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Climate Security in the United States and Australia: A Human Security Critique

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Climate change has been recognised as a security issue for the past two decades. However, no actions have been sufficient to prevent the climate insecurity imposed of states, individuals and nature. Securitisation of climate change has been debated extensively. This paper contributes to this scholarship by exploring the articulation of climate security issues in current national security policy discourse. A comparative discourse analysis of the recent key security policy documents of the United States and Australia provides an insight to the extent to which climate change has been incorporated in the security discourse. The analysis identifies the key elements of securitisation based on the theory of Copenhagen school of security studies and emphasises the necessity of implementing a human security approach to climate change. This article makes the central argument that climate change should be explicitly recognised by states as an existential threat to security and measures should be implemented under a human security approach.

Climate change is a challenge that states have attempted to address for more than three decades. Although climate change is discussed in various platforms and countless measures have been recommended at both regional and international level, current actions can be regarded as insufficient to reverse serious climatic disruption. Hence, this article reconsiders the possibility of securitisation of climate change as a means created urgency to mitigate and adapt to the threat of climate change. Securitisation of climate change lifts climate change to the top of the policymaking agenda (Floyd 2008) and, it could enhance and expand the policy response at different government levels by prompting policy makers and the public to acknowledge the security implications of climate change (Scott 2012). The research to date tends to focus on the success or failure of the securitisation of climate change rather than its potentially positive impacts. Moreover, the question as to whether climate change should be considered as a matter of security remains contested.

The general consensus is that climate change is a threat multiplier rather than a direct driver of conflict (Ahmed 2011; Christoff & Eckersley 2013; Elliott 2015; Oels 2012; Scheffran & Battaglini 2011). According to Deudney (1990) and Bonds (2015), it is wrong to link environmental problems with national security because the state's traditional security focus is interstate violence, and climate change should not be prioritised as a security issue because it is not "an enemy posing a direct threat to humans" (Corry 2012). Yet, climate change increases the risks of violent conflicts (Abrahams & Carr 2017; Barnett 2009; Scheffran, Link & Schilling 2012). The framework for securitisation emerged as a result of the need to broaden the scope of security to include a range of non-military issues (McDonald 2012). Thus, a threat or a security issue is not always a conflict or an incident with arms or weaponry.

This research analysis focuses on the security policies of two significant state actors; Australia and the United States (US) within the period of 2014 to 2019. The aim is to answer the question; 'how threatening was the risk of climate change in the perceptions of national security decision makers?' Recent and high-level policy documents were selected for this analysis after a thorough examination of security policy documents of the US and Australia. These are the *National Security Strategy (USNSS) 2017* and *National Security Strategy (USNSS) 2015* from the US and, the *Foreign Policy White Paper (FWP) 2017* and the *Defence White Paper (DWP) 2016* from Australia. This research analysis advances the understanding of securitisation of climate change in the context of national policy implementation.

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This research analysis makes the central argument that implementation of a human security approach to climate security by states, could be the solution to the lack of satisfactory efforts against the threat of climate change. This paper first gives a brief overview of securitisation and its elements. It will then examine the selected policy documents and report the proportion of each text dedicated to climate change. A comparative discourse analysis of the selected policy documents is presented. Thereafter, this paper emphasises the significance of noting upon whom (i.e. referent object) actions against climate change are focused. The possibility of implementing a human security approach to climate change is discussed based on the Human Security chapter of the IPCC's Report on *Climate Change 2014: Impacts, Adaptation, and Vulnerability.* Each selected policy document of the US and Australia is compared against it to determine to what extent human security approaches to climate change were supported by these states. Lastly, this paper lists a set of recommendations that could be implemented to tackle the threat of climate change.

Review of the US policy documents

This review of the national security documents focuses on two key questions; to what extent the policy documents recognise the threat of climate change, and does it contribute to a securitisation of climate change? In order to conduct a valid and practical evaluation, a framework for securitisation is outlined because there is no universal definition of securitisation. As the concept of security has no constant meaning, it is interpreted differently in every tradition within security studies (Floyd 2008; Stripple 2002). Securitisation is subjective because it only presents one manifestation of a theory and is applied accordingly to different case studies (Balzacq & Guzzini 2015). For the purpose of this research, securitisation is defined as a process of transforming issues into matters of security by implementing extraordinary measures on a referent object. The presence of key parameters of securitisation such as an existential threat, expression of issue (ex: threat of climate change) as a matter of security, extraordinary measures and a referent object indicates an attempt of securitisation.

The US National Security Strategy highlights national security concerns and elaborates on how the US administration wishes to tackle them. The USNSS 2017 illustrates the security policy under President Trump, whereas the USNSS 2015 represents the period of the Obama administration. Calculating the percentage of the number of pages which mention environmental concerns, out of the total number of pages in the policy document, gives an overall understanding of the magnitude of an issue in a security agenda. In the USNSS 2017, potential environmental challenges are discussed in less than one percent of the overall document and in the USNSS 2015, three percent of the whole document discusses environmental challenges [Figure 1.0]. The USNSS 2017 lacks the clear statement that climate change is a security concern. In the securitisation framework, the advantage of such an expression is that it could give high priority to the issue within a security agenda and trigger the necessary actions to tackle the threat of climate change. While there is no discussion of the threat of climate change in the USNSS 2017, the USNSS 2015 includes of a distinct section recognising the threat of climate change as one of the key national security concerns and it presents a general assessment of the threat of climate change. Despite climate change being one of seven national security issues discussed in the USNSS 2015, only three percent of the whole document discusses environmental challenges. This percentage is high compared to the one percent of the USNSS 2017, but three percent still indicates a low priority. Even so, the USNSS 2015 satisfies the requirement of the 'speech act' hypothesis as it declares climate change as a security issue and paves the way to a partial securitisation unlike in the USNSS 2017.

Securitisation of climate change requires more than the mere identification of climate change as a threat and should encompass the implementation of extraordinary actions to protect a referent object to from the threat. The USNSS (2017, p.14) implies a state-centric approach to security in the interest of building a resilient community against natural disasters and it highlights the need for protection of its people, property, infrastructure and 'taxpayer dollars from loss and destruction'. Moreover, the USNSS 2017 identifies that the need to respond to natural disasters is just as important as a counter response to an attack on the US. Christoff and Eckersley (2013, p. 200) refer to environmental implications as "weather of mass destruction" and indicate that it should be taken as seriously as weapons of mass destruction. Disaster management is essential to prevent the emergence of existing crises into conflicts (Scheffran & Battaglini 2011). Securitisation of environmental challenges is an illustration of urgent and significant actions, but not non-critical mundane actions (Eckersely 2009), and thus, resilience alone in the face of direct threats hardly falls into the realm of securitisation and it is evident that the USNSS 2017 does not imply any

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extraordinary measures. Resilience focuses on adaptation in the face of an adversity which involves a risk, while securitisation targets elimination of the threat, and according to McDonald (2012) securitisation upholds the issues above normal politics and may enable extraordinary actions.

Extraordinary actions are deliberate measures that were taken beyond political aspirations, for the betterment of the referent object, and a state otherwise would not have taken such actions if the security agenda did not consider climate change as a security threat. Reducing carbon dioxide emission according to an agreement with China, contributing to the Green Climate Fund, investing in clean energy projects, reducing methane emissions and implementing a free trade agreement for environmental goods, are suggested measures to tackle climate change in the *USNSS 2015*. However, there is not enough evidence to categorise the given actions are of an extraordinary nature. The *USNSS 2015* may have contributed to a partial securitisation of climate change because of its explicit recognition of climate change as a security issue and the use of firm language, for example; 'arresting climate change' (White House 2015, p. iii) and 'confront the dangers posed by climate change' (White House 2015, p. 1). Moreover, the *USNSS* goes into illustrating key measures to tackle the threat of climate change under the subheading 'Confront climate change' (2015, p.12). The securitisation framework focuses on the language when constructing security (McDonald 2012), thus language becomes a key element of analysis throughout this paper.

On whom extraordinary actions are employed i.e. referent object such as state, individual or ecological system, could be identified as the object that is threatened. 'Referent objects are entities that seem to be existentially threatened and have a legitimate claim to survival' (Buzan, Waever & Wild 1998, p.36). The USNSS 2015 proposes to prioritise efforts to address the top strategic risks to the country and it not only regards climate change as a threat multiplier but also considers climate change as a direct threat by recognising concerns about elevation of conflicts over resources and formation of 'climate refugees' (2015, p. 12). In this case, the nation state is the referent object because the measures that are proposed are to position the US military globally to render humanitarian assistance and disaster relief (White House 2015), and to strengthen cooperation with allies and reduce their vulnerability to natural disasters (White House 2017, p. 42). The international community can be considered a referent object of the USNSS 2015, because of its insistence on respecting international climate agreements to formulate partnerships with states and local communities to adopt to adverse events brought about by climate change implications (White House 2015, p. 9). Moreover, the USNSS 2015 indicates that climate change is a hindrance to the state's economic development; 'The global economy suffers, compounding growing costs of preparing and restoring infrastructure' (White House 2015, p. 10). On the contrary, the USNSS 2017 holds that the economy should be prioritised over actions to tackle climate change. 'Excessive environmental and infrastructure regulations impede American energy trade and the development of new infrastructure projects' (White House 2017, p. 18). This wording shows that the Trump administration was reluctant to implement measures that could harm economic growth. Focusing on energy dominance in the interest of economic development, which in turn identifies the economy as the referent object of the security discourse in the USNSS 2017.

Nevertheless, the non-recognition of climate change as a security threat and the emphasis on the nation state and its economic development undermined actions against the threat of climate change during the Trump administration. The aim of the *USNSS 2017* is to leave the children and grandchildren 'a nation that is stronger, better, freer, prouder, and greater than ever before' (White House 2017, p. 55) and although the *USNSS 2017* highlights the American interest, a safer nation is unlikely to be built in an unsafe climate. The *USNSS 2015* may have contributed to a partial securitisation of climate change but, it cannot be classified as a deliberate attempt to securitise climate change. It is questionable whether the US National Security Strategies, especially the *USNSS 2017*, are adequate for addressing climate insecurities. Thus, the securitisation of climate change remains incomplete in the US security agenda.

Review of Australia Policy Documents

This section reviews the two most prominent security policy documents in Australia from the period of 2014 to 2019; the *Foreign Policy White Paper (FWP) 2017* and the *Defence White Paper (DWP) 2016*. The *FWP 2017* illustrates the approach of the federal government towards the world and recognises opportunities as well as how economic and security interests are converging. The *DWP 2016* is a final report published by the Australian Department of

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Defence outlining the concerns for defence and the strategic plan for the Australian Defence Force. Both White Papers are from the administration period of Prime Minister Malcolm Turnbull. The key questions answered through this analysis are; to what extent the document recognises the threat of climate change, and does it contribute to a securitisation of climate change? Whereas a high percentage of six and a half percent of the *FWP 2017* discusses environmental challenges, only half a percent of the overall *DWP 2016* mentions potential environmental challenges [Figure 1.1].

In the *FWP 2017*, climate change is identified as a security issue contributing to many factors, thereby supporting the general consensus on climate change as a threat multiplier. Climate change is discussed under subheadings 'an environment under strain' and 'global cooperation' and as a result the international community is the referent object in this context. The indication of climate change leading to a state fragility in the *FWP 2017* suggests a securitising language, but implementation of extraordinary actions is absent. Mason and Zeitoun (2013) affirm that constructions of human security, such as food security and water security, could be recognised as potential threats to human security, and the *FWP 2017* explicitly discusses strains on food and water. In this context, the individual becomes a valid referent object of securitisation. Furthermore, the *FWP* dentifies that ocean acidification caused by climate change is a threat to the Great Barrier Reef in Australia and outlines measures to achieve Australia's emission reduction target by 2030 and other commitments made under the Paris Agreement (2017, p. 84).

However, the *FWP 2017* does not contribute to a securitisation of climate change, at state, individual, nature and/ or the international community levels (referent objects), because it only identifies security and other implications of climate as future, rather than present threats. Insinuations of future climate security risks do not imply the necessity or the urgency to implement extraordinary measures and do not depict climate change as an existential threat. Securitisation of climate change is not necessarily brought about by noting a connection between climate change and security issues (Corry 2012). Thus, although the *FWP 2017* identifies the potential danger of climate change, it does not contribute to a securitisation of climate change.

The referent objects of the security discourse in the DWP 2016, include the nation state and the economy. The DWP 2016 considers the management of natural resources as a crucial factor because of its implications for the national economy. This includes managing energy and maritime security in order to protect Australia's offshore oil and gas infrastructure. Geopolitical interests continue to structure and affect a securitisation of the environment (Mason & Zeitoun 2013). For example, Australia endorses energy security because the energy trade impacts the economic development. The DWP 2016 gives priority to actions against the threat of climate change and for economic development simultaneously. Moreover, the DWP 2016 explicitly declares that current global order requires threats to be dealt with before they become an existential threat. The DWP 2016 recognises climate change as a potential threat, but not as an existing threat and it clearly lacks the eminent extraordinary measures to be implemented in the name of security.

A Comparative Analysis of Policy Documents

This comparative analysis provides an example of the existence of distinct security approaches in the global political system which shares universal values and concerns. This review comparatively analyses those individual securitising and de-securitising features between the US and Australia security discourses. First, to add to the discussion of the comparison of overall proportions of each document in which environmental challenges are discussed, the US Security Strategies have a collective lower percentage of texts discussing environmental challenges, than the collective percentage of Australia White Papers [Figure 1.2]. The one percent of the *USNSS 2017* and the three percent of the *USNSS 2015* cover both environmental implications and the existential threat of climate change. The six and a half percent of Australia's *FWP* 2017 and the half a percent of the *DWP 2016* indicate environmental implications including the potential risk from natural disasters and state fragility caused by climate change. Although the *USNSS 2015* contains a lower percentage of three percent than the six and a half percent of Australia's *FWP 2017*, the *USNSS 2015* achieved a partial securitisation of climate change because climate change was explicitly articulated as an existential threat, but extraordinary measures were not recommended. The partial securitisation in the *USNSS 2015* may be considered a result of the political ideology and external factors such as international political commitments and the increase in natural catastrophes during Obama administration. A common similarity

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between each American and Australian document, is the emphasis on the necessity for immediate actions in the event of natural disasters. However, such mundane actions do not contribute to a securitisation because they constitute a risk, rather than threat approach to security.

Secondly, the tone of language in each policy document is evaluated by emphasising the urgency implied in the securitising and de-securitising statements. The tone of language plays a crucial role in determining whether a securitisation of climate change has occurred. Below, Table 1.3 and Table 1.4 illustrate key quotations found in each document which describe, downgrade or elevate environmental challenges. The use of language that demotes securitisation process could be identified as a 'de-securitising language' and the use of language that elevates climate change as an existential threat could be recognised as a 'securitising language'. The USNSS 2015 takes a strong position on securing against climate change with the use of firm words/ terms such as 'cement', 'arrest' and 'confront the threat of climate change', and the present tense is used consistently throughout the document to establish climate change as an existential threat. Both Australia's FWP 2017 and DWP 2016 use the future tense in describing the threat of climate change and present climate change as a potential threat that might contribute to the emergence of a range of security problems in the future. This failure to establish climate change as an existential threat stops the triggering of extraordinary measures. In assessing whether a securitisation of climate change has occurred in the past, McDonald (2012) asserts that the acceptance of a threat related to global climate change did not enable the pursuit of emergency actions in Australia. The discussion of resilience and adaptation in the face of natural disasters does not indicate an urgency and could rather be interpreted as a language of de-securitising climate change. Hence, the White Papers do not contribute to a securitisation of climate change.

Thirdly, the nodal points and referent objects of each security policy document illustrated in this review help to understand the subjects of discussion of each policy document. Nodal points are a set of key rhetorical elements which appear dominant in each discourse (Ferguson 2019, p. 108), and the nodal points are used in determining the referent objects of each document. For example, as the *USNSS 2017* elaborates on the discussion of securing 'domestic economy' (a nodal point), national economy is a referent object. As indicated in Table 1.5, the policy documents contain more than one referent object in its security discourse. Likewise, the nodal points of the *USNSS 2017* are 'American resilience', 'natural disasters', 'domestic economy' and 'energy dominance' and hence, the referent objects are the economy and the nation state. The nodal points of the *USNSS 2015* indicates that a securitisation of climate change is implemented with reference to the US state and the international community. In Australia's *FWP 2017*, 'climate-driven changes', 'fragile states', 'global stresses', 'natural disasters' and 'sustainable development' can be identified as the nodal points which suggest the individual, nature, international community and the economy as referent objects. Climate change is considered on equal standing with the economy and the security discourse expands from national to international measures in the *FWP 2017*, whereas the *DWP 2016* only identifies the potential danger to its referent objects, which are the state and the economy.

Furthermore, security concerns entered the security agenda of a state based on the political ideology of the administration and the security discourse may have both national and international focus in an administration period. The presence of different referent objects in the policy documents could contribute to a securitisation in different aspects, but the careful selection of referent objects in a security discourse, could enhance the effectiveness of the securitisation process. Therefore, the selection of an appropriate referent object in a security discourse, can progress the securitisation process.

Human Security Approach to Climate Change

This section analyses the extent to which the US and Australia deals with climate change within a human security framework. According to the *General Assembly Resolution 66/290*, human security is 'an approach to assist Member States in identifying and addressing widespread and cross-cutting challenges to the survival, livelihood and dignity of their people' (United Nations 2012). The *Human Development Report (HDR) 1994* defined the concept of human security with reference to seven components. These are economic security, food security, health security, environmental security, personal security, community security and political security. Meanwhile, the IPCC report on *Climate Change 2014: Impacts, Adaptation, and Vulnerability (AR5 Synthesis Report)* also provides a human security framework.

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Discussing climate change in the perspective of human security, could enhance security for vulnerable people and communities given the drawbacks of state-centric approaches to security (Adger 2010; Elliott 2015; Mason & Zeitoun 2013). The *AR5 Synthesis Report* evaluates how human implications of climate change directly influence the security capacity of the state protecting its citizens, and it emphasises economic and livelihood dimensions, cultural dimensions, migration and mobility dimensions of security, and how climate change could cause armed conflicts and geopolitical rivalry compromising the integrity of the state (2014, p. 762). Table 1.6 shows how the dimensions recognised in the *AR5 Synthesis Report* overlap the human security components in the *HDR 1994*. For example, the dimension of climate change and armed conflicts affect both personal and community aspects of human security.

'A threat to one element of human security is likely to travel – like an angry typhoon – to all forms of human security' (UNDP 1994, p. 32) and hence, a securitisation process focusing on human security should cover all the seven components of human security in order to effectively address the security issue. According to the percentage calculations, the US and Australia policy documents on security contain a considerable discussion of the human security aspects of the security agenda [Figure 1.7]. The US Security Strategies determine the key priority of the security discourse as the nation state. Only three percent of the overall *USNSS 2017* focuses on human security by means of strengthening domestic economy and building a resilient community to sudden attacks and environmental disasters. However, it does not deal with understanding the implications of climate change. The *USNSS 2015* identifies climate change as a threat to national security contributing to conflicts over natural resources, amplification of natural disasters and creation of refugee flows. Thirteen percent of the *USNSS 2015* represent the state's concern over individual economic growth, promotion of equality, protection of human rights and the inclusion of values of different communities. However, the actions to mitigate climate change outlined in the *USNSS 2015* take a state-centric approach by acknowledging that climate change instigates major costs to the global economy for restoring and preparing infrastructure.

According to the *AR5 Synthesis Report*, economic and livelihood dimension affects the economic, food and health aspects of human security. Essentially, the individual's standard of living determines access to food and health sources. Both the US Security Strategies do not explicitly identify individuals as a referent object and do not factor in how climate change can affect an individual's economic stability and growth. These economic and livelihood implications remain to be an area that should be addressed under the US security discourse. However, Australia's *FWP 2017* and *DWP 2016* extensively elaborate on state fragility caused by climate change. 8.77 percent of the *FWP 2017* discusses climate change in the context of global cooperation; promoting sustainable development, advancing human rights, responding to challenges of displaced people, strains on food energy and water, protecting the oceans, and guarding global health risks. Only a 1.5 percent of the *DWP 2016* considers human security in its security discourse. Yet, these percentages are not a representation of human security implications of climate change. The *DWP 2016* focuses on defence strategies in the event of state fragility due to climate change but, it does not recognise individuals as a referent object. Therefore, both White Papers do not provide extensive recognition of human security implications caused by the threat of climate change.

The *AR5 Synthesis Report* suggests that adaptation strategies should be implemented as a response to the threat of climate change, but these differ in their potential effectiveness (2014, p. 762). Strategies identified for enhancing the well-being of individuals include 'diversification of income generating activities in agricultural and fishing industries', 'migration as a risk management strategy', 'the development of insurance systems', and 'education of women'. However, the *AR5 Synthesis Report* declares that some of these approaches may undermine human security when complex livelihood arrangements are not considered, such as those based on cultural practices (2014, p. 762). The way a society perceives risks, resilience and the capacity to adapt is shaped by cultural aspects. Although the *USNSS 2017* does not give prominence to climate change implications, it recognises the importance of promoting American resilience through building a culture of preparedness. In order to include cultural values in the security agenda, the *USNSS 2015* also relies on the empowerment of civil society and young leaders. The adaptation strategies should incorporate local and traditional knowledge, such as the views of indigenous people, to provide an adequate response to risks or events (Adger et al. 2014).

Migration and mobility dimensions affect the economic, food and health components of human security. The state-centric approach followed in the *USNSS 2015*, recognises that the climate threat is a security issue which causes

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migration and refugee flows. It identifies the risk of excessive migrants crossing national borders seeking safety. Extreme weather events may displace populations, and this could result in temporary migrations (Adger et al. 2014). Australia's *FWP 2017* also considers the risk of "climate" migrants as a security issue. In turn, the *AR5 Synthesis Report* suggests that planning and increasing mobility can reduce the costs of displacement and approves migration as a strategy that mitigates the risk. The US and Australia policy documents do not consider migration and mobility as a strategy response. However, migration cannot be accepted as a favourable approach to state-centric security discourses because it is only a short-term solution.

In conflict zones, the basic needs of the individuals such as shelter and food are difficult to meet, and there is a higher consumption of basic resources. When extreme climate events affect those conditions, it could amplify conflict situations. There is enough evidence and consensus regarding the increased risk of armed conflicts and civil war because of climatic factors (Adger et al. 2014, p. 772). Effective resource management as a means of climate change adaptation is suitable and, although suggestions for adaptation such as peace parks are limited in its effectiveness and ambiguous, they can increase cooperation across borders and reduce the risk of conflicts (Adger et al. 2014, p. 775). However, there is uncertainty as to whether cooperation among states would alleviate human insecurities, but the developed states could aid the developing states without violating their sovereignty. Moreover, climate change affects the state's integrity by challenging territorial sovereignty, endangering critical infrastructure and causing geopolitical rivalry (Adger et al. 2014). Australia's *DWP 2016* provides a state-centric approach to problem through the implementation of defence mechanisms in the event of state fragility caused by climate change. Thus, proper adaptation and mitigation strategies are necessary to address human security implications of climate change before threats reach the state level.

When implementing adaptation strategies, it is important to consider location and context-specific factors, invest in institutional responses, and avoid inappropriate climate policy responses. The *AR5 Synthesis Report*acknowledges that adaptation and mitigation strategies become less responsive when climate change implications become serious (2014, p. 775). However, "although the opponents of securitisation of climate change reject traditional security approaches, they do not reject the human security implications" (Baysal and Karakas 2017, p. 40). Despite recognition of some human security implications, as shown in Table 1.8, the US and Australia security policies do not cover all the seven human security components to fulfil at least a partial 'human' securitisation of climate change. In conclusion, the *AR5 Synthesis Report*can be referred to as a framework for how a human security approach to security could enhance actions to mitigate the threat of climate change.

Recommendations

The analysis finds that the current security discourse articulated by the US and Australia does not include effective extraordinary measures to meet the threat of climate change. This section makes eight recommendations to adapt to and mitigate the threat of climate change. As the political community in each nation does not explicitly recognise climate change as a pressing and existential security issue, the first key recommendation is to explicitly state climate change as a current security issue, thereby triggering the implementation of policy actions to address climatic insecurities. Although a partial securitisation of climate change is identified in the *USNSS 2015*, because of the firm securitising language used to determine the severity of the existent threat, the *USNSS 2017* only mentions the importance of security in the face of natural disasters. The Australian *FWP 2017* and the *DWP 2015* identify climate change as a future threat, diminishing the priority and the scale of the threat.

The second key recommendation is to address the human security implications of climate change since lack of human security can lead to state insecurity. While the US Security Strategies address economic, environmental and political security of an individual to an extent, the security approach should extend beyond acts of resilience-building to incorporate environmental hazards, economic development of the community and political dignity of an individual. The FWP 2017 covers economic, food, health and environmental security implications by identifying that climate change will put strains on food and water, increase health risks and affect the economy. The 2016 DWP's state-centricsecurity approach only addresses economic and environmental security at a very low level. This recommendation also encourages the involvement and support of businesses, organisations and communities to further the cause of climate change mitigation and adaptation. While measures of mitigation can be carried out as

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means of voluntary climate change mitigation programs, implementing a policy that encourages cooperation at all levels would help to gain multilateral support of the international community.

As the third recommendation, the issue of economic dominance in the security discourse needs to be addressed by embracing economic development with due consideration to the loss incurred by the increased adversity of climate change and natural disasters. The Australian Climate Change Authority (2014) confirms that climate change incurs both social costs and economic costs. This recommendation should be implemented through the integration of climate change into other sectors such as education, health, transportation and environment.

As the fourth recommendation, deforestation and other disturbances to forest regions needs to be addressed. Both the US and Australia have forest regions that are currently under threat from factors such as deforestation, forest fires and other disturbances. Greenpeace (2019) affirms that Australia also contributes to the problem from the supply of cheap timber, paper, pulp and palm oil. The 2019 wildfires in the Amazon rainforest and the frequent Siberian wildfires are examples of devastating consequences of climate change. A state can pursue five measures for mitigation of the threat; implementing forests monitoring systems to monitor illegal or hindering activities in forests, afforestation/ reforestation projects, promotion of forests reserves and resource management. As an element of adaptation, forest-fire response teams and measures to restore natural habitats should be established.

As the fifth recommendation, the threat of continuous sea level rise needs to be addressed in the security agenda of a state. Sea level rise and its causes pose a risk to the marine ecosystem and the businesses and communities that rely on marine ecosystem for their livelihoods (US Global Change Research Program 2017). An important mitigation measure is to regulate aquaculture before they become a threat to the coastal region and the use of mangroves to absorb the carbon in the ocean would reduce GHG emissions. The management of resources in coastal areas without leading to exploitation of fishing grounds and creating coastal landslides for building ports is essential. Effective adaptation methodology to protect the coastal regions include establishing cost-effective shoreline protection through restoration of coastal ecosystems and implement measures to sustain local livelihood and economy (Hale et al. 2011).

A sixth recommendation is that climate change implications should be recognised as the result of GHG emissions and the incapability of the states and the communities to reduce the GHG concentration in the atmosphere. Adhering to the obligatory targets of each nation laid out in the *2015 Paris Agreement* an initial step to reducing GHG emission before moving onto more stringent targets. The IPCC Special Report on *Global Warming of 1.5°C* suggests all states could contribute by mitigating emission to reach 'net-zero' around 2050. The Clean Development Mechanism (CDM) in which developed states acquired emission credits for bankrolling projects, Emission Trading schemes, and Joint Implementation projects which would allow one country to gain emission credits by subsidizing emission reductions in another country are important GHG emission reduction strategies. The Australian Climate Change Authority 2014 suggests carbon reduction measures such as Carbon Pricing Mechanisms and Carbon Farming Initiatives. Natural carbon extraction mechanisms (low cost and low tech) are also options.

As a seventh recommendation, measures should be taken to reduce high energy consumption in the world by switching to renewable energy sources. Promotion of energy efficiency in the households and business is a good strategy that could be deployed by limiting the use of energy supply from one source and by supplying energy through different energy sources for different regions. The government could introduce reliable sources at fundamental levels in local industries and as a result it would add to economic development and stability of the living standards of the individuals. However, the use of renewable energy sources is a highly debated topic most commonly in the context of reliability, efficiency and security. Another adaptative measure could be regulating transportation emissions.

The final recommendation is for states use military sector for implementation of actions to mitigate and adapt to climate change. Military planning is becoming affected by climate change (Brzoska 2015; Briggs 2012), and it is highly recommended to expand the traditional role of the military. However, the support of the military should not in any way imply a 'militarisation' of a human security approach to climate change. Protection of natural habitats and resources could be realised with the aid of the military, but it should not be conducted as a military enforcement.

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States should therefore dedicate a proportion of the large state funding allocated to military expenditure to climate change mitigation and adaptation. Military resources and personnel could be used in the event of natural disasters and extreme weather events.

The Fourth National Climate Assessment 2017 of the US affirms that mitigation and adaptation strategies help to reduce climate change implications which are immediate, substantial and spanned over a range of sectors. Climate change is an existential threat that needs to be tackled as a security threat to individuals or communities. For an overview of the recommendations, refer to Table 1.9. As discussed, the two key recommendations and other recommendations could be implemented by a state to incorporate a human-security centred security approach to adapt to and mitigate the threat of climate change. In conclusion, climate security should go beyond a state-centred security approach to climate change It is crucial that we undertake further urgent actions to preserve our planet earth for the current and the future generations.

Figures and Tables

Figure 1.0

Figure 1.	1

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Figure 1.2

Table 1.3 – The tone of language addressing environmental challenges

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United States of America (USA) Australia				
National Security	National Security	Foreign Policy White	Defence White Paper	
Strategy 2017	Strategy 2015	Paper 2017	2016	
	Securitising	g Language		
'Promote American resilience – resilience – resilience includes the ability to withstand and recover rapidly from natural disasters' (p. 14). 'Reduce human suffering; United States will continue to catalyse international responses to manmade and natural disasters' (p. 42). 'Strategy in Regional context;reduce their vulnerability to economic fluctuations and natural disasters' (p. 47).	international consensus on arresting climate change' (p. iii). ' taking concerted action to confront the dangers posed by climate change and to strengthen our energy security' (p.01). ' interconnected systems and sectors are susceptible to the threats of climate change' (p. 04). 'We are partnering with states and local communities to better plan for, absorb, recover from, and adopt to adverse events brought about by the compounding effects of climate change' (p. 09). 'Confront climate change – Climate change is an urgent and growing threat to our national security, contributing to increased natural disasters, refugee flows and conflicts over basic resources like food and water' (p. 12). 'We will continue to develop American fossil resources while becoming a more efficient country that develops, cleaner, alternative fuels and vehicles' (p.16).	' alleviate suffering and serve national interests by build resilience to natural disasters' (p.18). 'Australian Defence Force is able to undertake disaster relief operations disaster response teams' (p.19). 'Responding to climate change will continue to be a priority for Australia's development assistance (p. 85). 'Climate change resilience and strengthened response to natural disasters' (p.104).	'Government's approach to defence;contribute to domestic disaster relief and other peacetime national support to the states and territories' (p. 34). 'Strategic outlook;state fragility including within our immediate neighbourhood, caused by environmental and governmental challenges and climate change' (p.41) 'Defence will continue to support to respond to natural disaster relief efforts' (p. 73).	

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Table 1.4 - The tone of language addressing environmental challenges

State	Document	Nodal points	Referent object
The United States of America (USA)	National Security Strategy 2017	American resilience, natural disasters, domestic economy and energy dominance.	Economy and the nation state
	National Security Strategy 2015	Climate impacts, global economy, domestic efforts, resilience, collective action, natural disaster relief	Energy, state and the global political system
Australia	Foreign Policy White Paper 2017	Climate-driven changes, fragile states, global stresses, natural disasters, protecting the oceans, sustainable development.	Individual, nature, international community and the economy.
	Defence White Paper 2016	Domestic disaster relief, state fragility, climate change, national resilience, and global order.	State and the economy.

Table 1.5 - Nodal Points and Referent Objects

Table 1.6 - Human Security Components engulfed in human security dimensions

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Figure 1.7		
Table 1.8 - Human security aspects addressed in policy documents		

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Issue/ Threat	Strategy	Recommendation
Non-recognition of climate change as a human security issue that affects all areas of community.	Mitigation/ Adaptation	Explicitly recognise climate change as an existential threat that would trigger necessary immediate actions.
Non-recognition of human security implications of climate change.	Mitigation/ Adaptation	Integrate the support of businesses, organisations and communities to further the cause of climate change mitigation adaptation. Encourage multilateral aid.
Dominance in the economic security of the state.	Mitigation/ Adaptation	Embrace economic security of the individual. Integrate environmental policy to policy areas of different sectors.
Deforestation and disturbances to the forests such as bush fires.	Mitigation	Implement forests monitoring systems to monitor illegal or hindering activities in forests. Deploy afforestation/ reforestation projects. Promotion of forests reserves. Resource management. Encourage and support individuals to maintain plantations and grow forests in their private properties.
	Adaptation	Establish forest-fire response teams and measures to restore natural habitats.
Sea level rise	Mitigation	Regulate aquaculture in the coastal areas. Manage the consumption of resources.
	Adaptation	Cost-effective shoreline protection through restoration of coastal ecosystems. Implement measures to sustain local livelihood and economy. Establish Coastal Risk Awareness and Information Centres. Encourage migration to inlands.
Higher concentration of Greenhouse gases in the	Mitigation	Implement Clean Development Mechanism (CDM), Emission Trading schemes, and Joint Implementation projects.
atmosphere.	Adaptation	Implement natural carbon extraction mechanisms (low cost and not high-technological).
Use of energy sources which cause climate change.	Mitigation	Encourage the use of renewable energy sources. Provide access to different energy sources which are reliable and accessible to different regions of the state. Regulation of transportation methods.
	Adaptation	Regulation of transportation methods.
Lack of a military role in climate action	Mitigation/ Adaptation	Allocate a proportion of the military funding for climate action Protection of natural habitats and resources. Implement disaster relief efforts

Table 1.9 - Recommendations

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