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Can military forces do it all? - Climate change, a national energy security issue for Australia and its Defence Force

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Can military forces do it all? - Climate change, a national energy security issue for Australia and its Defence Force

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Abstract

Australia experienced a significant increase in average annual temperatures in the 20th century bringing extreme weather events and devastating bushfires. The ensuing rescue and relief missions were strongly supported by the Australian Defence Forces (ADF). Yet, the country and its governments have shown little concern regarding the mitigation of this climate change and hampers Australia's international commitment and efforts to curb Green House Gas emissions. This denial has led to problematic choices in the energy sector where coal is still the main source of energy used despite a significant potential for renewable energies. With most countries taking the climate change issue into their core policy, especially in the Indo-Pacific region where climate change is a grave concern, Australia is becoming gradually isolated in international negotiations and cooperation.

Australia's political indifference in these matters is not without consequence for the Australian Forces which must maintain cooperation to protect Australia's strategic needs and national security. In addition, climate change related environmental threats as well as resulting rescue and relief missions strain the ADF's infrastructure, equipment and above all military operability. ADF's military capabilities are increasingly being torn between home defence, international operations and disaster relief. In addition, ensuring the maritime safety of Australia's trade and supply routes - especially for fuel imports - is a core part of the national Defence. With tarnished relations in the Indo-Pacific region due to Australia's poor performance on climate change mitigation the ADF's capability to tackle core defence tasks might become an issue.



Introduction

The emerging consequences of climate change are increasingly affecting civil and military energy security of nations and are a determinant element of national security. Australia as a nation and spanning an entire continent is already facing negative effects of global warming like severe droughts and uncontrolled bushfires. These natural disasters are beginning to stretch the capacity of civil society and military forces involved in disaster relief and rescue activities and are threatening the private and public infrastructures. In the past years Australia's government has always invoked the Australian Defence Force for crisis and disaster management. But should the military really take on all these additional tasks and roles? Since Australia's economy and national budget very much depend on the revenues from mineral and raw material exports while its energy supply strongly depends on international imports, any disruption of production and transportation infrastructure will make the country vulnerable with respect to energy security issues and its ability to cope with future crises. Australia has two major challenges to address in order to solve its climate and energy dilemma. First, respond to climate change related environmental challenges and the international demand for decarbonisation by taking into account its dependence on a carbon-based economy and second, to maintain energy security for the civil and military sectors under increasing threats from climate change. In this paper we will address the threats to Australia's national security caused by climate change and focus on Australia's climate policies and position on the Paris Climate agreement to understand the impacts on national energy security and the Australian Defence Force.

1. From climate change inaction to a national security issue

In 1998 Australia signed the Kyoto Protocol¹ but did not ratify it until 2007. Australia met and exceeded its carbon emission reduction target for the first commitment period but fell short of keeping up the positive result. In the COP 15 Copenhagen agreement in 2009, Australia pledged a voluntary 5% reduction by 2020 compared with the year 2000 emission levels for their second commitment period of the Kyoto Protocol but missed this target [14]. In August 2015, Australia presented its "nationally determined contribution" (NDC) to the Paris Agreement² under the Liberal Prime Minister Tony Abbott known for his anti-climate position. The pledge promised a 26-28% reduction of emissions by 2030 compared to 2005 levels which equals to a 22-25% cut below 1990 levels including the effects of land use changes. However, if land use is excluded, the target will be equal to a 3-6% rise in emissions as land use is currently acting as a net carbon sink³ in Australia.

Today, Australia is not on track to meet its climate targets even though the Australian Government has repeatedly insisted on the contrary in its annual emission projection reviews released by the department of Environment and Energy⁴ [7] [8]. Emissions were trending down from 2007 to 2015 but increased ever since. In June 2018 emissions had increased by 0.6% compared to the previous year, pushing Australia's emissions to be the highest since 2011 (see Figure 1). A report released in December 2019 by the Department of the Environment and Energy [5] shows that Australia's greenhouse gas emissions in 2020 are estimated to be just 1.6% below their 2000 level. Based on this estimate, Australia will possibly meet its target in 2030 instead of 2020.

The lack of political action on reducing carbon emissions and thus mitigating climate change will not go without consequences as Australia will lose its international credibility and suffer from its choices. Abiding to the Paris Agreement is critical to limit devastating climate impacts on public health, the national economy and natural ecosystems, - all these concerns were already raised by the 2008 Garnaut Review⁵. The Climate Action Tracker (CAT) [4], an independent scientific analysis produced by four international research organizations, warns that if other countries were to adopt climate policies similar to Australia then global average temperature could rise by up to 4° C, posing serious challenges for human survival. Global temperature has already risen by 1° C over the past millennium's average and yet the results are already felt in Australia with worsening heatwaves, bushfires, intense rainfall events, and rising sea levels, - all inducing serious national security issues⁶ [1].

Climate change considerably affects the risk perception and assessment [15] of the Australian public since they are particularly proud of their unique and fragile ecosystems and biodiversity. Yet, the relation of climate and environment with national security, even though recognised, is still seen as a matter of lesser importance.

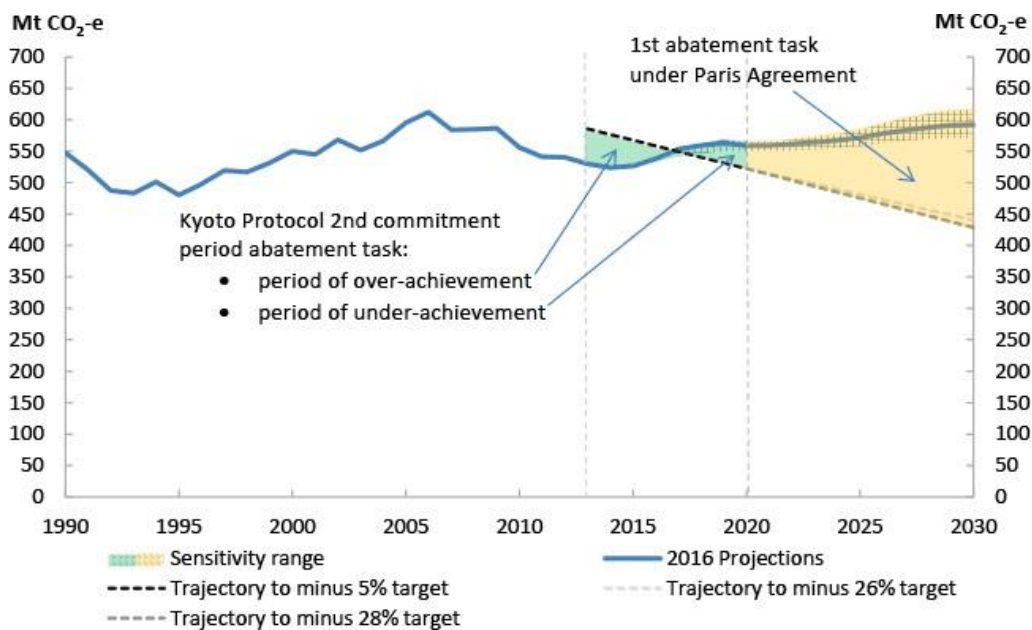


Figure 1: Australia's emission projections for 1990 to 2030 and the 2030 emission reduction target, based on 2016 projections. Source: ANAO (Australian National Audit Office) adapted from the Department of the Environment and Energy, Australia's emissions projections 2016.

The idea of conciliating environmental concerns with the social system and the economy is sometimes seen as a dilemma because it is generally assumed that addressing climate change challenges will hamper the economy, Australia's government first concern. This perception has prevented Australia from designing a national security framework which considers climate change effects and establishing no policy on environmental security beyond environment protection which is largely implemented by states and territories. The truth is that economic security as a well-accepted part of national security is itself challenged by climate



change. This is highlighted by the fact that the Australian Business Roundtable for Disaster Resilience and Safer Communities estimates the cost of natural disasters to reach AUD 39 billion per year by 2050. During the 2019-2020 bushfires, many called on Australia's Prime Minister to step up his response to the catastrophe and demanded that emergency management in Australia needs to be restructured because the threat is now a "national security issue".

¹ The Kyoto Protocol was an instrument made under the United Nations Framework Convention on Climate Change in 1997 to force some developed countries to reduce their greenhouse gas (GHG) emissions. First agreed on in 1992 and following growing global concern about climate change, the Convention defines a framework aimed at stabilising atmospheric concentrations of GHG to prevent 'dangerous anthropogenic interference with the climate system'. The UNFCCC entered into force in 1994, and now has a near universal membership of 197 countries having ratified the Convention. Parties to the Convention meet regularly, including at the annual Conference of the Parties (COP), where they make decisions to promote the effective implementation of the Convention and adopt other instruments.

² The Paris Agreement (December 2015) was designed to replace the Kyoto Protocol after the year 2020. It set a long-term temperature goal to keep the increase in global average temperature to well below 2° C above pre-industrial levels and to pursue efforts to limit the increase to 1.5° C. Each country was asked to determine, plan, and regularly report on the contribution that it undertakes to mitigate global warming. No mechanisms to force a country to set a specific emissions target by a specific date were implemented, but it was asked that each new target set should go beyond previously set targets. The 2° C level was chosen based on the Intergovernmental Panel on Climate Change's (IPCC) result: "global warming of more than 2° C would have serious consequences, such as an increase in the number of extreme weather events".

³ Photosynthetic uptake of atmospheric CO₂ by existing forests and other vegetation.

⁴ The relatively positive document has been criticised by many. First because Australia uses its good state of land use as a net sink to reduce the GHG emitted and taking credits for a large decline in deforestation that happened before the Paris Agreement was signed. Second, because Australia is trying to carry forward credit for overachieving on its Kyoto targets, using the surplus to meet its Paris goals. Lastly, because their own emissions projections curves show a gap between the level required by the pledge and the current trend.

⁵ Released on September 2008 the report was written by Ross Garnaut, one of Australia's most distinguished and well-known economists. Garnaut was commissioned by all of the Governments of Australia's Federation to examine the impacts of climate change on Australia and to recommend policy frameworks for improving the prospects of sustainable prosperity. The report was criticised by the Australian Chamber of Commerce and Industry for the implied negative economic impacts if greenhouse gas emissions were to be reduced.

⁶ In the Australian Bureau of Meteorology's annual climate statement, the year 2019 has been recorded as the warmest and driest. The annual national mean temperature was measured to have been 1.52° C above average, the nationally averaged annual rainfall 40% below average and a widespread severe fire hazard due to weather conditions throughout the year was noted. This trend is projected to worsen in the coming years.

2. The Australian Defence Force and Climate Change

The apparent lack of response by the national security framework decision makers to the new environmental and climate security paradigm induces uncertainties for the military as the guardian of national security [12]. Australia's 2009 and 2013 Defence White Papers mentioned climate change very briefly. In 2009 it was stated that strategic consequences of climate change were unlikely to be felt until after 2030 while in 2013 climate change was considered as a vague national security threat only. The 2016 Defence White Paper marks a change when climate change was referred to as one of the six key strategic drivers of Australia's security environment to 2035 and the impacts were named as a "threat multiplier".

The majority of Australia's population is concentrated near the coast. Further sea level rise, storm surges and coastal erosion endangers the cities and impact low-lying military bases, national energy infrastructure as well as ports and airfields (see Figure 2) Australian Navy's Admiral Barrie⁷ [11], suggested in 2018 that defence planners should consider new locations for military and civilian airfields situated in such threatened areas. On an international scale, rising seas could inflame terrorism and maritime disputes in the Asian Pacific region as competition for resources and military control may intensify. This could also overwhelm the Australian Navy's security role at border control to regulate the expected surge in climate-driven migration.

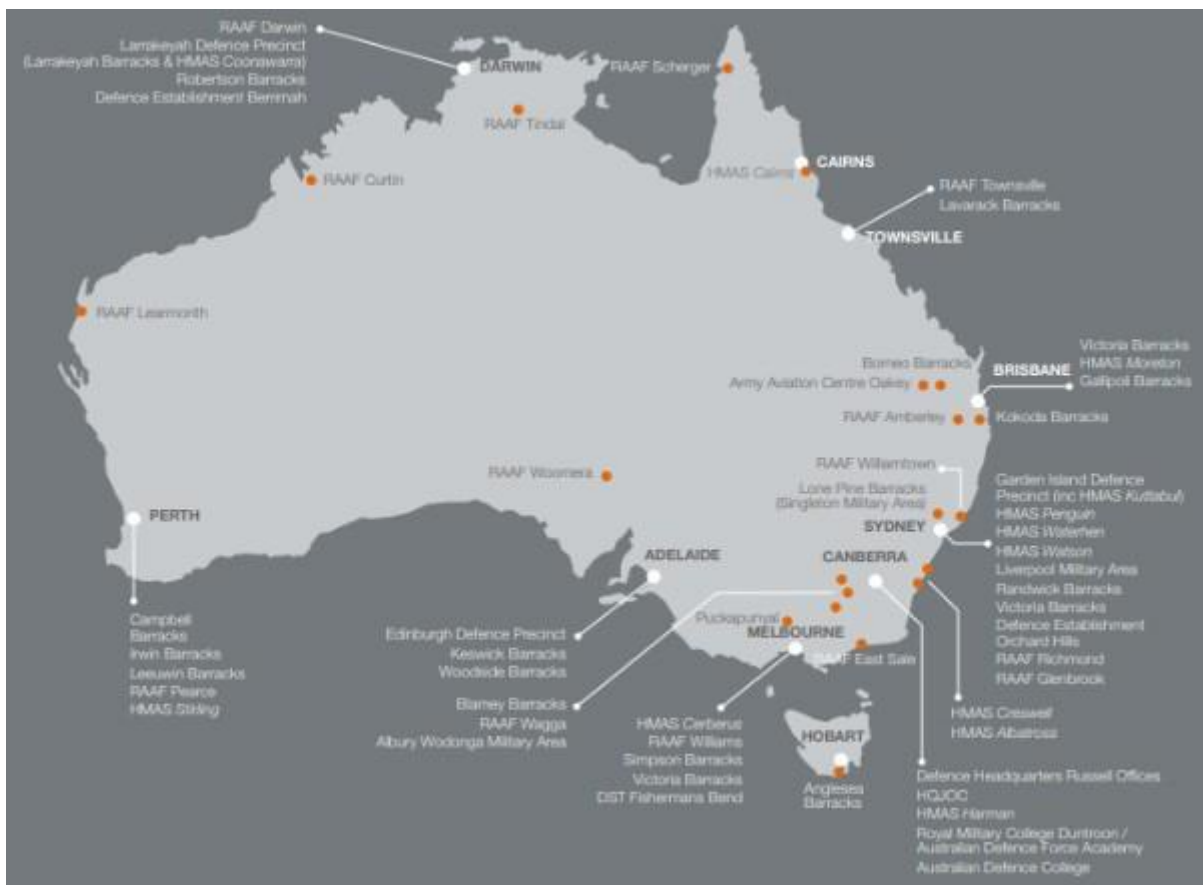


Figure 2: Military base locations of the Australian Defence Force. Source: Department of Defence annual report 2018-2019 [10]



The Australian Defence Force (ADF) is being more and more mobilised in the air, at sea and on land for climate change related missions. The recent bushfire crisis was one of its largest operations in years [18]. At least three thousand army reservists were activated to help deliver aid and to evacuate victims. The Australian Air Force was transporting personnel and firefighting equipment, army helicopters carried victims from isolated rural areas unable to evacuate on their own and navy ships evacuated over a thousand people trapped by bushfires along the coast shores being unable to evacuate by road. New Zealand and Singapore also offered military resources to assist.

“War” became a national metaphor used by Australians to refer to the black summer of 2019. This raises the question whether the ADF should be expected to continue fighting “climate change war” and whether ‘security risks’ include climate change. If so, the ADF will need to reorganise in order to address the complex issues emerging in both, homeland Australia and in neighbouring countries. The advantage of the ADF over civilian institutions is their long-term view on planning. The ADF is well trained and equipped and is known for its designing capabilities and effectiveness in risk and mitigation assessment. However, if according to John Blaxland⁸ climate-fuelled disasters on the scale experienced in 2019 become the norm, Australia’s military would not be large enough to meet both, its security obligations⁹ around the world and the capability to support relief operations at home.

The high operational level required by the bushfires in 2019 showed how climate change could challenge military capacities which were originally designed for traditional military missions. The bushfires also stretched the ability to meet both, security requirements and the unpredictable demands of new climate-fuelled disasters at home and in allied countries. For example ADF logistical terrestrial transport units, navy evacuation vessels and military air support could be requested by Australia’s government as permanent rescue assets rather than tools of war. Such could be the case for the two largest vessels in Australia’s fleet, the HMAS Choules being Australia’s only landing ship and the HMAS Adelaide one of its two helicopter carriers. If the ADF is to play a greater role in climate change mitigation the government will need to provide the necessary means for new equipment and forces to adapt them to new environmental conditions in order to ensure Australia’s sovereignty¹⁰ and national security.

Today, climate change is an issue taken seriously by the Australian military. In June 2019 in a speech to managers from government departments and agencies, the current Defence Force Chief Gen. Angus Campbell warned of the threats climate change poses to Australia’s military and deployments. He predicts for the next years that the military will have to cope with more disaster relief efforts and peace-keeping missions and that climate change has the potential to exacerbate conflicts. In his speech he also warned the Federal Government that their actions on climate change could affect the relationship with Pacific island nations, which have pushed for the inclusion of the 1.5° C target in the Paris Agreement and are asking Australia to do more to reduce emissions. If Australia keeps ignoring their call, the ability to influence their choices for support in the region could be altered¹¹. This would hinder the Australian Indo-Pacific strategy which aims to place Australia as the military, especially naval, guardian of the area.

⁷ Admiral Christopher Alexander Barrie is a retired senior officer of the Royal Australian Navy who served as Chief of the Defence Force from 4 July 1998 to 3 July 2002.

⁸ Head of strategic and defence studies at Australian National University.



⁹ The Australian military is involved in at least thirteen ongoing operations around the world mostly in the Middle East, Africa, and the Western Pacific, not counting periodic tasking and occasional operations.

¹⁰ The 2019-2020 bushfires have questioned Australia's ability to cope on its own with the problem. The reliance on contracting American firefighting aircrafts raised many questions. With large fires now happening year-round in Australia and in North America, Australia risks to be left without firefighting aircrafts in times of dire need.)

¹¹ In 2018, the Federal Government signed the Boe Declaration, a Pacific-wide declaration stating that climate change is the single largest threat to security in the region. However, during the 2019 Pacific Islands Forum leaders meeting in Tuvalu the coalition was put on hiatus over its refusal to take stronger action to combat climate change.

3. Ignoring the Indo-Pacific's call on climate will affect energy security in Australia

Australia's retired Air Vice Marshal John Blackburn [9] speaks of energy security as "the association between national security and the availability of natural resources for energy consumption". Energy plays an important role in the national security of any given country as a fuel to power the economy. Energy security is about reliability, affordability and environmental protection but also implies ensuring the security of energy supply.

The uneven distribution of mainly fossil energy supplies among countries has led to the internationalisation of the energy trade. This causes sovereignty and vulnerability issues over strategic energy resources and transport routes. Threats to energy security emerge from political instability of several energy producing countries, market manipulations of energy supplies, competition over energy resources, and overreliance on foreign countries. Terrorism or open warfare with attacks on energy infrastructure as well as accidents and natural disasters aggravate significantly the threats to energy security. Even in peacetime, export or import nations may have political or economic motives to limit their foreign energy sales and purchases or even cause disruptions in the supply chain by cutting off supplies, putting embargo and apply pressure during economic negotiations [16].

Australia is globally the 10th richest country in natural resources but is greatly depending on crude oil and petroleum imports [6]. This puts the country at risk as its natural resources could be coveted in the future by other nations while oil imports could be disrupted. Thus, Australia ironically greatly depends on energy imports for its resource extraction and exports. One security concern is the safety of the supply route through the Strait of Hormuz where more than 40% of the world's oil passes through and the South China Sea and Indonesian islands shipping routes where most of its fuel imports are coming to Australia. These areas have become a growing security concern as 50% of Australia's refined diesel and 75% of its refined jet fuel imports transit via these routes [3] (see Figure 3). Thus, providing protection to Australian's imported and exported goods, especially for fossil fuel products, is one of the ADF's concerns when securing sea lines and communication [13].

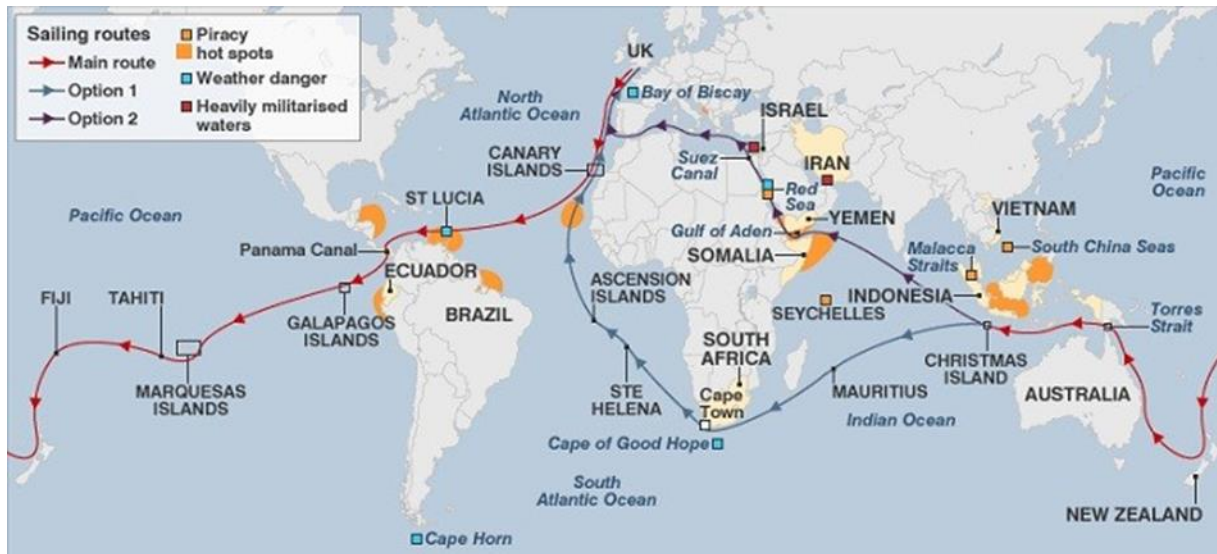


Figure 3: Main round-the-world sailing routes for LNG and petrol and the location of trouble spots for energy transport security. Source: International Maritime Bureau

With the Indo-Pacific region becoming economically, demographically, and strategically more contested and central to the global power balance, Australia’s interests are at a growing risk. The Indian Ocean is already supplanting the Atlantic as the world’s busiest shipping highway and maritime routes through the Western Pacific Ocean including the disputed waters of the South and East China Seas are becoming more and more important [20].

The continuing economic growth in Asia will result in an increased and acute dependence on sea-borne energy supplies for Australia. Changes in energy cooperation and importance of supply routes within the Indo-Pacific region highlight how the baseline of Australian defense planning has to shift. The “energy risk pivot” to Asia will introduce new strategic tensions as China, South Korea, Japan, India, and Singapore jostle to ensure continuity of supply. Australia will be a critical regional exporter as it is the biggest provider of LNG and coal in the region, sources of energy that are widely used in Indo-Pacific countries. Moreover, if Australia transition to clean energy, it could also become an important green energy export nation and a net exporter of mineral essential for energy transition such as lithium. This role could put Australia’s resources and routes supply at risk as they might become more and more sought-after in the current changing climate.

All countries of the Indo-Pacific share to some extent Australia’s energy security challenges. The developing economies in the Asia-Pacific region are expected to account for almost two-thirds of global growth in energy demand between now and 2040. These economies will increasingly rely on energy imports, especially of oil and gas, to sustain economic growth. Given their geographical location, deepening regional cooperation seems to be the best solution to the energy challenge. Understanding evolution patterns of energy interdependence, and the motivations behind national energy strategies can help find more appropriate answers and promote interstate cooperation while reducing the risk of energy shortage. In opposition letting a climate of energy insecurity can lead to resource nationalism



and potential conflict over control of resources. Given the Indo-Pacific is home to both supplier and consumer nations, mechanisms that promote transparent, rules-based, and liquid markets will be an advantage for ensuring the region's energy security and smoothen sovereignty claims on land and resources.

Such project will mean giving away energy independency to co-enhance security of electricity supply by connecting the countries' diverse source of energy to bring flexibility to energy supply. Countries of the ASEAN have made arrangements to increase energy resilience and supply each other in case of crisis. In 1997, the ASEAN heads of states first agreed to develop the ASEAN Power Grid (APG) to ensure energy security in the region through investment in regional power interconnections. The Trans-ASEAN Gas Pipeline (TAGP) is an example of a project aiming to create a single integrated gas pipeline grid. For now, the TAGP remains incomplete and has been slowed down by the general environment of energy insecurity and uncertainty, felt by Asian governments.

Even though the ADF does contribute to the preservation of regional security and stability in South East Asia through the auspices of Operation GATEWAY¹², Australia has been investing more in cooperation with the United States than with the Indo-Pacific region. In February of 2018 the Trump and Morrison administrations launched the Australia-U.S.-Strategic Partnership on Energy in the Indo-Pacific. However, this US-Australia energy cooperation weakens possible energy cooperation with Australia's nearest neighbors. To prevent Australia from becoming politically isolated from the Indo-Pacific countries, Australian's Defense Force has chosen to increase cooperation in the region. In July 2020, the ADF has stated in its 2020 Defence strategic Update the importance of its nearer region the Indo-Pacific and its willingness to deepen cooperation [19]. Yet, for this to happen, Australia will need to improve on its poor performance on GHG emission reduction and poor interest in climate change mitigation which are threatening the Australian-Indo-Pacific region and the political relations.

¹² Under Operation GATEWAY, the Australian Defence Force provides maritime surveillance patrols in the North Indian Ocean and South China Sea, contributing to the bilateral defence relationship between Australia and Malaysia. The operation has endured since the 1980s.



Conclusions

Today, the Australian Defence Force is deployed in more places at the same time and has a greater panel of activity than ever before. This brings up the question on how fit the Australian military is to provide national security with its capability to simultaneously support global, regional and domestic operations (see Figure 4) The ADF, like the armies of all countries, must face new military challenges. In addition to protecting the country from external threats, it is asked to protect strategic supply routes and infrastructures, protect the country from natural disaster and also to get “greener” [2]. To fulfil all these tasks, the ADF will need substantial government funding to build, repair and operate (also even greener) equipment with improved performance.

But should the military take on all these challenges and tasks as its genuine future roles? The public opinion in Australia is divided:

For some, ADF’s core business in the future will be to tackle climate change related issues like natural disaster aid at home and internationally as well as securing supplies of water, food, and energy. In their view climate change is “the most imminent” threat to national security because unlike the potential threats from rising nations like China or India, climate change is already happening. Therefore, instead of spending the Defence’s budget on weapons systems that might be used in the unlikely case that Australia gets involved in a conflict, the defence budget should be used for what could become the new task of national defence.

Many reject this idea. They believe that the Australian Government has other departments dealing with climate change, energy security and border control. They refer to the Department of Industry, Science, Energy and Resources, the Department of Infrastructure, Transport, Regional Development and Communications, the Australian Federal Police, and the Australian Border Force. If the ADF is to spend more time in Australia’s territory responding to climate change it will leave aside a role that no other agency can do which is to develop and, if necessary, apply all military capabilities to deter and defeat the nation’s potential adversaries. Consequently, they argue that for countering the consequences of climate change an appropriate budget, equipment, and training should be given to the responsible entities or to a newly created special unit.

What is needed for Australia’s policy is a new national security framework taking in account climate change for ensuring in the future the national security of energy, food, and water supply. The 2019-2020 bushfires have shown how Australia needed a national mitigation plan for climate change disaster to coordinate efforts between states. A harmonisation will help reduce the need for Australia’s Defence Force to intervene. What remains sure is that it will not be the ADF’s role to curb Australia’s GHG emissions – this is Australian nation’s task as a whole because no military alliance, deployment of troops or new weapon system will adequately protect Australia from climate change.

Australia’s Defence is firmly embedded on international ground by cooperation with global partners. Climate change is a new shaper of inter-countries relations and commercial exchange. Australia’s choice to either ignore climate change or to procrastinate in addressing its challenges is starting to negatively affect its partnerships, especially with the Indo-Pacific region, threatened by the already rising sea level and calling for action for climate change. This impacts commercial and military cooperation and influences export and import trends as

well as Australia’s energy security. The capability of the Australian Defence Force to focus on its genuine task of ensuring national integrity would greatly benefit from a “greener” Australian policy by strongly reducing strain on the ADF to intervene e.g. during climate change induced natural disasters and their negative political, social and financial consequences.

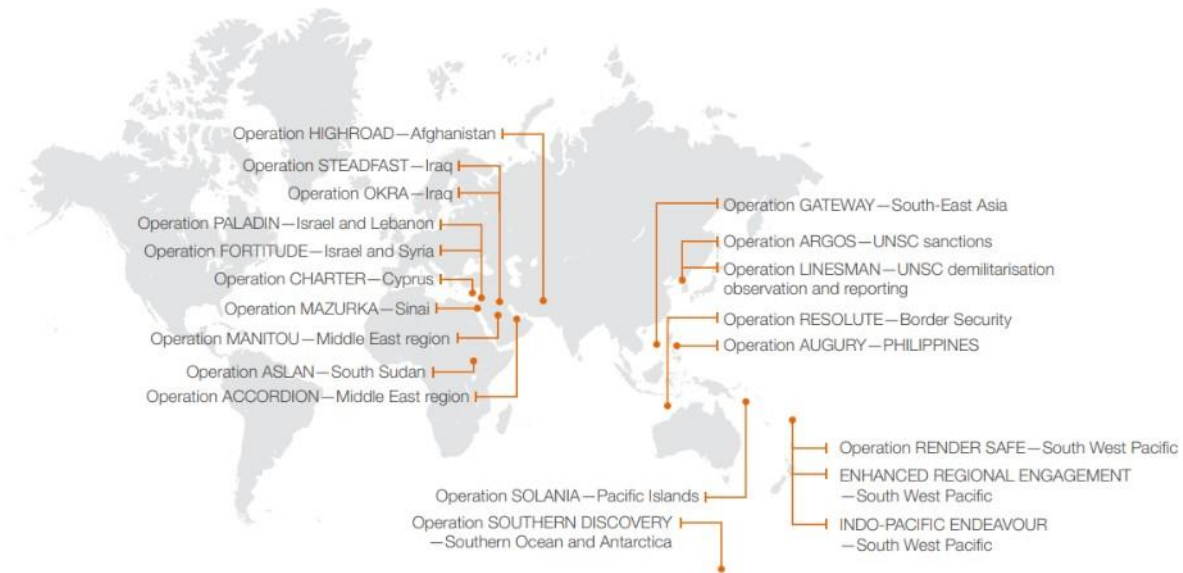


Figure 4: Australia Defence Force operations during 2018-2019.
Source: Department of Defence annual report 2018-2019

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