LAW IS ORDER, AND GOOD LAW IS GOOD ORDER: THE ROLE OF GOVERNANCE IN THE REGULATION OF INVASIVE ALIEN SPECIES.*

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Abstract

In Australia, invasive alien species (IAS) are the second largest threat to biodiversity after loss of habitat. International obligations provide that Australia should prevent the introduction of, or control or eradicate those alien species that threaten ecosystems, habitats or species. Yet, designing and implementing effective IAS regimes remains elusive. It is a multidimensional exercise that engages a variety of actors across all levels of government. The purpose of this paper is to examine complications stemming from governance of IAS regimes in federal systems where law-making power is shared.

It is argued that Australia has created a governance system for IAS largely based on political compromises that still presents the Federal government with the opportunity of providing a national framework for regulation of IAS. However, the Federal government has only partially grasped this opportunity, leaving the regime peppered with gaps and inconsistencies that fall short of the potential available to it.

Keywords: Invasive Alien Species, federal governance, biodiversity, biosecurity.

1. INTRODUCTION

On 1 January 1901, the *Commonwealth of Australia Constitution Act 1900* (Imp) (Australian Constitution or Constitution) commenced, creating Australia's Federal system of government. As with other federal systems of government, law-making power was henceforth to be shared[1] – in Australia's case, between a central, Federal Parliament and the State and Territory Parliaments.

However, while the Constitution apportioned law-making powers, it did not settle broader regulatory issues with respect to determination of policy and the design and implementation of regimes. These are especially important matters where governments operate in multi-layered and overlapping ways and each government has its own view on the best means of achieving effective regulation.[2] In such cases, carving out lines of legislative authority may be achieved by formalising the role of various parliaments,[3] yet effective regimes will often also involve compromises and procedures that have their foundation in extra-parliamentary and/or political processes.[4] Indeed, the structure of federal systems of government raises complex governance issues that lie at the very heart of the division and exercise of legislative power. More specifically, these issues include: considering which level of government would deliver the most effective outcomes; determining whether regimes should be centralized; and deciding which level of government should have input into concluding policy. These considerations help shape measures that in turn create 'good order'; a notion that was coined by the Greek philosopher, Aristotle, more than 2,000 years ago. It is a concept that is still relevant today, although more easily recognized as the study of what scholars now call 'governance'.

According to the Oxford dictionary, governance is 'the action or manner of governing'.[5] It encompasses a range of concerns that influence decision-making,[6] including conflict

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[1] Other countries with federal systems of government include the United States of America, Canada, Nigeria and Switzerland; Katy Le Roy and Cheryl Saunders, *Legislative, Executive, and Judicial Governance in Federal Countries* McGill-Queen's University Press (20060. For an analysis and synthesis on the vast literature on this subject see Ronald L Watts, 'Federalism, Federal Political Systems and Federations' (1998) 1 *Annual Review of Political Science* 117.

[2] See discussion in part 5 of this paper with respect to environmental regulation in Australia.

[3] Geoff Leane, Gary D Meyers and Sonia Potter, 'Promise or Pretence – Compliance with the Intergovernmental Agreement on the Environment: The National environment Protection Council (Western Australia) Act 1996' [1997] *Murdoch University Electronic Journal of Law* 8, at paragraphs 10 and 86. Available from <http://www.austlii.edu.au/au/journals/MurUEJL/1997/8.html> (last visited September 2009).

[4] Geoff Leane, Gary D Meyers and Sonia Potter, 'Promise or Pretence – Compliance with the Intergovernmental Agreement on the Environment: The National environment Protection Council (Western Australia) Act 1996', above n 3, at paragraph 86.

[5] Bruce Moore, (ed), *The Australian Concise Oxford Dictionary*, Oxford University Press Australia and New Zealand (2003).

resolution[7] and the role of institutions.[8] The study of domestic governance systems is also important to the development of international law because good governance at the national level can enhance the effectiveness of international regimes.[9]

This paper discusses governance issues relevant to environmental regulation of invasive alien species in a Federal system of government, using Australia as a case study. Invasive alien species (IAS) are alien species that threaten ecosystems, habitats or other species;[10] and countries are under international obligations to prevent the entry and establishment of these species.[11] Yet, international law does not provide a full range of prescriptive rules for regulating IAS, leaving it up to individual countries to determine objectives and means for achieving outcomes.

The discussion commences with an examination of what is meant by 'governance', emphasizing the importance of governance studies by helping regulators and other stakeholders appreciate the strengths and weaknesses of 'collective decision-making' within regimes.[12] The paper then moves to a discussion of IAS and the obligations imposed on, and recommendations accepted by, countries that form part of the governance mechanisms for these species.

Using this material, the paper undertakes a detailed analysis of Australia's governance regime for regulating IAS. The analysis is structured in three stages: first, a description of Australia's Federal system of government and how it operates in environmental regulation; second a description and analysis of the effectiveness of this system with reference to IAS; and third, identification of how governance arrangements applying to IAS might be improved, with a view to enhancing the IAS regime itself.[13]

It is argued that, Australia has created a governance system for IAS largely based on political compromises, under the banner of 'co-operative federalism'. The latter affords a way of structuring national regimes where, due to constitutional limitations, the Federal government lacks sufficient legislative powers to impose these regimes in its own right, as well as providing a forum for discussion, exchange of information and input into

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[6] Vasudha Chhotray and Gerry Stoker, *Governance Theory and Practice: A Cross-Disciplinary Approach*, Palgrave Macmillan (2009) 93.

[7] Matthew Paterson, David Humphreys and David Pettiford, 'Conceptualizing Global Environmental Governance: From Interstate Regimes to Counter-Hegemonic Struggles', (2003) 3(2) *Global Environmental Politics* 1 at 3.

[8] Vasudha Chhotray and Gerry Stoker, *Governance Theory and Practice: A Cross-Disciplinary Approach*, above n 6, at 228.

[9] David Yencken, 'Governance for Sustainability', (2002) 61 (2) *Australian Journal of Public dministration*, 78, 84; Vasudha Chhotray and Gerry Stoker, *Governance Theory and Practice: A Cross-Disciplinary Approach*), above n 6, at 224.

[10] *Convention on Biological Diversity 1992*, Article 8(h). The Convention was adopted 5 June 1992, [1993] ATS no 32 (entered into force 29 December 1993). The convention had 193 Parties as of March 2011.

[11] *Convention on Biological Diversity 1992*, Article 8(h).

[12] Vasudha Chhotray and Gerry Stoker, *Governance Theory and Practice: A Cross-Disciplinary Approach*, above n 6, at 5.

[13] The structure of this analysis is based on the findings of Vasudha Chhotray and Gerry Stoker, *Governance Theory and Practice: A Cross-Disciplinary Approach*, above n 6, at 214-215.

policy. In establishing the IAS regime, the Federal government has adopted a supervisory role, effectively setting itself up as 'meta-regulator'[14] and meta-policy maker, at the head of a network of meta-governance.[15] This stance presents the Federal government with the opportunity of providing a framework for coordinated national regulation of invasive alien species.[16] However, the Federal government has only partially grasped that opportunity, leaving the regime peppered with gaps and inconsistencies that fall short of the potential available to the government.[17]

2. GOVERNANCE

The word 'governance' has been described as a concept 'characterised more by its widespread use than its clarity or singularity of meaning.'[18] Undoubtedly, this evaluation results from the fluidity of the concept, which assumes different mantles according to context.[19] Hence, the notion of governance varies across a range of disciplines, including corporate governance,[20] global governance,[21] environmental governance[22] and global environmental governance.[23] Notwithstanding this plethora of uses, governance has been

[14] A meta-regulator is a regulator that regulates self-regulation. Christine Parker, *The Open Corporation: Effective Self-Regulation and Democracy*, Cambridge University Press (2002), Chapter 9.

[15] Michael Lockwood, Julie Davidson, Allan Curtis, Elaine Stratford, Rod Griffith, 'Multi-level Environmental Governance: Lessons from Australian Natural Resource Management', (2009) 40 (2) *Australian Geographer* 169, at 170.

[16] Tony McCall, 'Devolution in Embryo: the McArthur River Mine' in K J Walker and K Crowley (eds) *Australian Environmental Policy 2: Studies in Decline and Devolution*, UNSW Press (1999) 103, 109.

[17] See discussion in: R J S Beeton, Kristal I Buckley, Gary J Jones, Denise Morgan, Russell E Reichelt and Denis Trewin, (2006) Australian State of the Environment Committee) *2006 Australia State of the Environment Independent Report to the Australian Government Minister for the Environment and Heritage, Department of the Environment and Heritage* Canberra 2006 at paragraph 1.1; Elim Papadakis and Richard Grant, 'The Politics of "Light Handed Regulation": New Environmental Policy Instruments in Australia', (2003) 12 (1) *Environmental Politics*, 27, at 31; Michael Lockwood, Julie Davidson, Allan Curtis, Elaine Stratford, Rod Griffith, 'Multi-level Environmental Governance: Lessons from Australian Natural Resource Management', above n 15, at 171. One area where the Federal government has retained comparatively tight control over regulation is with respect to border controls in quarantine regulation. Policy and risk assessment is carried out by Biosecurity Australia; while operational matters are undertaken by the Australian Quarantine and Inspection Service (AQIS). See web site for Biosecurity Australia <http://www.daff.gov.au/ba> (last visited March 2011); and AQIS <http://www.daff.gov.au/aqis> (last visited March 2011). The legislative basis for Australia's quarantine services are found in the *Quarantine Act, 1908* (Cth).

[18] Charles Sampford, 'Environmental Governance for Biodiversity', (2002) 5 *Environmental Science and Policy* 79.

[19] See for example, the discussion on governance in United Nations, Economic and Social Council, 'Definition of Basic Concepts and Terminologies in Governance and Public Administration' E/C.16/2006/4 (2006) at page 3.

[20] Andrei Shleifer and Robert W Vishny, 'A Survey of Corporate Governance' (1997) 52 (2) *The Journal of Finance* 737.

[21] The Commission on Global Governance, Ingvar Darlsson and Shridath Ramphal (co-chairmen), *Our Global Neighborhood: the Report of the Commission on Global Governance*, Oxford University Press (1995).

[22] Andrew Jordan, Rüdiger K W Wurzel and Anthony R Zito, '"New" Instruments of Environmental Governance: Patterns and Pathways of Change', (2003) 12 (1) *Environmental Politics* 1, at 8.

[23] Lamont C Hempel, *Environmental Governance: the Global Challenge* Island Press (1996).

succinctly defined as: 'the structure and practice of decision making in an organization or society'.[24] Governance can also be more elaborately described as:

> the sum of the many ways individuals and institutions, public and private, manage their common affairs. It is a continuing process through which conflicting or diverse interests can be accommodated and cooperative action may be taken. It includes formal institutions, and regimes empowered to enforce compliance, as well as informal arrangements that people and institutions either have agreed to or perceive to be in their interest.[25]

Specifically, with respect to the environment, governance is:

> … the resolution of environmental conflicts through the establishment, reaffirmation or change of institutional arrangements, which may either facilitate, or limit, the use of environmental resources.[26]

Two features of governance are conspicuous: the importance of 'collective decision-making',[27] and the role of institutions.[28] With respect to the former, the literature on governance has identified a shift away from viewing governance as the sole domain of government[29] and towards the projection of authority and administration to other stakeholders.[30] Responsive regulation, for example, focuses on how best to guide conduct towards securing regulatory compliance[31] with the "minimum level [of intervention] necessary'.[32] Government, therefore, may set rules and the regulatory framework, but within that framework encourage self regulation. At the same time, effective governance calls for the establishment of mechanisms to monitor self-regulation in order to gauge the sufficiency of the system.

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[24] R Quentin Grafton, Linwood H Pendleton and Harry W Nelson (eds) *A Dictionary of Environmental Economics, Science and Policy*, Edward Elgar Publishing USA (2001) at 119.

[25] The Commission on Global Governance, Ingvar Darlsson and Shridath Ramphal (co-chairmen), *Our Global Neighborhood: the Report of the Commission on Global Governance*, above n 21, at 2.

[26] Matthew Paterson, David Humphreys and David Pettiford, 'Conceptualizing Global Environmental Governance: From Interstate Regimes to Counter-Hegemonic Struggles', above n 7, at 3.

[27] Vasudha Chhotray and Gerry Stoker, *Governance Theory and Practice: A Cross-Disciplinary Approach*, above n 6, at 214-215.

[28] Ibid, at 19.

[29]Colin Scott, ' Regulation in the Age of Governance: the Rise of the Post-Regulatory State', in Jacint Jordana and David Levi-Faur (eds) *The Politics of Regulation: Institutions and Regulatory Reforms for the Age of Governance'*, CRC Series on Competition, Regulation and Development, (2004), 145, 145-146; Scott Burris, Michael Kempa and Clifford Shearing, 'Changes in Governance: A Cross-Disciplinary Review of Current Scholarship", (2008) 41 *Akron law Review* 1, 12.

[30]Scott Burris, Michael Kempa and Clifford Shearing, 'Changes in Governance: A Cross-Disciplinary Review of Current Scholarship", above n 29, at 5.

[31]Ian Ayers and John Braithwaite *Responsive Regulation: Transcending the Deregulation Debate*, Oxford University Press (New York) (1992) at 4. John S F Wright and Brian Head, 'Reconsidering Regulation and Governance Theory: A Learning Approach', (2009) 33(2) *Law and Policy* , 197 at 198.

[32]Colin Scott, ' Regulation in the Age of Governance: the Rise of the Post-Regulatory State', in Jacint Jordana and David Levi-Faur (eds) *The Politics of Regulation: Institutions and Regulatory Reforms for the Age of Governance'*, CRC Series on Competition, Regulation and Development, (2004), above n 29, at 145, 157, 167-168.

Christine Parker has described the process of monitoring self-regulation as 'meta-regulation.'[33] The notion has been used in contexts as diverse as corporate law[34], analysis of the role of the European Commission in supervising compliance by member states,[35] and investigating the tension between community and commercial objectives in regulation.[36] It can be used to describe hierarchical regulatory mechanisms spearheaded by government[37] or regulation driven by community and market-place competition with government at the head of a 'modest hierarchy".[38]

As used in this article, 'meta-regulation' draws on the concept developed by Parker – the notion of government acting in a supervisory capacity and monitoring those it supervises. The word, however, is not used identically to Parker's formulation, because regulation of IAS in Australia is not based on a strictly hierarchical model. The regime is shaped by limitations stemming from the division of powers among the Federal, State and Territory governments which constrain the capacity of the Federal government to exercise 'official' power to impose wholesale regulation for IAS across Australia. In addition, the IAS regime involves the activities of many stakeholders, such as landowners, farmers and local government, who operate at the state, regional and local levels. Consequently, it is not practicable for the Federal government to undertake an exhaustive range of regulation for IAS. Rather, the Federal government has accepted obligations under international law to deal with IAS and is ultimately answerable for that regulation, even though large portions of the regime come within the purview of State and Territory jurisdictions.[39]

The second conspicuous feature of governance is the notion of 'institutions' – a concept capable of supporting a range of meanings. In a narrow sense, it comprises the laws, rules and regulations of a regime;[40] while in a broader sense it extends to organizations and stakeholders. For the purposes of this paper, 'institutions' or 'institution' is used in the broader sense to include 'formal and informal rules of behaviour, ways and means of enforcing these rules, procedures for mediation of conflicts, sanctions in the case of breach of the rules, and organizations'.[41] The role of institutions is crucial to the

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[33] Christine Parker, *The Open Corporation: Effective Self-Regulation and Democracy*, above n 14, Chapter 9.

[34]Ibid.

[35] Colin Scott, 'Regulating Everything', *UCD Geary Institute Discussion Paper Series* (2008), 11-12, 27 available <http://geary.ucd.ie/mapping/images/Documents/RegEverything.pdf> (last visited March 2011).

[36] Colin Scott, 'Regulating Everything', *UCD Geary Institute Discussion Paper Series* Ibid; Bronwen Morgan, 'The Economization of Politics: Meta-Regulation as a Form of Nonjudicial Legality', (2003) 12(4) *Social & Legal Studies* 489.

[37]Christine Parker, *The Open Corporation: Effective Self-Regulation and Democracy*, above n 14, Chapter 9.

[38] Colin Scott, 'Regulating Everything', *UCD Geary Institute Discussion Paper Series*, above n 35, at 26-28.

[39] The focus of this paper centres on the relationship among the Federal, State and Territory governments. Hence the discussion does not specifically delve into the role of regional governance, including local government. It is nevertheless acknowledged that parts of Australia's IAS regime, such as weed control, are implemented at the regional level and these represent an important link in the fight against IAS.

[40] See generally D North (1994), 'Economic Performance Through Time', (1994) 84 *American Economic Review*, 359 – 368 where he evaluates the role of institutions through time.

[41] World Trade Organization, *World Trade Report 2004: Exploring the Linkage Between the Domestic Policy Environment and International Trade*, WTO (2004) at 176. Available from

operation of governance mechanisms because institutions provide the building blocks of regimes. Moreover, appropriate institutions furnish the implementation link between international agreements and domestic laws. Inadequate domestic governance arrangements, for example, can impair the ability of a country to meet its international obligations;[42] potentially leading to ineffectual international agreements[43] and a breakdown of international governance systems.

As foreshadowed in the introduction to this paper, governance studies, including those relating to IAS, centre on three key issues: analysing how lines of authority and power should be drawn; determining who should formulate policy, design rules and regulations; and deciding how regimes should be enforced.[44] The key question posed by these issues is: 'how should regimes be governed?' In order to answer this question it is helpful to understand the aims and objectives of international law with respect to IAS.

3. GOVERNANCE OF IAS – THE INTERNATIONAL REGIME

The purpose of this part of the paper is not to analyse the international IAS regime *per se*.[45] Rather, it is to pinpoint governance structures that countries need to establish in order to fulfil their international obligations and commitments with respect to IAS.

Invasive alien species are alien species that threaten ecosystems, habitats or other species. The threats posed by IAS are numerous and include modifying habitat,[46] introducing pests and diseases,[47] reduction of biodiversity,[48] and even extinction of species. [49] The

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<http://www.wto.org/english/res_e/booksp_e/anrep_e/world_trade_report04_e.pdf> (last visited March 2011).

[42] David Yencken, (2002) 61 (2) *Australian Journal of Public Administration*, 78, XX; Vasudha Chhotray and Gerry Stoker, *Governance Theory and Practice: A Cross-Disciplinary Approach*, above n 6, at 224.

[43] Vasudha Chhotray and Gerry Stoker, *Governance Theory and Practice: A Cross-Disciplinary Approach*, above n 9, at 224.

[44] Ibid, at 228.

[45] The author has previously undertaken an analysis of the international IAS regime, XXXXXXXX 'Invasive Alien Species and the Protection of Biodiversity: The Role of Quarantine Laws in Resolving Inadequacies in the International Legal Regime' (2005) 17 (3) *Journal of Environmental Law* 323.

[46] Natural Resource Management Ministerial Council, Australia's Biodiversity Conservation Strategy 2010-2030, Australian Government, Department of Sustainability, Environment, Water, Population and Communities, Canberra (2010), at 24-25.

[47] Clare Shine, Nattley Williams, and Lothar Gündling, *A Guide to Designing Legal and Institutional Frameworks on Alien Invasive Species*, IUCN Gland Switzerland Cambridge and Bonn (2000) at paragraph 1.4.

[48] Carol M Brown, *Tilapia and the Environment*, 4 (2) TED CASE STUDIES, case no 208 (1995) available at <http://www.american.edu/TED/tilapia.htm> (last visited March 2011); E Grossman, *Nile Perch and Lake Victoria Infestation Problem* 4 (2) 2 TED CASE STUDIES, case no 206 (1995) available at <http://www.american.edu/TED/perch.htm> (last visited March 2011).

[49] Wittenberg (ed), *An Inventory of Alien Species and Their Threat to Biodiversity and Economy in Switzerland*. CABI Bioscience Switzerland Centre report to the Swiss Agency for Environment, Forests and Landscape (SAEFL, 2005) at 27; K Stokes, K O'Neill and R McDonald *Invasive Species in Ireland* Report to Environment and Heritage Service and National Parks and Wildlife Service by Quercus, Queens University (2004) at paragraph 1.6; Environment Protection Authority NSW, State of the Environment

IUCN has described the problem of invasive alien species as 'one of the major threats to biological diversity';[50] while the Conference of the Parties to the Convention on Biological Diversity (CBD)[51] has noted that the deleterious impacts of IAS are a significant cross-cutting issue for consideration by members.[52]

At the international level, the governance of IAS comprises a diverse range of mechanisms. These span regional treaties applying to Europe,[53] Asia,[54] East Africa,[55] Central America[56] and Antarctica; [57] to agreements dealing with the marine environment;[58] to treaties protecting migratory species; and to global treaties such as the

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Report 1997, EPA NSW Government (1997), paragraph 2.6; Greg Sherley and Sarah Lowe, 'Towards a regional invasive species strategy for the South Pacific: issues and options' in G Sherley (ed) *Invasive species in the Pacific: A Technical Review and Draft Regional Strategy* SPREP Samoa (2000) 7-8.

[50] IUCN, Species Survival Commission, Guidelines for the Prevention of Biodiversity Loss Caused by Alien Invasive Species, of IUCN, (IUCN Guidelines) (2000), at paragraph 1.

[51] *Convention on Biological Diversity*, above n 10.

[52] Convention on Biological Diversity 'Alien Species that Threaten Ecosystems, Habitats or Species' – Note by the Executive Secretary to the Conference of the Parties to the CBD/UNEP/CBD/COP/6/18 (18 January 2002).

[53] 1994 *Protocol for the implementation of the Alpine Convention in the Field of Nature Protection and Landscape Conservation Chambery* (Chambery Protocol), adopted 20 December 1994, available <http://www.ecolex.org/ecolex/ledge/view/RecordDetails;jsessionid=450637B9444BD183EEA4E53110CD2E8E?id=TRE-001212&index=treaties> (last visited March 2011) (entered into force 18 December 2002). As of March 2011 the protocol had 9 parties.

[54] 1985 *Asean Agreement on the Conservation of Nature and Natural Resources* (Asean Agreement), adopted 9 June 1985, *International Protection Of The Environment: Conservation in Sustainable Development*, Wolfgang Burhenne and Nicholas Robinson (eds), (2) 1/A/9-7-85 (not yet in force – by virtue of Article 33, as the required 6 instruments of ratification have not yet been deposited).

[55] 1985 *Protocol Concerning Protected Areas and Wild Life Fauna and Flora in the Eastern African Region (East African Protocol)*, adopted 21 June 1985, *International Protection Of The Environment: Conservation in Sustainable Development*, Wolfgang Burhenne and Nicholas Robinson (eds) (2) 11/A/21-06-85-b, 109 (entered into force 30 May 1996). As at September 2009 the Protocol had 10 parties. The convention was amended by the Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Western Indian Ocean adopted on 31 March 2010 (not yet in force). Available from <http://www.unep.org/NairobiConvention/The_Convention/Nairobi_Convention_Text/Amended_Text.asp> (last visited March 2011).

[56] 1992 *Convention for the Conservation of the Biodiversity and the Protection of Wilderness areas in Central America* adopted 5 June 1992, text available via Ecolex <http://www.ecolex.org/ecolex/ledge/view/RecordDetails;jsessionid=C06F7662CD7FDEDE3656D09CD1947D87?id=TRE-001162&index=treaties> (last visited March 2011) (entered into force on 20 December 1994). As of March 2011 the Convention had 6 parties.

[57] 1964 Agreed Measures for the Conservation of Antarctic Fauna and Flora (Agreed Measures), Article IX reprinted in W M Bush (ed) *Handbook of the Antarctic Treaty System* (1992) in *Antarctica and International Law* Volume 1 Oceana Publications (1992; *Madrid Protocol*, Articles 2, 3, Annexes I and II.

[58] 1995 *Protocol Concerning Mediterranean Specially Protected Areas and Biological Diversity in the Mediterranean to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean*, adopted 10 June 1995, (1999) *Official Journal of the European Community* L 322/3, Article 6(d) (entered into force 12 December 1999). As of March 2011 the protocol had 22 parties. The 1995 Protocol replaced the 1982 *Protocol Concerning Mediterranean Protected Areas* (1982) to the *Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean*; adopted 3 April 1982, (1982) *Official Journal of the European Community* 278/5, Article 7 (entered into force on 23 March 1986). As of the date it was replaced, the Protocol had 22 parties. *Protocol for the Conservation and Management of Protected Marine and Coastal Areas of the South-East Pacific (1989) to*

Convention on Biological Diversity and United Nations Law of the Sea. [59] The IAS regime also includes international plant and animal protection treaties,[60] international trade instruments[61]as well as non-binding guiding principles, [62] guidelines[63] and codes of conduct.[64] These instruments are supplemented by the activities of international organizations such as the International Union for the Conservation of Nature or IUCN [65] and the Global Invasive Species Programme.[66]

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the Convention for the Protection of the Marine Environment and Coastal Area of the South-East Pacific, adopted 21 September 1989, text available via ecolex <http://www.ecolex.org/ecolex/ledge/view/RecordDetails;jsessionid=C06F7662CD7FDEDE3656D09CD1947D87?id=TRE-001085&index=treaties> (last visited March 2011), Article VII (entered into force 24 January 1995). As of March 2011 the Protocol had 5 parties; *International Convention for the Control and Management of Ships' Ballast Water and Sediment*, Copy kindly provided by IMO Secretariat (Eileen Kee). Available by subscription from www.imo.org IMO Doc BWMCONF/36. The convention was adopted under the auspices of the International Maritime Organization (IMO) on 13 February 2004. It will come into force 12 months after ratification by 30 States, representing 35 per cent of world merchant shipping tonnage. As of March 2011, 21 States representing 23% of the world's merchant shipping tonnage had ratified the convention.

[59] 1982 *Law of the Sea Convention*, adopted 10 December 1982, [1994] ATS 31 (entered into force 16 November 1994). As of march 2011 the Convention had 161 parties.

[60] *International Plant Protection Convention 1951* adopted on 6 December 1951, [1952] ATS No 5 (entered into force 3 April 1952). Before the text of this convention was superseded, 127 governments had adhered to it. The convention was superseded by the *International Plant Protection Convention 1997*, adopted 17 November 1997, [2005] ATS No 23 (entered into force 2 October 2005). As of March 2011, the *International Plant Protection Convention 1997* (IPPC) had 177 parties;

[61] *Marrakesh Agreement establishing the World Trade Organization*, adopted 15 April 1994, [1995] ATS No 8, 1 (entered into force 1 January 1995). As of March 2011 the WTO has 153 members. The Marrakesh Agreement consists of the agreement to set up the WTO and a number of annexures, including the Agreement on the Application of Sanitary and Phytosanitary Measures that influences the design and implementation of national quarantine regimes.

[62] Guiding Principles for the Prevention, Introduction and Mitigation of Impacts of Alien Species that Threaten Ecosystems, Habitats or Species. Adopted April 2003 as part of Decision VI/23 of the Conference of the Parties. Report of the Sixth Meeting of the Conference of the Parties to the Convention on Biological Diversity, UNEP/CBD/COP/6/20 (23 September 2002).

[63] IUCN Guidelines for the Prevention of Biodiversity Loss Caused by Alien Invasive Species (IUCN Guidelines) (2000), above n 50.

[64] FAO, *FAO Technical Guidelines for Responsible Fisheries - Precautionary Approach to Capture Fisheries and Species Introductions (2)*, (1996). These guidelines are the second technical guidelines issued pursuant to the FAO Code of Conduct for Responsible Fisheries 1995. The code was adopted at the 28th session of the Food and Agriculture Organization (FAO) on 31 October 1995 and is supported by 9 Technical Guidelines and 4 Plans of Action, FAO, Rome, (1995).

[65] The IUCN was founded on 5 October 1948. It draws its membership from over 140 countries and currently has more than 10,000 acknowledged scientists and other experts who volunteer their services. The IUCN applies ecosystem management principles aligning both environmental and economic issues <http://www.iucn.org> (last visited March 2011). It maintains a Global Invasive Species Database listing 100 of the world's worst invasive species.

[66]The Global Invasive Species Programme is an international organization formed in 1997 and which works closely with international organizations, such as, the IUCN, the secretariat of the CBD and scientific, research and conservations groups, such as CAB International, SCOPE and CSIRO to develop best practices to control IAS on a global scale.<www.gisp.org> (last visited March 2011).

The IAS regime has been criticized for being piecemeal and fragmented;[67] however, the Convention on Biological Diversity endeavours to furnish a more unified and overarching framework for the protection of biodiversity,[68] including protection from the deleterious impacts of IAS. In particular, Article 8(h) of the CBD requires the contracting parties to 'prevent the introduction of or control or eradicate those alien species that threaten ecosystems, habitats or species'. Although this provision does not offer specific guidance for implementing obligations with respect to IAS, the Conference of the Parties to the CBD have adopted the CBD Guiding Principles for the Prevention, Introduction and Mitigation of Impacts of Alien Species that Threaten Ecosystems Habitats or Species (CBD Guiding Principles or Principles). [69]

The CBD Guiding Principles comprise 15 principles designed to enhance and harmonize domestic regimes with respect to IAS. The Principles are underpinned by the application of a three-tiered approach that emphasizes preventing introductions, followed by eradication, and then by control measures.[70] The explanation accompanying the adoption of the CBD Guiding Principles[71] envisages that members will establish appropriate institutional arrangements to support domestic IAS regimes,[72] which should include adequate policies and laws as well as governance 'mechanisms to coordinate national programmes' at all levels of government.[73] In addition, the Conference of the Parties of the CBD has reaffirmed the importance of biodiversity strategies and national action plans as a coordinating mechanism.[74] Finally, members are encouraged to use the CBD Guiding Principles to review their policies, legislation and institutions, to identify gaps and inconsistencies with a view to making appropriate adjustments. [75]

From these recommendations, it is clear that members should consider at least two governance mechanisms as being crucial: the need to coordinate measures and the need to support regimes with adequate institutional arrangements. These elements are, of course, not unique to IAS regimes, but are encouraged in environmental regulation at large.[76]

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[67] Sophie Riley, 'Invasive Alien Species and the Protection of Biodiversity: The Role of Quarantine Laws in Resolving Inadequacies in the International Legal Regime' (2005) 17 (3) *Journal of Environmental Law* 323 at 331-337.

[68] The CBD is a widely-accepted treaty, with a membership of 191 states (September 2009). A notable exception is the United States of America. However, with respect to the protection of biodiversity from IAS, the United States has established a National Invasive Species Council that provides a regulatory regime for the problem of IAS. See report of the council National Invasive Species Council *Progress Report on the Meeting the Invasive Species Challenge: National Invasive Species Management Plan. FY 2004* National Invasive Species Council (2005).

[69] Guiding Principles for the Prevention, Introduction and Mitigation of Impacts of Alien Species that Threaten Ecosystems, Habitats or Species, (CBD Guiding Principles), above n 62.

[70] CBD Guiding Principles, Ibid, Principle 2.

[71] CBD Guiding Principles, above n 62.

[72] Decision VI/23 of the Conference of the Parties. Report of the Sixth Meeting of the Conference of the Parties to the Convention on Biological Diversity, above n 62, at paragraph 10(b).

[73] Ibid, at paragraphs 10(b) and 10(f).

[74] Ibid, at paragraph 10.

[75] Ibid, at paragraph 10(c).

[76] For example, the World Summit on Sustainable Development considered it important that nations 'promote coherent and coordinated approaches to institutional frameworks….[and

The CBD Guiding Principles do not specify how countries are to realize these objectives. Shine, Williams and Gundling have pointed out that there are primarily three ways of doing so.[77] The first way comprises a 'unitary legislative framework' where one piece of legislation deals with all IAS. [78] The second method involves the use of a coordinating body, with authority to harmonise objectives and processes across a range of stakeholders, including government departments and agencies that deal with IAS.[79] The third possibility involves the use of a coordinating body that harmonises sufficient laws to ensure there are no conflicts between the sectors, but without the authority to impose harmonization of processes legally.[80]

The first option is the most intrusive as it is based on legal control by a central government, which can override State and Territory parliaments. It requires a strong central government with skilled personnel and sufficient monetary resources to implement appropriate measures. The second choice, at least at first glance, appears less intrusive because the coordinating body is intended to administer harmonized measures, rather than promulgate measures which override State and Territory regulation. Such a system can make use of existing State and Territory processes and share expertise and implementation costs. Moreover, membership of any coordinating body can be widely drawn to include representatives from Federal, State and Territory levels. Accordingly, the coordinating body can accommodate a high degree of collaborative decision-making.

However, the powers of the coordinating body are still predicated on legal control, sufficiently broad to impose regulation at all levels of government. As such, this option would still need to be supported by valid legislative underpinning, which in reality points to the exercise of overarching law-making powers by an institution of central government.[81] The third choice, which is less directly intrusive than the first two, is based on political persuasion. It is dependent upon the willingness of a central government to establish mechanisms to coordinate IAS but without basing these on overriding legislative authority. It is argued that Australia's IAS regime is developing in line with the third alternative but the regime lacks appropriate institutional support needed to achieve effective coordination.

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strengthen]…mechanisms necessary for policy-making and implementation and enforcement of laws.' United Nations, *Plan of Implementation of the World Summit on Sustainable Development* A/CONF.165/14, chap.1 resolution 1, annex II, paragraph 162. Available from: <http://www.un.org/esa/sustdev/documents/WSSD_POI_PD/English/WSSD_PlanImpl.pdf> (last visited March 2011); see also the Commission on Global Governance, Ingvar Darlsson and Shridath Ramphal (co-chairmen), *Our Global Neighborhood: the Report of the Commission on Global Governance*, above n 21, at 5.

[77] Clare Shine, Nattley Williams and Lothar Gundling, above n 47, at paragraph 4.3.4.

[78] Ibid.

[79] Ibid.

[80] Ibid.

[81] In Australia, the absence of a legislative base for regulation can lead to complex constitutional problems, as witnessed by a series of High Court challenges to corporate law regulation in the 1990s. See generally, *Re Wakim; Ex parte McNally* (1999) 198 CLR 511; *Bond v The Queen* [2000] HCA 22.

4. FEDERAL SYSTEMS OF GOVERNANCE: AUSTRALIA AS A CASE STUDY

4.1 Division of Law Making Powers

As already noted, Australia is ruled by a Federal system of government established by the *Commonwealth of Australia Constitution Act 1900* (Imp). In accordance with the Constitution, law-making powers are shared between the Federal, State and Territory parliaments.[82] A small number of powers, largely those found in section 52, are exercisable exclusively by the Federal Parliament.[83] However, the majority of powers available to the Federal government are those found in section 51 of the Constitution. These powers are technically exercisable concurrently by the State and Federal parliaments;[84] although the High Court of Australia has interpreted many of these powers as falling within the exclusive domain of the Federal parliament.[85] Any matters not referred to in the Australian constitution are known as the residual powers, which are exercisable solely by the States, and Territories.[86]

Neither section 52 nor section 51 contains an express environmental power in favour of the Federal Parliament. Consequently, before the early 1980s it was presumed that the power to legislate for the environment comprised a residual power vested in the State and Territory parliaments.[87] The 1983 High Court decision in *Commonwealth v Tasmania*[88] (Tasmanian Dam case) challenged this line of thought. This well-known case involved a dispute between the Federal government of Australia and the Tasmanian government regarding a dam the Tasmanian government wished to construct in an area that the Federal government had successfully nominated for World Heritage Listing.[89] In the

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[82] Australia's Federal system of government comprises: the Federal or Commonwealth government, the governments of the six states (Queensland, New South Wales, Victoria, Tasmania, South Australia and Western Australia) and the two territories (the Northern Territory and the Australian Capital Territory).

[83] Section 52 primarily deals with exclusive powers relating to the seat of government of the Commonwealth and places acquired by the Commonwealth for public purposes.

[84] These powers include quarantine under section 51(ix), census and statistics under section 51 (xi) and the external affairs under section 51(xxix). In situations of conflict between valid State and Federal laws, section 109 of the Constitution provides that State law gives way to the extent of the inconsistency; see *Commonwealth v Tasmania* (1983) 158 CLR 1.

[85] See generally discussion on interpretation of the Constitution and the scope of the external affairs power in Tony Blackshield and George Williams, *Australian Constitutional Law and Theory* Federation Press (2006), at 325-374.

[86] The residual legislative power that the States have covers a wide range of matters including, health, education and the environment.

[87] Australian Senate, Environment, Communications, Information Technology and the Arts Committee *Commonwealth Environment Powers*, Commonwealth of Australia (1999) paragraphs 2.1-2.14 and paragraph 6.1. Available from <http://www.aph.gov.au/senate/Committee/ecita_ctte/completed_inquiries/1999-02/enviropowers/report/c06.htm> (last visited March 2011).

[88] *Commonwealth v Tasmania* (1983) 158 CLR 1; see discussion in Jacqueline Peel and Lee Godden, 'Australian Environmental management: A "Dams" Story', (2005) 28 *UNSW Law Journal* 668 at 668-675.

[89] World Heritage Listing is undertaken in accordance with Article 11 of the1972 Convention Concerning the Protection of the World Cultural and Natural Heritage. The Convention was adopted on 23 November

ensuing litigation, the High Court held that the external affairs power in section 51(xxix) of the Constitution 'authorizes a law which gives effect to an obligation imposed on Australia by a bona fide international convention or treaty to which Australia is a party'.[90]

Although this finding uses broad, far-reaching language, it is also subject to a number of limitations that ensure the external affairs power is not read as endowing the Federal government with a *carte blanche* to legislate across the board for environmental matters.[91] As Justice Dean noted in the same case, it is implicit that there 'be a reasonable proportionality between the designated purpose or object and the means which the law embodies for achieving or procuring it.'[92] Accordingly, key restrictions centre on the aims and purposes of international obligations and whether Australian law may realistically be considered conducive to those purposes.[93] Notwithstanding these limitations, the growth of treaty-making, including environmental treaties, in the latter quarter of the twentieth century has widened the nature and scope of 'external affairs'. This in turn has provided a broader base for underpinning the validity of legislation enacted pursuant to section 51 (xxix) of the Constitution.[94] By the 1990s, this trend had helped re-shape the scope of Federal Parliament's law making powers to cover a wide range of environmental matters.[95]

For these reasons, outlining the nature and extent of the Federal Parliament's role in environmental matters is fraught with complexity. Apart from legalities stemming from the division of powers in the Constitution, land and resource management has historically been a matter for determination by the States and Territories.[96] Therefore, even if the Federal Government were to legislate for broad-scale environmental management, this regulation would intersect with pre-existing institutional arrangements established by the States and Territories.[97] Consequently, any changes wrought by Federal Parliament would need to take these institutions into account.[98] Indeed, the 1980s saw increasing

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1972 [1975] ATS no 47 (entered into force 17 December 1975). The convention had 187 parties as of March 2011.

[90] *Commonwealth v Tasmania* <http://www.austlii.edu.au/au/cases/cth/HCA/1983/21.html> Mason J, parag 5 (last visited December 2010).

[91] James Crawford, 'the Constitution and the Environment', (1991) 13 (1) *Sydney Law Review* 11, 21-24.

[92] *Commonwealth v Tasmania* <http://www.austlii.edu.au/au/cases/cth/HCA/1983/21.html> Deane J, parag 21(last visited December 2010).

[93] *Commonwealth v Tasmania* <http://www.austlii.edu.au/au/cases/cth/HCA/1983/21.html> Brennan J, paragraph 54(last visited December 2010).

[94] Melissa Castan, Sarah Joseph and David Wiseman, *Federal Constitutional Law*, Lawbook Co (2001), 98-99.

[95] Geoff Leane, Gary D Meyers and Sonia Potter, 'Promise or Pretence – Compliance with the Intergovernmental Agreement on the Environment: The National environment Protection Council (Western Australia) Act 1996', above n 3, at paragraphs 3-6, 18; James Crawford, 'The Constitution and the Environment', above n, 91; Jacqueline Peel and Lee Godden, 'Australian Environmental management: A "Dams" Story', above n 88.

[96] Gerry Bates, *Environmental Law in Australia*, LexisNexis Butterworths Australia (7th Edition 2010) at paragraph 5.50.

[97] Ibid.

[98] Australian Senate, Environment, Communications, Information Technology and the Arts Committee *Commonwealth Environment Power*, above n 79, at paragraph 6.1.

debate on how Federal, State and Territory Governments could create 'mutually agreed institutional and policy-making mechanisms' that took into account governance concerns stemming from each level of government.[99] The pathway eventually chosen was a political one, designated 'co-operative federalism'.

4.2 Co-operative Federalism

'Co-operative federalism' has been described as:

> the process by which the Commonwealth and the States organise for their overlapping constitutional powers to be exercised concurrently in order to achieve national outcomes through consensual processes.[100]

In *Re Wakim; Ex parte McNally*,[101] McHugh J pointed out that co-operative federalism is not a constitutional term, but a 'political slogan', describing an outcome reached by State and Federal governments operating within the powers conferred on each by their constitutions.[102] Essentially, it is an arrangement that enables the Federal government to establish national initiatives in areas where its legislative reach is curtailed by the Australian Constitution.

The heart of co-operative federalism is found in the establishment of the Council of Australian Governments (COAG), which commenced in 1992. COAG is the peak inter-governmental forum in Australia and its members consist of the Prime Minister, the Premiers of each of the six States, the Chief Ministers of the two Territories and the President of the Australian Local Government Association.[103] COAG's role is to develop and monitor the implementation of policy reforms that are of national significance and which require cooperative action by Australian governments. As such, COAG has a facilitative role, aimed at balancing the expectations of the differing levels of government and achieving integrated and efficient regulation.[104] Matters of national significance are determined through a consultation process that includes correspondence amongst ministers, meetings of COAG, as well as separate meetings of senior officials.[105] COAG

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[99] Ibid, at paragraph 6.2.

[100] James McConvill and Darryl Smith, 'Interpretation and Cooperative Federalism *Bond v R* From a Constitutional Perspective' (2001) 29 *Federal Law Review* 75, at 75.

[101] *Re Wakim; Ex parte McNally* (1999) 198 CLR 511.

[102] *Re Wakim; Ex parte* McNally, per McHugh at paragraph 54; see discussion George Williams, 'Co-operative Federalism and the Revival of the Corporations Law: Wakim and Beyond', (2002) 20 *Company and Securities Law Journal* 160, at 163.

[103] For membership of COAG at the time of writing see <http://www.coag.gov.au/about_coag/coag_membership.cfm> (last visited March 2011).

[104] Elim Papadakis and Richard Grant, 'The Politics of "Light Handed Regulation": New Environmental Policy Instruments in Australia', above n 17, at 29-30; Geoff Leane, Gary D Meyers and Sonia Potter, 'Promise or Pretence – Compliance with the Intergovernmental Agreement on the Environment: The National environment Protection Council (Western Australia) Act 1996', above n 3, at paragraph 84.

[105] Communication with Commonwealth-State Relations Secretariat dated 4 September 2009 (copy on file with author).

is assisted by a number of associated institutional arrangements[106] that include Commonwealth-State Ministerial Councils (Ministerial Councils), Intergovernmental Agreements and national strategies.[107]

The Ministerial Councils develop policy reforms for consideration by COAG and also oversee the implementation of those reforms.[108] Ministerial Councils are comprised of State and Federal ministers and at the time of writing there were over 40 Ministerial Councils overseeing a range of issues from International Trade to Local Government and Environmental Protection.[109] Intergovernmental Agreements are negotiated amongst Federal, State and Territory governments and represent a political commitment on the part of each government to implement COAG decisions.[110] There are numerous Inter-governmental Agreements[111] covering matters such as food regulation,[112] control of foot and mouth disease[113] and regulation of the environment. With respect to the latter, two important agreements are the 1992 Intergovernmental Agreement on the Environment (the IGAE)[114] and the 1997 by the Heads of Agreement on Commonwealth/State Roles and Responsibilities for the Environment 1997.[115]

These instruments apportion and define the respective roles of the Federal and State governments. For example, the IGAE limits the role of the Federal government in

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[106]See web site of the Council of Australian Governments <http://www.coag.gov.au/about_coag/index.cfm> (last visited March 2011

[107] Other institutions include specialist sub-committees. See Gerry Bates, *Environmental Law in Australia*, above n 96, at paragraph 5.58.

[108]See web site of the Council of Australian Governments <http://www.coag.gov.au/ministerial_councils/index.cfm> (last visited March 2011).

[109] Council of Australian Governments (COAG) *Commonwealth-State Ministerial Councils Compendium* Commonwealth Government – Department of the Prime Minister and Cabinet (April 2009). Available from <http://www.coag.gov.au/ministerial_councils/docs/compendium.pdf> (last visited Marc 2011).

[110]See web site of the Council of Australian Governments <http://www.coag.gov.au/intergov_agreements/index.cfm> (last visited March 2011).

[111]Ibid. The vast number of these agreements is exemplified by the question on notice for the Minister Assisting the Minister for Climate Change, requesting information concerning the number of Intergovernmental Agreements with respect to climate change. The answer revealed that seven agreements were relevant. See <http://parlinfo.aph.gov.au/parlInfo/genpdf/chamber/hansardr/2009-08-12/0201/hansard_frag.pdf;fileType=application%2Fpdf > (last visited March 2011).

[112] Intergovernmental Agreement on Food Regulation, July 2008, available from http://www.coag.gov.au/coag_meeting_outcomes/2008-07-03/docs/food_regulation_IGA.rtf > (last visited March 2011).

[113] Intergovernmental Agreement comprising a *Memorandum of Understanding National Response to a Foot and Mouth Disease (FMD) Outbreak*, December 2002, available from <http://www.coag.gov.au/intergov_agreements/docs/fmd_2002.cfm> (last visited March 2011).

[114] Intergovernmental Agreement on the Environment (IGAE) available from <http://www.environment.gov.au/about/esd/publications/igae/index.html> (last visited March 2011), section 2; see discussion Stephen Dovers, 'Institutionalising Ecologically Sustainable Development: Promises, Problems and Prospects' in K J Walker and K Crowley (eds) *Australian Environmental Policy 2: Studies in Decline and Devolution*, UNSW Press (1999) 204 at 209.

[115] The Heads of Agreement on Commonwealth/State Roles and Responsibilities for the Environment 1997, available from <http://www.environment.gov.au/epbc/publications/coag-agreement/index.html> (last visited March 2011).

environmental matters to developing foreign policy and to facilitating cooperative development of national environmental standards in accordance with schedules attached to the Agreement.[116] The schedules do not specifically apply to IAS, although Schedule 6 does refer to the protection of biodiversity and the potential for the provisions of the CBD to traverse a wide range of Federal and State responsibilities. In 1996-1997, COAG commissioned a report to provide updated information on the most suitable role for the Federal government with respect to environmental matters.[117] The outcome of this review was the COAG Heads of Agreement of November 1997, which further refined the roles and responsibilities of the Federal, State and Territory governments in environmental management.[118] Henceforth, the latter was to be based on principles of co-operation, effectiveness and efficiency, with the responsibilities of the Federal government limited to reform in five key areas, including matters of National Environmental Significance and compliance with State environmental and planning legislation.[119]

The Strategies which supplement the operation of Intergovernmental Agreements are developed under the auspices of COAG and are non-binding policy documents that are nevertheless expected to be implemented at all levels of government. Some environmentally-significant strategies include Australia's Biodiversity Conservation Strategy 2010-2030 (Australia's Biodiversity Strategy/Biodiversity Strategy)[120] and the National Strategy for Energy Efficiency.[121] The strategies are supplemented by committees[122] and in some cases emergency response plans, such as the Australian Emergency Marine Pest Plan.[123]

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[116] See discussion Geoff Leane, Gary D Meyers and Sonia Potter, 'Promise or Pretence – Compliance with the Intergovernmental Agreement on the Environment: The National environment Protection Council (Western Australia) Act 1996', above n 3, at paragraph 10; Tony McCall, 'Devolution in Embryo: the McArthur River Mine' in K J Walker and K Crowley (eds) *Australian Environmental Policy 2: Studies in Decline and Devolution*, above n 16, at 109-110.

[117] Intergovernmental Committee for Ecologically Sustainable Development (ICESD) Working Group on the Review of Commonwealth-State Roles and Responsibilities for the Environment, *Consultation Paper*, Canberra, December 1996. See discussion in James Prest and Susan Downing, *Shades of Green? Proposals to Change Commonwealth Environmental Laws*, Research Paper 16 1997-98, Law and Bills Digest Group 23 June 1998. Available from <http://www.aph.gov.au/library/pubs/rp/1997-98/98rp16.htm#BACK> (last visited March 2011).

[118] See discussion in Jacqueline Peel and Lee Godden, 'Australian Environmental management: A "Dams" Story', above n 88, at 668-675.

[119] Heads of Agreement; see attachments 1-4 inclusive. The other three areas are; better delivery of national environmental programmes; environmental assessment and approval processes; listing, protection and management of heritage places.

[120]. Natural Resource Management Ministerial Council, Australia's Biodiversity Conservation Strategy 2010-2030, above n 46.

[121] COAG, *National Strategy on Energy Efficiency* Commonwealth of Australia (2009). Available from <http://www.coag.gov.au/coag_meeting_outcomes/2009-07-02/docs/Energy_efficiency_measures_table.pdf > (last visited March 2011).

[122] See discussion surrounding footnote 128 of this paper.

[123] Natural Heritage Trust, Australian Emergency Marine Pest Plan (EMPPlan) (Control Centres Management Manual), Commonwealth Government of Australia Working Draft (May 2005). Available from: <http://www.marinepests.gov.au/__data/assets/pdf_file/0008/526283/EMPPlan_web_version_16_Oct_06_2.pdf > (last visited March 2011). For a discussion on the protection of marine environment and the effectiveness of the national framework see Ian Peebles, 'Towards A National Emergency Management

Regimes based on cooperative Federalism are beneficial in a number of respects including: improved capacity of integrating environmental matters into social and economic issues at the State and Territory levels;[124] enhanced information sharing;[125] and enhanced 'administration of governmental powers'.[126] COAG has proved a significant forum for achieving intergovernmental cooperation,[127] particularly with respect to the development of policy.[128] This is an important consideration for it can foster harmonious Federal-State relations and lead to the implementation of consistent regulatory regimes;[129] something which has not always been easy to achieve within the framework of the power-sharing arrangements of the Australian Constitution.[130] Yet, commentators have also criticized the 'extra-parliamentary processes' of co-operative federalism as an aberration and highlight deficiencies that can flow from inadequate leadership at the Federal level.[131] In order to evaluate the level of effectiveness of co-operative federalism in the context of IAS, it is first necessary to say a few words with respect to the structure of Australia's IAS regime.

5. AUSTRALIA'S IAS REGIME

Australia's IAS regime comprises a tangle of laws, regulations and policies that traverse a range of environmental and natural resource systems. It is above all the product of two centuries of predominantly *ad hoc* responses to the problem of unwanted species.

5.1. Federal Initiatives

At the Commonwealth level, the Federal government has enacted two statutes directly relevant to IAS, the *Quarantine Act, 1908* (Cth) (The Quarantine Act) and the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act).

Framework For Marine Bio-Invasions', (2004) 19 (3) *The Australian Journal of Emergency Management*, 50.

[124] Michael Lockwood, Julie Davidson, Allan Curtis, Elaine Stratford, Rod Griffith, 'Multi-level Environmental Governance: Lessons from Australian Natural Resource Management', above n 15, at 171.

[125] Geoff Leane, Gary D Meyers and Sonia Potter, 'Promise or Pretence – Compliance with the Intergovernmental Agreement on the Environment: The National environment Protection Council (Western Australia) Act 1996', above n 3, at paragraph 10.

[126] Ibid.

[127] Ibid at paragraph 7.

[128] Elim Papadakis and Richard Grant, 'The Politics of "Light Handed Regulation": New Environmental Policy Instruments in Australia', above n 17, at 30.

[129] Geoff Leane, Gary D Meyers and Sonia Potter, 'Promise or Pretence – Compliance with the Intergovernmental Agreement on the Environment: The National environment Protection Council (Western Australia) Act 1996', above n 3, at paragraph 10.

[130] Jacqueline Peel and Lee Godden, 'Australian Environmental management: A "Dams" Story', above n 88, at 668-675; Geoff Leane, Gary D Meyers and Sonia Potter, 'Promise or Pretence – Compliance with the Intergovernmental Agreement on the Environment: The National environment Protection Council (Western Australia) Act 1996', above n 3, at paragraph 84.

[131] Stephen Dovers, 'Institutionalising Ecologically Sustainable Development: Promises, Problems and Prospects' in K J Walker and K Crowley (eds) *Australian Environmental Policy 2: Studies in Decline and Devolution*, above n 114 at 216.

The Quarantine Act plays a 'critical role in protecting Australia from exotic diseases and pests'.[132] As such, the act is important in preventing or controlling the introduction of IAS, including those that impact upon the environment.[133] The Quarantine Act is also supported by regulations and proclamations.[134] Of particular importance is Quarantine Proclamation 1998[135] that prohibits the entry into Australia of animals, plants and their products unless they are on an authorized list, or they have been assessed and a permit has been granted for their importation.[136] Australia has pioneered a process known as the Weed Risk Assessment (WRA)[137] which is designed to identify potential plant IAS.[138] Analogous processes are also being formulated for animals, although these are proving more challenging.[139]

The *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act), was designed to fulfil Australia's international obligations under various international instruments, including the Convention on Biological Diversity. With respect to IAS, section 183 of the EPBC Act stipulates that the deleterious impacts of IAS may be listed as a 'key threatening process'.[140] Application needs to be made to the Threatened Species

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[132] *Director of Animal and Plant Quarantine v Australian Pork Limited [2005]* FCAFC 206 at paragraph 100 per Branson J.

[133] *Quarantine Act, 1908* (Cth), section 4(b). References to the environment were added to the *Quarantine Act* after the *Nairn Report* recommended that the scope of quarantine should be extended to the natural environment. See M E Nairn, P G Allen, A R Inglis and C Tanner, *Australian Quarantine: A Shared Responsibility* above n 206 at paragraph 2.2.4.

[134] See for example, *Quarantine Regulations 2000*, *Quarantine Act 1908* (Cth); for proclamations, see Quarantine Proclamation 1998 (as amended).

[135] The 1998 Proclamation is available from: <http://www.comlaw.gov.au/comlaw/legislation/legislativeinstrumentcompilation1.nsf/current/bytitle/AE38C4F883931ACECA256FC60003F7DB?OpenDocument&mostrecent=1> (March 2011).

[136] Essentially, only plant seeds listed in Schedule 5 of Quarantine Proclamation are permitted entry. All other importation of plant and animal products must undergo a risk assessment.

[137] DAFF, Fact Sheet on the Weed Risk Assessment System <http://www.daff.gov.au/ba/reviews/weeds/system/weed_risk_assessment > (last visited March 2011).

[138] DAFF, Fact Sheet on the Weed Risk Assessment System,. The Weed Risk Assessment is also being used by other states, such as Ecuador. H Rogg, C Buddenhagen and C Causton, 'Experiences and Limitations with Pest Risk Analysis in the Galapagos Islands' in *Identification of Risks and Management of Invasive Alien Species Using the IPPC Framework*, Proceedings of a workshop in Braunschweig, Germany 22-26 September 2003, Secretariat of the IPPC FAO (2005) 120. The authors also note that the WRA has limitations because it does not assess pathways of introduction of alien species.

[139] See generally, Mary Bomford, *Risk Assessment for the Import and Keeping of Exotic Vertebrates in Australia*, Bureau of Rural Sciences Canberra, Australia (2003); South Australian Pest Animal Risk Assessment developed by the Biosecurity Unit of the Department of Water, Land and Biodiversity of South Australia. Media release available from <http://www.pir.sa.gov.au/biosecuritysa/nrm_biosecurity/pest_animal/sa_pest_animal_risk_assessment> (last visited March 2011); Mary Bomford, *Risk Assessment Models for Establishment of Exotic Vertebrates in Australia and New Zealand*, Invasive Animals Cooperative Research Centre, Bureau of Rural Sciences Canberra, Australia (2008).

[140] A "key threatening process" is a threatening process that further endangers a listed threatened species, or ecological community, or adversely affects two or more listed threatened species, or ecological communities (EPBC Act, section 528 Definitions and section 188(4). A 'threatening process" is defined as one that threatens the survival, abundance, or evolutionary development of a native species or ecological community, (EPBC Act, section 528 Definitions and section 188(3)).

Scientific Committee,[141] which recommends whether or not the process should be listed. If the process is listed, then the Minister must prepare a threat-abatement plan to alleviate the threat, but only if the Minister considers that a threat-abatement plan is a 'feasible, effective and efficient way to abate the process'.[142] A number of key threatening processes directly related to IAS have already been accepted for listing including: predation, competition and land degradation by rabbits, un-managed goats, feral pigs, red foxes, feral cats, rats, as well as loss of biodiversity caused by the yellow crazy ant, cane toads and the red fire ant. [143]

In addition to the Quarantine Act and the EPBC Act, a number of Ministerial Councils and Intergovernmental Agreements also touch upon the problem of IAS, although no single Ministerial Council or Intergovernmental Agreement directly targets these species. Relevant Ministerial Councils include: the Cultural Ministers Council, the Ministerial Council on Energy, the Environment Protection and Heritage Council, the Gene Technology Ministerial Council, the Ministerial Council on International Trade, the Local Government and Planning Ministers' Council, the Natural Resource Management Ministerial Council, the Primary Industries Ministerial Council, the Regional Development Council, the Sport and Recreation Ministers' Council and the Australian Transport Council. [144]

While no dedicated Intergovernmental Agreement tackles IAS, Agreements have been negotiated that deal with particular aspects of the IAS problem such as foot and mouth disease[145] and marine pests. With respect to the latter, the Intergovernmental Agreement on a National System for the Prevention and Management of Marine Pest Incursions[146] deals with IAS of the marine environment. The Agreement provides for cooperative efforts,[147] consistency of measures and the establishment of a National Standing Committee to coordinate measures.[148] In a similar vein, the Federal, State and Territory governments have negotiated a draft Intergovernmental Agreement for improving

[141]EPBC Act sections 502 and 503 establish the Threatened Species Scientific Committee.
[142]EPBC Act section 270A.
[143] Department of Sustainability Environment, Population and Communities, Listed Key Threatening Processes. Available <http://www.environment.gov.au/cgi-bin/sprat/public/publicgetkeythreats.pl> (last visited March 2011).
[144] COAG, *Commonwealth-State Ministerial Councils Compendium*, above n 109.
[145] Commonwealth of Australia, State of New South Wales, State of Victoria, State of Queensland, State of Western Australia, State of South Australia, State of Tasmania, Northern Territory of Australia and Australian Capital Territory, Memorandum of Understanding National Response to a Foot and Mouth Disease (FMD) Outbreak – 2002. Available from <http://www.coag.gov.au/intergov_agreements/docs/fmd_2002.pdf > (last visited March 2011).
[146] Intergovernmental Agreement on a National System for the Prevention and Management of Marine Pest Incursions, available from <http://www.marinepests.gov.au/__data/assets/pdf_file/0007/772864/Marine_IGA.pdf > (last visited March 2011); see also associated plan for rapid response, the Australian Emergency Marine Pest Plan, above n 123.
[147] Marine IGA, above n 146, Preamble, paragraph C; paragraphs 7.2 and 10.
[148] Marine IGA, above n 146, paragraph 8.

Australia's Biosecurity System for Primary Production and the Environment[149] (the Intergovernmental Agreement for Improving Biosecurity).[150] At the time of writing, the agreement had been drafted and endorsed by the Natural Resource Management Ministerial Council for attention by COAG, but had not yet been adopted.[151]

The draft Intergovernmental Agreement for Improving Biosecurity is designed to supplement Australia's Biosecurity System for Primary Production and the Environment (AusBIOSEC). AusBIOSEC was established in 2005 within the Department of Agriculture, Fisheries and Forestry (DAFF). It oversees biosecurity with respect to primary production and the environment by drawing together government, industry, landholders and the public.[152] Although AusBIOSEC has been operative since 2005, the aim of the draft Intergovernmental Agreement is to extend Australia's existing biosecurity arrangements to those species that 'impact on the environment and social amenity'. The plan has the potential to create an overarching strategy that draws together regulation of invasive animals, plants and diseases.[153]

The Intergovernmental Agreements link closely to national strategies, plans and systems which are the means by which the political arrangements in the Intergovernmental Agreements are implemented. National strategies are drafted with the support of Ministerial Councils, approved by COAG and channel into State and Territory strategies.[154] The Federal government has developed a number of important strategies and plans that relate to IAS, including the Australian Weeds Strategy – A National Strategy for Weed Management in Australia (Australian Weeds Strategy),[155] the Australian Pest Animal Strategy – A National Strategy for the Management of Vertebrate Pest Animals in Australia (Australian Pest Animal Strategy);[156] the Australian

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[149] Primary Industries and Natural Resources Management Ministerial Councils, Communiqué 18 April 208, available from <http://www.mincos.gov.au/__data/assets/pdf_file/0009/629523/nrmmc-13.pdf > (last visited March 2011) at page 2.

[150] Australia's Biosecurity System for Primary Production and the Environment (AusBIOSEC), See also definition of biosecurity by AusBIOSEC as 'the protection of the economy, environment and public health from negative impacts associated with pests, diseases and weeds.'

[151]. Natural Resource Management Ministerial Council, 'Communiqué', NRMC 17, 23 April, 2010. Available from <http://www.mincos.gov.au/__data/assets/pdf_file/0008/1608911/nrmmc17.pdf > (last visited January 2011).

[152] Natural Resource Management Ministerial Council, *Australian Pest Animal Strategy – A National Strategy for the Management of Vertebrate Pest Animals in Australia*, Australian Government, Department of the Environment and Water Resources, Canberra ACT (2006) at (i), Commonwealth of Australia (2007). Available at <http://www.environment.gov.au/biodiversity/invasive/publications/pubs/pest-animal-strategy.pdf > (last visited March 2011).

[153] Allen Grant, 'The Australian Biosecurity System', Bureau of Rural Sciences Seminar, 4 August 2006, Australian Government Department of Agriculture, Fisheries and Forestry. Available from <http://adl.brs.gov.au/brsShop/data/seminar_4_august_2006.pdf > at 11 (last visited March 2011).

[154] Tony McCall, 'Devolution in Embryo: the McArthur River Mine' in K J Walker and K Crowley (eds) *Australian Environmental Policy 2: Studies in Decline and Devolution*, above n 16, at 109.

[155] Natural Resource Management Ministerial Council, Australian Weeds Strategy – A National Strategy for Weed Management in Australia, (Australian Weeds Strategy) Australian Government, Department of the Environment and Water Resources, Canberra ACT (2006). Available from <http://www.weeds.gov.au/publications/strategies/pubs/weed-strategy.pdf> (last visited March 2011).

[156] Australian Pest Animal Strategy, above n 152.

Emergency Marine Pest Plan;[157]and Australia's Biodiversity Strategy/Biodiversity Strategy).

The Australian Weeds Strategy provides guidance for consistent management of weeds in Australia at all levels.[158] It is supported by the Australian Weeds Committee, which develops policy with respect to control and management of weeds.[159] The Australian Pest Animal Strategy is a strategy for an integrated approach to the management of pest animals in Australia. The role of the Federal government is to provide leadership, to coordinate stakeholders and to raise public awareness of 'pest animals of national significance'.[160] In addition, the Federal government aims to ensure the implementation of 'nationally consistent pest animal management approaches' and to 'improve the consistency and effectiveness of pest animal management legislation across Australia.' [161] The strategy is supported by the Vertebrate Pests Committee,[162] which, in similarity with the Australian Weeds Committee, provides policy and planning support on a range of issues dealing with pest animals. In the context of the marine environment, the Australian Emergency Marine Pest Plan[163] specifies responsibilities and actions to control and eradicate marine pests 'before they establish large populations.' The plan is supported by the Consultative Committee on Introduced Marine Pest Emergencies (CCIMPE) which coordinates emergency responses.[164] The newly-released Biodiversity Strategy notes that procedures such as the Australian Weeds Strategy and the Australian Pest Animal Strategy are pivotal to dealing with IAS. [165]

Other initiatives instigated by the Federal Government include the Natural Heritage Trust and its successor, Caring for Country. The Natural Heritage Trust operated during the years 1997-2008, and was established from funds garnered from the partial privatization of Telstra Corporation Ltd.[166] The trust provided funding at the national, regional and local levels for projects designed to protect Australia's biodiversity and build community capacity and engagement. The eradication and control of invasive species figured prominently in the activities of the trust. For example, the National Feral Animal Control Program (now Australian Pest Animal Management Program) was established under the

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[157] Natural Heritage Trust, Australian Emergency Marine Pest Plan (EMPPlan), above n 123. This strategy was drafted under the auspices of the Ministerial Council on Forestry, Fisheries and Aquaculture and the Australian and New Zealand Environment and Conservation Council.

[158] Australian Weeds Strategy, above n 155, part 3 'Managing the weed problem – roles and responsibilities'.

[159] See web site of the Australian Weeds Committee at <http://www.weeds.org.au/awc.htm> (last visited March 2011).

[160] Australian Pest Animal Strategy, above n 152, at paragraph 1.6 at page 4.

[161] Ibid, at paragraph 1.2, page 8.

[162] See web site of the Vertebrate Pests Committee, < http://www.feral.org.au/policy/vpc/ > (last visited March 2011).

[163] Natural Heritage Trust, Australian Emergency Marine Pest Plan (EMPPlan), above n 123.

[164] See web site of the National System for the Prevention and Management of Marine Pest Incursions <http://www.marinepests.gov.au/national_system/how-it-works/emergency_management> (last visited March 2011), at 24-25.

[165]. Natural Resource Management Ministerial Council, Australia's Biodiversity Conservation Strategy 2010-2030, above n 46.

[166]*Natural Trust Heritage Act 1997* (Cth), sections 8 and 22-29.

auspices of the trust. The trust also awarded funds for state programs, such as the eradication of feral pigs.[167]

The objectives of the Caring for Country initiative are similar to the Natural Heritage Trust. Both concentrate on funding for environmental management of Australia's natural resources and protection of the environment at large.[168] In 2009-10 the program provided more than $403 million for environmental and sustainable farming projects.[169] Caring for Country continues to finance projects dealing with IAS, such as the $19 million grant provided to reduce the density of feral camels in remote Australia.[170] The program also supports an array of smaller community and government projects including $599, 615 awarded to the Southern Regional Natural Resource management Association (Tasmania) to minimize the spread of terrestrial and freshwater pests and pathogens in the Tasmanian Wilderness World Heritage Area; [171] and $595 000 granted to the North East Catchment Management Authority of Victoria to deal with the threats posed by invasive plants and animals in the Lower Ovens River.[172]

Australia believes that its governance arrangements comprising legislation, strategies, agreements and plans have not weakened the effectiveness of its IAS regime. [173] This is reflected in Australia's 2006 and 2009 country reports lodged with the Convention on Biological Diversity that indicate Australia is committed to managing the problem of IAS. More specifically, in its 2006 country report,[174] Australia considered the following activities as significant to fulfilling its obligations under article 8(h): listing the effects of IAS as threatening processes under the *Environment Protection and Biodiversity Conservation Act, 1999* (Cth);[175] the incorporation of IAS provisions in the National Strategy for the Conservation of Australia's Biological Diversity[176] and the National

[167]Laure Twigg, Tim Lowe and Gary Martin, *Feral Pigs and 1080 Baiting – what you need to know*, PestNote 197, Department of Agriculture and Food, Vertebrate Pest Research Section, (December 2006), 4. Available from <http://www.agric.wa.gov.au/objtwr/imported_assets/content/pw/vp/fer/fpigtext.pdf> (last visited March 2011).

[168] See web site 'Caring for Country' <http://www.nrm.gov.au/> (last visited March 2011).

[169] Caring for Country, Funded Projects, available from <http://www.nrm.gov.au/funding/index.html> (last visited Marc 2011).

[170] Caring for Country, Business plan 2009-2010, *Competitive Process Successful Projects*, available from <http://www.nrm.gov.au/business-plan/funded/09/competitive/index.html> (last visited March 2011).

[171] Caring for Country, Business plan 2009-2010, *Business Plan Projects Funded Through the Open Call Process*, available from <http://www.nrm.gov.au/business-plan/funded/10/open/success-tas.html> (last visited March 2011).

[172] Caring for Country, Business plan 2009-2010, *Business Plan Projects Funded Through the Open Call Process*, available from <http://www.nrm.gov.au/business-plan/funded/10/open/success-vic.html> (last visited March 2011).

[173] Australian Government, Australia's Fourth National Report to the United Nations Convention on Biological Diversity, March 2009 at page 79.

[174] Australia, *Third National Report to the Convention on Biological Diversity* 2006, 127-134.

[175] *Environment Protection and Biodiversity Conservation Act*, *1999* (Cth), section 183.

[176] At the time of the report to the CBD, the following strategy: Department of the Environment and Water Resources, *National Strategy for the Conservation of Australia's Biological Diversity* 1996. Available <http://www.environment.gov.au/biodiversity/publications/strategy/index.html> (Last visited March 2011).

Weeds Strategy (now the Australian Weed Strategy).[177] Although Australia's commitment to dealing with the problem of IAS is reflected in its policies and instruments, Australia's Fourth National Report lodged in 2009,[178] still identified the deleterious impacts of IAS as a continuing and major threat to the country's biodiversity.[179]

The report also conceded that while Australia has made good progress towards implementing management plans for specific IAS, there is insufficient coordination of activities.[180] This is particularly the case with respect to collection and synthesis of data.[181] Australia highlighted that it proposes enhancing management of IAS by techniques that include harnessing the potential of AusBIOSEC to use quarantine measures for protection of the environment at large.[182] It is also telling that Australia's Fourth National Report acknowledged that the states and territories lack adequate regulation with some aspects of their IAS regimes, including monitoring and management of IAS.[183]

5.2 The States and Territories

In similarity to the Federal government, the States and Territories also rely on a mix of legislative and policy instruments to deal with IAS, each instrument largely managing a specific aspect of the IAS problem.

To start with, all States and Territories have enacted legislation to eradicate or control declared 'pest' animals or weeds.[184] Section 174 of the *Natural Resources Management Act 2004* (SA), for example, authorizes the Minister for the Environment and Conservation to compile lists of pest animals and problem plants as a precursor to requiring land owners to control these species A proposed amendment to the legislation will extend obligations to those who have a pest animal in their possession or control.[185]

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[177] Weeds Australia, the *National Weeds Strategy*, is available from <http://www.weeds.org.au/> (March 2011).
[178] Australian Government, Australia's Fourth National Report to the United Nations Convention on Biological Diversity, above n 173.
[179] Ibid, at pages 4, 12 and 79-81.
[180] Ibid, at page 103.
[181] Ibid, at 103.
[182] Ibid, at 79-81.
[183] Australian Government, Australia's Fourth National Report to the United Nations Convention on Biological Diversity, above n 173, at pages 8-9 referring to the Northern Territory.
[184] In addition to the legislation discussed in this part of the paper, see also *Agriculture and Related Resources Protection Act* 1976 (WA), *Catchment and Land Protection Act* 1994 (Vic), *Plant Quarantine Act* 1997 (Tas), *Weeds Management Act* 2001 (NT).
[185]South Australia, Natural Resources Management (Review) Amendment Bill 2010 (An Act to amend the Natural Resources Management Act 2004). Available from <http://www.environment.sa.gov.au/dwlbc/assets/files/NRM_Review_Amendment_Bill_2010.pdf> (last visited March 2011).

The current list of pest species includes notorious IAS, such as the European rabbit[186] and the Red Fox.[187] Elsewhere, the *Land Protection (Pest and Stock Route Management) Act 2002* (Qld), the *Agriculture and Related Resources Protection Act 1976* (WA) and the *Pest Plant and Animals Act 2005* (ACT) contain similar measures to the *Natural Resources Management Act 2004* (SA): the establishment of lists of declared pests;[188] and the creation of a series of offences for matters such as failing to notify the presence of a pest, failing to control the pest, or releasing and/or keeping the pest.[189]

In New South Wales, comparable procedures apply with respect to plants under the *Noxious Weeds Act 1993* (NSW), and to animals under the Rural *Lands Protection Act 1998* (NSW). As with other jurisdictions, New South Wales legislation is also predicated on the declaration of lists of noxious or pest species. In accordance with sections 7 and 33 of the *Noxious Weeds Act,* the Minister for Primary Industries may declare plants as noxious weeds; while pursuant to section 143 of the *Rural Lands Protection Act 1998* the Minister may declare any member of the animal kingdom, including insects, reptiles, molluscs and crustaceans to be a pest. Once these declarations have been made, control orders are issued to the occupier of land, and in the case of the *Rural Lands Protection Act 1998* the owner of land as well.[190]

To supplement legislation based on declared lists, the States and Territories have also enacted quarantine regulation to stop the introduction and spread of diseases and pathogens of plants and animals. [191] The *Plant Diseases Act 1924* (NSW) for example, provides for the quarantine of land which is infected by a disease or pest,[192] and the destruction of abandoned orchards or nurseries. [193] In the Northern Territory, the *Plant Diseases Control Act 1979* (NT) similarly provides for the declaration of quarantine areas of pests of plants; [194] while the *Land Protection (Pest and Stock Route Management) Act 2002* (Qld) directly targets pest management of plants and animals on stock routes.[195]

With regard to the natural environment, in similarity to the Federal government, the States and Territories have established legislative and policy instruments to protect

[186]Natural Resources Management Act, 2004, Declaration of Animals and Plants, Class 9, mammals. <http://www.pir.sa.gov.au/__data/assets/pdf_file/0003/137460/Declaration_of_Animals_and_Plants.pdf> (last visited March 2011).
[187]Natural Resources Management Act, 2004, Declaration of Animals and Plants, Class 7, mammals. <http://www.pir.sa.gov.au/__data/assets/pdf_file/0003/137460/Declaration_of_Animals_and_Plants.pdf> (last visited March 2011).
[188]*Land Protection (Pest and Stock Route Management) Act 2002* (Qld), sections 36-38; the *Agriculture and Related Resources Protection Act 1976* (WA), sections 35-37; and the *Pest Plant and Animals Act 2005* (ACT), section 16.
[189]*Land Protection (Pest and Stock Route Management) Act 2002* (Qld), sections 39-46; the *Agriculture and Related Resources Protection Act 1976* (WA), sections 43, 50 and 51;and the *Pest Plant and Animals Act 2005* (ACT), sections 9, 18 and 22.
[190] *Noxious Weeds Act 1993* (NSW), sections 7, 12 and 33; *Rural Lands Protection Act 1998* (NSW), section 155.
[191] See also *Natural Resources Management Act 2004* (SA), section 187.
[192] *Plant Diseases Act 1924* (NSW), section 8.
[193] *Plant Diseases Act 1924* (NSW), section 21.
[194]*Plant Diseases Control Act 1979* (NT), sections 10 and 11.
[195]*Land Protection (Pest and Stock Route Management) Act 2002* (Qld), section 3.

threatened species and ecological communities from the deleterious impacts of IAS. In New South Wales, sections 8 and 13 of the *Threatened Species Conservation Act 1995* (NSW) provide that IAS may be listed as key threatening processes,[196] after which the Director-General of the Department of the Environment, Climate Change and Water may prepare a threat-abatement plan.[197] Comparable provisions for listing and preparation of action plans are also found in the *Flora and Fauna Guarantee Act (1988)* (Vic) [198] and the *Nature Conservation Act (1980)* (ACT). [199]

However, not all Australian States afford a legislative base for listing of threatening processes. In Queensland, for example, the *Nature Conservation Act 1992* (Qld) specifies that national parks and certain species, such as prohibited wildlife,[200] are to be managed in accordance with principles that take into account threatening processes, including threats presented by other wildlife.[201] The legislation, however, stops short of providing for listing of threatening processes. Instead, these are dealt with through policy approaches that can be located on the web site of the Queensland Department of Environment Resource Management.[202] In Western Australia, the *Wildlife Conservation Act 1950* neither mentions IAS, nor contemplates the listing of threatening processes.[203] Although section 17(2)(f) does prohibit a person from bringing into, or keeping an animal in Western Australia that might become or threaten to become injurious to fauna or flora. As with Queensland, Western Australia has also issued a number of policy documents; in Western Australia's case under the umbrella of 'Wildlife Management Programs (and Recovery Plans)';[204] these support listing of threatening processes that would extend to threats posed by IAS, such as weeds and feral animals.[205]

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[196] *Threatened Species Conservation Act 1995* (NSW), sections 8 and 13; for processes listed, see web site NSW Department of the Environment and Conservation, <http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/home_threats.aspx> (last visited March 2011).

[197] *Threatened Species Conservation Act 1995* (NSW), section 74.

[198] *Flora and Fauna Guarantee Act (1988)* (Vic), sections 11(3) and 19.

[199] *Nature Conservation Act (1980)* (ACT), sections 35, 38 and 40-42.

[200] *Nature Conservation Act 1992* (Qld), section 82 defines prohibited wildlife as 'an unnatural hybrid or not indigenous to Australia' and that is likely to 'constitute a threatening process to protected wildlife.

[201] *Nature Conservation Act 1992* (Qld), for example, section 16(2)(b) Management of National Parks and section 73A(iii) Management of wildlife and section 75(b) Management Principles of Prohibited Wildlife. Threatening processes are defined in section 12 to include processes that threaten the survival of any protected area, protected wildlife or wildlife habitat that affects the capacity of the habitat to sustain natural processes.

[202] Queensland Department of Environment Resource Management, 'Threats to Wildlife'; available from: <http://www.epa.qld.gov.au/nature_conservation/wildlife/threats_to_wildlife/index.html>, (last visited March 2011).

[203] Colin Murphy, Western Australia Auditor General's Report, Rich and Rare: Conservation of Threatened Species. Report 5 – June 2009 at 13-16 <http://www.audit.wa.gov.au/reports/pdfreports/report2009_05.pdf> (last visited March 2011).

[204] Available from the web site of the Western Australian Department of the Environment and Conservation, <http://www.dec.wa.gov.au/management-and-protection/threatened-species/policies.html> (last visited March 2011). Other policy documents include the 'Conservation of Threatened Flora in the Wild' and 'Conservation of Endangered and Specially Protected Fauna in the Wild'.

[205] See discussion in David J Coates and Kenneth A Atkins' Priority Setting and the Conservation of Western Australia's Diverse and Highly Endemic Flora', (2001) 97 (2) *Biological Conservation* 251 at 259-260.

The State of Tasmania also does not provide a legislative base for listing of threatening processes. While sections 13-21 of the *Threatened Species Protection Act 1995* (Tas) set out how threatened flora and fauna may be listed, no comparable provision is found for listing of threatening processes. Rather, a reference to invasive species is found in a Tasmanian policy statement, the 'Threatened Species Strategy for Tasmania'.[206] The strategy specifically refers to pests, weeds and diseases as threatening processes,[207] which are identified and then taken into account in accordance with section 27(2)(b) of the *Threatened Species Protection Act 1995*. The latter anticipates that threat-abatement plans may be prepared for identified threatening processes.

The States and Territories have also adopted a range of strategies and plans dealing with particular types of IAS, such as weeds,[208] or to address specific aspects of IAS regulation, such as biosecurity or monitoring.[209] New South Wales,[210] for example, has developed a dedicated IAS plan, while other states[211] and some local and regional areas, are also developing IAS strategies.[212] The NSW plan is designed to be implemented over 8 years and is supported by four key goals that target: preventing the establishment of new IAS; controlling and eradicating new IAS; reducing the impacts of significant IAS; and capacity building.[213] The plan applies to government and landowner alike and when fully functional, has the potential to achieve a comprehensive and coordinated system for managing IAS in New South Wales. Yet, as noted in the plan itself, regulators still face many challenges, including: coordinating stakeholders who may not all share common

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[206]Department of Primary Industries, Water and Environment, Threatened Species Unit, Nature Conservation Branch, *Threatened Species Strategy 2000* Department of Primary Industries, Water and Environment (2000) Hobart at pages 11-13. Available from <http://www.dpiw.tas.gov.au/inter.nsf/Attachments/RLIG-542642/$FILE/threatspstrat.pdf> (last visited March 2011).

[207]Ibid at pages 11-13); An example of a threat abatement plan that refers to IAS is the *Threatened Tasmanian Orchids Flora Recovery Plan 2006-2010* prepared by the Department of Primary Industries, Water and Environment, Hobart (2006) which at page 20 discusses weed invasions.

[208] Land Protection, Department of Natural Resources and Mines Queensland Weeds Strategy 2002-2006 (currently under review) <http://www.dpi.qld.gov.au/documents/Biosecurity_EnvironmentalPests/IPA-QLD-Weed-Strategy.pdf > (last visited March 2011).

[209] Jan-Willem De Milliano, Andrew Woolnoug, Andrew Reeves, and Damian Shepherd, *Ecologically significant invasive species: A monitoring framework for natural resource management groups in Western Australia*, Prepared for the Natural Heritage Trust 2 program, Department of Agriculture and Food, Western Australia, South Perth. Available from <http://www.agric.wa.gov.au/objtwr/imported_assets/content/pw/vp/rcm_esis_monitoring_framework.pdf> (last visited March 2011); Department of Primary Industries and Water, Tasmanian Biosecurity Committee, Tasmanian Biosecurity Strategy, (2006) page 14 parag 1.6 where the strategy refers to the development of consistent policies and plans for preparing and responding to pests, diseases and weed incursions.

[210] New South Wales Government, Department of Primary Industries, 'New South Wales Invasive Species Plan 2008-2015', New South Wales Government, Department of Primary Industries (2008).

[211] See for example, the State of Victoria, Department of Primary Industries, 'Invasive Plants and Animals, Policy Framework', Department of Primary Industries, (2010).

[212] See for example Brisbane City Council, 'Brisbane Invasive Species Management Plan July 2007-June 2011'; available from <http://www.brisbane.qld.gov.au/environment-waste/plans-projects/brisbane-invasive-species-management-plan/index.htm > (last visited March 2011).

[213] New South Wales Government, Department of Primary Industries, 'New South Wales Invasive Species Plan 2008-2015', New South Wales Government, Department of Primary Industries (2008), 1-4.

goals;[214] establishing an appropriate legislative base with respect to enforcement mechanisms;[215] and the complexities of operating against the backdrop of nationally inconsistent laws and policies.[216] This last point ushers this discussion towards an evaluation of Australia's IAS regime; for, notwithstanding the impressive array of legislative and policy instruments just discussed, there is room for much improvement.

6. GAPS AND INCONSISTENCIES IN THE REGIME

The increase in government activity leading to the conclusion of a range of legislative and policy instruments touching upon and dealing with IAS demonstrates a heightened awareness of the problem of these species. Yet, the emerging regime is marred by its piecemeal approach, jurisdictional inconsistencies and lacklustre governance and coordination mechanisms.

To start with, environmental aspects of the IAS problem are not integrated properly into the decision-making processes.[217] Although the environmental impacts of IAS are being increasingly acknowledged, the design of Australia's IAS regime does not start from a clean slate. It builds on pre-existing regulation that has traditionally equated IAS with the eradication and control of pests and diseases affecting the primary production sector.[218] Moreover, this direction has predominantly determined the course of the regime for over two centuries – a state of affairs that is not helped by the lack of a national IAS strategy and the perfunctory treatment given to IAS by the EPBC Act.

The lack of a national IAS strategy counters recommendations emanating from the Conference of the Parties to the CBD that advocates the use of such strategies as an important way of coordinating national regimes.[219] Although Australia has adopted strategies dealing with individual components of the IAS problem, such as weeds and pest animals, these strategies do not deal with the IAS problem in a holistic and coordinated way. Even the newly-negotiated Intergovernmental Agreement on Biosecurity, which is promoted as dealing with environmental impacts of IAS, will not necessarily deal with those IAS already present or established in Australia. It is telling that where the States and Territories have adopted biosecurity strategies[220] the priority

[214] Ibid, at 3, 11.
[215] Ibid, at 12.
[216] Ibid.
[217] Noel Dawson, *Review of Progress on Invasive Species Final Report to Department of Environment and Heritage*, Agtrans Research Department of Environment and Heritage Canberra (2005) 129-30; Natural Resource Management Ministerial Council, *Australia's Biodiversity Conservation Strategy 2010-2030*, above n 46, at 25.
[218] Noel Dawson, *Review of Progress on Invasive Species Final Report to Department of Environment and Heritage*, above n 217 at 130. Natural Resource Management Ministerial Council, *Australia's Biodiversity Conservation Strategy 2010-2030*, above n 46, at 25.
[219] Decision VI/23 of the Conference of the Parties. Report of the Sixth Meeting of the Conference of the Parties to the Convention on Biological Diversity, above n 62, at paragraph 10.
[220] For example, Queensland Government, Department of Primary Industries and Fisheries, Queensland, *Queensland Biosecurity Strategy 2009-14*, Queensland Government, Department of Primary Industries and Fisheries, (2008); NSW Department of Primary Industries, *Biosecurity Strategy (undated)* NSW

given to environmental considerations varies. The Queensland Biosecurity Strategy 2009-14 endeavours to integrate environmental matters related to IAS with biosecurity;[221] while the New South Wales strategy does not. However, the New South Wales Biosecurity Strategy is supplemented by a dedicated Invasive Species Plan.[222] Western Australia has not yet developed a dedicated biosecurity strategy, although a policy statement with respect to biosecurity, which does not emphasise environmental matters, is available on the web site of the Western Australian department of Agriculture and Food.[223] These problems are further aggravated by the fact that the EPBC Act does not offer a sufficient over-arching response to the threats of IAS. While section 301A of that Act specifies that regulations may be promulgated to tackle IAS, to date, only one regulation has been made that permits rangers to control or remove species from Commonwealth Reserves for the 'protection of public safety or for the protection and conservation of biodiversity and heritage' in that reserve.[224]

Perhaps one of the biggest drawbacks of the regime is the lack of a legislatively-based and uniform definition for 'invasive alien species'. While related terms, such as 'native' or 'indigenous' are often defined, these characterizations vary greatly. The *Nature Conservation Act 1992* (Qld), for example, interprets indigenous wildlife as wildlife not originally introduced by humans into Australia, unless this occurred before the year 1600;[225] the *Territory Parks and Wildlife Conservation Act 2006* (NT) defines indigenous plants and animals to include species introduced by Aboriginal peoples before the year 1788;[226] while the *Threatened Species Protection Act 1995* (Tas) interprets 'native' flora and fauna as those species that occur naturally in Tasmania. The *Environment Protection and Biodiversity Conservation Act 1999* (Cth) defines a native species to include one that was present in Australia or an external Territory before 1400. Since definitions can act as triggers for implementation of measures, this plethora of meanings and descriptions across jurisdictions makes it difficult to achieve consistency in the regime.

The situation is further compounded by the fact that the concept of 'invasive' also needs improved clarification. As already discussed, legislation can categorize species as 'noxious' or a 'pest', yet that categorization tends largely to focus on economically important species, such as feral goats, rabbits, and foxes.[227] Moreover, because such

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Department of Primary Industries; Department of Primary Industries, *Biosecurity Strategy for Victoria*, Biosecurity Victoria (2009).

[221] See for example, Queensland Biosecurity Strategy 2009-14, above n 220, at page 6 where the interlinkages amongst quarantine, environment and trade are mapped.

[222] New South Wales Government, Department of Primary Industries, 'New South Wales Invasive Species Plan 2008-2015', above n 188, at 23. In addition, regions have also produced invasive species strategies, see for example Brisbane City Council, 'Brisbane Invasive Species Management Plan July 2007-June 2011' above n, 212.

[223] Department of Agriculture and Food, Agriculture Biosecurity in Western Australia, <http://www.agric.wa.gov.au/PC_93118.html?s=1001 > (last visited March 2011).

[224] Environment Protection and Biodiversity Conservation Regulations 2000 - Regulation 12.66.

[225] *Nature Conservation Act 1992* (Qld), schedule – Dictionary.

[226] *Territory Parks and Wildlife Conservation Act 2006* (NT), section 9.

[227] Australian Pest Animal Strategy, above n 152, at page 1.

categorizations will inevitably occur once the species already become invasive,[228] classification of species as 'noxious' or a 'pest' may not adequately capture the *potential* of species to cause damage. These approaches foster the creation of regimes that are reactive, rather than proactive.[229] While a reactive approach can assist regulators in making short-term decisions on how to allocate resources,[230] it is not necessarily an effective long-term strategy. The latter needs to incorporate process that identify, monitor and eradicate *potential* IAS.[231] Even so, settling an overarching definition of an IAS will not be easy, for classifying a species as an IAS guides regimes towards consideration of broader issues regarding management of natural resources, including management of land and water usage. In the context of IAS, this task is made all the more difficult by the divergent uses and conflicting values humans have for certain species. Hence, regulation of IAS may be coloured by the fact that one person's IAS is another's useful resource.[232]

The plant *Echium plantagineum*, for example, is regarded as "Paterson's Curse" by Australian graziers, because its leaves are poisonous to cattle, while bee-keepers refer to it as "Salvation Jane", because its pollen provides food for bees.[233] Consequently, effective regulation also requires the political will to take into account the fact that a species may be an invasive alien species, even though it provides economic benefits to one product sector. More recently, in the Australian state of Victoria, efforts to classify the browsing and grazing activities of the introduced Sambar deer as a 'threatening process'[234] resulted in protracted litigation commenced by the Australian Deer

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[228]Examples include Bitou Bush and Rubber Vine, State of Queensland, Department of Primary Industries and Fisheries, 'Weeds of National Significance Update 2008, State of Queensland, Department of Primary Industries and Fisheries (2008) at 8 and 38; available from <http://www.weeds.org.au/docs/WONS_update_2008.pdf > (last visited march 2011).

[229]For discussion of strategies implemented by the Commonwealth for established weeds see Jennifer Bellamy, Dan Metcalfe, Nigel Weston and Steven Dawson, *Evaluation of Invasive Species (Weeds) Outcomes of Regional Investment*, Australian Government, (2005), (v). Available from <http://www.nrm.gov.au/publications/books/pubs/evaluation-weeds.pdf> (last visited March 2011).

[230] Pam Clunie, Ivor Stuart, Matthew Jones, Di Crowther, Sabine Schreiber, Shanaugh McKay, Justin O'Connor, David McLaren, John Weiss, Lalith Gunasekera and Dr. Jane Roberts, A Risk Assessment of the Impacts of Pest Species in the Riverine Environment in the Murray-Darling Basin, Department of Natural Resources and Environment, Arthur Rylah Institute, Heidelberg, Victoria, (2002),at 2 where the report notes that the 'classification of a pest is often based on economic criteria when the damage caused by a pest species justifies the costs of a control program'.

[231] Jeffrey A McNeely, Harold A Mooney, Laurie E Neville, Peter Johan Schei and Jeffrey K Waage (ed), *A Global Strategy on Invasive Alien Species* IUCN Gland Switzerland and Cambridge UK, in collaboration with the Global Invasive Species Programme (GISP) (2001) paragraphs 2.1 and 6.2.

[232] See generally, Douglas O Linder, 'Are All Species Created Equal? And Other Questions Shaping Wildlife Law', (1988) 12 *Harvard Environmental Law Review* 157, at 163.

[233] See Richard Groves, Robert Boden and Mark Lonsdale, *Jumping the Garden Fence Invasive Plants in Australia and their Environmental and Agricultural Impacts* a CSIRO report for WWF, WWF-Australia (2005) 29.

[234] Application made pursuant to the Victorian *Flora and Fauna Guarantee Act 1988* to list "Degradation and loss of terrestrial habitats caused by Sambar (Cervus unicolour)" as a threatening process. The nomination was accepted with some modifications in June 2006. See, Scientific Advisory Committee acceptance of nomination as a threatening process: *Reduction in biodiversity of native vegetation by Sambar (Cervus unicolor)* (June 2006) available at <http://www.dse.vic.gov.au/CA256F310024B628/0/101E5CCD017DCBBBCA25753F0018F6A9/$File/FFG+processes+list+November+2008.pdf> (last visited March 2011); Department of Sustainability and

Association Inc.[235] Although the litigation was unsuccessful, it highlights the difficulties regulators face in coordinating regimes where stakeholders have differing agendas and objectives.

Elsewhere, the IAS regime is typified by legislative and policy instruments that deal with specific components of the IAS problem in a fragmented manner, [236] although, as already discussed, some jurisdictions, such as New South Wales, are developing overarching strategies.[237] Notwithstanding the number of instruments, they do not always cover the full range of IAS. For example, the National Pest Animal Strategy refers to vertebrate animals such as mammals, birds, reptiles, amphibians and fish of national significance,[238] but does not cover invertebrates such as insects. These are managed on a case-by-case basis, as a 'key threatening process'[239] or as a quarantine issue.[240]

Another feature of the regime is that the States and Territories are concerned with and also manage those IAS located within their own jurisdictions. This represents an administrative expedience and is also a mechanism that taps into local know-how. Often, fine-tuning policy or implementing regimes may be more successful if addressed at a localised level, such as occurred with the removal of kikuyu grass from Montague Island.[241] However, from a national perspective this type of regulation can lead to the development of a fragmented regime. The difficulty stems not so much from the fact that issues are addressed at a regional or local level, but from the lack of strategic guidance

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Environment (Victoria) Draft Flora and Fauna Guarantee Action Statement, *Reduction in Biodiversity of Native Vegetation by Sambar (Cervus unicolor)*, available at<http://www.dse.vic.gov.au/CA256F310024B628/0/352922211DC08D48CA25754D00146FBC/$File/Reduction+in+biodiversity+by+Sambar+AS.pdf> (last visited March 2011).

[235] The Australian Deer Association has approximately 2,500 members and represents interest of deer hunters and deer conservationists. Their web site is located at <http://www.austdeer.com.au/index.php> (last visited March 2011). *Australian Deer Association Inc v Attorney-General for the State of Victoria* [2008] VSC 204.

[236]Some examples include the Queensland Government, Department of Primary Industries and Fisheries, Queensland, *Queensland Biosecurity Strategy 2009-14*, , above n 220. NSW Department of Primary Industries, *Biosecurity Strategy (undated)* NSW, above n 220; Department of Primary Industries, *Biosecurity Strategy for Victoria*, above n 220; South Australia is in the process of formulating its Biosecurity strategy for 2009-14 following the release of a draft document titled 'One Biosecurity: a working partnership', released in December 2008.See <http://www.pir.sa.gov.au/pirsa/biosecurity/south_australias_biosecurity_strategy> (last visited march 2011).

[237] New South Wales Invasive Species Plan 2008-2015.

[238] Australian Pest Animal Strategy, above n 152, at page (ii).

[239] See for example, Commonwealth of Australia, *Threat Abatement Plan to Reduce the Impacts of Tramp Ants on Biodiversity in Australia and Its Territories*, Department of the Environment and Heritage, Canberra (2006). Available from <http://www.environment.gov.au/biodiversity/threatened/publications/tap/pubs/tramp-ants.pdf> (last visited March 2011).

[240] In Western Australia, for example, where the notion of a 'threatening process' is not specifically integrated into legislation, the Department of Agriculture takes action against specific IAS, such as bumble bees, that it consisders a significant problem. See Government of Western Australia, Department of Agriculture, 'Bumble Genus Bombus', (2004) 14 *Gardennote* 1-2.

[241] See fact sheet, 'Montague Island Nature Reserve – Seabird Habitat Restoration Project' New South Wales Government, Department of the Environment, Climate Change and Water, May 2004.

and coordination. Not only does the regime develop in a piecemeal way, but it also fails to identify in a timely manner those species that are transitioning from a localized problem into a widespread problem. Such is the case with cane toads,[242] a notorious IAS in Australia, which for many years was a problem confined to the state of Queensland, but which has now developed into an IAS of national proportions.[243] This illustration also stresses the need for caution when designing and implementing regimes based on administrative or political boundaries that do not also take into account the ecological reach of a species.

Another flaw in the regime stems from the fact that the States and Territories provide differing regulatory foundations for similar parts of their systems. It will be recalled that some jurisdictions adopt policy instruments to support key procedures, such as the listing of threatening processes, while others have enacted legislation. What is more, even once a threatening process has been listed, the jurisdictions vary in the degree of obligation regarding outcomes and consequences. In accordance with the EPBC Act, the Minister must prepare a threat-abatement plan, but only if the plan is a feasible and efficient way of managing the threat;[244] in New South Wales, the Minister 'may' prepare a plan at his or her discretion;[245] while in Victoria, the minister must prepare a threat-abatement plan.[246] In those states such as Western Australia and Queensland, where the listing of a threatening process is based on policy, so too are proposals for further action. While the use of policy instruments, in the form of plans and strategies can assist in the development of regimes, it also represents the use of extra parliamentary processes; and can lead to lack of consistency, inadequate transparency and insufficient accountability. In particular, policy instruments cannot provide for the enforcement of regimes by way of penalties which are often necessary to buttress responsive-type regulation.[247] Accordingly, policy instruments need to be counterbalanced by sufficient legislative and institutional mechanisms in order to foster more successful implementation of regimes.

Australia has a more consistent approach towards IAS with respect to international border controls in quarantine, these being uniformly devised in accordance with the Quarantine Act. However, a recent report on Australia's quarantine, *One Biosecurity, A Working Partnership: The Independent Review of Australia's Quarantine and Biosecurity Arrangements Report to the Australian Government*, (the Beale Report) identified a weakness in the system stemming from lack of synergy between the Commonwealth and the States with respect to 'post-border controls of biosecurity risks'.[248] This is an

[242] The cane toad was introduced in June 1935 to control insects destroying sugar crops in the Australian state of Queensland. It provided valueless for this purpose, but soon developed a taste for native Australian species. Australian Museum, *Fact Sheet Cane Toads, Giant Toads or Marine Toads* (2003) Available at <http://www.austmus.gov.au/factsheets/canetoad.htm> (last visited March 2011).
[243] See fact sheet, 'Action on Cane Toads', Australian Government, Department of the Environment, Water, Heritage and the Arts, Climate Change and Water, 2009.
[244] EPBC Act, section 270A.
[245] Threatened Species Conservation Act, section 13.
[246] Flora and Fauna Guarantee Act, section 19.
[247] John Braithwaite, 'Rewards and Regulation', (2002) 29 (1) *Journal of Law and Society*, 12.
[248] Roger Beale, Jeff Fairbrother, Andrew Inglis, David Trebeck, *One Biosecurity, A Working Partnership: The Independent Review of Australia's Quarantine and Biosecurity Arrangements Report to the Australian Government*, Commonwealth of Australia (2008), xviii, 19.

important finding, for even in the most stringent regimes, unwanted species will gain entry,[249] – and once this occurs IAS are difficult if not impossible to eradicate. Lack of appropriate post-border activities also presents a formidable challenge to the integration of monitoring activities and evaluation of policy outcomes against environmental concerns. In particular, without monitoring, it is hard to assess the status of an introduced species to determine whether it is advancing its range and in danger of becoming an IAS.

Overall, the regime is in need of improved legislative and institutional support in order to achieve a more consistent and coordinated approach to the problem of IAS. [250]

7. IMPROVING THE REGIME

Part 3 of this paper identified two key governance mechanisms necessary for fulfilling international obligations under article 8(h) of the CBD: the requirement to coordinate measures in a cross-sectoral manner; and the need to underpin regimes with adequate institutional arrangements. The two mechanisms are related, for coordination of measures is part of the institutional arrangements of regimes. In addition, as already discussed, Shine, Williams and Gundling have identified three pathways to enhance coordination. It will be recalled that the first way comprises a 'unitary legislative framework'; the second method consists of a coordinating body with sufficient legislative authority to harmonise objectives; and the third method envisages a coordinating body that lacks legislative power to harmonize IAS processes, but which can coordinate activities on a policy or political basis.

Each of these pathways is predicated on the establishment of a national body, although with differing levels of control and power. To implement either of the first two choices the Federal government would need to take a leadership role based on legislative control. This could theoretically be achieved by an enhanced exercise of existing legislative power under the Commonwealth Constitution, or by the states referring powers to the Federal government. To implement the third alternative, the Federal government could establish a coordinating body, either as a Ministerial Council under COAG or as a separate body, but one that operates under the auspices of existing ministerial councils. The third alternative could also be supplemented with selected legislative and/or policy instruments to improve coordination of activities across the jurisdictions.

7.2 Enhanced Legislative Control

As previously discussed,[251] the Australian Federal Parliament does not enjoy the benefit of specific environmental law-making powers. Nevertheless, it is arguable that the

[249]The outbreak of equine influenza in Australia in 2007 was thought to have occurred due to a breakdown in quarantine processes at Sydney's Kingsford-Smith airport; Ian Callinan, Equine Influenza, The August 2007 Outbreak in Australia, Commonwealth of Australia, 2008 at 5.

[250] Mark Burgman, Terry Walshe, Lee Godden, Paul Martin, 'Designing Regulation for Conservation and Biosecurity' (2009) 13 (1) *Australasian Journal of Natural Resources Law and Policy* 93, 110.

Federal Parliament can use existing heads of power in the Constitution to legislate for a wider range of matters with regard to IAS than it currently does. In addition, it is open to the states to refer some or all of their law-making powers with respect to IAS to the Federal government.

Heads of power relevant to IAS under the Commonwealth Constitution include the trade and commerce power under section 51(i), the external affairs power under section 51(xxix), the quarantine power under section 51(ix) and the corporations power under section 51(xx). None of these heads of power provides a dedicated or complete platform for Australia-wide IAS regulation. With respect to the external affairs power, for example, it will be recalled that the High Court held that any Federal laws need to achieve a reasonable degree of proportionality between the objectives of the law and the method by which those objectives are achieved.[252] In the context of IAS, Justice Deane provided a relevant example:

> …a law requiring that all sheep in Australia be slaughtered would not be sustainable as a law with respect to external affairs merely because Australia was a party to some international convention which required the taking of steps to safeguard against the spread of some obscure sheep disease which had been detected in sheep in a foreign country and which had not reached these shores. The absence of any reasonable proportionality between the law and the purpose of discharging the obligation under the convention would preclude characterization as a law with respect to external affairs. [253]

This quote denotes a three-staged approach for examining the validity of Federal legislation pursuant to the external affairs power: the existence of an international treaty requiring that Australia take steps to stop the introduction and spread of IAS; the likelihood that the IAS would cause damage in Australia if it reached our shores; and a determination that any Federal law is proportional to the risk posed by the IAS.

Australia is a party to a number of international treaties concerning IAS, including: the CBD, the International Plant Protection Convention 1997,[254] and the International Agreement for the Creation at Paris of an International Office for Dealing with Contagious Diseases of Animals, and Annex 1924.[255] In combination, these treaties require members to implement regimes dealing with the full range of IAS, including the establishment of appropriate governance mechanisms.[256] Moreover, the importance of

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[251] See discussion above in part 4 of this paper.

[252] *Commonwealth v Tasmania*, Dean J at paragraph 21.

[253] Ibid.

[254] *International Plant Protection Convention 1997*, above n 60.

[255] *International Agreement for the Creation at Paris of an International Office for Dealing with Contagious Diseases of Animals, and Annex 1924*, adopted 25 January 1924 [1925] ATS No 15, (entered into force 12 January 1925). The organization is now known as the OIE and as at March 2011 had 178 members. The name of the OIE was originally the Office International des Epizooties. In May 2003 the name was changed to the World Organisation for Animal Health, with retention of the OIE acronym.

[256] CBD, article 8(h), *International Plant Protection Convention 1997*, articles IV, VII and VIII; *International Agreement for the Creation at Paris of an International Office for Dealing with Contagious Diseases of Animals, and Annex 1924*, article 5 and also the Codes developed by the OIE, such as the Terrestrial Animal Health Code 2010 and the Aquatic Animal Health Code 2010.

IAS to Australia is underscored by *Australia's Biodiversity Conservation Strategy 2010-2030* that has singled out the problem of IAS as a major threat to Australia' biodiversity; and set a target reduction of the impacts of IAS of at least 10% by 2015. [257] Bearing these points in mind, it is at least arguable that the Federal Government could claim *bona fide* implementation of a range of international treaties, to legislate for a holistic IAS regime.

Yet another avenue open to the Federal government is to combine the external affairs power with other heads of power, such as those pertaining to trade and commerce, quarantine and trading corporations. The technique of combining a number of heads of power to support Federal legislation is well established;[258] however, the validity of the legislation still depends on the ambit of the underlying section 51 powers. The boundaries of section 51 heads of power have not been tested with respect to IAS and attempts by the Federal government to expand its law-making power could trigger legal challenges. By way of example, the scope of the quarantine power under section 51(ix) has not been judicially determined. Indeed, the section itself just uses the one word, 'quarantine'. Section 4 of the Australian *Quarantine Act 1908* (Cth) describes quarantine in terms of processes and outcomes that include measures to prevent or control 'the introduction, establishment or spread of diseases or pests'.[259] This concept gives the notion of quarantine a wide meaning that not only contemplates preventing the introduction of species, but also of preventing their establishment and spread. If section 51(ix) were to be given a similarly wide interpretation, this would allow the Federal government to introduce virtual Australia-wide law with respect to species introduced into the country. What is not certain, however, is whether section 51(ix) could be interpreted widely enough to underpin Federal legislation covering existing IAS, especially those currently found solely within the boundaries of only one State or Territory.

A more practical problem flows from the fact that even if the Federal parliament were able to expand its current law-making activities across all Australian jurisdictions, this does not necessarily equate to more effective outcomes.[260] Given the pre-existing involvement of the States and Territories in matters relevant to the problem of IAS, the Federal government still needs to consider how best to involve the States and Territories when drawing lines of authority, formulating policy and designing rules. These are complex matters for determination in any regime, but made more complex in a Federal system of government where law-making powers are shared. [261] As the Australian Senate has pointed out, 'there will often be some tension between the different levels of government as to the most appropriate distribution of roles and responsibilities.'[262]

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[257]Natural Resource Management Ministerial Council, *Australia's Biodiversity Conservation Strategy 2010-2030*, above n 46, at 10, 13-4.

[258] See for example, the Water Act 2007 (Cth), section 9 that refers to paragraphs 51(i), (v), (viii), (xi), (xv), (xx), (xxix) and (xxxix), and section 122, of the Australian Constitution.

[259] *Quarantine Act 1908* (Cth) section 4(1)(b).

[260]Paul Martin, Robyn Bartel. Jack Sinden, Neil Gunningham, Ian Hannam, *Developing a Good Regulatory Practice Model for Environmental Regulations Impacting on Farmers – Overview*, Research Report, Australian Farm Institute, Surry Hills Australia (2007), 2.

[261] Some senate report Ibid, at paragraph 6.1.

[262] Australian Senate, Environment, Communications, Information Technology and the Arts Committee *Commonwealth Environment Powers*, above n 87, at paragraph 6.1.

Keeping in mind that the Federal government needs the cooperation of the States and Territories to establish a consistent and coordinated approach to IAS, imposing uniform laws would do little to secure that cooperation.

The difficulties are illustrated by the aftermath of an attempt in 2002, by Senator Andrew Bartlett to introduce a private member's Bill into Federal Parliament dealing with IAS: the Environment Protection and Biodiversity Conservation Amendment (Invasive Species) Bill 2002 (Invasive Species Bill). The bill proposed amendments to the EPBC Act which would have included the construction and maintenance of a national data base of invasive alien species[263] and the establishment of an Invasive Species Advisory Committee.[264] This Committee would have acted as a unifying institution for the regulation of IAS by drawing together a diverse range of stakeholders to advise cabinet Ministers of the impacts of IAS. These features of the Bill would have made headway towards resolving some of the problems with Australia's IAS regime particularly those stemming from fragmented regulation and lack of coordination.

However, the Bill never became law, having been rejected by Federal Parliament. In the ensuing Senate inquiry, 'Turning Back the Tide, the Invasive Species Challenge' (the Senate Inquiry), [265] the investigation concluded that the Bill demonstrated a 'commendable, if somewhat idealistic, approach [potentially leading to] risks and confusion.' [266] Key criticisms centred on resource constraints that the Federal government would have faced in implementing a fully functioning IAS regime[267] and the perceived imbalance that the Bill would have created with respect to governance mechanisms established under co-operative Federalism. With respect to the latter, several State and Territory governments voiced their concerns at the scope and breadth of powers that the Federal government would need to exercise in order to implement the provisions of the bill.[268] The caution displayed by the States towards an expansion of Federal Parliament's jurisdiction may also render unfeasible any proposed referral of powers.

Section 51 (xxxvii) of the Australian Constitution permits the Federal Parliament to make laws on matters referred to it by the States. In theory, the States could transfer their law-making powers for IAS to the Federal Parliament. However, given the anxiety that greeted the introduction of the Invasive Species Bill, it is unlikely that the States would

[263] Environment Protection and Biodiversity Conservation Amendment (Invasive Species) Bill 2002 (Invasive Species Bill), clauses 2666AA, 266AB and 266AC.
[264] Environment Protection and Biodiversity Conservation Amendment (Invasive Species) Bill 2002 (Invasive Species Bill), clauses 2666CG, 266CO, 503A and 503B. The composition of the committee would have included representatives from AQIS, non-governmental conservation organizations, members of the scientific community, indigenous peoples, the commonwealth, the business community and animal welfare groups. The role of the committee would have been to advise the Minister on protection of native biodiversity and agricultural commodities from IAS.
[265] Environment, Communications, Information Technology and the Arts References Committee, Parliament Australia, Senate *Turning Back the Tide, the Invasive Species Challenge* (Report on the Report on the regulation, control and management of invasive species and the Environment Protection and Biodiversity Conservation Amendment (Invasive Species) Bill 2002), (2004).
[266] Ibid, at paragraph 7.50.
[267] Ibid at paragraphs 7.22-7.24.
[268] Ibid, at paragraphs 7.26-7.34 and 7.53.

consider a wholesale referral of their IAS regimes. The IAS regime traverses many domains and disciplines, including environmental law, quarantine regulation and land use management. The power to regulate for IAS could provide the means for the Federal government to intrude into many other legislative and policy areas traditionally regarded as state jurisdiction. It may be more likely that the States would negotiate a partial referral of their legislative powers. Yet even in this case, the difficulties inherent in framing a mutually-acceptable referral of powers are typified by the dispute over corporate law regulation and the limitations on the exercise of legislative power imposed by the States on the eventual referral.[269] An alternative approach lies in overhauling the coordination of the existing regime, supported by selected overarching legislative frameworks based on the exercise of powers already within the purview of the Federal government.

7.2 Enhanced Coordination

The need for a better coordinated IAS regime was acknowledged by the Senate Inquiry on invasive species. Although the inquiry vetoed the enactment of the Invasive Species Bill, it did make a number of recommendations reflecting key concepts of the Bill, such as those relating to better coordination of the IAS regime and enhanced Federal leadership. More precisely, the Senate Inquiry called for the Federal government to take an enhanced role in providing leadership 'by developing a robust national framework, in consultation with State, Territory and local governments, to regulate, control and manage invasive species'.[270] Additionally, the Inquiry recommended that the Federal government promulgate IAS regulations under s301A of the EPBC Act.[271] The recommendations, however, stopped short of proposing the establishment of a co-ordinating institution, such as an Invasive Species Advisory Body, leaving open the means by which the Federal government should achieve better coordination.

Some five years later, in 2009, a review of the EPBC Act made similar recommendations – specifically that the Federal parliament use section 301A to make regulations for IAS[272] and that the Federal government undertake a more pro-active leadership role. With respect to the latter, the review particularly singled out: the development of protocols to deal with the movement of IAS across jurisdictions; [273] the design of systems to identify potential threats to the environment from IAS; and the creation of a Unit or Taskforce to 'guide management responses' with respect to these threats. [274] The importance of

[269] Corporations Act 2001 (Cth), sections 3 and 4; W J Ford, 'Politics, the Constitution and Australian Industrial Relations: Pursuing a Unified National System', (2005) 38 (2) *The Australian Economic Review*, 211, 217-8.
[270] Ibid, Recommendation 1.
[271] Ibid, Recommendation 6.
[272] Allan Hawke, *The Australian Environment Act – Report of the Independent Review of the Environment Protection and Biodiversity Conservation Act 1999*, Commonwealth of Australia (2009), 146-7.
[273] Ibid, at 149.
[274] Ibid.

coordination is established in other regulatory areas, such as bushfire management[275] and administration of the chemical industry.[276] In these sectors, one of the most significant barriers to effective management has been identified as lack of coordination, especially where large numbers of agencies and institutions are involved. [277] Regulators face crucial challenges integrating 'multiple values, multiple stakeholders [and] different interests'.[278] Analogies can readily be drawn from these regimes to the management of IAS. For example, the Australian Emergency Marine Pest Plan,[279] has identified at least 22 Australian government agencies,[280] State and Territory agencies[281] and marine industry and environmental organizations [282] that are concerned with the management of marine IAS. In the regulation of terrestrial IAS, interested stakeholders include volunteers such as Landcare,[283] those involved in primary production, the hunting lobby,[284] and government agencies, such as the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES),[285] the Australian Quarantine and Inspection Service [286] and Biosecurity Australia.[287]

Coordinating efforts against IAS allows States and Territories to focus on IAS relevant to their own jurisdictions, but with the advantage of strategic institutional support for allocation of funds, collating information and tracking the development and implementation of regimes in an integrated manner.[288] Hence, coordination should not be

[275]Stuart Ellis, Peter Kanowski and Rob Whelan, National Inquiry on Bushfire Mitigation and Management', COAG, Commonwealth of Australia (2004).

[276]Productivity Commission Research Report, Chemicals and Plastics Regulation, Commonwealth of Australia, July 2008.

[277]Stuart Ellis, Peter Kanowski and Rob Whelan, National Inquiry on Bushfire Mitigation and Management', above n 275, at 190; Productivity Commission Research Report, Chemicals and Plastics Regulation, above n 276, at 29.

[278] Michael Lockwood, Julie Davidson, Allan Curtis, Elaine Stratford, Rod Griffith, 'Multi-level Environmental Governance: Lessons from Australian Natural Resource Management', above n 15, at 170.

[279] See Natural Heritage Trust, Australian Emergency Marine Pest Plan (EMPPlan), above n 123.

[280] For example, the Department of Agriculture, Fisheries and Forestry, the Department of the Environment, Water, Heritage and the Arts, and the Australian Maritime Safety Authority.

[281] For example, the Victorian Department of Sustainability and Environment, Queensland Biosecurity Council and the Northern Territory Department of Regional Development, Primary Industry, Fisheries and Resources.

[282] For example, the Australian Shipowners Association, Ports Australia and the National Bulk Commodities Group.

[283] Landcare is a voluntary 'community movement' that facilitates collective action between government, community and private landowners to care for Australia's land. Landcare comprises approximately 4,500 members. See <http://www.daff.gov.au/natural-resources/landcare > (last visited March 2011).

[284] See discussion above, surrounding footnote 135, on *Australian Deer Association Inc v Attorney-General for the State of Victoria* [2008] VSC 204.

[285] ABARES was formed in 2010 by the merger of the Australian Bureau of Agricultural and Resource Economics and the Bureau of Rural Sciences, see <http://www.daff.gov.au/abare-brs > (last visited March 2011).

[286] Australian Quarantine and Inspection Service (AQIS) undertakes operational matters with respect to quarantine matters.

[287] Biosecurity Australia sets policy with respect to quarantine matters..

[288] See generally, Tony McCall, 'Devolution in Embryo: the McArthur River Mine' in K J Walker and K Crowley (eds) *Australian Environmental Policy 2: Studies in Decline and Devolution,* above n 16, at 112, 119-120. As an example specifically related to IAS see the National Invasive Species Council in the United States of America. Its activities have a strong focus on coordination and organizational collaboration. See

viewed as a pathway to the 'lowest common denominator'. The Beale report for example has recommended the establishment of uniform and centralized regulation with respect to quarantine and biosecurity.[289] This would permit the Federal government to set an upper ceiling on biosecurity measures, allowing goods landed at any port in Australia to move freely across the country. However, because such regulation would override State and Territory quarantine laws, the report also acknowledged the need for any centralized system to take regional and local conditions into account.[290]

Coordination of efforts can be delivered within the parameters of COAG. Although COAG is styled as 'cooperative federalism', in practice, the strategies and plans adopted through COAG allow for coordinated efforts as much as cooperative efforts.[291] In order to work towards achieving cohesion and unity out of the present system there are at least three actions the Federal government can take: first, adopt a uniform definition of IAS; second, adopt a National IAS Strategy; and third, establish an advisory or coordinating body either as a stand-alone institution or as a Ministerial Council devoted to IAS. The need for a uniform definition has already been discussed as a legislative gap. Due to the fact that definitions set the parameters for regulation, it is a flaw that requires urgent attention before Australia can achieve improved governance of its IAS regime.

The second suggestion, the formulation of a National IAS Strategy, offers a number of tangible benefits. Problems with the piecemeal approach of the present regime include the fact that common goals are not consistent, that current strategies do not cover all IAS, and that the regime emphasizes some product sectors such as primary production over environmental concerns. A dedicated national strategy would in effect supply a 'road map' for regulatory unity, both in an institutional and practical sense, fostering common goals and making it more likely that policy objectives will be achieved.[292] The strategy would also provide guidance for dealing with conflicts such as the one already discussed that occurred in the Australian state of Victoria with respect to the introduced Sambar deer. Moreover, a national strategy can also help strengthen the effectiveness of IAS regimes by promoting the monitoring of species and sharing of information which can be analysed and used to implement improved action plans. Finally, in common with strategies developed for pest animals and weeds, a national IAS strategy would reinforce

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<http://www.invasivespecies.gov/global/org_collab_budget/organizational_budget_index.html> (last visited March 2011); Ross Prizzia, 'Sustainable Development in an International Perspective' in Khi V Thai, Dianne Rahm and Jerrell D Coggburn (eds) *Handbook of Globalization and the Environment*, CRC Press (2007), 19 at 36.

[289] Roger Beale, Jeff Fairbrother, Andrew Inglis, David Trebeck, *One Biosecurity, A Working Partnership: The Independent Review of Australia's Quarantine and Biosecurity Arrangements Report to the Australian Government*, above n 248, at 19, 33, The suggestion is that Australia establishes An independent biosecurity authority to oversee quarantine.

[290] Ibid, at 73.

[291] See for example Australian Pest Animal Strategy, above n 152, at pages 4, 8 and 9 where repeated references are made to the need for nationally coordinated measures; see also Australian Weeds Strategy, above n 155, at pages 2, 3, 4, 5 and 9 where similar references are made.

[292] Oran R Young, 'Environmental Governance: The Role of Institutions in Causing and Confronting Environmental Problems', (2003) 3 *International Environmental Agreements: Politics, Law and Economics* 377 at 379.

the need for, and provide direction to, the development of appropriate institutional and legislative frameworks supplemented by policies and programs.[293]

The notion of improved institutional frameworks channels into the third suggested improvement, the establishment of an advisory or coordinating body. Such bodies are well-accepted in other areas of regulation such as the marine environment,[294] human health,[295] and immunisation programmes.[296] Regional advisory committees have already been established on an *ad hoc* basis to deal with specific IAS such as weeds.[297] The functions of the coordinating body could extend to acting in a consultative capacity to target actions and streamline regulation. In particular, with respect to the latter, the advisory body could act as a focal point to identify gaps, duplication and inconsistencies among the Federal, State and Territory regimes.

Ministerial Councils represent yet another means of enhancing Australia's regulation of IAS. More specifically, COAG could establish a new Ministerial Council on invasive species that draws together decision-makers from key portfolios, such as the Department of Agriculture, Fisheries and Forestry, the Department of Environment, Water, Heritage and the Arts and the Department of Foreign Affairs and Trade. By bringing these portfolios together, a new Ministerial Council on invasive species would facilitate institutional unification of IAS regulation. However, COAG has stipulated that there is a presumption against the establishment of additional Ministerial Councils;[298] hence, it is unlikely that CAOG would endorse the creation of an additional Council targeting IAS. Consequently, the establishment of an independent body that can advise government might be a more likely scenario.

8. CONCLUSION

In structuring the regime to deal with the problem of IAS, the Federal government has endeavoured to build on pre-existing systems developed to manage an assortment of unwanted species, such as weeds, feral animals and other declared pests. Due to complexities inherent in operating within a multi-layered system of government, the Federal government has chosen not to use prescriptive legislative power, even where,

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[293] See for example, Australian Pest Animal Strategy, above n 152, at paragraph 1.6, page 4.

[294] National Maritime Safety Committee, details available from, <http://www.nmsc.gov.au/nmsc_and_you/index.php?MID=2&COMID=1&CID=2> (last visited March 2011).

[295] Adverse Drug Reactions Advisory committee (ADRAC); the Committee, which is comprised of independent medical experts, advises the Therapeutic Goods Administration, which is located within the Department of Health and Aging. See, <http://www.tga.gov.au/adr/adrac.htm > (last visited march 2011).

[296] The Australian Technical Advisory Group on Immunisation (ATAGI), details available from, <http://www.health.gov.au/internet/immunise/publishing.nsf/content/advisory-bodies > (last visited March 2011).

[297] For example, the North Coast Weeds Advisory Committee. See <http://www.northcoastweeds.org.au/aboutus.htm > (last visited March 2011).

[298] COAG, *Commonwealth-State Ministerial Councils Compendium*, above n 109 section 1.

arguably, it has the legal right to do so. Instead, it has set itself up as a meta-regulator that supervises how that power is exercised.[299]

However, for this type of governance arrangement operate at an optimum, the meta-regulator needs to ensure that it maintains its supervisory role in an effective manner.[300] It is a jurisdictional conundrum that is not easily resolved, particularly in Australia where environmental governance '…is hampered by a lack of integrated policy and planning between' the different levels of government. [301]

Shine, Williams and Gundling have identified three proposed governance models for IAS regulation. Each model is based on varying degrees of central control; and each is supported by coordinating mechanisms. As Australia currently lacks such mechanisms, this paper has argued that the time has come to reconsider Australia's governance arrangements for IAS. At the very least, the Federal government should draft a uniform definition of an IAS, adopt a national IAS strategy, and establish a national advisory body or Ministerial Council with respect to IAS. Even in the absence of comprehensive Federal legislation, the Federal government can pass considered legislation and use its political influence to help shape State and Territory regimes.[302] This type of approach would go some way towards enhancing governance mechanisms for IAS and also assist in achieving policy and institutional unification for these problematic species.

[299] Geoff Leane, Gary D Meyers and Sonia Potter, 'Promise or Pretence – Compliance with the Intergovernmental Agreement on the Environment: The National environment Protection Council (Western Australia) Act 1996', above n 3 at paragraph 83; Michael Lockwood, Julie Davidson, Allan Curtis, Elaine Stratford, Rod Griffith, 'Multi-level Environmental Governance: Lessons from Australian Natural Resource Management', above n 15, at 170.

[300] Vasudha Chhotray and Gerry Stoker, *Governance Theory and Practice: A Cross-Disciplinary Approach*, above n 6, at 224.Although the comment was made specifically with respect to forestry management, it is equally relevant to the regulation of IAS.

[301] Charles Sampford, 'Environmental Governance for Biodiversity', above n 18, at 83.

[302] Michael Lockwood, Julie Davidson, Allan Curtis, Elaine Stratford, Rod Griffith, 'Multi-level Environmental Governance: Lessons from Australian Natural Resource Management', above n 15, at 170.