

*Developing Effective Government Responses to Climate Change: The Case of
Australia*

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0282

The Asian Conference on the Social Sciences 2013

Official Conference Proceedings 2013

Abstract

The international awareness and emphasis on global climate change has put pressure on national governments to prepare action plans to counter its impacts. The imperative to act as quickly as possible is an added strain on governments, which seek effective and timely responses to this complex problem. Yet the multiplicity of actors, particularly at the local level, and interests at stake cause complications to formulate and implement effective policies to mitigate or adapt to climate change. In order to alleviate such complexity, adaptive governance could be a solution for environmental issues. Yet it is still experimental and prone to failure in larger scale policy implementations.

This research examined Australia in terms of both the climate policy-making complexities and a test ground for adaptive governance. Despite in recent years creating a specialized Department of Climate Change, formulating the National Climate Adaptation Framework, initiating its Local Adaptation Pathways Programme and passing a controversial carbon tax, one cannot speak of a coherent (sustainable and /or effective) national response to climate change in Australia. Firstly, complexities created by the plurality of climate change actors in Australia exacerbate seemingly irreconcilable differences in perspective. Secondly, the structural, procedural and contextual limitations of Australian institutional governance structures complicate the implementation of effective adaptive governance for climate change response plans. Australia as an example shows that without building a sufficient consensus between different climate change actors about the need to act, without awareness of the structural and procedural deficiencies of local governance, and the importance of building up a flexibility of understanding among the local and national actors for policy making, it is very difficult to develop a comprehensive, effective, and sustainable climate change policy.

Many solutions could be offered to ease this complexity and utilize a better functioning adaptive governance at the national level but this research argues that one solution could also be building up a filter (council or committee) that would operate between the local and national/federal levels of governance. It would act as a system of checks and balances and be responsible for what is included and excluded from policies and who is responsible and accountable for their implementation. Such an idea could help the local and national/federal levels of government to have a better understanding of cooperative policy making and its bureaucratic implementation.

Key words: climate change, mitigation, adaptation, adaptive governance, Australia, carbon tax

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Rising of Awareness on Climate Change: Parameters of National Governments' Responses

The definition of the UN-led Intergovernmental Panel on Climate Change (IPCC)¹ refers to climate change as a change in the state of the climate that can be identified (e.g. using statistical tests) by changes in the mean and/or the variability of its properties, and that persist for an extended period, typically decades or longer. Climate change, more practically, is an accumulated result of widespread and persistent use and abuse of the environment; in particular the unawareness of the mass production methods and approaches of the last couple of centuries about their impacts on environmental degradation.

The global agenda has begun to focus on the issue in the last two decades. It started firstly with a scientific focus by the IPCC in 1988. In 1992 there was another UN effort called the UN Framework Convention on Climate Change (UNFCCC)² which was signed by almost every country and which contributed to reducing the emission level of green house gasses. In 1997 the Kyoto Protocol to the UN Framework Convention on Climate Change³, aimed to build up a global regulation to secure binding commitments to reduce green house gas emissions.

In the last decade two more reports were released on environmental degradation: the Fourth Assessment Report of the IPCC in 2007 and the Stern Review 2007.⁴ They defined global warming and made projections about its prospective impacts on water resources, natural disasters, marine and terrestrial ecosystems, human health and agriculture.

Two main policy responses have been discussed for dealing with the effects of climate change on the national scale: mitigation and adaptation. The former is the set of measures to reduce the emission level and strengthen the absorption of green house gases and the latter is the set of measures to increase preparedness for the negative effects of climate change, to alter its effects and adapt to it.⁵ Yet these two should not be taken as mutually exclusive means; they complement each other, particularly in terms of their long-term consequences. Mitigation aims to reduce the effects of factors that create climate change and adaptation aims to stabilize this in the next few decades.

Both mitigation and adaptation are national policy mechanisms but regardless of the international awareness, they have not yet become fully effective. In other words, there is serious amount of analyses in academia⁶ about the reasons and also the short

¹ For the details of the IPCC process see: <http://www.ipcc.ch/>

² For the details see: <http://unfccc.int/2860.php>

³ For the full text of the Kyoto Protocol see: http://unfccc.int/essential_background/kyoto_protocol/items/1678.php, accessed on 19 May 2013.

⁴ For the full text of the Report see: http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf, accessed on 19 May 2013; for the full text of the review see: http://webarchive.nationalarchives.gov.uk/+http://www.hm-treasury.gov.uk/stern_review_report.htm, accessed on 19 May 2013.

⁵ A. Sumi, K. Fukushi, A. Hiramatsu (eds.), *Adaptation and Mitigation Strategies for Climate Change*, (Tokyo: Springer, 2010), 131, 134.

⁶ N. Stern, *Stern Review: The Economics of Climate Change*, (UK Treasury: London, 2006), <http://www.sternreview.org.uk>; Intergovernmental Panel on Climate Change, *Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, (Cambridge University Press: Cambridge, 2007); R. Garnaut, *The Garnaut Climate Change Review: Draft Report*, June 2008, <http://www.garnautreview.org.au>.

and the long-term consequences of climate change but still there is a serious gap between these analyses and the institutional actions.

The main reason for this gap can be found in the requirements for building up and implementing climate change policies. One of the major requirements of these policies is to be integrative within and across the different levels of public and private governance. That means public governance should 'accommodate various stakeholders and manage associated principal-agent relationships as astutely as possible'⁷ and construct an integrated policy implementation mechanism. The other requirement is that these policies should be resilient (ie. adaptive and responsive) to changes in the environmental protection demands. Effective coordination is important among public and private governance actors vertically and horizontally via communication. Coordination should be maintained via interrelation of activities which creates synchronization between the public and the private spheres. The last requirement is the interlocking acceptance and consent by all actors of each other's power (mutual authority and legitimacy), which makes each domain subject to the checks and balances of the other. Given the complexity in creating the above-mentioned environment for climate change policy implementation schemes, the gap between the scientific analyses and policy responses of climate change is difficult to eliminate.

These requirements of cooperation schemes refer to the national actors. This is not enough for constructing solutions to a global problem. The effects of climate change cannot be mitigated piecemeal by a few countries. A new outlook is required for climate change solutions, which adopts a comprehensive and holistic approach for identifying and classifying problems, for achieve sustainable solutions. One important path is to build up a new vertical cooperation scheme, focusing on the structural and contextual features of environmental policies, to move between the national to global spheres.

Vertical Cooperation Schemes on Climate Change: from National to Global

The success of national/global climate change policies relies on the efficient cooperation between national and global institutions. Since institutions are the lynchpins of the governance; they are vital in the initiatives and policy responses (across governments) for climate change. But their roles should not be confined to the national borders via official/governmental institutions. National governmental institutions with the help of non-governmental institutions should cut across the political boundaries and interact with their counterparts in various parts of the globe in an interdependent and interlocking scheme, which could create a region or even a world-wide concerted collective action.

The Kyoto Protocol clearly stated the importance of international cooperation of governmental and non-governmental institutions. Article 10 states that:

[All parties shall] [c]ooperate in and promote at the international level, and, where appropriate, using existing bodies, ... including the strengthening of national capacity building, in particular human and institutional capacities and

⁷ J-E Lane, *Public Administration and Public Management: The Principal-Agent Perspective*, (Routledge: London, 2005).

the exchange or secondment of personnel to train experts in this field, in particular for developing countries, and facilitate at the national level public awareness of, and public access to information on, climate change.⁸

In the last decade, in addition to the Kyoto Protocol, other international bodies, organizations and programmes focused on the structural and procedural requirements of climate change initiatives. The World Meteorological Organization, the United Nations Environment Programme, The International Civil Aviation Organization, the International Maritime Organization, and the Intergovernmental Panel on Climate Change (IPCC) are a few examples. They also underlined the importance of not only the official institutions but also non-governmental agencies including firms and non-profit bodies.

Contrary to expectations, not a great deal of momentum was created by the above-mentioned initiatives to facilitate and maintain international cooperation schemes among governmental and non-governmental institutions. The intricate interests and demands of multiplicity of actors (institutions, bodies, organizations) created complexities in the international cooperation schemes.

These complexities show an interesting dilemma about the structural and procedural features of environmental policies. Since national environmental policies encapsulated within the political borders are not able to bring about an effective global solution to climate change, some other motive needs to initiate global non-governmental institutions' commitment. The mix between the public and the private depends on negotiations among state, civil and market-based actors' interests, which should be agreed upon both domestically, within the country, and internationally, among the international public and private bodies. Yet the multitude of these bodies with conflicting interests and scopes make the task of achieving a negotiated global or even regional climate change resolutions quite difficult.

Adaptive Governance: a Proposal for a Possible Solution to the Complexities of Climate Change Policies?

Due to the disparate actors in climate change policies, an exclusive motive is required to encompass the official government structure. Governance or more specifically adaptive governance has a potential to be such a motive, if necessary adjustments are made.

Governance that derives from corporate management refers to a break from the usual style of government. It is a transition from top-down forms of bureaucracy to a bottom-up, which involves the development of new forms of interactions between the government, bureaucracy and the civil society, and the corporate sectors, diverse interest groups and private citizens on policy making issues.⁹ Such an approach aims a more transparent and open government apparatus.

⁸ http://unfccc.int/essential_background/kyoto_protocol/items/1678.php, accessed on 19 May 2013.

⁹ For details of adaptive governance see: D. Armitage, R. Plummer (eds.), *Adaptive Capacity and Environmental Governance*, (New York: Springer, 2010); M. Pelling, *Adaptation to Climate Change: From Resilience to Transformation*, (London: Routledge, 2011), D. Dredge, J. Jenkins, *Tourism Planning and Policy*, (Milton: John Wiley, 2007) 54-55, 463; J. O'Flynn, J. Wanna, *Collaborative Governance: A New Era of Public Policy in Australia?*, (Canberra: ANU E Press, 2008); I. Marsh, 'Governance in Australia: Emerging Issues and Choices', *Australian Journal of Public Administration*, Vol.61, No.2, 2002, 3-9.

Originating from this description of governance, adaptive governance can be defined as ‘the evolution of rules and norms that better promotes the satisfaction of underlying human needs and preferences given changes in understanding, objectives, and the social, economic and environmental context’.¹⁰ It also refers to the policymaking and implementation process, which integrates local community knowledge to advance a common/national interest. Such integration relies on polycentric institutional arrangements that operate at multiple scales,¹¹ and balance between centralised and decentralised control.¹²

The term was introduced to the environmental policy realm by Crawford Stanley Holling.¹³ Adaptive governance proposes a disintegration of the global realm of climate change into much simpler local problems, which could be approached concurrently. In this approach, inevitable uncertainties together with scientific and local knowledge are integrated to clarify and advance common interests. This policy-making approach is adaptive and incremental. Successful local policies are accumulated to build up comprehensive (national, regional even global) policy solutions; failed policies are terminated. Responsive institutional arrangements are built to monitor the changes and ‘maximize the flexibility of human populations to respond creatively and constructively to’ climate change.¹⁴ Development, success and progress depend on the cumulative learning from various policy trials.

The interest of this approach lies in its community-based understanding. In each community, even in one country, climate change problems are different in a way that is peculiar to that community. That means only people in that community can have the knowledge to make ‘procedurally rational and politically feasible decisions’: ‘State, federal, and international officials cannot know enough to mandate policies appropriate for the many local communities under their jurisdiction, even if they are interested’.¹⁵ This approach aims to create a patchwork type of understanding and interaction among various local communities.

The question remains: which communities should be taken into consideration in this patchwork? Obviously not every community subject to climate change: ‘recently damaged or vulnerable communities already motivated to address their own problems’ should be the primary focus. These chosen ones should have a network supported by external actors (national, international) so they can ‘capitalize on their differences and similarities to evolve better policies without a global master plan imposed from the top down’.¹⁶

Adaptive governance of environmental policies seems promising to facilitate climate change policies caused by the complexity of actors but it is not free of criticisms. This

¹⁰ S. H.-Dodds, R. Nelson, D. C. Cook, *Adaptive Governance: An Introduction, and Implications for Public Policy*, ANZSEE Conference, Noosa Australia, 4-5 July 2007.

¹¹ For the details of polycentric institutional arrangements see: M. McGinnis, (ed.) *Polycentric Governance and Development: Readings from the Workshop in Political Theory and Policy Analysis*, (Ann Arbor: University of Michigan Press, 1999).

¹² M. Imperial, ‘Institutional Analysis and Ecosystem-based Management: the Institutional Analysis and Development Framework’, *Environmental Management*, Vol. 24, 1999, 449–465.

¹³ For the details see: C. S. Holling, *Adaptive Environmental Assessment and Management*, (MI: Michigan University, 1978). See also: R. D. Brunner and A. H. Lynch, ‘Adaptive Governance: Proposals for Climate Change Science, Policy and Decision Making’ in A. Sumi, K. Fukushi, A. Hiramatsu (eds.), *Adaptation and Mitigation Strategies for Climate Change*, (Tokyo: Springer, 2010), 269-284.

¹⁴ S. Rayner, E.L. Malone, *Human Choice & Climate Change*, Vol. 4, (OH: Battelle Press, 1998), 120.

¹⁵ R. D. Brunner and A. H. Lynch, ‘Adaptive Governance: Proposals...’, 277.

¹⁶ R. D. Brunner and A. H. Lynch, ‘Adaptive Governance: Proposals...’, 281.

approach could be successful for creating a patchwork of local knowledge within the national scale but climate change issues are larger than national scale and as Evans¹⁷ stated, adopting this approach to an international problem could be very difficult since motivation to work together for different local governance actors of different nationalities could be low. The other criticism was put forward by Ostrom¹⁸ by stating the possibility of rapid alterations in climate change effects could challenge the resilience and robustness of the adaptive governance. Another criticism refers to the rawness of this approach - its potential success is still experimental and needs coordination to motivate local actors concurrently. The approach therefore becomes risky for acute climate change problems.¹⁹ There is also the risk of an inflexible bureaucratic system that could hinder the policy makers' focus on local interests and transfer them into the national policy making, and the risk of insufficient interconnectedness between the local/national/regional/global actors to develop adaptive policies. As Smit and Wandel²⁰ stated, the adaptive governance approach needs risk management by examining the adaptive capacity and adaptation measures required to improve the robustness of a system exposed to climate change.

These criticisms create constraints for practitioners and policy makers to cope with, in particular: 'i) ambiguous purposes and objectives of what should be achieved with governance; (ii) unclear contextual conditions in which governance takes place; and (iii) uncertainty around the effectiveness of different governance strategies'.²¹ Australia's climate change policy-making scheme clearly highlights these complexities and uncertainties.

Success of adaptive governance for environmental policies?: The case study of Australia

Secondary literature coverage on climate change subjects is vast in Australia, due to the climatic conditions of the past decade, including a prolonged and devastating drought, dust storms, soil erosion and declining water stocks.²² Furthermore, Australia is a high-energy consumer, reliant on fossil fuels, with one of the highest per capita emissions of GHG in the world.²³

¹⁷ For details see: J.P. Evans, *Environmental Governance*, (London: Routledge, 2011), 170-186.

¹⁸ E. Ostrom, 'Sustainable Social-Ecological Systems: An Impossibility?', The American Association for the Advancement of Science Annual Meeting: "Science and Technology for Sustainable Well-Being, San Francisco, 15-19 February 2007, 18-19.

¹⁹ M. Parry, O. Canziani, J. Palutikof, P. van der Linden, C. Hanson, (eds), *Climate Change 2007: Impacts, Adaptation and Vulnerability*, Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, (Cambridge, UK and New York: Cambridge University Press, 2007), 12, 13, 20, 21, 35, 136.

²⁰ B. Smit, J. Wandel, 'Adaptation, Adaptive Capacity and Vulnerability', *Global Environmental Change*, Vol. 16, 2006, 282-292, 285.

²¹ J. Rijke, R. Brown, C. Zevenbergen, R. Ashley, M. Farrelly, P. Morison, S. van Herk, 'Fit-for-purpose Governance: A Framework to Make Adaptive Governance Operational', *Environmental Science & Policy*, Vol. 22, 2012, 73-84, 74.

²² L.C. Botterill, M. Fisher (eds.), *Beyond Drought: People, Policy and Perspectives*, (Collingwood: CSIRO Publishing, 2003), 1-8; M. Alston, J. Kent, *Social Impacts of Drought: Report to NSW Agriculture*, (Wagga Wagga: Centre for Rural Social Research, Charles Sturt University, 2004); Alston, M. and Kent, J., *Impact of Drought on Rural and Remote Education Access: a Report to DEST and Rural Education Fund of FRRR*, (Wagga Wagga: Centre for Rural Social Research, Charles Sturt University, 2006); R. Garnaut, *The Garnaut Climate Change Review: Draft Report*, June 2008, <http://www.garnautreview.org.au>.

²³ According to the Australian Greenhouse Office (2006), the main sectors that are responsible for Australia's GHG emissions are electricity, gas and water (35%), agriculture, forestry and fisheries (24%), manufacturing (13%), services and construction (11%), residential (9%), and mining (8%).

This research uses Australia as a case study to refurbish the discussion on climate change policies by focusing on the cooperation patterns between the local and national governance actors within the framework of adaptive governance. Australia is a good example to illustrate the deficiencies in adaptive governance despite the national awareness and effort to mitigate the effects of climate change.

Canberra's steps to develop its climate change policy provide insight into the effectiveness of adaptive governance in climate change policies. Canberra was initially reluctant to ratify the Kyoto Protocol since the US, India and China did not participate and the Protocol did not include developing countries.²⁴ As a substitute, Australia introduced the National Greenhouse Strategy²⁵ in 1998. This strategy is particularly important because it addressed one of major deficiencies of Australia's current climate change policy: a national uniform regulatory regime. The strategy emphasized the importance of an integrated policy paradigm for climate change covering the federal, state and local governments and incorporated the private sector as well. Yet this strategy did not bring the estimated target for the reduction in green houses gases.²⁶ In February 2006, the Council of Australian Governments announced the introduction of a new national Climate Change Plan of Action and formation of a high-level inter-jurisdictional Climate Change Group as an overseer of policy implementations.²⁷ Still there was no standardized and uniform climate change policy paradigm between the local, the federal and the business sector.

Australia's response to climate change after 2006 focused on the Kyoto Protocol and the Carbon Pollution Reduction Scheme (CPRS). Australia finally ratified the Kyoto Protocol in December 2007 (it came into effect in March 2008).²⁸ That was one of the first international actions of Kevin Rudd's government to increase Australia's international visibility. Another reason for the late ratification of the Protocol was the reluctance of John Howard's conservative government to reduce carbon emissions in fear that such an action would disadvantage the country economically.²⁹ More specifically the 'connections' between the Howard government and the 'natural resources and energy sectors', and the decision of the USA not to ratify the agreement',³⁰ caused the delay in ratification.

In July 2008, the Labor government's Green Paper on CPRS³¹ was released and in May 2009, the Carbon Pollution Reduction Scheme legislation³² introduced into the

²⁴ W. Hare, 'Australia and Kyoto: in or out?', *University of New South Wales Law Journal*, Vol.24, No. 2, 2001, 556-564; The Commonwealth of Australia Department of Foreign Affairs and Trade, 'Climate change – Australia's position', 2006, <http://www.dfat.gov.au/environment/climate/> accessed on 19 May 2013.

²⁵ The National Greenhouse Strategy: Strategic framework for advancing Australia's greenhouse response, 1998, <http://www.greenhouse.gov.au/government/ngs/pubs/ngs.pdf> accessed on 19 May 2013.

²⁶ For the details about the estimates see: R. Sullivan, 'Greenhouse challenge plus: A new departure or more of the same?', *Environmental and Planning Law Journal*, Vol. 23, No. 1, 2006, 60-73.

²⁷ Council of Australian Governments' Meeting, 10 February 2006, <http://www.coag.gov.au/meetings/100206/index.htm> accessed on 19 May 2013.

²⁸ For details of Australia's ratification of Kyoto Protocol see: I. Barnsley, 'Dealing with Change: Australia, Canada and the Kyoto Protocol to the Framework Convention on Climate Change', *The Round Table*, Vol. 95, No. 385, July 2006, 399 – 410; A. Kellow, 'Australia's Role in International Climate Negotiations: Kyoto and Beyond', *Energy & Environment*, Vol. 19, No. 1, 2008, 43-54.

²⁹ For the details of John Howard government's attitude to Climate Change see: Hayley Stevenson, 'Creating a Climate of Convenience: Australia's Response to Global Climate Change (1996-2007)', *Energy & Environment*, Vol. 19, No. 1, 2008, 3-20.

³⁰ I. Barnsley, 'Dealing with Change: Australia,', 400.

³¹ For the details of the Green Paper see: <http://www.climatechange.gov.au/publications/cprs/green-paper/cprs-greenpaper.aspx>, accessed on 20 May 2013.

Parliament. The Senate voted against the legislation in August 2009 and the government reintroduced the legislation in October. After two years of discussions and controversy, Australia's carbon tax was adopted in October 2011.

One main reason for such a delay in carbon tax legislation was that as a substantial exporter of coal, 'public opinion has generally favoured low-carbon policies, even as politicians, fearing adverse impacts upon Australia's terms of trade, or adverse mobilisations of opinion by political opponents, prevaricated over policy alternatives'.³³ The hints from these steps show that the plurality of climate change actors in Australia exacerbates seemingly irreconcilable differences in perspective; this includes a considerable number of climate change sceptics.

These steps also denote the need for voluntarism³⁴ by the private sector to adopt into national climate change policies, which do not put mandatory targets in mitigating the climate change effects. Since there are no top-down targets for energy efficiency or green house gas emission reduction, every actor put their own targets, which could also create inconsistencies at the expense of national objectives.

In terms of adaptive governance Australia built up brand new plans and programmes for encouraging local mitigation responses and produce effective local environmental planning.³⁵ Two important examples for such steps are National Climate Adaptation Framework and Local Adaptation Pathways Programme, which provided financial support to local governments to develop local climate risk assessments and adaptation plans. Yet they ended up without any significant success.

One of the major reasons for such programmes' failures was a miscalculation or a misperception that climate change issues could be solved via focusing on the local level. For sure, the local governance and their adaptation to environmental polices are important but 'implementing effective local adaptation plans may be beyond the capacity of many local governments',³⁶ which are also 'ill-prepared for the complex challenges'³⁷ of climate change.

In Australia in addition to the general deficiency of weak practices in terms of local governments environmental policies there are also 'structural, procedural, and contextual constraints to local adaptation planning'. One important constraint is that some regions of Australia, such as Queensland, has a 'complex and multi-layered governance framework' and for effective policy implementations it requires the above-mentioned vertical coordination scheme from local to, even, federal level. In other words there is the lack of 'consistent and clear policy direction from state and federal governments' to the local governments.³⁸ Such lacking could create

³² For the details of the legislation see:

<http://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;query=Id%3A%22legislation%2Fbillhome%2Fr4127%22>, accessed on 20 May 2013.

³³ C. Rootes, A. Zito, J. Barry, 'Climate Change, National ...', 679.

³⁴ A. Griffiths, N. Haigh, J. Rassias, 'A Framework for Understanding Institutional Governance Systems and Climate Change: The Case of Australia', *European Management Journal*, Vol. 25, No. 6, December 2007, 415–427, 424.

³⁵ For the details of Australian Government's adaptive governance measures on climate change see: the Department of Climate Change, *Adapting to Climate Change in Australia: An Australian Government Position Paper*, Commonwealth of Australia, 2010.

³⁶ I. Baker, A. Peterson, G. Brown, C. McAlpine, 'Local government response to the impacts of climate change: An evaluation of local climate adaptation plans', *Landscape and Urban Planning*, Vol. 107, 2012 127– 136, 128.

³⁷ S. C. Moser, A. L. Luers, 'Managing climate risks in California: The need to engage resource managers for successful adaptation to change', *Climatic Change*, Vol. 87, 2008, 309–322, 310.

³⁸ I. Baker, A. Peterson, G. Brown, C. McAlpine, 'Local government response...', 128, 134.

misunderstandings in the local governments about how specific their policies should be and to what extent they can contribute to the national scale mitigating and/or adapting efforts.

In the light of the above-mentioned constraints, established standards are necessary for local plans recognizing policy implementation schemes from the state/federal level. Such schemes should take local governments' parameters, needs, and prospects into consideration via consultation with the local.³⁹

Neither Canberra's nor the local governments' or private sector's enthusiasm and efforts could bring a national uniform regulatory climate change policy in Australia. The plurality in different levels of governance and the competition among various actors that can affect climate change policies together with the need for voluntarism of these actors create uncertainty for the success of Australia's national climate change policy and inefficiencies in its implementation.

Conclusion

Climate change is one of the most fundamental and serious challenges that confronts world governments. Yet it is not equally noticeable every part of the earth at all times, which causes uneven policy responses from different governments. This hinders a comprehensive and coordinated global policy on climate change. Such deficiency of global climate change policy accentuates the significance of vertical cooperation platforms from national to global. In other words the issue may be global, but the political action necessary to address climate change is inevitably local and national/federal. However the national or the local side does not have smoothly operating climate change policies either.

Within the territorial borders of a country there is also an asymmetry in terms of climate change effects and therefore the policy reactions of local governments. For mitigating these asymmetrical interactions adaptive governance was put forward as a solution. Yet this approach is still not battle-proven. The obscurity of the purposes and objectives of governance, ambiguity of contextual framework on which governance operates and experimental status of adaptive governance, together with other criticisms mentioned above, underlines the complexities and difficulties that adaptive governance still does not provide a fully-fledged resolution for climate change. All these intermingling and interlocking complexities show that without building a sufficient consensus between different climate change actors about the need to act and without awareness of the structural and procedural deficiencies of adaptive local governance it is very difficult to develop a comprehensive, effective, and sustainable climate change policy.

This complexity of global climate change policy has, of course, many elements to be solved. Yet one approach to alleviate this problem could be focusing on the local-national/federal policy interactions, namely to address the problems of adaptive governance. For this, two major parts of adaptive governance should be sorted: governance and local-national/federal interactions. In terms of governance, two major issues should be solved. Firstly, the purpose of governance should be defined in a way

³⁹ For similar views see: I. Baker, A. Peterson, G. Brown, C. McAlpine, 'Local government response....', 135.

to balance varying interests, beliefs and values; secondly contextual conditions and expected outcomes of different governance mechanisms should be determined. In terms of smoothing over local-national/federal interaction the starting point should be constructing a flexible and inclusive model for national policy making apparatus that could be resilient to the changing of demands and policy proposals from the local. For such a model to be operational, a filter is necessary – one which would screen and distil the policy proposals from the local to the national/federal and vice versa. Such filter could be a council or even a committee but it should embody the bureaucratic, scientific and adaptive governance elements at the same time, with which it could act as a system of checks and balances to enhance accountability. This filter should also be responsible for what is included and excluded from policies and who is responsible and accountable for their implementation. Via these characteristics the filter could help the local and national/federal levels of governance to have a better understanding of cooperative policy making and its bureaucratic implementation. Such a filter could also help to build up a flexible, standardized and uniform climate change policy paradigm, which was seen as Australia's major deficiency in climate change policies, between the local, the federal and the business sector.

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