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The thin green line Climate change and Australian policing

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Introduction

Climate change is already, directly and indirectly, creating threats in water security, energy security and food security. Indeed, it's emerging as a serious issue right across the security agenda. The public is increasingly concerned about the traumatic implications of environmental disruption. The environment, and in particular climate change, was an important factor in the election of the Rudd government.¹ A recent public opinion poll found climate-related issues topped the list of possible threats to the vital interests of Australia.² The Labor government moved early in its term of office and signed the Kyoto Protocol, created the Department of Climate Change (DCC) and has outlined the Carbon Pollution Reduction Scheme (CPRS) in its July 2008 Green Paper.

Though there is an emerging body of literature relating to climate change and security, focused on such issues as future resource scarcity, the mass movement of people and civil unrest,³ there has been little or no work on the impacts of climate change on policing, either in Australia or abroad.⁴ With 45,000 officers, the eight police forces that serve this country are the principal domestic security actors in Australia. They need to think harder about how climate change may affect their core business.

Most Australian senior police officers haven't considered climate change to be relevant for their work. The notable exception is Australian Federal Police Commissioner Mick Keelty, who suggested last September that climate change could eclipse terrorism as the security issue of the century.⁵ Climate change requires action both to mitigate the contributing human factors, by curtailing greenhouse gas emissions, and to adapt, by planning and implementing strategies that lessen the potential harm associated with long-term climatic change. It's likely that Australian law enforcement agencies will be required to contribute to climate change mitigation in Australia and will need to start thinking strategically about adaptation to climate change.

Why should Australian law enforcement agencies be concerned about climate change? One reason is that climate change may either directly or indirectly contribute to complex national and regional emergencies that require police action. A second reason is that, as Australia begins to actively participate in measures designed to mitigate the rate of climate change, most critically the forthcoming CPRS, new legal regimes will require compliance and enforcement that may involve police agencies. The Australian Federal Police (AFP), for example, has experience in investigating matters related to tax evasion:

it's possible that carbon accounting or emissions fraud will require similar forensic policing capacities. A third reason is that climate change may bring with it other climate-related crime, such as water theft. And a fourth reason is the human factor: climate change will impact on the working conditions of Australian police officers.

Climate change projections

There are several ways in which climate change is projected to have an impact on Australia.⁶ The immediate risks relate to changes in weather patterns and weather events, including increasing temperature, sea level rise, changing rainfall patterns, increased humidity and hail storms, increased frequency and scale of flooding, bushfires, heat waves, increased electrical storm activity and the intensity of cyclonic activity. Vector-borne diseases are likely to spread and cases of food and waterborne diseases will become more common.⁷

All these changes will have direct economic and social impacts and could result in increased police and emergency calls.⁸ These issues will make demands on the broad capability profile of police as first responders and may create new kinds of 'climate crime': rapidly changing climate conditions may fuel social tensions and possibly generate new patterns of criminal behaviour.

Compliance and enforcement

The CPRS, due to operate from 2010, will be a market in the billions of dollars, creating big winners and losers. As the policy agency of the CPRS, the DCC will be responsible for setting the legal framework that governs the emissions trading market⁹, including permits, entitlements and reporting. It will decide what government agency responsibilities are with regards to managing its operation. Draft legislation is expected by the end of the year.¹⁰

An independent regulator could have the task of running the new market in carbon emissions permits, with targets set by government. The *Garnaut Climate Change Review* Final Report makes this recommendation: the administration of the emissions trading scheme should be made the responsibility of an independent carbon bank with a high degree of executive independence in the exercise of its powers. The closest analogue is the Reserve Bank of Australia. The powers of the independent authority would be defined by legislation and by agreement with government. The overarching objective of the independent carbon bank should, according to Professor Garnaut, be the maintenance of the long-term stability of the Australian emissions trading scheme.¹¹

The actual design of the compliance and enforcement elements of the CPRS is not yet known, but it's likely that the regulator will have the power to delegate monitoring to other agencies.¹² The Australian Securities and Investments Commission (ASIC), for example, could be responsible for the rules governing the trading system under the *Corporations Act 2001* powers relating to financial product disclosure, licensing and regulation of markets.

Where companies mislead consumers, or their claims relating to carbon offset services are disputed, the Australian Competition and Consumer Commission (ACCC) could prosecute. Already there's been legal action here: claims by an Australian car company that its vehicles were green and carbon neutral have recently been declared misleading by the Federal Court. ACCC chairman Graeme Samuel warned in a statement that companies risk breaching the Trade Practices Act if they give an overall impression to consumers that their product is environmentally friendly when it isn't and that the ACCC will 'continue to be vigilant on "greenwashing" and will not hesitate to take

enforcement action, including Federal Court action, against traders who make false or misleading representations to consumers, as has been demonstrated by this case.¹³

Similarly, where Commonwealth environmental standards have been breached, the Department of the Environment, Water, Heritage and the Arts might undertake enforcement activities. And state and territory Environmental Protection Agencies (EPA) would prosecute where infringements contravene state and territory regulations.

Although the government's recent Green Paper on the CPRS discusses reporting and compliance, it says nothing about the role of police, and so assumes that the regulator can manage alone.¹⁴ However, Australia's police, especially the AFP's forensic financial officers, could become involved in both the CPRS and in the voluntary carbon market when conduct in the market is suspected of crossing into the criminal domain or at the behest of a regulatory agency.¹⁵ Many countries already have considerable experience investigating criminal breaches of large derivatives or futures markets, which suggests that the investigations relating to emissions trading may not in fact pose significant challenges for Australian police.¹⁶ City of London Police and Britain's Serious Fraud Office conducted a joint investigation into the Singapore-based futures trading activity of Nick Leeson whilst he was working for Barings P.L.C in 1995. And French police were heavily involved in investigating the actions of Jerome Kerveil, a trader at Societe Generale in January 2008: Kerveil was caught making unauthorised trades on equities futures resulting in at least \$7 billion of write-downs for France's second largest bank.

It would be naive, however, to simply assume that previous experience in other large markets automatically equips our police forces with a sufficient knowledge base to play a

role in whatever CPRS emerges, or for that matter, to collaborate with other agencies involved in international carbon trading. And the prosecution of environmental cases has been historically challenging: there are practical difficulties in prosecuting environmental offenders. Gathering sufficient and appropriate evidence has proven difficult and the political implications of punishing offenders, in particular large corporations, have hindered the achievement of results. Indeed, we may have expectations of our police forces that they are not in a position or resourced to deliver. The 2001 Enron scandal in the United States, for example, demonstrated that the investigation of those fraudulent activities was extremely resource intensive.

The financial scale of the future CPRS and the linkages to existing international carbon trading schemes suggests the AFP in particular, will need to explore what opportunities exist for deception, particularly where emission trading intersects with world financial markets. In a booming market there's always a high possibility of fraud by a 'green-shoe' brigade.¹⁷ Investigations into carbon markets overseas highlight some of the possible avenues for deception. Cases have been uncovered where some companies have been paying for offsets that don't take place; instances where people and organisations have been buying worthless carbon credits that don't yield any reductions; some companies and individuals have paid over the odds for the private purchase of carbon credits that plummet in value because they don't result in emissions cuts; and companies could collude to fix the price of carbon.¹⁸

The regulatory nature of the carbon trading market appears to preclude any substantive police role, yet it may be that Australian police agencies could play an important part in a future whole-of-government approach

to establishing and enforcing Australia's carbon market. There's been some discussion about the role for Australian police in the enforcement of environmental protection legislation (EPL), which is useful for thinking about police agencies and the future Australian carbon market.¹⁹ On the one hand, Australian police have limited experience or expertise in enforcing EPL. On the other hand, environmental protection agencies have a limited pool of expertise and resources to enforce EPL and have extensive advisory, regulatory and compliance responsibilities that create the perception, at the very least, of having conflicting roles.

The same may also be true in the case of the Australian carbon market. And whilst in the long-term, compliance and enforcement is likely to be a primary function of other federal, state and territory agencies, in the short term, Australian police could play a symbolic enforcement role, demonstrating the government's commitment to reducing carbon pollution to the Australian public. Ensuring the integrity of the CPRS and the voluntary carbon market will be an important component of Australia's adjustment to a carbon neutral economy and could help avoid some of the problems that have plagued carbon markets overseas.

Australia's stake in how our Pacific Island neighbours are impacted by the emerging carbon markets is also a good reason for the federal police to understand climate change response strategies of our near island neighbours. Whilst we may be confident in the capabilities of Australian policing and regulatory institutions, there's evidence to be concerned that the Pacific Island states would be vulnerable to criminal activity associated with carbon markets. The recent case of an Australian national questioned in Vanuatu on suspicion of trying to defraud the government of Vanuatu by offering a program to cut its

greenhouse gas emissions highlights the challenges faced by the island states.²⁰

There's also other schemes around that pose risks of fraud, such as ocean fertilisation. Ocean fertilisation is the deliberate addition of nutrients to the sea in order to stimulate phytoplankton growth in the hope that the CO₂ is captured in the marine organisms and then transferred to the deep ocean, where it would be stored, possibly for centuries.²¹ However, neither the environmental safety nor the efficacy of ocean fertilisation has been adequately assessed. It could risk side effects such as artificially induced phytoplankton blooms that degrade the maritime domain of countries that share sea borders with Australia. The massive economic potential of ocean fertilisation has started to draw commercial operators and some Pacific islands together. Commercial ocean fertilisation is being touted as a future source of carbon offset and a solution for countries dependent on fish stocks for food security. As noted above, however, the science is sketchy and there's a raft of consequences that could threaten human security and cause tension between states.²²

If such cases become more frequent, Australian police could be involved in overseas assistance roles, providing investigative and analytical expertise. Australian police could, for example, form part of ad-hoc Australian investigative teams tasked with aiding a large-scale fraud investigation or could form part of future long-term Australian development assistance designed to assist climate change strategies in Pacific Island countries by transferring knowledge gained from Australian experiences to recipient countries.²³

Finally, there's also a lack of expertise in small island states in drawing up carbon contracts: this vulnerability could open up possibilities of deception.²⁴ The voluntary carbon market

is likely to grow significantly. And with looser regulation than expected for the CPRS, opportunities for deception in the voluntary market may in the future consume more police time.

Jurisdictional impacts

It's unlikely that the introduction of an emissions trading regime will require any major police rethinking about jurisdictional rights and responsibilities. There's potential, however, for some jurisdictional overlap. Where police involvement is invited, all cases could effectively be deemed to be federal jurisdiction because Commonwealth legislation will govern the CPRS. In cases arising outside of the official CPRS, such as in the voluntary offsets market, Commonwealth laws could be breached, but the primary impacts may be felt by a particular jurisdiction. In these cases police would need to decide whether it's the breach of legislation or the effect of the breach that determines the jurisdiction. More joint operations, harnessing the expertise and resources of both federal and state and territory police, will be required. And the likely linkages between the CPRS and global emissions reductions markets will increase the need for greater international police cooperation.

Until the knowledge and experience base matures, Australian police will need to examine who is best placed to deal with future investigations: this will involve police thinking outside the 'jurisdictional box' and engaging with external agencies and experts, as has occurred when new areas of criminal activity have emerged.²⁵

Climate crime

We may see changes in the type, rate and frequency of crimes as our climate alters. There's been little research, however, that analyses the impact of weather conditions on

criminal behaviour in Australia.²⁶ Anecdotal evidence suggests weather does encourage particular types of criminal behaviour, such as changes in domestic violence patterns, a rise in drunkenness and associated anti-social behaviour, especially in the aftermath of disasters.²⁷

Exceptionally hot days and exceptionally low rainfall days are expected to increase in frequency.²⁸ We may, therefore, see increases in a range of water thefts: individuals stealing water, the use of fraudulent water trucks to steal public water for private gains, more incidences of siphoning from river systems for irrigation and illegal damming of rivers.²⁹ If water becomes increasingly precious, the lengths to which individuals will go to protect their water assets, including violence, will increase.

Climate change could provoke violent protests aimed at the government over perceived inadequate policy responses or against corporate entities that are environmentally irresponsible.³⁰ It should, however, be noted that Australia has not in the past experienced the type of militant protests associated with other interests groups overseas, such as extreme animal rights activists. Open democratic debate should ensure that future protests remain law abiding.

The increase in incidences of natural disasters will result in more crimes of opportunity. The looting which occurred in Queensland after the flooding in 2008, indicates that police will need to put more emphasis on securing property both during and in the immediate aftermath of future disaster events and develop strong crisis communications skills.³¹ In widespread cases of looting, where custodial sentences resulted for offenders, there would also be implications for our prison system.

It's highly likely that climate change will increase the number of migrants seeking

permanent entry to Australia.³² More displaced 'climate refugees' or 'climate migrants' from vulnerable low lying atoll neighbours could pose an increasing problem for community policing unless our cities and towns are able to accommodate and help assimilate potentially large groups of foreign nationals. It would be prudent, therefore, for law enforcement agencies to examine the background of those likely to move from climate migration 'hotspots'. This will assist police in being more effective in dealing with possible crime involving those displaced by climate change.

Community vulnerability

Australian police agencies will need to work much more with community organisations and government agencies to develop plans to respond to climate change related disasters. In the aftermath of such disasters, that may devastate large parts of whole communities, the first steps to prevent the security situation from deteriorating will be to ensure that social networks and basic community functions are able to resume with minimal fuss.

Climate change risks pushing already vulnerable pockets of communities further into hardship. Lower socio-economic groups are increasingly relocating into drought-affected towns: the cost of living is cheaper than in areas less affected by water availability. The upwardly mobile, on the other hand, are moving away from drought-affected areas to locations less challenged by water availability. Some communities risk being caught in a vicious cycle of poor economic prospects and associated social ills, including increased crime against both persons and property.

A similar scenario could emerge in densely populated areas that become increasingly susceptible to natural disasters. If there are consecutive instances of large-scale

disasters, such as the 2008 Mackay flooding, this may rapidly change the socio-economic status of large numbers of people who are today considered middle class and stable. Their assets might become uninsurable and subsequently decline in value. The capacity to recover from such a series of events may weaken community resilience.

The associated law enforcement costs for these types of scenarios, including large-scale homelessness, is difficult to calculate. It's likely, however, that there will be a rise in demand for police required to deal with the fallout from rapidly declining social circumstances associated with climate change. It would be wrong to assume that these changing circumstances would primarily be a policing issue: planning to adapt to climate change at the local level will assist in mitigating many of the worst-case scenarios. Collaboration is required between a range of actors, including law enforcement bodies, across all tiers of government to understand the social implications of climate change for particular communities.

Police forces will provide a safe environment in which other agencies can implement their response strategies and, in the worst-case scenario, respond to breakdowns in social order.³³ Police agencies will therefore need to explore how to build bridges between law enforcement and other organisations and to develop practical pathways of interagency cooperation under uncertain environmental conditions.

Operational planning and the human factor

In adapting to climate change, it will be important to consider the human dimension of police work: climate change is likely to impact on the working environment for police officers, with increased expectations of effective response to more frequent and

varied instances of natural disaster. As in other professional occupations, Australian police agencies will need to consider how to best deliver a safe working environment for their officers.

It's likely, for example, that bio-security threats associated with climate change will become more acute. Police agencies will need to undertake risk assessments on the likelihood of exposure to new and uncommon diseases, such as Japanese encephalitis, that are not usually found in Australia. With temperature variation, disease vectors are likely to become more prevalent in terms of increased diversity of mosquito species and other blood feeding insects in some parts of Australia.³⁴ And if more police are deployed to assist countries stricken by extreme weather events associated with climate change, there will be a greater risk of exposure to endemic diseases whilst on operation.

In the face of increasing numbers of police involved in responding to disasters, police agencies will need to consider the physical and psychological impacts of climate change on their personnel. Extended periods of working under disaster conditions could result in increased incidences of fatigue amongst regular police. Similarly, the emotional trauma of dealing with affected communities in natural disaster areas could have major psychological impacts on some officers when they return to normal duties.

Climate change might also have implications for police budgets: responding to a higher frequency of weather-induced disasters will divert already scarce resources from core police business. This could have a trickle down effect in some states by adding to the workload pressure of police involved in bread and butter law enforcement.

For disaster response preparedness, all state and territory police forces will need to ensure that comprehensive strategies

are in place to ensure the safety of families of police officers acting as first responders in a disaster situation. *Hurricane Katrina*, for example, illustrated the importance in the United States of ensuring that first responders have the capacity to go to work and know that their families are safe. In the worst-case scenarios of catastrophic disasters, we may see police officers abandoning work to take care of their families: this would increase the risk to the public as a disaster scenario unfolded and undermine public confidence in the police to respond effectively in future crises.

A strategic response to disasters

The vulnerability of our region, in particular the Pacific Islands, to climate change related disasters, will increase the likelihood of a future role for Australian police as first responders.³⁵ More disasters and political instability related to climate change effects will require more Australian police to play a role, either in responding to a disaster or in deploying to maintain and restore law and order.³⁶ Whilst Australia's police are experienced in responding to disasters, there are areas where planning and operational capacity could be improved.

At the capability level there has been limited preparatory planning, particularly where isolated Australian communities are concerned.³⁷ It's within such vulnerable communities where the response challenges to police will be most acute and where the potential for a serious breakdown in law and order are most likely. Enhancing linkages with non-government bodies will be one way for police to plan future capabilities to implement disaster response in isolated communities. Non-government bodies, such as the Australian Red Cross, already provide important services for disasters: the Red Cross registers all evacuees with federal/state police in the aftermath of a disaster. In order

to maximise the utility of non-government organisations during natural disasters, police will need to play an active part in educating the public in disaster response protocols, whilst improving police community warning systems.

At the operational level, ensuring that key lessons from recent disasters are taken into account in police planning for emergencies will be paramount. *Cyclone Larry* in 2006, for example, demonstrated the importance of communication technologies.³⁸ Police will need to move their local radio broadcast onto the national radio network. In disaster events this will ensure that vulnerable and affected communities have a continuous source of information about the status of police and emergency service response in their local area. And it will ensure that relevant safety instructions can be delivered when necessary.

If the number of climate change related disaster response operations increases, it will become more important for our police forces to be able to respond in both a stand-alone capacity and in conjunction with other response actors. Police will need to plan to have the capacity to be self-sustaining in such operations: they should assume there will be nothing on the ground, in terms of food, water and basic necessities.³⁹ To deal effectively with these emerging disaster scenarios, police will need to undertake more emergency management exercises that reflect extreme events, just as they now participate in counter-terrorism exercises.

Police–military cooperation

Australian police agencies might be required to assist countries in distress after a natural disaster with border security. They may be required to provide a security presence at refugee camps or at key transit areas to help manage any potential mass movement of people. In this type of situation, a police

presence may be less provocative than a military deployment.

The Australian Defence Force (ADF) will continue to play an important role in supporting Australian police forces in the face of climate change related disasters and as a first response to requests for Australian assistance to disasters abroad. There's already a clear protocol for the activation of Defence aid to the civil community. With more natural disasters expected in the future, there's likely to be increased calls on the ADF to embrace domestic disaster response as part of the military's core business: such a shift would have implications for police–military engagement.

Currently, the ADF and Australian police are cooperating at the strategic planning level. Interoperability between the ADF and AFP is at historically high levels vis-à-vis overseas deployments. At the tactical level, however, cooperation between police and the ADF tends to occur only when there is the convenience of geographic collocation of police and emergency services and the ADF, such as in Queensland. Elsewhere the police might be more proactive and invite ADF participation in scenario/contingency planning.

Climate-proofing police infrastructure

Queensland police are considering how to strengthen some of its physical infrastructure to withstand major disasters. This is very sensible: a recent report by Queensland's Office of Climate Change finds the state particularly vulnerable to climate variation.⁴⁰ Police infrastructure will need to adapt to climate change by hardening infrastructure or addressing redundancy in police systems to deal with anticipated extreme weather events. Protecting critical police infrastructure could become increasingly important, if for example, electrical blackouts become a

more common occurrence because of more frequent and extreme weather events. In major cities, blackouts could cause havoc with traffic signals and require more police to manage traffic. Blackouts could impair the physical operation of police buildings: police back-up power systems will need to be effective. And it will be important to ensure that communication between police and other emergency responders doesn't suffer in the event of power outages.

Low-carb policing

Planning to reduce the carbon footprint of Australia's police has been given scant consideration to date by police agencies, particularly when compared to the mitigation and adaptation initiatives that have been taken by some law enforcement agencies overseas.⁴¹ All new government buildings are required to meet federal and state legislation that mandate minimal energy efficiency requirements. But there's been little police planning on making existing infrastructure more energy efficient. Old structures far outweigh planned new buildings, so there will be costs associated with redesigning old energy inefficient police buildings.⁴²

Like other large organisations in Australia, police agencies will have to contribute to reducing greenhouse gas emissions. Emissions generated by Australia's police agencies are likely to constitute a small fraction of total emissions. However, their abatement could constitute an important symbolic gesture: it might become a factor in meeting future police recruitment demands, as potential applicants become more conscious about the green credentials of prospective employers.⁴³ One area that could be addressed is energy efficiency in police motor vehicles. It's likely that Australian police will need to adapt to more economical and eco-friendly forms of transport. This will have implications for the composition of police vehicle fleets.⁴⁴

The way forward

At this stage, it's not clear exactly what the impacts of climate change will be for Australian police agencies. To identify these impacts and to advance the adaptations that will be necessary by Australian law enforcement agencies to climate change three measures are suggested.

Establish an information hub

Planning adaptive strategies for climate change is made difficult by the scale of the problem and uncertainties surrounding our capacity to predict likely climate change scenarios. Australian police forces are independently starting to think about future adaptive requirements. But there's little connection between the individual efforts.⁴⁵

A more effective process would be to bring together current knowledge and future thinking on climate change and its implications for policing in a national information hub. The hub would act as a repository for existing knowledge and a central location for generating new ideas about policing and emerging climate-related issues. An information hub could be hosted by an existing institution, such as the Australian Institute of Criminology, or the Australia and New Zealand Policing Advisory Agency.⁴⁶ One area where this might have immediate tangible benefits is in improving consistency in the energy efficiency of Australian police forces. Applying best practice in this area would contribute to Australia's overall emissions reductions targets.

Improve decision support

Research centres and relevant university centres should initiate research programs on the social implications of changing climatic conditions in Australia and the impact this might have on law enforcement agencies.

Understanding the criminal implications of the drought would be an obvious place to start.⁴⁷ Using a range of factors, such as looking at the volume of recorded crime and certain types of crime, as well other indicators of community stress like suicide, would be an important first step in taking a community-based approach to dealing with climate change: it could identify critical implications for policing as well as the types of preemptive action required to prevent adaptation from becoming a predominantly policing issue.

Undertake risk assessments

Australia's police agencies, in cooperation with select scientific and research bodies, should develop risk assessments of the locations that will be most affected by climate change as part of a multi-agency strategic approach to climate change adaptation. Just as the government conducts strategic assessments of the international political environment, law enforcement agencies will need to consider likely scenarios that may be shaped by climate change and their possible impacts on Australian policing both at home and abroad. Understanding the key potential vulnerabilities will be important for planning future contingencies and ensuring the most effective allocation of limited financial resources by Australian law enforcement bodies.

Bringing the issues together

Climate change will potentially cut across many areas of policing. It will involve broadening police partnerships between state and territory, national and international agencies. Taking a cooperative, proactive public education position on any emissions trading regime, for example, will avoid any unnecessary criminalisation emerging from such a scheme and reduce pressure on the criminal justice system.

At the jurisdictional level, it's likely that climate change will be dealt with as and when the impacts have a tangible effect on communities. But it will become increasingly important to define the role of state police as part of a national response mechanism to climate change: poor planning based on misconceptions of police capability and roles needs to be avoided.

Educating Australian communities about the role of law enforcement in the event of future climate disasters will be an important step towards improving Australian resilience to the impacts of climate change. And while we may not see the early introduction of climate change squads in Australian police forces, there will be an increasing requirement for Australian law enforcement agencies to consider how they will need to adapt to the challenges posed by the severity and impact of climate change.

Endnotes

- 1 See Ian McAllister *Public opinion in Australia towards defence, security and terrorism*, ASPI Special Report, August 2008.
- 2 *The Lowy Institute Poll 2008: Australia and the world*, p.12. Available at <http://www.loyyinstitute.org>
- 3 The CNA Corporation, 2007. *National Security and the Threat of Climate Change* <http://securityandclimate.cna.org/report/National%20Security%20and%20the%20Threat%20of%20Climate%20Change.pdf>, The Centre for Strategic and International Studies *The Age of Consequences: The Foreign Policy and National Security Implications of Global Climate Change* http://www.csis.org/media/csis/pubs/071105_ageofconsequences.pdf, Alan Dupont 'The strategic implications of climate change' *Survival*, vol. 50 no.3, June-July 2008, pp.29-54. For a discussion

- of the impacts of climate change on the Australian Defence Force see Anthony Bergin and Jacob Townsend, *A Change in Climate for the Australian Defence Force*, ASPI Special Report, July 2007.
- 4 For a brief treatment of the issues in a British context see, Chris Abbott, 'A storm brewing', *Jane's Police Review*, vol. 116 no.5988, 18 July 2008, pp.26-27.
 - 5 Mick Keelty, *Address to the inaugural Ray Whitrod Oration*, Adelaide Convention Centre, 24 September 2007.
 - 6 The climate change impacts on Australia are outlined in the *Garnaut Climate Change Review Final Report* released 30 September 2008, chapter 6. See also *Intergovernmental Panel on Climate Change Fourth Assessment Report*, chapters 10, 11, 16.
<http://www.ipcc-wg2.org/>
 - 7 See Anthony J McMichael, Rosalie E Woodruff and Simon Hales 'Climate change and health: present and future risks', *The Lancet*, 2006; 367: pp.859-869.
 - 8 Under a no-mitigation scenario, increased incidence of heat-waves and hot days in Queensland is likely to lead to an extra 4,000 deaths a year increasing the demands for coronial reporting. See *Garnaut Climate Change Review Final Report*, 30 September 2008, p.140.
 - 9 It's expected that the scheme will be a 'cap and trade' system, in which total emissions are capped at a certain level and companies will need permits to pollute.
 - 10 In September 2007, the *National Greenhouse and Energy Reporting Act 2007* was introduced. This legislation established a national greenhouse and energy reporting system that will underpin the emissions trading scheme. Firms registered under the Act will provide information on their greenhouse gas emissions, energy production and energy consumption to the Greenhouse and Energy Data Officer. Those required to report will be facilities with over twenty-five kilotonnes of emissions, or production/consumption of 100 terajoules or more of energy in a given year. The system was in place from 1 July 2008 and the first year of reporting will be the 2008–09 financial year.
 - 11 See *Garnaut Climate Change Review Final Report*, released 30 September 2008, especially pp.352-53.
 - 12 See *Carbon Pollution Reduction Scheme Green Paper* July 2008, p.216.
 - 13 See 'Car maker misled with green claims', *The Australian*, 18 September, 2008. For the Federal Court's decision see <http://www.austlii.edu.au/au/cases/cth/FCA/2008/1428.html>
 - 14 *Carbon Pollution Reduction Scheme Green Paper*, July 2008, chapter 5. The final report of the *Garnaut Climate Change Review* issued on 30 September 2008 is also silent on any possible role for the police. To ensure the ongoing credibility of the CPRS, there's a need to consider the regulation of services and other conduct relating to permits: the government's preferred position is that the permit would be a financial product for the purposes of the *Corporations Act 2001*, but some adjustment to that regime may be required to fit the characteristics of permits.
 - 15 Most liable entities are expected to comply voluntarily with legislation if the relevant information and assistance is provided. If educative strategies fail to achieve an appropriate degree of compliance, it's anticipated that a range of responses would be available, escalating

statutory enforcement of administrative penalties and, in more serious cases, civil and criminal penalties. See, the *Carbon Pollution Reduction Scheme Green Paper*, Chapter 5. Where this happens, the logical assumption is that investigations will be subject to and will follow established patterns and methodologies of investigation and prosecution.

- 16 Australian law enforcement agencies will also be consulted during the design phase of the scheme to ensure that it embodies best practice approaches to compliance and enforcement. See, Australian Government Department of Climate Change *Agenda Paper: Compliance and Enforcement Under the Australian Emissions Trading Scheme* <http://www.greenhouse.gov.au/emissionstrading/consultation/pubs/ets-roundtable4-papers5-compliance.pdf>
- 17 It's likely that under the proposed CPRS liable entities will be obligated to adhere to a range of verification and reporting processes that could be manipulated or falsified.
- 18 For example, see *Industry caught in carbon 'smokescreen'*, <http://www.ft.com/cms/s/0/48e334ce-f355-11db-9845-000b5df10621.html>. Australian police could play a part in ensuring that the laws governing future standing forests in Australia are effectively enforced: properly managed forests will be valued more highly than those with poor sectoral governance. And illegal loggers in the Asia-Pacific region could exploit carbon offset markets by participating in accepting offsets money for areas of forestry they then log and sell.
- 19 See James Blindell, '21st Century policing – The role of police in the detection, investigation and prosecution of environmental crime', *ACPR Issues*, May 2006, http://www.acpr.gov.au/publications2.asp?Report_ID=150
- 20 See http://news.sbs.com.au/worldnewsaustralia/aussie_cleared_over_alleged_vanuatu_scam_539651
- 21 See Rosemary Rayfuse, Mark G. Lawrence and Kristana M. Gjerde 'Ocean Fertilisation and Climate Change: The Need to Regulate Emerging High Seas Uses', *International Journal of Marine and Coastal Law*, 23, 2008, pp.297-326.
- 22 Anthony Bergin and Ross Allen, 'No credit as Oceans Turn Sour', *The Weekend Australian*, 5 July 2008. Illegal, unreported and unregulated fishing could become a much bigger policing problem as the oceans around Australia and in the region become more acidic. Ocean acidification could damage the ocean food web, reducing the numbers of commercial fish stocks and shifting patterns of fisheries.
- 23 The main risks in this field are likely to relate to the offset markets such as forest credits, Certified Emissions Reductions from Clean Development Mechanism projects and avoided deforestation/ degradation credits.
- 24 The current lack of experience will result in some inevitable errors and legal disputes: it will be important not to assume the worst in all of these cases as this criminalisation approach could hinder the evolution of the emissions trading market.
- 25 For example, when computer fraud emerged some fifteen years ago Australian police adapted and developed a multi-agency approach to get the right skill sets to complete investigations.

- 26 A 2007 preliminary report commissioned by the UK Home Office suggests that there are seasonal trends to some crimes: violent assault offences and sexual offences, for example, peak during summer months. See Celia Hird and Chandni Ruparel *Seasonality in recorded crime: preliminary findings* <http://www.homeoffice.gov.uk/rds/pdfs07/rdsolro207.pdf>
- 27 Some criminologists believe that there could be a link between drought-affected areas and domestic violence.
- 28 See *Drought: exceptional circumstances* http://www.daff.gov.au/__data/assets/pdf_file/0007/721285/csiro-bom-report-future-droughts.pdf
- 29 Recent media reports have documented a 30% increase in water theft in country Australia. The New South Wales Government has publicly promised to crack down on water theft after reports of extensive unauthorised channels being used to siphon water from wetland regions in the Murray Darling Basin. See <http://www.news.com.au/dailytelegraph/story/0,22049,21736664-5001021,00.html>
- 30 This point is made by Chris Abbott, see note 4, p.27.
- 31 The Insurance Council of Australia recently warned consumers to be wary of criminals presenting themselves as tradesman or insurance company residents in response to the Blacktown hailstorms.
- 32 It's possible that Australia will be involved in any future migration scheme that accepts Pacific Island residents whose physical existence is threatened by sea level rise. See, 'Pacific nation plans for oblivion', *Canberra Times*, 21 June, 2008; *Intergovernmental Panel on Climate Change Fourth Assessment Report*, Chapters 7 and 11 for a discussion of environmental migration. <http://www.ipcc-wg2.org/>. For a recent report on climate migrant related issues from Green Cross Australia see <http://www.greencrossaustralia.org/our-work/a-national-peoples-assembly/outcomes-of-the-assembly.aspx>
- 33 During *Hurricane Katrina*, which flooded New Orleans and killed more than 1,800 people in 2005, many residents defied evacuation orders to guard their homes and businesses from looters as law and order broke down.
- 34 See *Garnaut Climate Change Review Final Report*, 30 September 2008, p139.
- 35 Pacific Island countries are some of the most vulnerable states in the world to climate change. See <http://www.iied.org/pubs/pdfs/100201IED.pdf>
- 36 The Australian police led Regional Assistance Mission to Solomon Islands may be a template for how future assistance missions might operate.
- 37 The 2007 Council of Australian Governments Climate Change Adaptation Framework acknowledges that climate change has a greater impact on vulnerable communities. The document proposes future areas for research but there have been few, if any, concrete plans derived from the framework to date.
- 38 Blackberry mobile communication handsets were crucial during *Cyclone Larry* for sending and receiving information because local communication networks were either oversubscribed or disrupted due to the weather conditions. Similarly, independent radio networks were critical communicative devices due to the breakdown of local radio broadcasting.

- 39 Emergency Management Australia's urban search and rescue unit has the ability to self sustain for fourteen days.
- 40 See http://www.climatechange.qld.gov.au/downloads/downloads/ClimateScienceReport_WEB.pdf
- 41 West Yorkshire Police in the UK recently received an environmental award for being one of the Britain's greenest police forces. See <http://www.westyorkshire.police.uk/section-item.asp?sid=12&iid=5058>; <http://www.lep.co.uk/travel/Lancashire-police-cars-go-green.3901302.jp>
- 42 AFP buildings are bound by the federal government's energy efficiency in government operations policy, <http://www.environment.gov.au/settlements/government/eego/publications/pubs/eego-fs1.pdf>. States and territories have their own guidelines: see for example http://www.build.qld.gov.au/downloads/csb_crs%20_web.pdf
- 43 For example <http://www.onrec.com/newsstories/18213.asp>
- 44 The Australian Government Green Vehicle Guide rates common police vehicles poorly against fuel efficiency and greenhouse gas emissions. Note that there will be particular cases, such as the use of four-wheel drive vehicles for country police, where using vehicles that have high levels of emissions is unavoidable.
- 45 Planning activities of state police forces are being undertaken under the broad umbrella of the COAG Adaptation Framework. The 2008 COAG meetings climate change focus has centred on the implementation of emissions trading in Australia. The scale of climate change adaptation planning at state level will be such that a dedicated police planning agenda, that is aligned with the objectives of the COAG framework, but is separate from the broad planning timetable, might advance adaptive police strategies more efficiently.
- 46 The Australia New Zealand Policing Advisory Agency is a cross-jurisdictional body which provides policy and strategic advice, research capacity, knowledge management and information sharing services to Police Ministers and Commissioners throughout the Australian Commonwealth and New Zealand.
- 47 Some experts in preventive medicine have suggested that rising suicide rates amongst Australian farmers are linked to drought conditions. See <http://www.abc.net.au/pm/content/2007/s2054047.htm>

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