

ESD in broader retrospect and prospect: evaluating national framework policies against climate adaptation imperatives.

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1. Abstract

This paper revisits four Australian framework policies with implications for ecologically sustainable development to consider lessons for climate change adaptation. The competition, disaster resilience, sustainable development and water policies examined underline the difficulty in developing and implementing effective policy frameworks. We find that to succeed, a national policy in this federation needs: a coalition of stakeholders advocating for their implementation; bipartisan support; a focus on a perceived urgent national issue; significant socio-economic benefits; a focus on a limited number of core principles and systemic legislative reform with incremental implementation over many years; the allocation by the Federal Government of substantial funds for state implementation; requirements to report to COAG; and support from central government agencies rather than marginalisation in the environment portfolio. These qualities are not inherent in the 1992 National Strategy

for Ecologically Sustainable Development and this explains why it is now moribund. These findings suggest that it will be particularly hard to develop and difficult to implement an effective national climate change adaptation policy.

2. Introduction

This paper revisits Australia's 1992 National Strategy for Ecologically Sustainable Development (NSED) in the wider context of national framework policies in a federal system. We evaluate the NSED as one of a suite of four national policy initiatives to identify factors determining the strength and impact of such policies. To sharpen the relevance of the evaluation, we explore the implications of the evaluation for national coordination of climate change adaptation policy, as a current issue that - like ecologically sustainable development - crosses sectors and levels of government and therefore demands both horizontal and vertical policy integration.

There is debate over how the task of climate adaptation should be allocated between levels of government, particularly in a federation (Farber 2009; Harrington 2010; Glicksman & Levy 2010). As with other policy issues, two key questions arise: when is it *appropriate* for the federal government to act and what *form* might that action take? State and local governments are the natural "first responders": they own or license critical infrastructure, provide health services, and control land use (Farber 2009). Yet the federal government may step in to provide mandatory standards for adaptation efforts, disseminate information in relation to risk assessments and mitigation options, or to finance adaptation. The premise here is that before the need to adapt becomes truly acute, Australia has to think about the appropriate role and responsibility of the federal government.

Our objectives are two-fold. First, we explore the role and potential of relevant, current, national framework policies in initiating, enabling and coordinating adaptation options. The underlying assumption to this objective is that much of the adaptation we must do in the future has been the focus of federal attention in the past, for example, managing water scarcity. One question is: are our existing institutions sufficient? We consider policies driven by the federal government as well as intergovernmental agreements between the federal and state governments. The second objective is to analyse the strengths and weaknesses of national framework policies, to identify key policy design features, institutional factors and resourcing issues that lead to more or less degrees of impact. The objective is to understand

how federal engagement might best be pursued, and to ask: what makes a good national strategy?

Multi-level governance and climate adaptation in Australia

Similar to (ecologically) sustainable development, the role of different levels of government in climate adaptation is contested, especially as most policy and management responsibility is assigned constitutionally to the states and territories. Some argue that the role of the Federal Government is small (Garnaut 2008; Productivity Commission 2012); others assert that promoting adaptation is a responsibility of all scales of governance (Hussey et al. 2013; Dovers & Hezri 2010; Pittock 2009). The existence of numerous national policies that are climate-relevant suggests that, while the degree of responsibility for the Federal Government may be contested and vary between sectors, the fact that it has a role is not.

The Australian federal system engenders significant governance and coordination challenges and the Intergovernmental Panel on Climate Change noted that fragmentation across three levels of government is a major constraint to more robust adaptation in Australia (IPCC 2007). A consequence is that “regional and local responses have been limited, variable and inconsistent” (IPCC 2007: s.11.5). While there has been increasing societal expectations of a more national approach in many policy areas (e.g. education, environment, natural resource management, health), the primary responsibility for the majority of governance programs which relate to climate adaptation resides with the state, territory and local governments.

Areas in which Australia’s Federal Government is *legally* entitled to govern are defined in the *Australian Constitution Act 1900* (UK) and restricted to the ‘external affairs’ power and matters relating to taxation, health, postal and telegraphic communications, defence and counter-terrorism, insurance, trading corporations, and the payment of social security benefits (Australian Constitution s51(xxix)). However, in practice there are numerous issues and policy domains of relevance to climate adaptation which the Federal Government has an interest in, or responsibility for, even in the absence of statutory powers. In recent years, the language of ‘shared responsibility’ has emerged to characterise co-operative federalist responses in key policy domains, which are often initiated and co-ordinated through the Council of Australian Governments (COAG). The Federal Government's 2010 position paper, ‘Adapting to Climate Change in Australia’, is supportive of this view, though it goes further to advocate it has a leading role: “The Australian Government has a responsibility to

lead national reform to ensure Australia is well placed to deal with these [climate] risks. Similarly, while many adaptation decisions will be based on local conditions, it will be important where necessary to maintain national consistency in important areas of standards” (Commonwealth of Australia 2010: 9). This point has been reinforced in subsequent policy statements and position papers (DIICCSRTE 2013; Select Council on Climate Change, 2012).

Precisely what form this ‘leadership’ role might take remains to be seen, but we know that intervention by the federal government can take many forms, as evidenced by the proliferation of national ‘frameworks’, ‘strategies’, ‘policies’, ‘plans’, ‘initiatives’, ‘roadmaps’, ‘agreements’ or simply ‘arrangements’.

Our focus in the remainder of the paper is to identify, in Section 2, the extent to which existing climate-relevant national strategies initiate, encourage, enable or coordinate climate adaptation and, in Section 3, what characteristics make national strategies particularly robust, effective and enduring.

2. National frameworks and adaptation options

Many of the threats posed by climate change are not new: drought, floods, cyclones and prolonged periods of extreme temperatures are features of Australia’s climatic system. In response to that system, successive state and federal governments have designed and implemented a range of institutions to cope, including planning and development regimes, building codes, the provision of emergency services, mandatory insurance schemes and/or payments for exceptional circumstances (Hussey et al. 2013). In some respects, therefore, thinking about how Australia can best prepare for the impacts of future climate change - and what role if any the federal government should play in climate adaptation policy - must begin with close analysis of whether Australia’s current institutional arrangements are sufficient to deal with current climatic variability and future change.

Our interest is on the role and potential of climate-relevant national framework policies in enabling adaptation options. In doing so, we place the NSESD in a wider comparative context. We have selected national policies over the last two decades that seek to direct Federal, state and other actors’ priorities, actions and investments, in other words, they have ‘systemic’ intent to influence behaviours across a wide set of actors and activities. These selected “framework” policies are those that are already reasonably well-documented and

analysed. We chose to focus on policies based on their systematic intent, available documentation, and divergent timing, form and outcomes. The four policies included in this assessment are outlined in Table 2.

Table 2: Overview of five climate-relevant national policies

Title	Timeline	Foundation in law and policy	Scope	Status
National Competition Policy (NCP; Curran & Hollander 2002; NCC n.d.).	Proposed in 1993. COAG agreement in 1995. Ongoing implementation.	COAG policy agreements and the Commonwealth Competitive Policy Reform Act 1995.	Nationwide covering all private and public sector businesses.	Review of 1700 pieces of legislation. Three tranches from 1997-98. It concluded in 2005-06. Ongoing implementation.
National Strategy for Ecologically Sustainable Development (NSESD; ESD Steering Committee 1992).	1992 - ?	Policy without direct legislative force.	Nationwide covering all sectors of society.	While never formally withdrawn it is moribund.
National Strategy for Disaster Resilience (NSDR; COAG 2011)	Public release 2009; endorsed 2011	Policy without direct legislative force.	Nationwide, focusing on “disaster resilient communities”. To “provide high level strategic direction”.	Unclear - no concrete next steps identified. Funding to 2013. Responsibility for implementation plans devolved to the states.

National Water Initiative (NWI; Commonwealth of Australia et al. 2004).	Adopted in 2004. Ongoing implementation.	COAG policy agreement.	Nationwide covering water management.	Ongoing implementation.
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In this first analysis the NSDR, NSED and NWI were selected on the basis that they may already contribute to climate change adaptation nationally. Specific data was sought on the following adaptive characteristics of these policies (drawn from Dovers 2009):

1. Evidence the approach resulted in some level of climate change adaptation;
2. Explicit inclusion of climate adaptation, or scope for inclusion, via statutory objectives or regulatory guidelines;
3. Existence of overlap, ambiguity, or contradictions in legislative requirements or processes;
4. Focus across stages of an adaptation or resilience enhancing process;
5. Systemic reach, rather than ad hoc or project specific;
6. Applicability to relevant policy and decision-making responsibilities;
7. Sufficiency of resources to implement existing arrangements;
8. Information and knowledge gaps, including missing stakeholder contributions;
9. Existence of incentive gaps and conflicts for private and public sector actors that risk impeding adaptation;
10. Existence of conflicting strategic policy goals frameworks and unintended outcomes;
11. Potential or otherwise to be incorporated into a national adaptation framework.

Each of the selected policies is now examined in more detail, then their adaptive characteristics are summarised in Table 3.

National Strategy for Disaster Resilience

a) Description

In 2009 COAG agreed to adopt a whole-of-nation resilience-based approach to disaster management, which recognised that “a national, coordinated and cooperative effort is needed to enhance Australia’s capacity to prepare for, withstand and recover from disasters” (COAG

2009). COAG subsequently adopted the NSDR in February 2011 to provide high-level guidance on disaster management to federal, state, territory and local governments, business and community leaders and the not-for-profit sector. The NSDR focuses on priority areas to build disaster-resilient communities, recognising that disaster resilience is a shared responsibility for individuals, households, businesses and communities, as well as for governments. However, the NSDR does not have any particular objectives or concrete outcomes, except to the extent that it will be “a further step in supporting the development of disaster resilient communities” (COAG 2011: 3).

Disaster resilience is a crowded space when it comes to the development of “shared approaches”; the NSDR explicitly states that it “complements” initiatives such as the National Disaster Resilience Framework; the Australian Government’s Critical Infrastructure Resilience Strategy; the National Climate Change Adaptation Plan, and the National Partnership Agreement on Natural Disaster Resilience (NPA).

The NSDR does not have any funding however, the related and “complementary” NPA provided approximately \$98.6 million over four years to 2012/13, to fund ‘natural disaster mitigation projects’ across Australia.

b) Adaptive characteristics

The NSDR would lead to adaptive outcomes if it were to be systemically implemented. However, beyond a requirement that states and territories make tacit mention of the strategy in their application for funding through the NPA, there is no indication of how the numerous “priority outcomes” in the NSDR will be incorporated into legislation in the states and territories. The NSDR only mentions adaptation insofar as “successful adaptation” is a characteristic of a resilient community. There is indirect reference to climate adaptation in the risk assessments component, which involves assessing vulnerability to climate change, though the NPA does not explicitly mention climate change.

States and territories are expected to indicate how their proposed implementation plans under the NPA reflect the key characteristics in the NSDR, in order to receive co-funding from the Federal Government. Scrutiny of state and territory plans under the NPA reveals references to the NSDR in their applications for funding but these are as vague as the NSDR itself (Wenger et al. 2013).

The NSDR provides a moderate level of detail against each of the characteristics of a “disaster resilient community” to include so-called “priority outcomes”, a check-list of aspirational objectives. One could also argue that the availability of the NSDR could be useful in and of itself, but without clear actions and outcomes attributable to particular stakeholders, and without significant funds to support the implementation, it is difficult to see how it will add value. The plethora of “complementary” plans and strategies in the disaster management and resilience domain suggests that: (i) the significance of any one strategy is diluted; (ii) there is redundancy between the various strategies and plans; and/or (iii) contradictory information might arise between the different plans and guidelines (see also Wenger et al. 2013).

As far as identifying the primary characteristics of disaster resilient communities, the NSDR does a good job, though the “priority outcomes” in the document are imprecise. For example, one priority outcome is that “A range of models are used to engage businesses in all phases of prevention, preparedness, response and recovery”, but no detail is provided into what those models might be, which are most successful and under what circumstances.

While there are many attributes of the NSDR that can usefully inform an adaptation framework equally there are many lessons on what not to do, including limited and short-term funding, no legislative force, and limited specificity in implementation.

National Strategy for Ecologically Sustainable Development

a) Description

Increasing national and international interest in the environment in the late 1980’s lead to a Prime Ministerial Interdepartmental Committee preparing a discussion paper on ESD in 1990. This paper encouraged the Federal Government to facilitate an inclusive and consultative Ecologically Sustainable Development Steering Committee, involving different levels of government and stakeholders. Nine sectoral working group papers were published in 1991 leading to the adoption of the NSESD by COAG in 1992 (ESD Steering Committee, 1992).

The NSESD has the objectives of: enhancing wellbeing by following a path of economic development that safeguards the welfare of future generations; providing equity within and between generations; and protecting biodiversity and other essential ecological systems

(Curran & Hollander 2002). The strategy included 500 recommendations and was largely an in-principle and voluntary agreement that governments were to implement on an ad hoc basis, including through legislation (Dovers 1998). There was an unrealised expectation that the Federal Government would compensate the states for the costs of implementation (Curran & Hollander 2002). Oversight of strategy implementation was to be undertaken by the Intergovernmental Committee on Ecologically Sustainable Development, however it was dissolved after reporting in 1996. Ad hoc legislation in different jurisdictions has since incorporated elements of the ESD principles, notably the *Environment Protection and Biodiversity Conservation Act* (Cth) (Dovers 2002). While ostensibly the NSESD remains in force, in practice implementation has stalled without leading institutions to champion and update the strategy.

b) Adaptive characteristics

The NSESD includes recommendations that equate to standard steps that would have led to adaptive outcomes had it been systemically implemented. Climate change adaptation was explicitly considered however the development of the strategy in the early 1990's and subsequent lack of processes for revision mean that the measures proposed more than twenty years ago are now considered inadequate.

Translation of the political agreements into legislation and resulting processes for implementation has been erratic and measures are often contradicted by other legislation, for instance, the diesel fuel rebate that subsidizes use of this polluting fuel by businesses.

The ambition for the NSESD was to systemically guide people's interaction with the Australian environment yet in practice it has not succeeded in influencing much more than key pieces of environmental legislation. Similarly, the ambition to guide decision making has not been realised in practice. Few resources were allocated to the implementation of the NSESD and there has been insufficient incentive for the state governments to institute reforms.

While the NSESD itself was developed with model engagement of stakeholders, and some subsequent processes like 'state of the environment' reporting have delivered strategic information, in practice there have not been processes that have translated knowledge into effective programs.

There are extensive barriers to implementation of the strategy. Among them are lack of effective champions within government, perverse financial incentives for unsustainable development, limited revenue for sound environmental management, limited public appeal rights, lack of cross-compliance in funding agreements between governments, and limited measures to hold governments to account for environmental performance (Dovers 1998; Dovers 2002).

While there are many attributes of the NSESD that can usefully inform an adaptation framework equally there are many lessons on what not to do, particularly in the form of a weak institutional framework.

National Water Initiative

a) Description

The NWI is the national reform blueprint which provides an ‘overarching framework guiding Australian water management’ (Hussey & Dovers 2007). The 2004 NWI modified and extended the reforms of the initial 1994 COAG agreement on water that first proposed a national, cross-jurisdictional co-ordinated approach to address the perennial problems of over extraction, declining river system health, drought and catchment management, surface and groundwater depletion and stream flow variability that characterise water systems and use.

The NWI’s overall objective is “to increase the productivity and efficiency of Australia’s rural and urban water use while ensuring community needs are met and river and groundwater systems are returned to environmentally sustainable levels of extraction” (Commonwealth of Australia et al., 2004:cl.5) through a market and trading system for water access rights. Supporting the NWI are the *National Water Commission Act 2004* (Cth), which established the National Water Commission and the nine commissioners responsible for biennial reviews of implementation. It is further reinforced by the *Water Act 2007* (Cth) which established the Murray Darling Basin Authority (MDBA) and empowers the Australian Competition and Consumer Commission (ACCC) with developing and enforcing water charge and market rules, and the *Water Amendment Act 2008* (Cth) which refers powers from the basin states to the Federal Government.

b) Adaptive characteristics

The NWI addresses the challenges of adapting to climate change both directly and indirectly. Under the NWI, water is allocated through trading of access rights whose purpose is to move water resources to ‘high value users’ (Keim & Austin 2012) at times of distress as the result of normal climate variability or due to climate change. This market based instrument provides a high degree of flexibility for responding to changing by enabling water resources in times of stress to move from ‘low value’ users, such as irrigated pasture, towards ‘high value’ ones such as perennial horticulture (NWC 2011).

Climate change adaptation is referred to explicitly in two of the ten objectives of the NWI (Commonwealth of Australia et al. 2004:cl.23):

- “6. Clarity of the assignment of risk arising from future changes in the availability of water for the consumptive pool”;
- “9. Addressing future adjustment issues that may affect water users and communities.”

While these clauses make specific mention of climate change adaptation by reference to circumstances that will arise from a changed climate, there is little detail nor consideration of where they might fit into the priorities of the other eight objectives. The legislation enacted by the federal and state governments is consistent in providing mandates to the Commission and other water agencies to support the objectives of the NWI.

The NWI includes considerations of planning, sustainability, markets, trading, allocation and risk assessment which are all relevant to building resilience and adapting to changed circumstances. The NWI displays systemic reach and approach in three ways: first, through the breadth of legislation and statutory arrangements which centralise management and reporting while devolving operational management at state, regional and catchment level, and revolutionising the governance of interstate allocations; second, by means of conjunctive management of surface and groundwater water resources; and finally, by requiring sustainable levels of water extraction.

The Commission has undertaken biennial assessments to ensure that actions to achieve these objectives are continually evaluated by reporting to the COAG on how to improve institutions where gaps and failures are identified. However, in contrast to the market based elements of the NWI, key environmental measures have not been well implemented

(NWC 2011). Significant funding has been allocated to acquiring water for the environment in the case of the Murray-Darling Basin however these programs are criticised for funding expensive infrastructure-based measures instead of purchasing water entitlement directly, as well as for failing to adequately consider climate change adaptation measures (Pittock et al. 2010).

The success of the NWI in meeting many of its complex and disparate objectives while managing a resource system and stakeholders across geographical, jurisdictional and state boundaries offers some lessons for other national policies.

Discussion: Adaptive characteristics of the policies

Drawing on the assessment above, a comparison of adaptive characteristics across these three national framework policies is shown in Table 3.

Table 3: Comparison of adaptive characteristics across selected national framework policies

Characteristic	National Policy		
	NSESD	NSDR	NWI
1. Level of adaptive outcomes	LOW	LOW	HIGH
2. Explicit inclusion of climate change adaptation	MEDIUM	MEDIUM	MEDIUM
3. Legislative requirements or processes	LOW	LOW	HIGH
4. Focus across stages of an adaptation process	MEDIUM	HIGH	HIGH
5. Degree of systemic reach	MEDIUM	MEDIUM	HIGH
6. Applicability to decision-making responsibilities	MEDIUM	LOW	HIGH
7. Sufficiency of resources	LOW	LOW	HIGH
8. Information and knowledge gaps	MEDIUM	MEDIUM	MEDIUM
9. Incentives to overcome gaps and conflicts	LOW	LOW	MEDIUM
10. Integrated strategic policy goals	LOW	LOW	MEDIUM
11. Potential to be incorporated into an adaptation framework	MEDIUM	HIGH	HIGH

The NWI has shown promise in leading to adaptive outcomes in requiring reform of state institutions in line with better practices to access Federal Government funding and to benefit from water markets. The aspirational NSDR and NSESD should contribute to adaptation but there is no evidence that this is the case given little Federal Government funding and lack of requirements for state government implementation. The NWI does require consideration of climate change adaptation in water planning, even if this has been poorly implemented at times (Pittock et al. 2010).

However there are many policies that detract from the erstwhile commitments to adaptation in these policies. For example, in relation to flood management, numerous policy barriers and contradictory measures hinder the effectiveness of the NSDR, beginning with limited mapping of flood zones, development in harm's way, through to recovery strategies that are not designed to relocate or harden impacted structures and activities. While the need to prevent or plan for impacts is often recognised, disproportionately few resources are usually devoted to these stages of the adaptation process (Wenger et al. 2013).

While all three policies were intended to have systematic reach and engage relevant decision-makers, in practice only some programs associated with the NWI have been effectively implemented, and even then the environmental components have been less well applied than the market-based measures.

The three policies should in theory each allow participation by stakeholders. Only the Commission structure and the emphasis that it has placed on generating knowledge, linked to national water accounting, has enabled substantial progress in the water sector. By contrast, considerable information and incentive gaps and conflicts remain for effective sustainable development and disaster resilience, as indicated in the flood control sector. There are also incentive gaps and conflicts in the water sector, for instance, with the failure of state governments to regulate inflow interception activities and bring them within the water markets (NWC, 2011). This illustrates the need for clear requirements, accountability and financial incentives if national policies are to be effectively implemented at state and more local scales. The lack of an effective, overarching ESD policy process may be one reason why there are so many conflicting policies, for instance, climate change mitigation policies that may exacerbate water scarcity in parts of Australia (Pittock et al. 2013).

Theoretically NSESD should form an overarching policy framework that may embrace climate change adaptation (Dovers & Hezri 2010). Major institutional reform will be required

at the core of the Federal Government for this to occur (Ross & Dovers 2008). Given the out-dated condition and limited support for the NSESD this appears unlikely in the foreseeable future. The NSDR should be part of a national adaptation framework but as outlined in this assessment it is in no fit condition to contribute given its aspirational approach, parallel policies and limited funding. The NWI is a logical part of a national adaptation framework and can contribute now but could do much more with further inducements for state implementation in areas like inflow interception management, water markets and environmental flows (NWC, 2011).

3. Successful national frameworks: factors for success and lessons for resilience

In the second part of our analysis, two policies that had systemic influence were identified to discern the elements that contributed to their success and which may in turn inform the development of a national climate change adaptation policy. The NCP was a far-reaching economic meta-policy that emerged in the early 1990's and dramatically changed natural resource industries (Curran & Hollander 2002). The NWI is also considered in this analysis. In assessing the elements that contributed to the success of these policies, we apply a framework developed by Cork et al. (2011), identifying four characteristics of effective adaptive capacity and resilience:

1. Clarity of purpose: Clear definition and understanding of problems at a system level to address root causes rather than symptoms.
2. Diversity: diversity range of ideas, views, skills, resources, innovation, flexibility in problem solving, and wide inclusion of stakeholders in a purposeful and structured fashion.
3. Connectivity: Institutional networks that are not susceptible to collapse due to one part failing; effective use of resources; community ability to organise itself; appropriate leadership; spare capacity; and some duplication of functions.
4. Integration and feedback: Holistic consideration of issues and realistic consideration of scale, accounting for the range of interactions between humans and ecosystems. In addition, resources to monitor, debate and learn.

To supplement the earlier summary of the NWI we begin this part of the analysis with a brief overview of the NCP, before assessing their outcomes.

National Competition Policy

The NCP was agreed as the nation's micro-economic reform process to increase competition and productivity through six related policy reforms, namely: extending the *Trade Practices Act* (Cth) to unincorporated and government businesses; extending prices surveillance to government; applying competitive neutrality principles to government businesses; restructuring public sector monopolies; reviewing all legislation that restricts competition; and providing third party access to nationally significant infrastructure (NCC n.d.). The NCP was derived from the 1993 Hilmer Report into competition policy. In 1995 COAG agreed to implement resulting recommendations by adopting the Competition Principles Agreement, the Conduct Code Agreement and the Agreement to Implement the National Competition Policy and Related Reforms (NCC n.d.). This was underpinned by the *Competitive Policy Reform Act* (Cth). Implementation was overseen by central Federal Government agencies, including the departments of Prime Minister and Cabinet, and Treasury, and their counterparts in each state and territory. The NCP was championed by a dedicated government body, the National Competition Council, and supported by funding of A\$4.2 billion (1994/5) (Curran & Hollander 2002). Under its auspices, 1700 pieces of legislation were reviewed in three tranches from 1997-98 to 2005-06. While the NCP remains in force, since the cessation of tranche payments to state governments linked to their implementation of reforms the pace of change appears to have slowed.

Characteristics of effective national policies

In Table 4 we draw on the above assessment to compare the NWI and NWC against the four characteristics of effective adaptive capacity and resilience identified by Cork et al. (2011).

Table 4: Comparison of the NCP and NWI against Cork et al.'s (2011) characteristics of effective adaptive capacity and resilience.

Policy	Clarity of purpose	Diversity	Connectivity	Integration and feedback
National Competition Policy (Curran & Hollander	High. A tight focus on economic competition.	High. Process engaged a diversity of views. Public	High. The policy involved removal of monopolies	Medium. Regulatory institutions established

2002; NCC, n.d.).		challenges are enabled. Arguably economic competition fosters diversity.	which may lead to duplication of service providers.	under the policy enable public challenges and are self-reinforcing.
National Water Initiative (Commonwealth of Australia et al. 2004).	Medium. Economic elements of the NWI's many principles have largely been implemented but the sustainability measures have been poorly enacted (NWC 2011).	Medium. Some elements of the policy have enabled a diversity of approaches, such as water trading. Other elements lack diversity, eg. focus on environmental flows over complementary measures (Pittock & Finlayson 2011).	Medium. The market-based elements show attributes of resilience, for instance during the past decade of drought (Grafton 2011). The environmental elements remain at risk from physical and governance failures (Pittock et al. 2012).	Low. On paper the NWI integrates issues of scale and of socio-economic and environmental issues well. The Commission provides feedback to COAG but despite sage advice this has not engendered change by the state governments (NWC 2011).

Considering *clarity of purpose*, the NCP and NWI are framework agreements enunciated through principles, with the detail developed and applied over time. The NCP and water markets component of the NWI have a relatively narrow focus on enhancing markets and thus can be seen as 'high politics'. In focussing on economic competition and on sustainable water management, the NCP and NWI can be seen as specific and achievable reform agendas, more technical in nature and less likely to stir opposition. These policies also targeted sectors with a high degree of ownership by governments as opposed to invoking the

need for reform across society and challenging many private interests at once. The three tranches of the NCP were implemented over ten years while the initial agreement for the NWI was eight years, illustrating the robust nature of these policies and in contrast with the NSESD, whose central processes were cut after just four years.

Regarding *diversity*, both processes have had mechanisms for stakeholder engagement. The NWI is limited to one large sector: water. The NCP has been applied to most sectors of the economy but it is in turn largely limited to one goal: economic competition. Strong advocacy by business interests and the Federal Government for the NCP were translated into a robust policy structure and implementation plan (Curran & Hollander 2002). The NWI had less enthusiastic support from some state governments but nonetheless has had a sufficiently diverse and supportive group of industry, financial agency and community supporters to survive (Rosalky 2011).

With respect to *connectivity*, the NCP and water markets component of the NWI are relatively narrowly focussed on enhancing markets, drawing as they do from neo-classical economics for inspiration. Thus they enjoyed broad support from many in government, academia and business. The National Competition Council and the National Water Commission were established as independent agencies within the Federal Government and involving state governments to champion national reform. They were also supported by the Federal Government's central agencies. Both the NCP and the NWI benefitted from funding of billions of dollars for implementation, particularly by state governments.

Examining *integration and feedback*, the NCP and NWI were established with limited information and a large part of their implementation processes by the National Competition Council and the National Water Commission have involved progressive, systemic reviews of state institutions to recommend reforms. These organisations continue to oversee implementation and evaluate their relevant policies, reporting to COAG. Importantly, the extensive water and market data concerned is readily measured, understood and reported in mainstream processes.

4. Conclusions

Like ecologically sustainable development, national climate change adaptation policy should necessarily include multiple sectors, all three levels of government, engagement across the public and private sectors, and the active support and inclusion of communities in its

development and implementation. It is, therefore, a complex and unwieldy policy to develop and implement. This assessment has examined both existing strategies that may already support climate change adaptation as well as less directly related national policies that hold lessons for a national adaptation policy. The four national policies examined underline the difficulty in developing and implementing effective policy frameworks in Australia.

The NCP and water markets component of the NWI illustrates that, to succeed, a national policy needs a coalition of stakeholders advocating for their implementation and bipartisan support. Notably, these two policies are instruments of the dominant neo-classical economics paradigm. They focussed on perceived urgent national issues, namely making the economy more competitive and addressing water scarcity, rather than issues regarded as having incremental and long term benefits, such as disaster resilience and ecologically sustainable development.

The NCP and NWI focussed on a limited number of core principles and systemic legislative reform and have been implemented incrementally over many years, as opposed to the much broader and more diffuse NSESD agenda. The allocation by the Federal Government of substantial NCP and NWI funds for state governments was a critical incentive for implementation, again, in contrast to the NSESD. Importantly, the NCP and NWI reported to COAG and had champions in the Federal Government - backed by central agencies - for implementation in the form of the National Competition Council and the National Water Commission. This is in contrast to the NSDR and NSESD that have not the same level of support and have therefore made little progress. The focus of the NCC and NWI on legislative reform and on independent regulatory agencies has provided opportunities for public accountability, transparency and incentives for governments to follow through on their policies, as compared to much of the NSDR and NSESD agenda.

These observations suggest that it will be hard to develop and difficult to implement an effective national climate change adaptation policy. To succeed, a policy will need to have backing from stakeholders and enjoy bipartisan support while being focussed on core principles. Few stakeholders may be motivated by the incremental impacts of climate change. Positioning an adaptation policy as delivering socio-economic benefits is needed rather than seeing such policy marginalised in the environment portfolio. The NCP and water markets component of the NWI focussed on benchmarking relevant legislation in each jurisdiction and proposing reforms to bring them into conformity with policy principles, which could be a

focus of national adaptation policy. The Federal Government would need to manage an adaptation policy that engenders reform in state jurisdictions as well as undertaking adaptation measures within its own institutions.

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