
**MANAGING THE RELATIONSHIP BETWEEN ADAPTATION AND COASTAL LAND USE
DEVELOPMENT THROUGH THE USE OF S 149 CERTIFICATES**

PAUL GOVIND*

Adaptation has emerged as a high priority in terms of climate change policy. This article is concerned with adaptation to sea level rise affecting coastal communities in New South Wales (NSW), Australia. Of particular concern is the manner in which the NSW Government has sought to include adaptation management into the existing land use planning and development architecture. This article focuses upon the use of planning certificates, which accompany a purchase of property, to inform prospective buyers of, inter alia, risks of sea level rise and inundation in a future affected by climate change. The use of these documents in such a way represents an interesting attempt to add a climate change dimension to the existing legal apparatus.

I INTRODUCTION AND BACKGROUND

In recent times the profile of adaptation to climate change has risen as a goal and object of international climate change law and policy. The Cancun Adaptation Framework mandates that adaptation is as vital in terms of priority as mitigation of Greenhouse Gases (GHG).¹ Adaptation is a policy that can assist all countries featuring heavy population concentration in coastal areas.² This article discusses recent legislative developments that attempt to integrate adaptation concerns into planning and development law in New South Wales (NSW). Specifically, this is achieved through amendments to the information requirements of s 149 (planning)

* BA/LLB (Hons) (Macq), LLM Candidate (Syd). Tutor, Macquarie Law School, Macquarie University.

¹ Conference of the Parties, *Report of the Conference of the Parties on its Sixteenth Session*, Cancun, Mexico, 29 November – 10 December 2010, FCCC/CP/2010/7 Add.1. See Decision 1/CP.16 *The Cancun Agreements: Outcome of the Work of the Ad Hoc Working Group on Long-term Cooperative Action Under the Convention* para 11 – 35, ('Cancun Adaptation Framework').

² See Agenda 21 that suggests up to 75% of the global population could be living within 60km from the coast by 2020 – *Report of the United Nations Conference on Environment and Development*, UN Doc A/CONF.151/26 Vol ii (1992). The Intergovernmental Panel on Climate Change (IPCC) defines adaptation as the 'adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities' Intergovernmental Panel on Climate Change, 'Summary for Policymakers' in *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*.

certificates included under the *Environment Planning and Assessment Act 1979* (NSW). When land is sold in NSW, the *Conveyancing Act 1919* (NSW) requires certain documents to be attached to the contract. One such document is a planning certificate issued under s 149. The s 149 certificate contains information regarding zoning of the land. Following legislative amendment, the scope of information to be included pursuant to the s 149 certificates regarding local councils that inhabit coastal areas includes environmental risks associated with climate change.

Whilst the application of adaptive measures is necessarily localised, a number of outcomes emerge that are valid to a host of other nations that feature densely populated coastlines. The Garnaut Report maintains:

There are two main building blocks for a productive response to the adaptation challenge. The first is to make sure we have a strong, flexible economy, with smoothly functioning markets. The second is to make sure we have sound information about possible impacts of climate change on various regions and activities and that information is disseminated in easily useable forms.³

This paper argues that re-conceptualization of private property is necessary in a future constrained by the impacts of climate change. As the risk of damage to coastal land increases in the context of climate change, the intersection between adaptation management and the incursion upon private property rights must be managed more effectively. Communication of risks to property posed by coastal hazards is an essential aspect of fostering greater understanding.

This article focuses on an often overlooked feature of the recent *Coastal Protection and Other Legislation Amendment Act 2010* (NSW) ('Amendment Act') which commenced operation early in 2011.⁴ This paper views the amendments through the prism of climate change adaptation practice and of particular concern are the amendments designed to alleviate the information deficit regarding climate change risks such as sea level rise. In order to achieve this goal, the Amendment Act, broadly speaking, operates to allow classification of certain coastal land into varying risk categories dependent upon the exposure of the land to certain environmental hazards such as sea level rise, erosion and inundation. When such a classification is made the information must then be included on the s 149, or planning, certificate that is attached to the relevant property.⁵ The overall effect as described in the Agreement in Principle Speech is to 'help future purchasers better understand the erosion problems associated with a particular parcel of land.'⁶

This article suggests that the use of s 149 certificates helps inject adaptation concerns into the existing land planning and development system. Information regarding risk and vulnerability is crucial to effective climate change adaptation policy. The use of

³ Ross Garnaut, *The Garnaut Review 2011: Australia in the Global Response to Climate Change* (Cambridge University Press, 2011) 101.

⁴ *Coastal Protection and Other Legislation Amendment Act 2010* (NSW) ('Amendment Act'). For a more detailed analysis of this legislation see, Zada Lipman and Robert Stokes, 'That Sinking Feeling: A Legal Assessment of the Coastal Planning System in New South Wales' (2011) 28 *Environmental and Planning Law Journal* 182.

⁵ *Environment Planning and Assessment Act 1979* (NSW), s 149.

⁶ New South Wales, Legislative Assembly, 22 September 2010, 3550 (Frank Sartor, Minister for Climate Change and the Environment).

information concerning restrictions on potential land use and development similarly underlies the use of s 149 certificates. This is therefore a natural crossover between climate change adaptation and broader land planning and development policy. The situation provides an opportunity to explore a potential synthesis by importing adaptation practices into the pre-existing planning and development architecture. The desire at all levels of government to provide climate risk information is understandable and desirable. Local government have voiced concerns of potential liability to property owners due to a perceived failure to properly and responsibly manage climate change impacts such as sea level rise.⁷ There is a strong argument for building greater transparency into the assignment of risks and rights relating to private property for the benefit of present and future generations. However, this compulsion to provide such information must be balanced against the inevitable backlash from owners that such measures will lead to a de-valuing of their property holdings and potentially impose a restraint on development rights and use of the property. This conflict was witnessed through events on the NSW Central Coast in 2010.⁸ Protests by private property owners over the decision by Gosford City Council to include information regarding likely sea level rise on s 149 certificates provided an insight into the issues that were in conflict. Owners were outraged at the prospect of plummeting house values – a representative argued, ‘they [the council] have demonstrated their duty of care to potential buyers of these properties and yet have not even considered the impact of this decision on their rate payers.’⁹ Gosford City Council maintained that the measures were part of the council’s duty of care to the community as well as present and future property owners.¹⁰ The other key area of discord related to consultation between the council and the owners of the affected property. Aggrieved property owners maintained that there was no consultation surrounding the decision whilst the council said that it was part of a broader ‘ongoing conversation’ with the community regarding climate change impacts.¹¹ The provision of information regarding climate risk has been described as an essential part of engaging and involving communities in coastal adaptation because ‘engaged and empowered communities and businesses can support greater adaptation action by local governments.’¹²

Conversely, a lack of understanding leads to confusion and resistance to government policy that undermines the effective implementation of adaptation measures. In the context of climate change impacts such as sea level rise, the root cause of confusion is often relates to the science itself. A problem such as sea level rise is difficult to observe directly as it occurs incrementally over a long period. Convincing property owners that this is a problem that requires action be taken in the present despite potential harm being anywhere between 50 – 100 years in the future is a stern challenge requiring effective communication. Failure to remedy communicative barriers such as this tends to lead to premature conclusions that the environmental

⁷ See, Department of Energy and Climate Change, Australian Government, *Developing a National Coastal Adaptation Agenda. A Report on the National Climate Change Forum* (November, 2010) 13, <<http://www.climatechange.gov.au/~media/publications/adaptation/developing-national-coastal-adaptation-agenda.pdf>>.

⁸ Terry Collins, ‘Residents furious as home values threatened’, *Central Coast Express Advocate* (Gosford), 21 May 2010, 1.

⁹ Ibid.

¹⁰ Ibid.

¹¹ Ibid.

¹² See above, n 7.

problem is not occurring and therefore any related government action is an unwarranted intervention. In this event, as seen through the example involving Gosford City Council, property owners display a strict insistence on rights of development as an indispensable part of private property.

The article begins by locating the need for climate change adaptation within the international legal context. Whilst adaptation was provided for under the *United Nations Framework Convention on Climate Change* (UNFCCC),¹³ more recent instruments such as the Cancun Adaptation Framework have heightened its profile – of particular interest is the need to communicate information to affected sectors of the population.

Subsequently, the paper will look closely at the relevant amendments to the *Coastal Protection Act 1979* (NSW)¹⁴ (CP Act) and the manner in which they provide coastal risk information. An examination into the extent to which these amendments necessitate a change in conceptions of private property will follow. This section will show that s 149 certificates provide an opportunity to bring adaptation concerns into the architecture of land use development and planning. It can help give effect to the process of mainstreaming adaptation concerns by highlighting compatibilities between adaptation and development. This can also have a positive effect as a practical application of adaptation policy by informing property owners, both current and prospective, of the dangers of climate risks, and by doing so avoiding costly consequences associated with hazards such as sea level rise and flooding. Restriction on private property rights in the name of the public interest is a feature of planning and development law. The introduction of climate change adaptation information as part of the requirements of s 149 certificates potentially adds a further layer of restriction in the broader public interest of sustainable development. Adaptation is best employed as complementing development in a manner that allows for identification and reduction of vulnerability:

Adaptation is understood to guide development successfully in light of increased risk from global environment, social and economic change.¹⁵

¹³ *United Nations Framework Convention on Climate Change*, opened for signature 4 June 1992, 1771 UNTS 164 (entered into force 21 March 1994). See Article 3, Principles:

3. The Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures, taking into account that policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at the lowest possible cost. To achieve this, such policies and measures should take into account different socio-economic contexts, be comprehensive, cover all relevant sources, sinks and reservoirs of greenhouse gases and adaptation, and comprise all economic sectors. Efforts to address climate change may be carried out cooperatively by interested Parties.

Further, Article 4, Commitments:

(1)(b) Formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change by addressing anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, and measures to facilitate adequate adaptation to climate change.

¹⁴ *Coastal Protection Act 1979* (NSW).

¹⁵ Lisa Schipper, 'Climate Change Adaptation and Development' (Working Paper No 107, Tyndall Centre for Climate Change Research, 2007) 9.

This paper does not suggest that the emergence of climate change adaptation policy has initiated a profound change in the operation of planning and development, nor indeed conceptions of private property rights. Rather, climate change adaptation presents a public interest issue that is now represented as a restriction upon land development.

II CLIMATE CHANGE ADAPTATION AND INTERNATIONAL LAW

A *UNFCCC and the Cancun Adaptation Framework*

The Sixteenth Conference of the Parties ('COP-16') took place at the conclusion of 2010 in Cancun, Mexico. The most notable and enduring feature of COP-16 has been the Cancun Adaptation Framework. Whilst the Adaptation Framework is primarily directed at assisting adaptation for developing countries, the document reiterates that adaptation is a challenge faced by all Parties and "invites" all Parties to enhance action on adaptation.¹⁶ The instrument recommends that best practice adaptation must follow a 'participatory and fully transparent approach.'¹⁷ Included as part of enhanced action is '(h) strengthening data, information and knowledge systems, education and public awareness.'

The Adaptation Framework also made provision for the establishment of an Adaptation Committee to help promote coherent adaptation policy in line with the UNFCCC through such functions as:

- (a) Providing information and recommendations, drawing on adaptation good practices, for consideration by the Conference of the Parties when providing guidance on means to incentivize the implementation of adaptation actions, including finance, technology and capacity-building and other ways to enable climate-resilient development and reduce vulnerability, including to the operating entities of the financial mechanism of the Convention, as appropriate.¹⁸

Additionally, the Adaptation Committee shall undertake:

- (b) Strengthening, consolidating and enhancing the sharing of relevant information, knowledge, experience and good practices, at the local, national, regional and international levels, taking into account, as appropriate, traditional knowledge and practices.¹⁹

In order to fulfil this function, the Adaptation Committee will draw upon the experiences of bodies within and external to the UNFCCC including the Nairobi work programme due to its role in knowledge sharing and engaging stakeholders in order to, *inter alia*, facilitate 'an effective learning-by-doing approach to adaptation.'²⁰ Best practice principles have been established against which adaptation

¹⁶ *Cancun Adaptation Framework*, para 14.

¹⁷ *Ibid*, para 12.

¹⁸ *Ibid*, para 15.

¹⁹ Ad Hoc Working Group on Long-term Cooperative Action under the Convention, *Synthesis Report on the Composition of, and modalities and procedures for, the Adaptation Committee, including linkages with other relevant institutional arrangements*, 14th sess, Agenda item 4, FCCC/AWG/LCA/2011/3 (Bangkok, 5–8 April 2011, and Bonn, 6–17 June 2011) para [14] – [15], 7.

²⁰ *Ibid*, para [24] – [28], 9–10.

programs in individual nations can be measured against. Whilst specific adaptation planning takes place within a localised context, there are some universal measurements of an ideal approach.

Of particular concern is stakeholder engagement and knowledge management, and ways in which this can be managed effectively. The Nairobi Work Programme lists a number of ‘Good Practices and Lessons Learned’ in relation to a series of case studies.²¹ Included is the finding that, in terms of planning adaptation action, community-based approaches must respond to vulnerabilities using techniques that are developed in conjunction with, rather than imposed upon, communities. Further, in terms of implementing targeted adaptation actions, it is preferable to engage as many stakeholders as possible to enable a democratic and transparent approach. In addition, experiences in adaptation programmes should constitute shared knowledge that can assist future adaptation planning and implementation of practices. Though adaptation remains context specific to the Nairobi work programme, there is value in sharing information on practices through the international community so that they can be ‘considered, replicated, improved and/or adapted to suit different needs.’²²

Australia’s population is heavily concentrated on the coastline making it an outstanding candidate to share knowledge and experience on the success of climate change adaptation in relation to coastal hazards, including sea level rise. This article is partly driven by the expectation that developed countries will participate in the international arena to help provide a coherent approach to adaptation. The recent amendments in NSW present a novel approach but reveal some broader lessons about the intersection between private property and effective adaptation management. The issues discussed in this paper underline positive and negative aspects of attempting to achieve the aforementioned goals of providing information, education and public awareness.

B *Best Practice Climate Change Adaptation Principles*

Provision of coastal climate risk information is vital. Environmental uncertainty is a key factor in motivating proactive and anticipatory loss prevention measures. Adaptive management is an approach that attempts to accommodate such uncertainty through ‘experimental management in the face of uncertainty’ based on best available science detailing climate change impacts.²³ In terms of appreciating and incorporating the risk of future damage, adaptation management seeks to avoid optimistic assumptions about the future and sponsors incremental decisions where information is sufficient.²⁴ The overall effect is to build adaptive capacity in the face of

²¹ United Nations Framework Convention on Climate Change, *Highlights of the Contribution of the Nairobi Work Programme, Assessing Climate Change Impacts and Vulnerability, Making Informed Adaptation Decisions* (Climate Change Secretariat, 2011). The Nairobi Work Programme breaks climate change adaptation practice and management into four phases: Assessment, Planning, Implementation and Monitoring Evaluation. Stakeholder engagement and knowledge management are relevant to each phase.

²² *Ibid.*, 35.

²³ Jan McDonald, ‘Mapping the Legal Landscape of Climate Change Adaptation’ in Tim Bonyhady, Andrew Macintosh and Jan McDonald (eds), *Adaptation to Climate Change* (The Federation Press, 2010) 1, 29.

²⁴ *Ibid.*

uncertainty. Information on risk and vulnerability, and the communication of such information, is crucial to developing adaptive policy.

The use of information detailing coastal climate hazards is crucial to minimising the degree of risk of harm. Adaption practices work best when they anticipate or prevent harm. These key words indicate that adaptation is concerned with the risk of damage occurring over the long-term – that is, policies are particularly orientated toward the future.²⁵ The particular type of harm being guarded against may not be immediately apparent at the time when adaptation measures are taken but will manifest themselves in incremental stages. A particular form of harm is the loss caused by sea level rise. Whilst sea level rise has and will occur independent of climate change, the projected rate of the rise is expected to climb with the increase in global temperature.²⁶

In this sense, climate change is best characterised as an additional stressor exacerbating an already precarious situation for coastal residents, government and the public in general.²⁷ It is impossible to legislate comprehensively for climate change adaptation - given the varied impacts of climate change any attempt would be unwieldy and ineffective. Adaptation practices must be tailored to local conditions and therefore implemented at a level closest to where the impacts are experienced.²⁸

Despite scientific consensus regarding the broad nature of climate change consequences, an element of uncertainty surrounds predictions upon which adaptive decisions are based. Of particular relevance to sea level rise is the effectiveness of mitigation policies in reducing GHG emissions. Increased rates of emissions will lead to higher global temperatures and consequently a more rapid sea level rise.²⁹ The interrelationship between climate change mitigation and adaptation means that decisions on the required scale of adaptive measures are complex.

III COASTAL PROTECTION AND OTHER LEGISLATION AMENDMENT ACT

The recent amendments must be viewed in the broader context of new measures adopted by the NSW government to combat sea level rise. The documentation consists mainly of new policy guidelines that are designed to assist local councils adopt a best practice approach to climate change adaptation. The CP Act is the principal piece of legislation that applies to the NSW Coastal Zone. The Act serves the stated objective of ‘protecting the coastal environment for the benefit of present and future generations.’³⁰

²⁵ Ibid, 25.

²⁶ See, Department of Environment, Climate Change and Water, New South Wales Government, *New South Wales Sea Level Rise Policy Statement* (October, 2009), <<http://www.environment.nsw.gov.au/resources/climatechange/09708sealevelrisepolicy.pdf>>.

²⁷ See, McDonald, above n 23.

²⁸ Ibid, 24.

²⁹ See, M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson (eds), *Climate Change 2007 – Impacts, Adaptation and Vulnerability Contribution of Working Group II to the Fourth Assessment Report of the IPCC Climate Change 2007 – Impacts, Adaptation and Vulnerability* (Cambridge University Press, 2007).

³⁰ See *Coastal Protection Act 1979* (NSW), s 3.

The *New South Wales Coastal Policy 1997* reiterates this concern and underlines the commitment to promote ecologically sustainable development of the New South Wales coastline.³¹ The instruments regulating coastal protection were not drafted or designed to deal with climate change adaptation *per se*, but rather natural coastal erosion processes including sea level rise. Climate change will exacerbate the rate at which sea level rise occurs and it is essential that this is recognized in responsible land use planning.³²

In the wake of the Fourth IPCC Assessment Report in 2007, the NSW Government issued a document entitled *Sea Level Rise Policy Statement*.³³ The document promotes an adaptive risk-based approach to managing the impacts of sea level rise, and whilst it does not preclude development in coastal areas exposed to risk, it ensures that development is adapted to such risk. Guidance is provided through sea level rise planning benchmarks for an increase above 1990 mean level sea levels of .4m by 2050 and .9m by 2100,³⁴ whilst detail about the application of this information in land use planning and development assessment can be found in the *NSW Coastal Planning Guideline: Adapting to Sea Level Rise*.³⁵ Some of the adaptation principles mentioned earlier have been translated into the *New South Wales Coastal Planning Guideline: Adapting to Sea Level Rise*. The Guideline features six planning principles. Of particular relevance to this paper are planning principles 1 and 2:

Principle 1: Assess & evaluate coastal risks taking into account the sea level rise planning benchmarks

Principle 2: Advise the public of coastal risks to ensure that informed land use planning & development decision-making can occur.³⁶

Whilst lacking in legal force, the guidelines highlight crucial factors, such as provision of information relating to climate change risk, and mentions the role played by s 149 certificates.³⁷

³¹ New South Wales Government, *New South Wales Coastal Policy 1997* (October, 1997), <<http://www.planning.nsw.gov.au/plansforaction/pdf/PPARTA.PDF>>.

³² See, above n 26, *New South Wales Sea Level Rise Policy Statement*.

³³ Ibid.

³⁴ House of Representatives Standing Committee on Climate Change, Water, Environment and the Arts, *Managing our Coastal Zone in a Changing Climate: The Time to Act is Now* (October, 2009), Fig 4.2 <<http://www.aph.gov.au/house/committee/ccwea/coastalzone/report.htm>>.

³⁵ Also see: Department of Environment, Climate Change and Water, New South Wales Government, *Coastal Risk Management Guide: Incorporating Sea Level Rise Benchmarks in Flood Risk Assessments* (August 2010), <<http://www.environment.nsw.gov.au/resources/water/coasts/10760CoastRiskManGde.pdf>> and Department of Environment, Climate Change and Water, New South Wales Government, *Flood Risk Management Guide: Incorporating Sea Level Rise Benchmarks in Flood Risk Assessments* (August 2010), <<http://www.environment.nsw.gov.au/resources/water/coasts/10759FloodRiskManGde.pdf>>.

³⁶ Department of Planning, New South Wales Government, *New South Wales Coastal Planning Guideline: Adapting to Sea Level Rise* (August, 2010), <<http://www.planning.nsw.gov.au/LinkClick.aspx?fileticket=VYjmQirQIAk%3d&tabid=177&language=en-US>>.

³⁷ Ibid. The discussion of s 149 certificates is found under section 2.5 Making Information Available To The Public and suggests that other means should be considered to inform landowners and the broader coastal community, p 7.

The Amendment Act enhances means of providing information relating to coastal risks that involve certain properties. The relevant part of the Amendment Act operates in relation to Schedule 4 of the *Environmental Planning and Assessment Regulation 2000* ('EPAR').³⁸ Schedule 4 of the EPAR details what type of information must be included on s 149 certificates that are attached to any sale of land as provided under s 149 of the *Environmental Planning and Assessment Act 1979* (NSW) ('EPAA'). The use of s 149 certificates is to provide details of land vulnerability and the expected council response. There is clear concern for future development in areas that are subject to potential coastal hazards. Of particular relevance to this paper, Schedule 4A(3) allows for the inclusion on s 149 certificates of:

- (3) such information (if any) as is required by the regulations under section 56 B of the Coastal Protection Act 1979 to be included in the planning certificate and of which the council has been notified pursuant to those regulations.³⁹

The Amendment Act connects the operation of the EPAR to the CP Act. The Amendment Act inserted s 56B into the CP Act dealing with 'Categorisation of Coastal Risks To Land'.⁴⁰ The provision allows the use of the *Coastal Protection Regulations 2011* (NSW) ('CP Regulations') to categorise land within the coastal zone according to the level of exposure to coastal risks and hazards. Section 149(2) certificates are once more engaged as the CP Regulations may require the inclusion of a statement regarding the risk category that applies to the relevant parcel of land. Part 4, clause 13 of the CP Regulations lists the coastal hazard risk categories. The categories can be applied to properties facing present day hazards and those that will likely be adversely affected in the future – underlining a commitment to future purchasers and property holders. Under cl 13 the categories are as follows:

13 Coastal hazard risk categories

Land within the coastal zone that is, or is likely to be, adversely affected by a coastal hazard may be categorised under this Part according to the following risk categories:

- (a) Risk Category 1—that the land is, or is likely to be, adversely affected by the coastal hazard at the present time (a current coastal hazard),
- (b) Risk Category 2—that the land is not, and is not likely to be, adversely affected by the coastal hazard at the present time, but is likely to be adversely affected by the coastal hazard in the year 2050 (a 2050 coastal hazard),
- (c) Risk Category 3—that the land is not, and is not likely to be, adversely affected by the coastal hazard at the present time or in the year 2050, but is likely to be adversely affected by the coastal hazard in the year 2100 (a 2100 coastal hazard).⁴¹

For the purposes of s 56B (b) of the CP Act, clause 14 provides that the determination of whether particular land be allocated to a risk category for a coastal hazard resides with the Minister for Planning. If such a determination is made, information regarding the relevant coastal risk category must be included on the s 149 certificate that attaches to the property. Under cl 15 the information must include:

³⁸ *Environmental Protection Assessment Regulations 2000* (NSW).

³⁹ *Environmental Protection Assessment Regulations 2000* (NSW), Sch 4A(3).

⁴⁰ *Coastal Protection Act 1979* (NSW), s 56B.

⁴¹ *Coastal Protection Regulations 2011* (NSW), cl 13.

- (a) the year that the determination was made, and
- (b) the risk category to which the determination has allocated the land in relation to each coastal hazard that adversely affects, or is likely to adversely affect, the land.⁴²

Section 149(5) of the EPAA allows a rather broad ambit for inclusion of information regarding climate change related coastal risks. The subsection provides that a council may, as part of s 149 certificates, include advice on ‘such other relevant matters’ affecting the land of which it is aware. According to a Department of Planning Circular, it appears that “relevant matters” must be considered within the broader context of guidelines and policy provided by the NSW government with regard to sea level rise – this includes sea level rise benchmarks that have been calculated to reflect heightened levels of sea level rise caused by climate change.⁴³ The Department recommends councils consider the following notation:

This land has been identified as being affected by projected sea level rise. In identifying coastal risks caused by projected sea level rise, council is to consider the NSW sea level rise planning benchmarks. Those benchmarks specify an increase above 1990 mean sea levels of 40cm by 2050 and 90cm by 2100.

- In the event of a 40cm sea level rise, this land will be affected by (coastal erosion/tidal inundation and / or coastal flooding).
- In the event of a 90cm sea level rise, this land will be affected by (coastal erosion/tidal inundation and/or coastal flooding).⁴⁴

A *Mainstreaming Adaption with the assistance of s 149 certificates*

Climate change is characterised as an issue that affects the world and society jointly. It is an environmental challenge that requires broad scale policy implementation and adaptation measures advertised as a public good. Information regarding climate change risk is the foundation to effective adaptation policy. Similarly, information regarding such risks needs to form part of land planning and development policy and furthermore must be communicated to all relevant parties. Both climate change adaptation and land development policy share an objective to avoid development in areas prone to climate change impacts such as sea level rise and coastal inundation. Avoidance of development in such high risks areas, whilst it might impair private property rights, is justified in terms of the public interest and sustainable development.

The commonality of objectives between adaptation and development allows mainstreaming of climate change adaptation and development – this set of legislative changes arguably demonstrates an attempt to mainstream adaption into the existing land development and planning architecture. Private property holders cannot necessarily use the land subject of the property holdings that would be detrimental to others, including future owners. The conflict is not representative simply of owners

⁴² *Coastal Protection Regulations 2011* (NSW), cl 15. Clauses 7 and 7A of Schedule 4 of the EPA Regulations require that s 149 certificates include information on where development controls relating to coastal hazards or flooding apply to the subject land.

⁴³ See, Department of Planning New South Wales, *Amendments to s 149 planning certificates related to coastal matters* PS-11-001 (24 January 2011).

⁴⁴ *Ibid.*

who want to maintain the values of their property. The inclusion of sea level rise information on the s 149 certificate can indirectly restrict, or at least strongly dissuade, owners from engaging in use or development that is characterised as heightening the risk of damage from such environmental events.

The conceptualization of ‘obligations’ and ‘harm’ in the context of climate change adaptation is challenging. To justify any government intervention, there must be a perception of harm to protect against. Harm, in the context of climate change adaptation, inflicted through sea level rise is characterised as social, and envisages a distribution of burden across the broader community.⁴⁵ An assessment undertaken by the Australian government in 2009 of climate risk to the Australian coast stated that \$63 billion worth of existing residential buildings are at risk of inundation by 2100.⁴⁶ This characterisation of harm necessitates a more social or community-centric view of private property. Climate change harm poses a threat to society broadly. Firstly, there is harm associated with poor development. Macintosh equates harm with the distressed suffered when people and property are threatened by natural causes.⁴⁷ The second, and more tangible consequence, involves information deficiencies as developers and potential purchasers of private property may not have sufficient resources to properly evaluate risks of inundation. However, the harm that eventuates from poor adaptation decisions is not necessarily felt through only environmental consequences – and this is especially true of sea level rise. Rather, harm takes the form of the distribution of financial penalties across the greater community through burdens such as taxes that arise as a consequence of damage to property caused by sea level rise and coastal inundation. The distribution of this form of harm among members of the community that did not contribute to its initial cause is characterised as an equitable issue – that is, the fairness of expecting the broader community to bear the brunt of something it did not cause.⁴⁸ This provides a ground for the intervention of government and the imposition of adaptive measures.

Macintosh describes market failure based on information deficiency as situations ‘where participants in markets are unable to obtain adequate information to evaluate the characteristics of a traded item.’⁴⁹ This reiterates the motivation for including risk information on s 149 certificates – an attempt to increase the channels and overcome barriers to obtaining climate information. This is compounded by the level of uncertainty that is endemic within climate change predicted outcomes and consequences. This can effect, to a different extent, government decision-making and provision of information regarding climate change risks and adaptations. The Garnaut Review maintains that adaptation will be secured at a lower cost if more individual Australians are involved in ‘anticipating problems before they arrive and taking into account all of the risks in their investment decisions.’⁵⁰

⁴⁵ See, Andrew Macintosh, ‘A Theoretical Framework for Adaptation Policy’ in Tim Bonyhady, Andrew Macintosh and Jan McDonald (eds), *Adaptation to Climate Change. Law and Policy* (The Federation Press, 2010) 38.

⁴⁶ Department of Climate Change, Australian Government, *Climate change risks to Australia’s coast: a First Pass National Assessment* (2009), 136.

⁴⁷ Macintosh, above n 45, 51.

⁴⁸ *Ibid.*

⁴⁹ *Ibid.*

⁵⁰ Garnaut, above n 3, 102.

In order to stave off consequences and the consequent harm suffered by the broader community through financial redistribution, government feels that it must intervene in terms of restricting development that carries a high flood related risk. The Garnaut Review stresses the importance of markets in providing information regarding risk and the “most immediate avenue” for addressing uncertainties of climate change.⁵¹ The lack of climate information regarding sea level rise will arguably lead, from the perspective of government, to failure to internalise the costs of sea level rise that might affect vulnerable coastal properties and lead to costly measures being taken in the future. Section 149 certificates can be viewed as a formal notice provision also used as a mechanism to address perceived market failure. From the government perspective, the market might take too long, if ever, to recognize climate risks such as sea level rise, and there is a need to provide information to those affected, both now and potentially in the future. The uncertainty that surrounds climate change impacts, adaptive practices and guidelines affects government decision-making as much as market response to risk. Freyfogle points out that the close relationship between property and law means that as the operation of law changes over time so does our conception of private property – like law, property is an “evolving institution”.⁵² Of course, changes in law often reflect changes in values, beliefs and priorities that prevail within the larger community, and are reflected in statements of the common good. The common good therefore allows restriction with regard to the use of property because it theoretically reflects government acting in the best interests of landowners and landless alike.⁵³ Singer maintains that, ‘owners have obligations as well as rights and that one purpose of property law is to regulate property use as to protect the security of neighbouring owners and society as a whole.’⁵⁴

A traditional function of s 149 certificates is to provide information of hazards that are detrimental to land development and planning. The inclusion of information relating to climate change impacts in s 149 certificates builds upon this idea and reinvigorates existing concerns about the precarious balance between environmental protection and development. The key question, identified by Schipper is, ‘whether adaptation indeed represents options for reshuffling the current understanding to ensure that “climate proof” development involves reducing vulnerability and not simply identifying responses to the impacts of climate change.’⁵⁵ Adaptation must be viewed as a process that is designed to reduce existing and future vulnerability associated with climate change. For this reason, adaptation should not be considered an end goal that can be implemented through a series of projects that remains external to development.⁵⁶ Put another way, the inclusion of climate risk information as part of s 149 certificates can “climate proof” future land planning and development. Informing prospective purchasers of risks associated with climate change can avoid high costs associated with damage to property and related consequences occurring in the future. Outside the context of climate change policy there exists a strong connection between land use development and planning, and management of natural

⁵¹ Ibid, 102.

⁵² Eric T Freyfogle, ‘What is Land? A Broad Look at Private Rights and Public Power’ (2006) 58(6) *Planning and Environmental Law* 3, 6.

⁵³ Ibid.

⁵⁴ Joseph William Singer, ‘How Property Norms Construct the Externalities of Ownership’ (Harvard Public Law Working Paper No 08 – 06, Harvard Law School) 3.

⁵⁵ Schipper, above n 15, 9.

⁵⁶ Ibid.

hazards. Inclusion of climate change risk information could improve linkages between adaptation and development. The legislative amendments represent a useful synthesis between adaptation practice and existing land planning and development mechanisms.

The use of information relating to climate change impacts as part of s 149 certificates can also help facilitate adaptation in practice. Despite a wealth of research detailing climate change vulnerabilities and impacts, there is comparatively little documented experience of practical applications of adaptation policy. The ‘ADaptation And Mitigation Strategies’ (ADAM) project undertaken in the European Union noted that engagement of relevant actors is necessary to handle the incremental changes of extreme weather patterns and ‘[a]lthough changing land use planning is a promising adaptation strategy to cope with climate change impacts, it is not yet extensively practiced.’⁵⁷ Mainstreaming adaptation activities in this context consists of injecting ‘adaptation actions into ongoing sectoral planning to reduce vulnerability.’ The use of s 149 certificates to convey information of climate change risk does present an interesting opportunity to facilitate the mainstreaming of adaptation.

The absorption of adaptation measures into existing development practices is an idea that has attracted much appeal and criticism in international circles. In the context of international law, the approach of mainstreaming adaptation mainly applies to funding and financing development projects. However, the underlying point of mainstreaming adaptation into development planning is whether the two ideas are so strongly linked that each process supports the other.⁵⁸ This extends to land planning, as Schipper notes:

From a policy perspective, the adaptation approach to development...centres around mainstreaming adaptation, which comes down to taking into account climate change in social, institutional and infrastructural development planning.⁵⁹

This approach is endorsed at the international level as seen in the Adaptation Policy Framework, developed by the United Nations Development Programme-Global Environmental Facility that emphasizes the mainstreaming as the preferred option for implementing adaptation strategy. The effectiveness of mainstreaming depends on the reduction of vulnerability to climate change related impacts. If development heightens exposure to climate related risks it is clearly inconsistent with the objectives of adaptation. Given that the land use planning and development has historically recognised the importance of coastal hazards such as sea level rise and coastal flooding, it is arguable that the promotion of sustainable development may be a less problematic way to ultimately achieve climate change adaptation.

Schipper maintains that vulnerability reduction should be absorbed into development policy rather than through the creation of explicit adaptation strategies, arguing that:

[O]ften the reasons that people are vulnerable to climate change have nothing to do with climate...while the adaptation approach necessarily focuses on adjusting to

⁵⁷ Mike Hulme, Henry Neufeldt, Helen Colyer and Angela Ritchie (eds), *Adaptation and Mitigation Strategies: Supporting European Climate Policy. The Final Report from the ADAM Project. Revised June 2009*. (Tyndall Centre for Climate Change Research, University of East Anglia, 2009).

⁵⁸ Schipper, above n 15, 7.

⁵⁹ *Ibid.*

reduce the specific impacts of climate change, the vulnerability reduction approach addresses the much more fundamental, underlying series of issues that cause these impacts to be difficult to address, which mostly have little or nothing to do with climate.⁶⁰

IV CONCLUSION

Ideally, the facilitation of climate change adaptation measures should take place within a dialogue between government and the community. The Cancun Adaptation Framework affirms that adaptation should take a ‘participatory and fully transparent approach.’ Whilst it can assist to influence the market to indicate coastal climate risk, s 149 certificates generally become relevant at the time of purchase of a property. Other measures are required in order to keep the community informed of exposure to coastal risk.

The National Climate Change Forum noted that engagement with community is the key. This involves more than just the notification of government restriction upon development and includes discussion and consistent updates on policy and strategy. This remains a key challenge for the future of coastal life in NSW and will represent a learning curve for other nations facing similar problems through both the developed and developing world. Macintosh comments that:

These adaptation choices need to account for current preferences, the state of climate science, future uncertainties and relevant equity considerations. There are no easy methods for resolving adaptation questions. Controversies will arise and there will be valid debates about the merits of policy responses.⁶¹

⁶⁰ Ibid, 11.

⁶¹ Macintosh, above n 45.

▼ Basic Description	
Title	Macquarie Journal of International and Comparative Environmental Law
ISSN	1448-8345
Publisher	Macquarie University * Centre for Environmental Law
Country	Australia
Status	Active
Start Year	2004
Frequency	Semi-annually
Language of Text	Text in: English
Refereed	Yes
Serial Type	Journal
Content Type	Academic / Scholarly
Format	Print
Website	http://www.law.mq.edu.au/html/MqJICEL/about.htm
▶ Subject Classifications	
▶ Additional Title Details	
▶ Publisher & Ordering Details	
▶ Price Data	
▶ Online Availability	
▶ Other Availability	