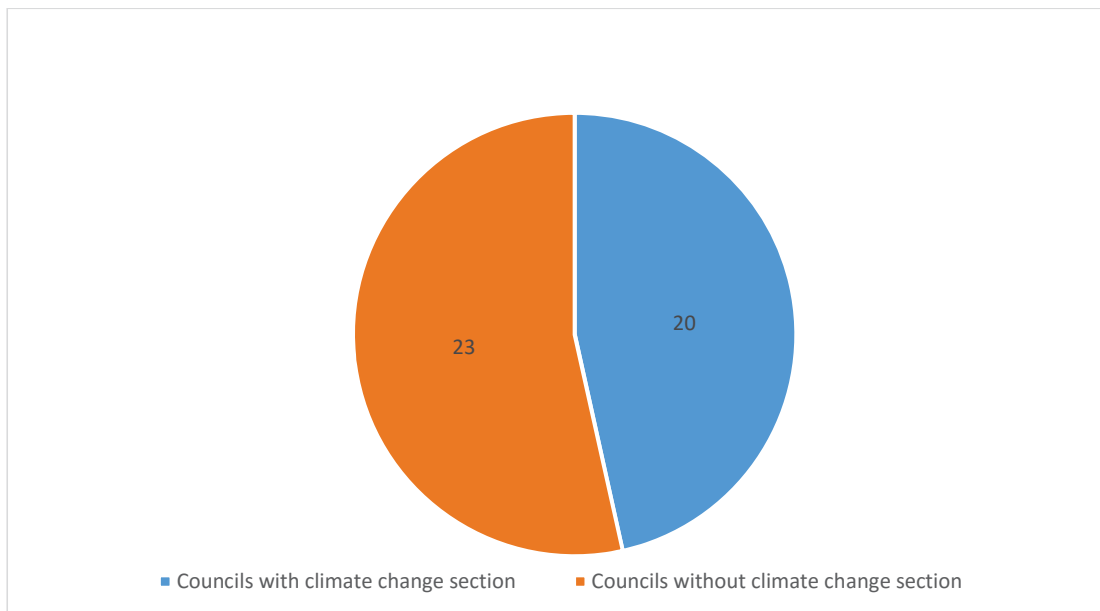


Figure 4: Local councils with or without climate change section in their website

Further analysis of the climate change information provided in the websites shows that only a few of them gave extensive information on climate change. This included information about causes, risk, and mitigation and adaptation measures such as steps on how to reduce energy and become energy efficient, ways to decrease carbon footprints, water management, heat stress and sustainable living. However, most of the websites provided very general information about climate change (limited to causes, risks and predictions by NSW Office of Environment and Heritage) and then

provided links to the NSW Office of Environment and Heritage, Department of environment, Australia and Commonwealth Scientific and Industrial Research Organisation (CSIRO) website for getting more information.

This shows that climate change was yet not considered vital as many of the local councils in Metropolitan Sydney have not done much work in this area. Moreover, those councils which were working on climate change were just at the initial phase of understanding causes and risks of climate change and most of them were dependent on the NSW Office of Environment and Heritage and CSIRO for getting more information on climate scenario and effects.

#### 4.2 LOCAL COUNCILS' CLIMATE CHANGE POLICY

The second phase of the desktop mapping involved identification of councils with an explicit climate change policy. The exercise shows that only six councils (Blacktown, Parramatta, Ku-ring-gai, Leichhardt, Pittwater and Marrickville) have developed a climate change action plan to date. Five other councils (Burwood, North Sydney, Canada bay, Canterbury and Strathfield) have developed a related Greenhouse action plan (Figure 5).

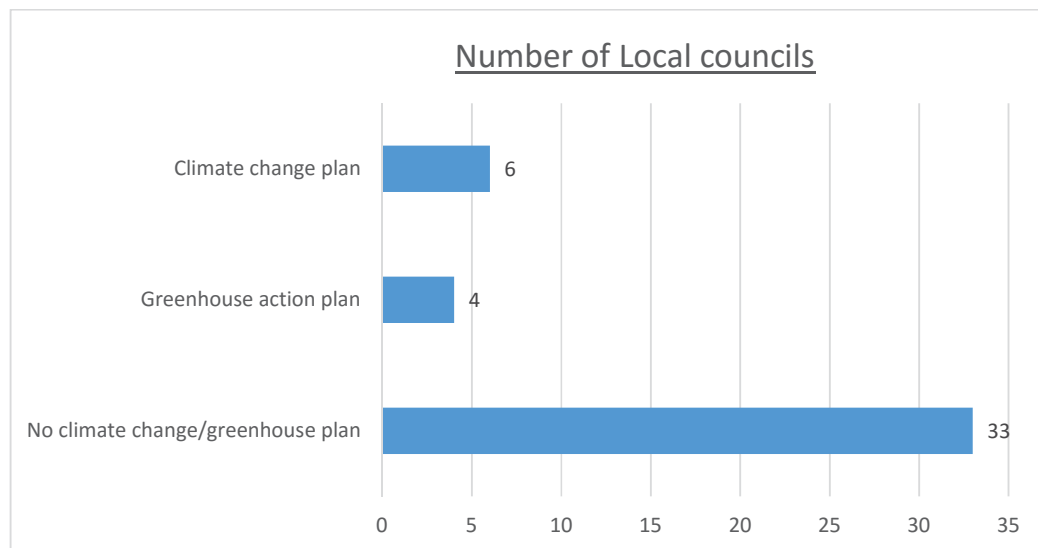


Figure 5: Local councils with a Climate change and Greenhouse action plan

Geographically, seven councils (Blacktown, Parramatta, Leichhardt, Marrickville, Burwood, Canada bay, Canterbury and Strathfield) are in the Western Sydney region and three councils (Ku-

ring-gai, Pittwater, North Sydney) are in the northern area of Metropolitan Sydney. This suggests that councils in the western Sydney region are more advanced in addressing the issues of climate change than other parts of Metropolitan Sydney.

### **4.3 CONSIDERATION OF VULNERABLE GROUPS WITHIN CLIMATE POLICY**

This final section of the desktop mapping identifies the extent to which these climate policies recognised vulnerable groups including gender.

In terms of the identification of specific vulnerable groups, most of the councils with climate plans unanimously identified elderly people as most vulnerable to climate change risks such as heat. Other vulnerable communities identified included people with health issues, disabled people, young children, economically disadvantaged people and Indigenous communities (Table 1).



<b>Council Name</b>	<b>Climate/greenhouse policy/plan</b>	<b>Identification of key vulnerable groups</b>	<b>Gender identification</b>
Blacktown	Blacktown Climate Change Action and Adaptation Plan 2011-2025	Elderly and other vulnerable populations with health issues due to heat waves	Not identified
Parramatta	Climate action plan 2006-2011	Frail, disabled or elderly residents, young children	Not identified
Marrickville	Climate change plan 2015-2025	Elderly	Not identified
Pittwater	Climate change policy	Not identified	Not identified
Ku-ring-gai	Climate change strategy	Elderly	Not identified
Leichhardt	Council climate change plan	Economically disadvantaged, people with chronic illness, the elderly, the very young and indigenous communities.	Not identified
Canada Bay	Greenhouse action plan	Not identified	Not identified
Strathfield	Greenhouse Action Plan 2007	Not identified	Not identified
North Sydney	Greenhouse action plan 2010-2015	Not identified	Not identified
Canterbury	Greenhouse Gas Reduction Action Plan 2008-2010	Elderly and disabled.	Not identified

Table 1: Identification of vulnerable community by climate change plan

Table 1 also highlights that none of the local councils with a climate policy considered women as vulnerable to climate change. This suggests a gender blindness and lack of climate justice in the climate policy of the local councils of Sydney Metropolitan area.

#### **4.4 SUMMARY OF DESKTOP MAPPING**

The desktop mapping of the local councils shows that all the councils work in the sector of environment but only around half of them are working in the sector of climate change. Further, only 10 councils have climate change or greenhouse policy and some of these policies have identified climate vulnerable communities in their area. This shows that climate change is an emerging issue in the local councils. In terms of gender inclusion in the climate policy of local councils, the research shows that none of policies have identified gender as a vulnerable group in relation to climate risks. Considering the importance of understanding this ‘absence’ of justice for gender in the climate policy of local councils, the thesis now presents detailed information about three case study areas (Blacktown, Marrickville and Ku-ring-gai).

## **5 FINDINGS: BLACKTOWN, MARRICKVILLE AND KU-RING-GAI**

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Further to the Sydney-wide mapping, the second phase of the research was to understand the presence or absence of gender in climate change policies in three selected case study councils. As noted in the methodology, three councils were selected: Blacktown, Marrickville and Ku-ring-gai (Figure 6). The discussion below first sets out some brief background information about each case study. It then sets out the findings from the policy analysis before presenting the findings from the semi-structured interviews.

### **5.1 BACKGROUND TO THE CASE STUDIES**

Blacktown is situated approximately 35 kilometres west of the Sydney Central Business District. It is the largest local government area by population in NSW. It occupies an area of 247 square kilometres and has population of 332,424 (Blacktown city council, 2015). Marrickville council, in the Inner West of Sydney, is located 7 kilometres inner-west of the Sydney central business district. Marrickville sits on the northern bank of the Cooks River. According to Australian Bureau of Statistics of 2013, the council has a population of 82,523 (ABS, 2015b). Ku-ring-gai Council is a local government area 16 kilometres away from Sydney in the north shore region. There were 109,297 people in the Ku-ring-gai Council local government area in 2011 (ABS, 2015a). Ninety-five per cent of the residential area was low density housing, while just five per cent of land in Ku-ring-gai was used for business (KMC, 2015).

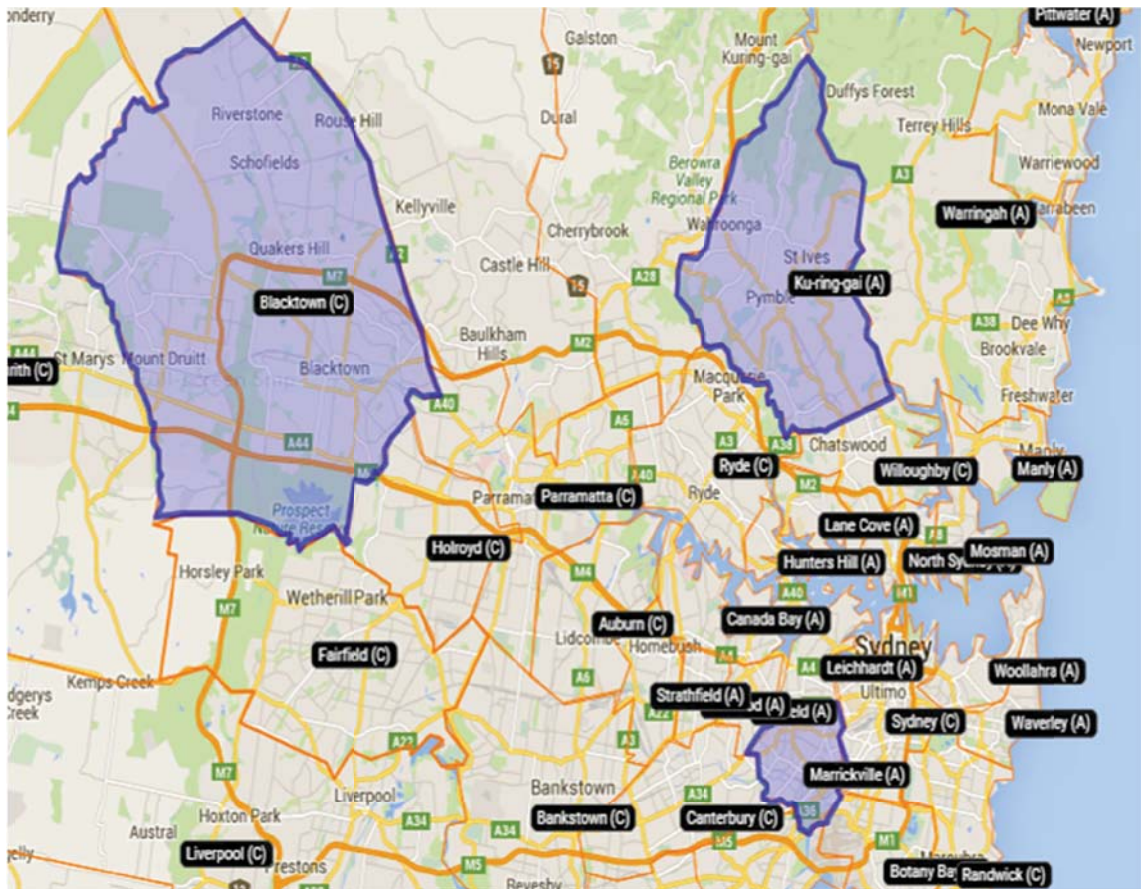


Figure 6: Map of three case study areas- Blacktown, Marrickville and Ku-ring-gai (Source: adapted from [www.au.nearmap.com](http://www.au.nearmap.com))

## 5.2 CLIMATE POLICY ANALYSIS

For each case study local council the main climate policy was selected for analysis, as follows:

- Blacktown Climate Change Action and Adaptation Plan 2011-2025 (BCCAAP)
- Marrickville Council Climate Change Plan 2015-2025 (MCCCP)
- Ku-ring-gai Climate Change Adaptation Strategy

This section first provides an overview of the contents of these policies before considering the issues of recognition, distribution and representation in greater depth.

### **5.1.1 Blacktown**

Blacktown formed its 'Blacktown Climate Change Action and Adaptation Plan (BCCAAP) 2011-2025' in 2011. The main aim of the BCCAAP was to address climate change for the benefit of current and future generations. It highlights the opportunities to reduce carbon emissions. It also identifies areas of vulnerability to climate change and recommends actions to assist in adapting to the impacts of climate change in the area (p.5).

BCCAAP (2011) identified that the Blacktown local government area is expected to become warmer, with more hot days and fewer cold nights. The average annual days above 40 degree Celsius could increase from the current average of 13 per year to approximately 21 by 2030 and to 49 by 2070. The annual average number of consecutive days of 40 degree Celsius or more could double by 2030 and increase six-fold by 2070. The current annual average of days with minimum temperatures below zero degree Celsius should decrease substantially by 2030 and be very rare by 2070. This will result into increase in energy demand for cooling in summer. Subsequently, since the colder days will be decrease, energy demand for heating in winter will decrease. Buildings, roads and other Council assets will deteriorate more quickly due to increased exposure to extreme weather conditions which increase the costs of maintenance. The higher temperatures may also increase the spread of vector-borne viruses and water-borne and food-borne diseases (p.7).

The magnitude of changes in short-duration extreme rainfall events (which were most likely to cause serious flooding in the small catchments in this area) were uncertain. Hail storms, and possibly wind storms, were projected to become more severe, although the degree was uncertain, which cause additional demands on emergency services, and increase insurance premiums. Power blackouts will happen more often when transmission lines were damaged. The only likely positive physical impact of climate change in Blacktown will be warmer winters and fewer frosts (BCCAAP, 2011, p.7)

### **5.1.2 Marrickville**

Marrickville introduced its climate plan 'Marrickville Council Climate Change Plan 2015-2025' on 2015. The main objectives of the plan were: a) Support the uptake of energy efficiency and low carbon, renewable energy in homes, businesses, streets and public spaces and Council facilities and operations and b) Enhance the ability of Council and the community to adapt to a changing climate (MCCCP, 2015)

Marrickville Council identified following areas as climate risks area: Extreme weather – storms, Heatwaves, Increased temperatures, Sea level rise and general climate change. The adaptation actions addressing the risks associated with extreme weather (storms) include measures to minimise flooding through improvements to the drainage system and improve flood warning systems. It was also identified that increasing the resilience of trees will have dual benefits for community health and safety. For the adaptation for heatwaves, prepare for more frequent heatwaves by mapping thermal hotspots and social vulnerability and subsequently prioritising locations for green infrastructure and developing a community heat communication and emergency plan. The need to monitor biodiversity more closely and improve resilience was also highlighted. In case of temperatures increase, it would be considered that increased urban tree canopy can able to mitigate the urban heat island effect through and introducing greener infrastructure. The impact of increasing temperatures on costs associated with maintaining infrastructure, assets and electricity consumption will need to be investigated. For adapting towards sea level rise, research on the impacts of sea level rise on open space, biodiversity and flooding was vital (MCCCP, 2015, p.8).

### **5.1.3 Ku-ring-gai**

The main aim of the Climate Change Adaptation Strategy of Ku-ring-gai council was a) to reinforce the advice that climate change is progressing rapidly; b) that adaptation action is required to satisfy due diligence in decision making; and c) that well designed and timely implementation of adaptation strategies can reduce the impacts of extreme weather events and enhance sustainability (CCAS, 2012)

Ku-ring-gai Council, located on the North Shore of Sydney, may be particularly vulnerable to increased storm and fire activity. The Council is particularly vulnerable to bushfire due to its geographic position in sharing boundaries with three National Parks. The Council had already recorded a loss of \$670 million from a single storm in 1991, and again in 1994 significant loss of houses occurred owing to bushfire. It was likely that Ku-ring-gai will experience an increase in drought, extreme wind and rain events and an increase in frequency of extreme temperature days. The regional scenarios predicted will create both adverse and opportunistic economic, environmental, social and governance consequences on Ku-ring-gai Council and its community. Primary effects associated with climate change could generate a range of secondary effects on the Ku-ring-gai local area. Notable impacts may include electricity, water, gas and sewer disruption, extremes in heat, more intense and frequent storms, local flooding and prolonged droughts. These

could affect infrastructure and property, businesses, logistics and transport, resources, public services, biodiversity, land and health (Scott and Hayward, 2007 cited in CCAS, 2012, p.3).

In conclusion it can be said that all the three councils despite having different geographical location and size, have identified heat as their main climate risks. Other than that flood and storm were considered other climate risks in all three areas. Bushfire was considered one of the major risks in Ku-ring-gai area where as it was not considered risk in other two councils. The summary of the climate policy analysis of the three councils is given below in Table 2.

<b>Climate plan/strategy</b>	<b>Policy aim</b>	<b>Climate risk</b>	<b>Recognition</b>	<b>Distribution</b>	<b>Participation</b>
Blacktown Climate Change Action and Adaptation Plan (BCCAAP) 2011-2025	Reduce carbon emission, Identify areas of vulnerability, give adaptation measures	Extreme heat, due to which spread of vector-borne viruses and water-borne and food-borne diseases, flooding, hail storms, and possibly wind storms	Elderly and other vulnerable populations such as those experiencing health issues	Not specified	Two days community consultation in 2008 on Climate consensus. Participants randomly selected
Marrickville Council Climate Change Plan 2015-2025	Support the uptake of energy efficiency and low carbon, promote renewable energy, enhance the ability of council and community to adapt to climate change	Extreme weather – storms, Heatwaves, Increased temperatures, Sea level rise and general climate change	Elderly people	Not specified	Not specified
Ku-ring-gai's Climate Change Adaptation Strategy	To reinforce that climate change is progressing rapidly, adaptation action, and timely implementation of adaptation strategies to reduce extreme weather events and enhance sustainability.	Strom, bushfire, extreme heat and drought	Older people and children vulnerable towards extreme heat, 13,000 houses near to bush area vulnerable to bushfire hazard	'House Buddy' program to monitor, vulnerable residents in time of extreme risks, Ensure supervision of children on extreme heat days	In 2008, two workshops as part of a community consultation process to discuss climate change weather. Participants selected from local business, government agencies, emergency services and NGOs

Table 2: Summary of climate policy of the three case study councils



#### **5.1.4 Gender and climate justice in climate policies**

To identify and understand the presence of climate justice for vulnerable communities including women, Fraser's 'three dimensional criteria' - recognition, distribution and representation- was applied to study the local councils' climate policy.

In relation to recognition, the Blacktown climate plan (BCCAAP) recognized that more extreme and longer lasting heatwaves in summer, combined with population growth, was likely to increase heat related deaths amongst the elderly and other vulnerable populations such as those experiencing health issues. Based on current socio-economic data for Blacktown, this could amount to an extra 37 heat-related deaths per year in the Blacktown Local Government Area (LGA) by 2030 and an extra 65 by 2070 (BCCAAP, 2011).

The climate change plan of Marrickville too considers elderly people as vulnerable to climate extreme events. Their identification of elderly as vulnerable in climate plan was in line with their already existing strategy 'Community elderly plan' for elderly people (MCCCP, 2015).

The Ku-ring-gai climate strategy identified older people as a vulnerable group in the context of extreme heat because demand of energy infrastructure during hot season will be at peak. This could lead to reluctant from older people to use their limited income on cooling appliances such as high energy consuming air conditioner. They are tempted to endure heat then use their limited resources. Further, the strategy also considered 13,000 houses near to bush area vulnerable to bushfire hazard (CCAS, 2012).

In case of distribution of resources for vulnerable community only the Ku-ring-gai council had allocated specific adaptation financing for older people and children. The other two councils did not specifically specify any adaptation plans for vulnerable people.

The final criteria is representation. In case of consultation with the community for formulation of the climate plan the Marrickville council did not identify any such work. On the other hand, Blacktown had done two days consultation with the community during the formulation of its climate plan, but for the selection process of the participants were selected randomly. Similarly, Ku-ring-gai council also conducted two workshops for the preparation of the climate plan and the participants for the workshop were specifically selected from local business, government agencies, emergency services and NGOs.

### **5.1.5 Summary: policy analysis**

In conclusion, the main aim of three climate change plans/strategies were to reduce greenhouse gas/carbon emissions and increase the adaptive capacity of the community and council. In relation to climate risks, all of them have identified heat and storms as their main climate risks. Floods, heat waves, drought and high rainfall were identified as additional climate risks. Ku-ring-gai also identified bushfire as another climate risk as the area contains three national park areas.

In relation to vulnerable community all three have unanimously considered elderly people as vulnerable to climate risk especially towards heat which cause health issues. Furthermore, Ku-ring-gai council has identified communities (particularly children) in bushfire prone areas as vulnerable to climatic risk. The plans have not identified any other vulnerable groups such as disabled, indigenous as vulnerable to climate change. It also does not have specific section on vulnerable community and impact of climate risk on them.

For the distribution of resources for climate risks towards identified vulnerable community only Ku-ring-gai have a specific plan. In relation to representation for climate policy formation, Ku-ring-gai and Blacktown have done consultation work with the community.

However, the policy study also indicates the absence of any kind of gender specific recognition/participation/distribution in the climate plan. This indicates that all the three climate plans have failed to address climate justice for gender.

## **5.2 INTERVIEWS**

Interviews were conducted with council staff and related stakeholders who were working in the sector of climate change and gender in order to provide deeper understanding into the councils' process of understanding climate change, its risks and about people who will be affected by climate disasters. This allows an analysis and understanding of the councils and related stakeholders perception towards gender and climate and challenges for gender inclusion. This section is structured as follows. Firstly, it looks at the general identification of climate risks and affected vulnerable groups in the local community. Then particular gender and climate risks are identified and finally challenges for gender inclusion in climate polices are explored.

### 5.2.1 Climate risks and identification of vulnerable groups

Blacktown council identified increasing heat as its major climatic risk of the area which was causing health issues in the area especially in children and elderly people due to their age factor:

*“Health risk associated with urban heat is increasing. There is less knowledge about this in the community. The health impact is massive and it continues to get worse. It always come back to lack of knowledge, and care. There is lack of data in this sector. But we are pretty confident that hot days are going to increase which is going to affect the health of the community”* (Council staff, Blacktown)

The interviewee blamed the cause of this increasing heat to urban development, wide concrete roads, less trees and having no coastal areas nearby for cooling breeze.

Marrickville council too identified extreme heat as the major risk of climate change which was causing health impacts in the community. Flood risk was considered another area of climate hazard in Marrickville council which would affect the low lying areas of the council.

Similarly, Ku-ring-gai council identified increasing heat as one of their main climate threats. Another threat was identified as bushfire, due to the vast bushland area in Ku-ring-gai Council (1,100 hectares of council-managed bushland and 1,646 hectares of National Park Estate -Ku-ring-gai Chase, Lane Cove and Garigal National Parks (KMC, 2015)), which could cause financial loss in the area:

*“It depends on how you assess hazard. In terms of number of people affected it’s probably heat, but in terms of pure financial loss it’s bushfire. So in terms of perceived risk by the community it’s bushfire... They are at a different scale on how people look at them such as financial impact, health impact and the social impact. It also shows potential loss and historical loss. If you look at historical loss which is expensive, it tends to be storm. But the greatest potential loss is bushfire. Because we’ve got 14000 housed in terms of bushland, which are highly vulnerable community”.* (Council staff, Ku-ring-gai)

The staff of Ku-ring-gai informed that climate risks are addressed through a ‘multi-hazard’ approach which further includes risks like storm, drought and other impact of climate change.

In summary, all the three case study councils' staff perceived increasing heat as the main climate risk caused by changing climate, which corresponds with the desktop mapping and policy analysis. The Blacktown council interviewee informed that health risks due to heat were a major problem in the area. This affects very young children and very old people, because of their age which gives less ability to cope with the impact of heat. He also identified that disadvantaged individuals will be affected more by heat. Some disadvantaged and poor areas were vulnerable to urban heat such as Willmot and Mt. Druitt area, where most of the buildings were old and have no insulation and people do not have means to cool or heat their home due to poverty.

In relation to extreme heat impact in Marrickville council, elderly and very young people were identified as vulnerable. Further, people with non-English speaking backgrounds were taken as vulnerable as it will be hard for them to understand and communicate and get the required information to cope with climate change. Additionally, people with disability and mobility issues were also considered vulnerable to climate change due to their inability to cope with the climate change related risks. Moreover, people with very low income (homeless people or people who live in government benefits etc.) were considered vulnerable as they cannot afford to buy means such as cars (to travel to cool areas such as the beach) or air conditioners (to cool the house) to cope with change. People who live in boarding houses were vulnerable to increasing heat, as they were generally single parent families – usually mother or father with their children, and older women.

The Ku-ring-gai council representative considered aged community and seniors, Culturally and Linguistically Diverse (CALD) communities, early childhood centre, nursing homes and small businesses.

### **5.2.2 Gender and climate vulnerability**

This section explores the perception of interview respondents about their views on the relationship between gender and climate change. All the interviewees admitted that gender issues were not considered or did not come up while making climate change policy as they perceived that other groups, such as elderly or children, were more vulnerable to climate change. Some respondents, even when explicitly asked, were not able to see a connection between gender and climate change. Others when asked to think about the ways in which women could be more vulnerable were able to identify some important factors including the impact of heat, lack of resources and different attitudes to adaptation.

At first the respondents admitted that they have not considered links between gender vulnerability to climate change risks. One of the stakeholder interviewee plainly rejected any links between gender and climate vulnerability. She said:

*“I think women are metabolically more capable of coping with heat than men. Generally I don’t think that you would treat women differently ...you might target them differently... but I don’t think that being women makes you more vulnerable”* (Environment staff, Local government NSW)

Some respondent have admitted that they have not considered linkages between women and climate issues. They informed that:

*“We haven’t thought really about gender as an issue. It’s not probably that we don’t want to include gender, just that it was not on top of our mind. Gender does not appear as a big issue. But maybe if we investigate deeply it might be”* (Council Staff, Marrickville)

*“We haven’t really thought about gender as an issue”.* (Council Staff, Blacktown)

Another respondent from a women’s NGO admitted that she never actually thought about any relation between climate change and its impact on women and she was interested to know more about it:

*“I can say that the disadvantage community as a whole would struggle with climate change if that means increasing cost of electricity and cooling the house etc. Potentially women who are single mothers would struggle with such situations. But I am too sure how else it could be linked”* (Women organization staff, Blacktown)

Only the council staff of the Ku-ring-gai said that they have considered women as vulnerable to climate change effects, but it was not specifically written in the climate plan. However, they have adjusted their workshops for emergency situations so that they addresses gender issues more:

*“Yes we have identified women as vulnerable, but our resources for this particular year has not extended to do a workshop particularly for them. But when we do workshops for residential areas, we ensure that issues of women too are addressed. For example we predict that such and such situation occurs and your family have no car, how you going to react to those sort of situations. Such situations are equally relevant to all and can be just*

*adapted to the situation depending on who your audience are. We use scenario cards, but we need to ensure that they are not too gender specific in case a person is not female. But if you look at how it is written and what the scenarios are a lot of them very applicable to the person at home as a carer such as women. So our work is quite applicable to women.”*  
(Council staff, Ku-Ring-Gai)

This shows a lack of adequate research and knowledge in the area of climate change, its impact on women and provision of relevant adaptation measures. This further causes a lack of consideration and inclusion of gender in the area of climate policies of local councils.

However, when asked explicitly about their experiences in the council about women and climate change issues, the respondents were able to identify some examples of connections between women and climate risks.

One issue identified was the impact of increasing heat as a key health risk for newborn or young children which have direct effect on their mother as their primary carer causing additional emotional, financial and physical stress.

*“There is some ways of addressing this in the plan to mitigate the risk of heat to children and mothers. We don’t specially target women, mothers or newborn so I think there is room for that. Councils regularly do meet up with NSW health and I think that’s probably is the best place to start an initiative like this. Informing expecting mothers and family- perhaps about heat so that they can do something at home to mitigate heat as well. I am not sure that NSW health engage with mothers in these issues of heat or not. But there is no reason why the councils cannot be involved in giving information about heat to mothers or pregnant women”* (Council staff, Blacktown)

*“I guess when you are talking about women you are talking about children as well, so we need to do something specific that can be done by the council and build it into the plan.”*  
(Council staff, Marrickville)

Another area of increasing heat effect was related to increasing consumption of alcohol which correlates with increasing domestic violence against women:

*“Some of the climate change impacts for instance severe heat events might be linked to domestic violence. As increasing heat could lead to higher alcohol consumption which*

*could link to domestic violence. If people are disadvantaged and they cannot get out of the home then it is going to impact more. So there is one area we have to look at for the climate change impact. The challenge is what the degree of that impact is going to be? and to decide what to do specifically for women".* (Council staff, Marrickville)

*"Domestic violence spike up when it's a hot climate. In the Christmas period the statistics are high, of such incidents. It's really traditional statistics. We always say that when it's hot weather people consume more alcohol have more parties, and domestic violence flares up."* (Women organization staff, Blacktown)

Hence, these examples show that there is a link between increasing temperature and its impact on women's unpaid work load, health and violence against them.

Another issue identified was a lack of resources. One respondent suggested that women generally have less resources such as money, home or superannuation than men, as they generally work less or in less rewarding jobs to fulfill their role as the primary carer for their children and family. Further, women were sometimes homeless due to gender violence or divorce at an older age, as they do not usually have their own income hence they were the ones who had to leave the home.

*"Women I guess are some of the most disadvantaged groups in our community particularly if they are not earning their own income and relying on someone else. When we talk about gender violence it's usually the women who have to leave their home, they have to take refuge and they might not have the income to take their children with them. There is a lot of information on the issue that when women retire, women are much worse off because they don't have enough super – because they have taken breaks during work time to look after children. There are imbalances, they may be in a disadvantaged group and may not be able to cope with climate change".* (Council staff, Marrickville)

*"Issues with older women are that they are reaching a certain age and getting divorced, sometime they have never worked in any paid jobs as they always worked as a homemaker – so they don't have super, they haven't had any savings and sometimes they are not able to afford a house and become homeless... Traditionally older men were more homeless but now more and more women are becoming homeless".* (Council staff, Ku-ring-gai)

This lack of resource puts women in the category of disadvantaged group. This in turn causes a lack of coping capacity in women towards climate risks like heat, health etc.

Finally, in terms of attitudes towards coping with climate risks, interviewees perceived that women and men have different views. While women want to play it safe and wanted to go to a secure place during climate extreme events, it was perceived that men tend to play the role of ‘hero’ or ‘savior’ and willing to take risks.

*“During bushfires, we have gender impacts that men generally think that they are capable of dealing with, whereas women are more likely to say ‘its past me now’ and rely on someone else”. (Council staff, Ku-ring-gai)*

*“Some of the women whom I have spoken to in that exact situation, the women wanting to leave, because she did not want to go through another bushfire. Whereas the husband was going ‘no! I am not going to let this defeat me, we get help in, we get someone who can do this for us, we will be fine’. But she saying ‘No’. The women wanted to get out and play it safe, and the husband is prepared to take the risk.” (Council staff, Ku-Ring-Gai)*

In summary, while many interviewees stated that they have never considered any gender issues while constructing climate change policies, they said that it could come up as an important issue during their present ongoing work on climate vulnerability mapping and further work on climate adaptation. Additionally, when explored in greater depth, the interviewees were able to identify examples from their work experiences which show climate change impacts on women. The climate issues related to gender identified by the interviewees were increasing impact of heat on women, lack of resources and lack of adaptation capacity.

### **5.2.3 Challenges for addressing gender issues in climate change policies**

The interview respondents gave various reasons for the lack of consideration of gender in climate policies. They were as follows: a lack of understanding of gender and climate change issues within the climate change sector, climate change as an emerging issue; a lack of budget allocation in the climate change sector; attitudes of staff within the council and a ‘one size fits all’ approach towards gender. These are explored in more detail below.

The council staff working in the sector of climate change and policy making themselves do not have adequate information around the issues of women vulnerability towards climate risks. Hence, they do not discuss gender during the consultation of climate policy making and therefore gender issues are not added in the policy.



Climate adaptation is a recent emerging issue which takes more time to be fully acknowledged by all levels of government. Due to which, not all government departments fully support or provide budgets in this area, as some of them are even climate skeptics. Hence, the staff who are working in the council around climate change need to keep lobbying to receive funding in this area. The comment below given by one of the council's staff shows the views towards climate change in the level of government.

*“Current state and federal government they are not very interested to address climate change. Probably the state government is a bit more forward towards climate change but the federal government is just refusing to back up. We just need to keep lobbying. Sooner or later they have to address it”.* (Council staff, Marrickville)

The respondents informed that the councils were more interested to put the budget in other areas such as development work like infrastructure construction, road etc. which was considered more rewarding than climate change work. As one of the women organization staff informed that:

*“I think that Blacktown is a high need area. There are so many things to prioritize. I would say that they have other priorities. Whatever is easy for them to do they go for that, say for example transportation. Transportation around Blacktown is difficult especially in this Mt. Druitt area, it does not work. I would say that they see more of these things as priority than women's issues. There was also because it is also a developing area, there are a lot of people coming in the Blacktown area hence the council see housing facilities and other stuff as more of a priority area”.* (Women organization staff, Blacktown)

Attitudes of the council staff are not positive towards climate change work or investment. They have a conservative view towards new areas like climate change which makes it hard to get climate projects approved in the local councils. Further, the climate projects do not give instant financial gain such as development work, hence the council staff are reluctant to take the financial risk:

*“I think the bigger cultural problem here is people who are in financial administration at council. They tend to bar the climate projects. They are very conservative. Very conservative... When it comes to science and suitability area, the way they view success is that when we save some money for the council. Whereas, we tend to view success when a number of people put solar panel in their roofs and tones of CO2 being reduced. They don't see it as success outcome*

*that good for council that has not actually provide council anything. But it does provide benefit to community and global climate change”. (Council staff, Ku-ring-gai)*

Finally, within the climate change policy sector, there is lack of adequate research for the identification of vulnerable communities, as in the climate plan most of the councils have only identified older people as vulnerable group. Further, most interviewees said that they generally do not distinguish between men and women while making plans and allocating adaptation measures. This shows their attitude of providing adaptation measures on the basis of “one size fits all” proposition without considering differences, social, cultural or financial, in relation to gender.

In summary, the interviews identified that heat is one of the major climate risk in all three areas. Further, the case studies recognized older people, children, disabled, disadvantaged and CALD groups as vulnerable but failed to recognize women vulnerability to climate change, even though most respondents were women themselves. Various reasons were given for this gender non-inclusion in the policy. However, even though there is lack of gender inclusion in the policy or lack of understanding of the council towards women and climate change relation, the councils still provide some support to women organizations when needed and have some women oriented program such as women shed, older women groups etc. The next chapter provide discussion on the overall findings and analysis considering the analytical framework of Fraser’s ‘three dimensional justice’ for gender in climate change policy.

## **6 DISCUSSION: GENDER AND CLIMATE JUSTICE IN METROPOLITAN SYDNEY**

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The local councils in Metropolitan Sydney are gradually working towards addressing the impacts of climate change and providing adaption measures to the vulnerable communities due to climate change in their area. However, the empirical research suggests that issues of gender are not currently incorporated within the climate policies that are being developed. This chapter revisits the climate justice framework.

### **6.1 RECOGNITION**

Fraser's (1997, 2007a) 'recognition' perspective for women in climate justice, informs that no group should not be misrecognized (subjection to cultural invisibility) or left out due to 'institutionalized hierarchies' or gender specific status subordination. In this research, the recognition justice helps to show whether the climate policy have identified social/cultural differences between man and women in relation climate risks. Further, it also checks whether climate polices have addressed issues of 'status subordination' towards women, such as domestic violence, marginalization, unequal rights etc. which increase during and after climate disasters.

The desktop mapping showed that across Metropolitan Sydney, there was little recognition of vulnerable groups. In those councils where vulnerable groups were identified, most only identified older people as vulnerable. Moreover, within the climate policies there is no clear section for vulnerable communities and exploration of their potential vulnerability to climate risks.

In the three case study councils, Marrickville, Blacktown, and Ku-ring-gai, all three climate policies have considered old people as vulnerable. Ku-ring-gai have also added people living near bush areas as vulnerable to bushfire and Blacktown have included people with health risks as vulnerable. However, there is no further clarification or information on why they are vulnerable, how many of them, what kind of health risks and gender differentiation.

In the interviews, the interviewees identified a greater variety of groups as vulnerable, such as young children, disabled people, disadvantaged people or people with low income and non-English background community or CALD community as vulnerable to climate risks. All of these groups are more at risk from increasing heat. This shows that the climate plans fail to recognize and include

all the potential vulnerable groups in the plan, even though councils' staff recognize them as vulnerable. This non-recognition of vulnerable groups by climate plans may trigger a non-response by the council or other related organization in required adaptive measures towards these vulnerable communities.

In case of recognition of women as vulnerable group, the climate plans are completely silent. Furthermore, the interviewees too did not identify women as vulnerable to climate change risks. This shows that there is an absence of any recognition of women in climate policy as well as in perception of councils' staff and stakeholders. Interviewees, most of them female staff, informed that they did not consider women as vulnerable to climate risks during the formation of climate plans and they also do not consider men and women separately while taking suggestions from the community during the policy formulation period. However, some of them admitted that they might have to do more in depth research or vulnerability mapping to understand women's issues in the community and if it seems to be important, then they might include those during future reviews of the climate plan. The council staff identified that there are some kind of gender subordination due to domestic violence which is caused by stress due to increasing temperature. This is in line with the research done by WHGNE (2011) in Victorian bushfire areas, which shows that climate risks increase stress in men which cause violence against women. They have also recognized women as primary carers of their children during increasing heat period.

Furthermore, there is no specific department for women in any of the local councils of Metropolitan Sydney. It is addressed under the collective umbrella of community in the councils. The only legal document focused towards women is equity rights policy which ensures equal work rights and equal opportunity for women in the councils. Women's issues are narrowly confined to domestic violence in all level of government in Australia, which too is not directly addressed by local councils and is instead under the mandate of both State government as it considered as a health issue and addressed by Women's Health, NSW. Further, women's organizations are not aware about the linkage between climate change and gender issues. During consultation with the community for issues like climate, these women groups are invited, however, their issues are addressed collectively without gender consideration. Other climate NGOs do not work with local councils. This shows a lack of stakeholder pressure at council level which could have provide a greater diversity of views of understanding climate risks and measures by the council staff.

This shows that there is overall no ‘recognition’ of women in the climate plans of Metropolitan Sydney. However, there is some ‘recognition’ of women’s issues in councils as they recognize them as vulnerable to climate risks like heat which sometimes causes domestic violence.

## **6.2 DISTRIBUTION**

The research identifies that in distributive justice, women income generation capacity is decreased by their social and cultural role as primary carer for their family. This is an unpaid job which results in lower income and savings which in turn cause their higher climate vulnerability.

In the desktop mapping, the research found that there is no allocation of resources or adaptive measures for women. Furthermore, none of the councils have any specific women oriented programs in their climate plan. Women are not specifically identified as vulnerable to climate change and hence there is no specific distribution of resources for women in the climate plan.

However in the interviews with council staff, they identified that in case of women’s economic generation activity, women tend to take care of their children more than men which is an unpaid job which affects their income generation capability, and if they get divorced during old age period that also affects their coping capacity with issues like climate change due to their lower super fund. This finding is similar to previous research (such as Rohr, 2007; Hansson, 2007; Quinn, 2009; Alber, 2011; Nagel, 2012; Bjornberg and Hansson, 2013) in the area of women and climate change. Further, councils do organize workshops to give information about climate change and its risk and adaptation measures, but everyone from the community can participate in these. The council does not give any ‘targeted program/workshop’ especially for women. This shows that the council approach for climate change adaptation is on the line of ‘one size fits all’ approach (Abate, 2010).

The research shows that councils are more interested to put their budget in financially rewarding planning such as development work, rather than ‘invisible outcomes’ like climate change. Further, the state and federal government too are reluctant to provide a budget in this sector which too generate a hindrance to do more work in climate change and further on its impact on women.

However, the women organizations representative informed that council always actively helped them in their women oriented programs such as White ribbon day on 25<sup>th</sup> November and other domestic violence awareness program. They are satisfied with council’s support, but said that it

would be better if they have a written plan on women's issues so that local people become more aware and sensitive on these issues.

In conclusion, it can be said that the climate plans are entirely silent on the issue of distribution of resource for women. Hence, there is no 'distribution justice' in climate plan. However, in practice, councils tend to help or give resources to women related issues if needed. Also, they provide workshops/training which helps women as well. This shows, some presence of 'distributive justice' for women in councils' practice, even though it is not present in the written form as policy.

### **6.3 REPRESENTATION**

Representation is the third component of the Fraser's 'three dimensional justice'. It argues for participation of people as peers in any decision making and not to wrongly exclude them by making any political/community boundaries (Fraser, 2005, 2007b). For this research, representation justice try to understand whether women or related organizations are being included or consulted while making climate policy or it. If consulted, does it ensure justice for women in climate policy or not.

The desktop mapping research work, shows no participation of women in the formulation of climate policy. However, the climate policy analysis shows that the two of the case study councils (Ku-ring-gai and Blacktown) have organized workshops to consult with the community and stakeholders during their climate plan formulation process. However, it also shows that the councils have not done any specific consultation with women community groups or women stakeholders on their issues related to climate change.

The interviews show that, in the climate plan formulation process, council's community representative gather information from the community people and act as a linkage between community and environment team to provide community voice in the climate plan. However, the community consultations are not specific sector oriented, it is mostly general consultation process including all people without separating them according to their specific needs-such as women's issues etc.- in climate planning process. As the representative said:

*"The council have their community consultation for community workers to update their social plan. They do tend to ask or collaborate with organizations relatively frequently. But I would say its general not so much specifically about women's issues it's more general like what should the council be focusing on and that's where we say that women issues were*

*big factor in all these sorts of things and you should prioritize that. They have not yet done anything in terms of prioritizing women's issues in plans. However, they give support to us when we need it". (Community staff, Blacktown)*

The councils' community staff who engaged and organize workshops, identified that they do not work specifically with women groups to get their views on climate related risks and adaption measures perceived by women in the community. As the Marrickville council's community officer said that:

*"I am in the community development program for a long time. But we do not have any specific women's consultation in terms of climate change". (Council staff, Marrickville)*

Councils generally use multimedia to get peoples suggestions or give information on climate change to the people such as through their Facebook pages, own websites, e-newsletters etc. However, people always don't have knowledge or excess to these information. As the women community organization representative informed that she never got any invitation or information on climate change from the council:

*"We have not got any information from the council on climate change issues. I am sure they probably have some sources accessible, but maybe it's up to us to ask them to do something rather than them doing a campaign about it. But I have not seen anything that comes to my mind from the council on climate change. But I definitely think that this should be something they should be responsible for and giving information out there about climate change and the impact that it has on people here in Blacktown" (Women organization staff, Blacktown)*

Further, considering female participation in policy formulation, it come up that the three case-study councils' environment department have comparatively more female staff then the male staff, headed by female head and they lead the way for the formulation of climate plan. Hence, this suggest that 'a critical mass of women participation' does not ensure the 'inclusion of gender issues or gender justice' in policy making, unless there is 'change in attitude' or sensitivity towards importance of gender inclusion. This finding resonates with the study in Scandinavian countries by Magnusdottir and Kronsell (2015) where it is identified that although councils have a high proportion of female staff, this does not ensure a gender sensitive climate plan formulation. The next section, provides the overall conclusions to the research.

## 7 CONCLUSION

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This research has set out to examine how and why gender issues are incorporated within local councils' climate policies in Metropolitan Sydney and the implications for climate justice. This final chapter sets out the conclusions, study limitations and opportunities for further research.

### 7.1 SUMMARY OF FINDINGS

The first research question explored how councils are approaching climate change issues in their policies. The study shows that all the local councils (43) of Metropolitan Sydney are working in the sector of environment. However, climate change is an emerging issue in these local councils and they are at different stages towards addressing the challenges posed by climate change. Around half of them have acknowledged climate change and trying to work towards it.

Only 10 councils have formed climate policy/plan/strategy to date while others are in the process of making climate plan drafts or doing risk assessments. The climate policies have identified increasing heat as the major climate risk in their respective areas which is cause of many health related issues. They have identified various adaptation measures to decrease the impacts of heat such as providing heat shelters, cooling fountains in public area etc. Other climate risks identified are flood, storm, hail and bushfire.

The second question explored how gender is addressed or incorporated in these policies. The research shows that in relation to identifying vulnerable groups facing climate risks, most of the climate policies have unanimously identified older people and children as vulnerable. This is due to the age factor which affects their ability to get help when needed. Other councils identified disabled, disadvantaged groups and people with non-English background as vulnerable. However, overall, the policies appear to be 'silent' in relation to identifying a gender dimension to vulnerability and have not focused specifically on women's vulnerability towards climate change.

Finally, the research aimed to explore the opportunities and challenges for gender to be addressed in local councils' climate policies. One challenge is that there is participation of female staff during the formation of climate plan yet they themselves are not aware of gender inclusion or issues related to women and climate risks. This is quite revealing considering that most of the staff working in the environment sector in the case study areas are women. This shows that participation of women



in policy making does not make any difference until and unless there is an understanding of climate and gender issues and a change in attitude towards gender sensitivity. This could also be because the environmental sector in the council is 'too technocratic' in their working process and give little consideration to the social or cultural impacts of climate change. The Environment department staff in the council do take suggestions from the Community officers of the council (which deals with the community issues in the council) during the policy formulation process yet the influence is seems to be limited.

It can be identified that the 'gender silence' in the climate policy of local councils is caused by a lack of research on gender and climate change, climate change as new issue in the council, and lack of budget in this sector. Further, the negative attitude of other council staff towards the climate change sector causes more budget constraints. Additionally, the climate policy gives the same kind of adaptation measure for most of the vulnerable community without considering any gender differences. Finally, a lack of research in the sector of climate justice and gender causes less information to be available in this sector and hence people are not adequately informed about the importance of the issues.

The research also shows that the lack of a written document such as a policy does not always relate to no action by councils towards gender issues. In contrast, the council provides help to women's organizations to address issues like domestic violence and women oriented work such as forming older women groups and women sheds, which provide companionship and handy skills for jobs respectively. This work does not have direct links to climate adaptation, but is able to help them to get support and skills in case of need.

## **7.2 THE IMPLICATIONS FOR CLIMATE JUSTICE**

Considering Fraser's (2005, 2007b) three dimension of justice – recognition, distribution and representation – it can be summarized that there is lack of climate justice for women in the councils' climate policy in Metropolitan Sydney. This is because the climate policy did not recognise women as vulnerable, provide any specific resource (distribution) for climate risks or have any specific representation methods to include women.

However, in contrast to the policy, the practice by councils in their work provides a different perspective. Although they may not identify women as vulnerable to climate change, they do however provide needed support to them whenever necessary. Hence, in practice it can be said that

there is presence of ‘limited climate justice’ for women, as it would be incorrect to completely neglect the work done or support given by council towards women directly or indirectly.

Furthermore, the research also shows that ‘recognition justice’ determines the existence of the other two justice criteria i.e. ‘distribution’ and ‘representation’ for women in the climate policy of local councils. ‘Recognition justice’ is considered more important because it is only after recognizing and understanding women’s vulnerability to the impacts of climate risks that stakeholders will be able to demand for the ‘distribution’ of resources for women to adapt to climate change and further, demand for women’s representation in policy formulation process to provide their views on their issues. In summary, it is important to have a legal written document which explicitly addresses gender issues to ensure climate justice for gender within local council policy.

### **7.3 OPPORTUNITIES FOR FUTURE RESEARCH**

Due to time constraints, the research only focused on three case study areas in Metropolitan Sydney, with a limited number of interviews in each case. As a result, it was not possible to capture all of the internal power dynamics within the council which is likely to be important in order to more fully understand the inclusion/exclusion of gender issues in climate policy. Hence, further research can be undertaken across a wider range of departments within local councils to understand the formulation of climate policy and how gender might be incorporated. There is also the opportunity for more case studies across the whole of the Metropolitan Sydney area. Future research could also include wider stakeholders’ perceptions on the works of local councils on climate justice for gender.

The research explicitly focused on Metropolitan Sydney. Future research could compare and contrast rural and urban local councils’ climate policies in terms of understanding gender and climate justice. The research could also be expanded to identify ‘climate- gender justice’ in local council policies across Australia and at different levels of policy making (state and federal government). This would give a broader view of the Australian context and allow for comparison across and within state climate policies. Additionally, more research should be done in the area of ‘climate justice for gender’, across different policy sectors to provide more in depth information about the climate risks faced by women and the possible adaptation measures.

Finally, there is potential for a comparative study between Australian local climate policy and other developed or developing countries local climate policy considering climate justice and gender. This

would allow exploration of similarities and differences as well as consideration of wider contextual and structural issues.

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## APPENDIX: INTERVIEW QUESTIONS

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### **Background**

- What post you are in?
- How long have you been working in the post?
- What is your role and responsibility?

### **Climate issues**

- What are the specific climate issues and impacts within this council area?
  - e.g. bushfire, flooding, heat
- How is your organization addressing issues of climate change?
  - Policy, partnerships, forums, voluntary groups?
- Within this council area, are there specific groups who are more vulnerable to the impacts of climate change? Who/why?

### **Connecting climate and gender issues**

- How is gender an issue for climate change in this area?
  - Which groups of women?
  - Which climate change issues/impacts?
- Is gender an issue that is currently considered within the council response to climate change? How/why?
- In your opinion, how should gender be considered/incorporated within climate policy?
- What are the challenges for connecting gender and climate issues within the local council?
- How might future policy address issues of climate change and gender?

## APPENDIX 2: ETHICS APPROVAL

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### **Final Approval- Issue Addressed: Ethics Application Ref: (5201500406)**

Dear Dr Fuller,

Re: 'Climate justice and gender: A study of Sydney metro councils' climate policy'

Thank you for your recent correspondence. Your response has addressed the issues raised by the Faculty of Arts Human Research Ethics Committee.

Approval of the above application has been granted, effective 27/05/2015.

This email constitutes ethical approval only.

If you intend to conduct research out of Australia you may require extra insurance and/or local ethics approval. Please contact Maggie Feng, Tax and Insurance Officer from OFS Business Services, on x1683 to advise further.

This research meets the requirements of the National Statement on Ethical Conduct in Human Research (2007). The National Statement is available at the following web site:

[http://www.nhmrc.gov.au/files\\_nhmrc/publications/attachments/e72.pdf](http://www.nhmrc.gov.au/files_nhmrc/publications/attachments/e72.pdf).

The following personnel are authorised to conduct this research:

Dr Sara Fuller

Ms Niru Gurung

NB. STUDENTS: IT IS YOUR RESPONSIBILITY TO KEEP A COPY OF THIS APPROVAL EMAIL TO SUBMIT WITH YOUR THESIS.

Please note the following standard requirements of approval:

1. The approval of this project is conditional upon your continuing compliance with the National Statement on Ethical Conduct in Human Research (2007).
2. Approval will be for a period of five (5) years subject to the provision of annual reports.

Progress Report 1 Due: 27/5/16

Progress Report 2 Due: 27/5/17

Progress Report 3 Due: 27/5/18

Progress Report 4 Due: 27/5/19

Final Report Due: 27/5/20

NB: If you complete the work earlier than you had planned you must submit a Final Report as soon as the work is completed. If the project has been discontinued or not commenced for any reason, you are also required to submit a Final Report for the project.

Progress reports and Final Reports are available at the following website:

[http://www.research.mq.edu.au/for/researchers/how\\_to\\_obtain\\_ethics\\_approval/human\\_research\\_ethics/fo rms](http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/human_research_ethics/fo rms)

3. If the project has run for more than five (5) years you cannot renew approval for the project. You will need to complete and submit a Final Report and submit a new application for the project. (The five year limit on renewal of approvals allows the Committee to fully re-review research in an environment where legislation, guidelines and requirements are continually changing, for example, new child

protection and privacy laws).

4. All amendments to the project must be reviewed and approved by the Committee before implementation. Please complete and submit a Request for Amendment Form available at the following website:

[http://www.research.mq.edu.au/for/researchers/how\\_to\\_obtain\\_ethics\\_approval/human\\_research\\_ethics/forms](http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/human_research_ethics/forms)

5. Please notify the Committee immediately in the event of any adverse effects on participants or of any unforeseen events that affect the continued ethical acceptability of the project.

6. At all times you are responsible for the ethical conduct of your research in accordance with the guidelines established by the University. This information is available at the following websites:

<http://www.mq.edu.au/policy/>

[http://www.research.mq.edu.au/for/researchers/how\\_to\\_obtain\\_ethics\\_approval/human\\_research\\_ethics/policy](http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/human_research_ethics/policy)

If you will be applying for or have applied for internal or external funding for the above project it is your responsibility to provide the Macquarie University's Research Grants Management Assistant with a copy of this email as soon as possible. Internal and External funding agencies will not be informed that you have approval for your project and funds will not be released until the Research Grants Management Assistant has received a copy of this email.

If you need to provide a hard copy letter of approval to an external organisation as evidence that you have approval, please do not hesitate to contact the Faculty of Arts Research Office at [ArtsRO@mq.edu.au](mailto:ArtsRO@mq.edu.au)

Please retain a copy of this email as this is your official notification of ethics approval.

Yours sincerely

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