The dynamic of climate change in a multi-level governance environment

Abstract

Understanding the dynamic between the role of climate change mitigation and adaptation approaches is to explore one of the key policy areas for cities of the future. This is because climate change policy, and subsequent projects, implemented by governments are an example of a diffuse, dynamic and systemic policy for cities, which also function in an increasingly multi-level governance environment (MLG). Understanding the policy dynamic of climate mitigation and adaptation policy, and its role in this multi-level governance environment, is to understand one of the key challenges for cities in the achievement of liveability, sustainability and prosperity in the future.

This paper explores the role of climate change as a policy dynamic in cities, its current context and challenges for the future. This requires investigation of three issues. Firstly, the continued relevance and dynamism of the climate change policy dichotomy of mitigation and adaptation, its perceived benefits and potential restrictions, in the pursuit of systemic and meaningful sustainability goals for cities. Secondly, the challenge posed to the delivery of coherent, and consistent, climate change policy in an MLG environment. Thirdly, the role of legislation, regulation, market mechanisms and soft governance tools in this picture for local governments and in particular cities.

Introduction

Climate change is one of the most challenging yet dynamic policy areas facing cities today. It is present, and affects in some form, all decision-making for government and local governments in particular. As cities grow rapidly and a broader range of services and policy activities are expected from city governance, it is important that this key policy area is in tune and relevant for the needs of cities, as much as for discussion in a global or research based context. At present climate change policy is separated into mitigation and adaptation policy streams, these are then often addressed in isolation by different departments of government at the local, state, national and even global policy levels. Although there is merit in addressing the two areas separately in order to gain depth of research, this paper discusses the benefit of investing in a review, consolidation and synthesis of climate adaptation and mitigation approaches, so as to improve the complementarity of climate change policy and improve its efficacy in an urban, city and local government context.

Such an activity should be conducted in the spirit of moving onto the next phase in strategic policy development by viewing climate issues as either influencing behaviour approaches, or technological fix solutions, or a combination of the two. It is contended that the influencing behaviour and technological fix problem solving model, provides for a more strategic and coherent framework for addressing the current problems in the climate change policy field. These include, the opportunity for complementary rather than competing strategic policy development. This would result in more openness for more cross-cutting approaches across disciplines and government departments, rather than policy issues being dealt with on an individual project basis which, when developed in isolation, may reduce the impact or undermine the impact of other projects. A cross-cutting approach would also uncover opportunities for a more acute awareness of the potential for cumulative impacts and solutions that provide for cumulative benefits. This paper concludes that the competition between mitigation and adaptation has at times resulted in a loss of opportunity to develop options for influencing behaviour, and promoting technological buy-in across both climate mitigation and adaptation action planning.

These concerns have been identified in the UK (Tompkins 2005), Sweden (Nilsson, 2012) and Australia where there have been missed opportunities and the fragmentation of implementation due to the continued promotion of governance structures that retain this division at all costs, leading to a lack of synergy being achieved in the scoping of climate change policy problems. This is a particular issue for cities in the development of long-term planning and sustainable development goals across social, economic and environmental issues.

This paper briefly explores some of these concepts by investigating:

- The realisation of climate change policy in a dynamic multi-level governance environment.
- The requirement to acknowledge the limitations of the competitive adaptation/mitigation dichotomy and move to a new phase in climate

change policy. A phase that acknowledges the co-benefits in viewing problems as potentially being solved through an influencing or behaviour change perspective or requiring a technological fix solution or a combination of the two.

- Recognition that this new phase is particularly relevant in the context of local government and strategic planning for cities as mitigation and adaptation problems are apparent in areas including but not limited direct service areas such as infrastructure, planning, building design, transport and health.
- The role of soft governance tools, such as governance, action plans and partnership development (dominated by adaptation measures), and their legitimacy as a mechanism to influence real change through encouraging broad participation and collective action. This compares to more traditional forms of policy making through legislation and regulation on climate change issues (dominated by mitigation measures through measures such as legislating carbon pricing).
- Finally, this model provides a more synthesised and fluid scope for responding and building resilience to climate change impacts, by governments and other stakeholders.

The realisation of climate change policy in a dynamic multi-level governance environment

The rationale for this paper was from my experience in the development climate change policy over the last decade in both the UK and Australia. Over this time, at all levels of government climate change policy has increasingly been separated into problems that are either mitigation or adaptation in nature and the development of solutions to these problems have been categorised as mitigation and adaptation based solutions, "usually occurring in different policy domains and engaging different communities"(Tompkins. 2005:563). In the beginning this separation seemed a natural break between policy issues that dealt directly with policy decisions that were causing climate change, and those that were being adversely affected by decisions when impacts were not taken into account. As Tompkins notes of the UK experience this … dichotomy (arose) because of the perception that raising adaptation options in policy circles reduces the requirement for mitigation…. (where) (t)here is also recognition of the danger in setting up apparent trade-offs between adaptation and mitigation as this division could lead to separate policies being developed in a vacuum from one another (Tompkins, 2005:563). This can further lead to increased costs of managing climate change with little effect on climate risks (Kane & Yohe, 2000:2). This observation is further acknowledged within the Swedish experience where it is noted, that "prior to 2005, adaptation was seen as competitive with mitigation efforts and therefore had not been seen as a relevant policy issue" (Nilsson. 2012: 6).

The policy work in the early 2000's revolved around understanding early climate modelling and developing scenarios around potential impacts and ways of providing services or more broadly influencing lifestyle choices in order to mitigate and adapt to climate change impacts.

Over time, policy was increasingly separated into mitigation and adaptation and two changes occurred, one that issues around mitigation tended to attract quantitative minds including economists, engineers,

architects and planners and adaptation work tended to attract those in the human services and education fields. Tompkins draws the distinction between the two areas noting “the existing constituencies of adaptation and mitigation in most governments are only marginally overlapping. Energy planning and the carbon intensity of economic growth are usually high in the priorities of industry sectors, government and by consumers who are interested in security of energy. Adaptation within government is primarily dealt with by spatial planners and different (non-energy) sectors of the economy. It also involves different consumption and production decisions by house-holds from those relating to energy use” (Tompkins. 2005:569). This observation is further supported in the Australian experience in the Federal Government’s recent publications on adaptation and mitigation legislation (Australian Government. 2010 & 2012).

Although, it is appreciated that the separation of climate change policy into these two streams has provided a useful focus for research of climate change problems for government and policy makers to date, the dichotomy has given rise limitations in the scoping of climate change problems. This has lead to issues such as the development of an artificial competitiveness between the two streams, in terms of emphasis and prioritisation, and capacity to develop responses to climate risks in general (Tompkins. 2005:565). I have spent countless hours at workshops where a range of stakeholders have been tasked with prioritising policies, where the outcome was often unsatisfactory to many participants, due to competing agendas, and hence lacked sufficient buy-in to devote time and energy to promote, develop and fund the final list of priorities. This experience contrasted with my other work at the time on Strategic Environmental Assessment (SEA) where an assessment was made on the individual impact of a particular policy, in accord with the general SEA criteria and the cumulative impact of a given set of policies. A literature review of all relevant policies in the development of a given plan was undertaken for the purpose of environmental assessment, so that the widest scope for policies that may conflict with or enhance the benefits of the plan were identified. This was a key element for the SEA in investing in more holistic process in developing an agreed evidence base for decision-makers to determine a given course of action, in particular for long-term activities and provided key assurance measures for policy makers. When this evidence base achieved a level of consensus and buy-in from participants, only then was a plan presented and approved by council or cabinet within government.

The experience of working at the Federal, State and Local Government levels, on when dealing with climate change adaptation policy and projects, illustrated an emphasis on developing solutions that only dealt with adaptation scenarios based on an assumed level of mitigation success. The more optimistic a group of decision makers was about mitigation policy success, the less investment there has been in time and funds on adaptation measures during the lifetime of the policy. This response development process, if not exact, can then lead to two undesirable outcomes. The first is the risk of under adaptation with policies failing to address climate change impacts adequately. The second is maladaptation, where implementing some adaptation measures could actually lead to resources being wasted, and fear in the political sphere of being accused of wasting precious budgets on unnecessary adaptation. This has lead to the paralysis and/or lack of

definitive outcomes of many projects due to uncertainty. As policy makers embarked on initial climate change policy in the last two decades they made two assumptions, these are that the degree and likelihood of climate change indicators such as temperature change, rainfall, at least in the short to medium term would increase in certainty and therefore data inputs would increase in reliability, and that there would be consensus on the range and degree of impacts. Due to repeated failures to reach global agreement on carbon emissions targets, this optimism has waned over time with the requirement for increasingly complex and more costly adaptation is now being contemplated.

Over time, certainty has been inundated by increasing complexity, coupled with an unwillingness to agree on the scale of the problem, with some level of scientific consensus being achieved, evidenced by recent findings in IPCC reporting (IPCC. 2013:3). Yet politically, consensus on the degree of impact has not been achieved, or more accurately in the 'trial by media' for climate change (Holmes. 2013), even on some of the most basic assumptions that need to be agreed upon to make the dichotomy function without conflict. This problem was most acutely observed when developing policy solutions at the local government level in cities. This level of government was most heavily focused on implementation, requiring definitive decision-making as it is also the most heavily in tune with consulting the public, small business and property owners.

Local government and city planners often lack the authority to act on an issue due to decision-making powers being held at multiple levels of government. This lack of clarity on the certainty of assumptions that can be made about impacts, and the locus of authority on climate change policy, has undermined decision-makers efforts on policy and risk assessment. It has also in turn frustrated and disenfranchised the public, and the potential for active participation in climate change initiatives is eroded.

This has led to a desire to find a more constructive and definitive mode for developing climate change policy, that encouraged more fluid problem or knowledge sharing between levels of government, and more complementarity of project objectives, which may include a combination of both mitigation and adaptation outcomes. Therefore, it is posited that Tompkins (Tompkins. 2005:562) observation of the influencing behaviour change and technological fix as descriptors of potential solutions to climate change policy issues, provides for increased capacity for action on climate risk, act due to their attributes for complementarity and the realisation of cumulative benefits.

The dynamic multi-level governance environment and a role for city governments

Climate change policy challenges are apparent at every level of government from the global to the local. Much of the work in the scientific sphere has been focused on determining the scale of the impacts of climate change, ie. some impacts are isolated and more acute and some are of a more general nature. Much of the work in the policy sphere has been absorbing these impacts, and making determinations on which level of government is responsible for the problem, and providing a solution (which may include funding that solution).

Bache notes one of the valuable contributions of the MLG approach is its capacity to “operate at multiple scales in order to capture variations in the territorial reach of policy externalities. Because externalities arising from the provision of public goods vary immensely – from planet-wide in the case of global warming to local in the case of most cities so should the scale of governance” (Bache. 2004:5).

The first challenge of the climate change policy is to explore the continued value and relevance of the climate change policy dichotomy, if the separation of the two continues into mitigation and adaptation streams. This paper acknowledges the value of this dichotomy up to the present, in providing an opportunity to focus in depth on analysing and developing ideas around pricing carbon and changing decision-making processes around infrastructure, and our behaviour in the use of resources. This analysis provided an opportunity to develop modes of action in order to limit the extent of climate change, and reduce the negative impact of unavoidable changes on a number of fronts. However, the problem with the dichotomy is its limitation in offering a view that encourages a choice between a reduction in climate impacts or adaptation to climate impacts. In investing in mitigation measures, it is logical to conclude that less investment is required to adapt to climate changes. This calculation is then dependent on how optimistic one feels about the quantitative reduction, and therefore preservation of resource benefit, that a particular mitigation measure may yield. This problem has posed a major issue for local government and particularly for cities, as there is a fear that overinvestment in adaptation measures will lead to maladaptation, and accusations of wasting public funds. This fear leads to pressure being placed on policy makers to make a decision with often a long-term time frame of 20 years or more in an atmosphere of short political cycles. Cities are particularly vulnerable to inertia as they are also challenged with a number of other policy drivers such as population growth and subsequent pressure on housing and transport policy. Where these responsibilities are shared between State and local government in Australia, there tends to be an atmosphere of NIMBYism (Not In My Back Yard), which poses significant problems for either the development of dynamic, agile government working in partnership to deal with climate risk, and a prioritisation of protecting neighbourhoods in the immediate term to preserve the “character of local communities”(Kelly. 2013).

Polycentricity: a multi-level governance approach

The limitations of the current approach have given rise to further investigations on how to apply more dynamic approaches such as Ostrom’s view on a polycentric approach. Polycentricity can be defined as “one where many elements are capable of making mutual adjustments for ordering their relationships with one another within a general system of rules where each element acts with independence of other elements”(Ostrom. 1999:57). Ostrom has applied this concept very effectively to the climate change policy challenge (particularly focusing on mitigation activity and the current problems with achieving unilateral international agreement post Kyoto), identifying it as a ‘classic collective action problem’. Values of the approach identified include: experimentation at multiple levels of government and in multi-scaler contexts; strategies that are both suitably localised and globally integrated in terms of a State’s domestic requirement and international

responsibilities; an assessment of the costs and benefits of the various strategies tested and finally; consideration of the outcome of these initiatives within specific locations and ecosystems and compare the results with other locations (Ostrom. 2009: 9-11). This approach with its elements of reduced scale experimentation and shared learning, increases individual commitment to reducing emissions activity, with the key outcomes being responsibility at the small to medium scale government level, linked by monitoring to ensure that the proposed benefit of the activity matches the outcome and information networks (Ostrom. 2009:16). Ostrom's review uses an example of local and state government action on air pollution monitoring and energy reduction projects, in achieving real gains in carbon reductions, committed to by the US government nationally. These are useful examples in the development of projects to address a desire for public participation in cleaner air and energy reduction activities (including a Californian cap-and-trade program), which have the benefit of achieving the more strategic goals for emissions reductions.

The key elements to Ostrom's work on collective action focuses on the value of multi-scaler and multi-level governance approaches, identifying the appropriate level of government where the responsibility for an action lies, without the requirement for signed international agreement, but rather focusing energy on where the desire for action and networks to facilitate those actions exist.

This is a key point for cities where the value of a multi-level and multi-scaler approach, recognises that mapping out current institutional spheres and networks is as valuable in achieving climate change policy goals. Where, a polycentric approach can create real gains in the present, rather than waiting for international agreement to be finalised or national political consensus to be achieved.

Others theorise (Peel. 2012:6) that the value of this approach also provides opportunities to relate the value in achieving action now to innovations with the technological and institutional spheres. Cities with their capacity for agility, yet the weight of authority, through collective partnerships like the C40/Clinton Climate Change Initiative[1], are in a unique and enviable position to leverage opportunities and use their networks to achieve significant gains in learning, in both technological investment, and which combined sets of actions are the most effective in addressing the long-term impacts of climate change (Ostrom. 2013:4).

This formulation indicates some parallels with Tompkins complementary policy actions for technological change and social behaviour already discussed. The development of an understanding of the type of institutions and networks that are available is also vital for cities in understanding their responsibility for emissions and adaptation investments, where an accurate analysis or audit of these actions is dependent "on their geographic location, ecological and economic conditions, prior preparation for extreme events, and past investments" (Ostrom. 2013:4). Tompkins also noted similar value in the identification of local culturally and regionally specific characteristics, "different societies of groups will need different characteristics and tools to respond to different hazards and different types of climate change" (Tompkins.

[1] http://www.c40cities.org/. accessed 10th November 2013.

2005:567). Recognition of this will facilitate the development of better feedback mechanisms and accordingly will provide for more tailored responses and capacity building initiatives.

In conclusion, the emergence of the MLG approach provides cities with opportunities as never before to embrace their capacity for agility in the development of effective governance arrangements. To provide the forum for "climate change regulation to take place on many fronts and in different fora ….(where it is essential to) examine strategies adopted to deal with climate change at a range of scales …..(and) allow consideration of the contribution made by activities of non-state actors, such as businesses, environmental groups and communities"(Peel. 2012:5). Where, in the absence of overarching international agreements on carbon reduction quotas, it is essential that we now explore options for alternative modes of action to the previous 'top-down' climate governance model. Recognition of the value of the contribution of cities in particular, to utilise their networks and agility, and to enhance policy activity that is increasingly trending towards "fragmented, decentralised and grassroots empowerment… a more kaleidoscope world consisting of a 'multi-layered system' of activity undertaken by states, international institutions, the private sector and non-government sector" (Peel. 2012:7).

The limitations of the adaptation/mitigation climate change policy dichotomy

The adaptation/mitigation dichotomy is often divisive and specific in its decision-making context, because a decision to adapt is often presented as a 'realistic' response to an agreed degree of inevitability of a climate impact. Whilst a decision to mitigate is philosophically more aspirational in its goal to reduce emissions, a response which signals some level of avoidance of the impact. Strong proponents of mitigation argue that successful mitigation will reduce the requirement for adaptation, and therefore question the wisdom of investment in adaptation over the long term.

"Dichotomies can create fractured and biased images of the world and reduce the possibility of finding holistic responses that consider sustainability, that are dynamic and learning based, that build on strengths rather then needs, and that put human well-beings at the centre of the issue" (Tompkins. 2005:562).

Rather than identifying the necessary co-benefits that could arise from complementary implementation of solutions, this competitiveness has created potential barriers and a lack of synthesis and dynamism between the two streams, where different and divergent solutions have been cultivated. This is because by their very definition mitigation and adaptation compete for relevance within government departments many of whom then competed in terms of research, solution development and funding. As a result government policy makers still interpret the results of global scientific reports on climate change impacts, such as the IPCC 5th Assessment Report, as either a either a climate mitigation or adaptation policy problem.

An alternative view of climate change problems and solution formulation has been suggested by Tompkins (Tompkins. 2005:562) to view potential climate change problems as having a behaviour change and/or technological fix solution or, as in most cases, a combination of the two.

Climate change is also an excellent example of a diffuse policy problem developing in the context of a dynamic multi-level governance environment, where it is developed and interpreted at every level of government from the global to the local, and equally from the local to the global. Policy equally trickles down and floats up in influencing and knowledge sharing between government levels as never before, further complicating the competitive model. Whereas the behaviour change/technological fix categories provide the necessary openness to dynamic, synergistic and systemic approaches required for the next phase in the development of climate change policy at all government levels. Climate change impacts by their diffuse nature are apparent across all government departments, at any level of government, with problems also varying in scale, so it is necessary to maintain monitoring mechanisms that assess impacts and potential solutions at a broad base level.

The new phase of influencing behaviour and technological fix problem identification through to solution development, and why it's so important for cities

The influencing behaviour and technological fix framing, is a better mode for decision-making within climate change policy, as it recognises that the context is one where decision-makers are faced with making decisions about the "trade off between investment in the development and diffusion of new technology, and investment in encouraging and enabling (including the willingness of) society to change its behaviour or adopt the new technology" (Tompkins. 2005:562). Furthermore, Tompkins posits that this framing of responses reflects the capacity of a society to change (reduce) their greenhouse gas emissions; their perceived vulnerability to climate impacts; and their capacity to modify their social behaviour and physical environment (Tompkins. 2005:562).

For cities their willingness for social and behaviour change to accommodate climate change policies, will be reflected by their capacity to invest in and innovate in technological solutions to climate change problems. Responses will also be dependent on the capacity for multi-scale responses, multi-level governance and institutional arrangements and the timeframe in which these responses occur.

The current decision-making process is reliant on a value judgement being made that is either 'realist' or optimistic, and result of a projected outcome at a given point in time in the future. For example, the sea level will rise X amount so infrastructure must be Y in specification. As debate rages on the answer to X, it becomes impossible to make an adequately learned decision about Y. The alternate technological capacity and societal behaviour change frame, at least provides an opportunity to invest in a risk reduction and/or resource preservation solution, that seeks out the best solutions in a blended approach, rather than having to cross the mitigation adaptation divide. Whilst behaviour change, has the potential to reduce the impact further without forming a competitive notion between making a 'choice', such as that made within the adaptation and mitigation dichotomy. The problem with this 'choice' model is both dependent on an individual or group of decision-makers attitude towards risk and in making a 'choice' and developing solutions down that pathway, this can often lead to "separate policies being developed in a vacuum from one another" (Tompkins. 2005:263), which can lead to over

investment and overcompensation in reducing some risks and overlooking others altogether. This has been the dilemma for many local government policies and choices around projects within cities where decisions are undertaken at the individual level, where there is actually a requirement for “adaptation and mitigation activities (to be) undertaken together as part of the management of risk and resources” (Tompkins. 2005:562).

Conclusions

It is the position of this paper that the current approach to the climate change policy agenda in separating the climate change adaptation and mitigation policy agendas has its limitations, and can place constraints on, and create challenges for, decision-making processes examples include the implementation of MLG approaches outlined above. The demarcation of mitigation and adaptation climate change policy particularly in an increasingly MLG environment poses somewhat of a ‘crisis of legitimacy’ for climate change policy actors and their implementing institutions, if the two approaches continue to compete for relevance in the current political and policy environment. That is if the two areas continue to develop in the degree of isolation and potentially competitive environments where in Sweden for example “prior to 2005, adaptation was seen as competitive with mitigation efforts and therefore had not been seen as a relevant policy issue”(Nilsson. 2012:6). The rising prominence of adaptation as a less marginal policy realm, has created a more competitive environment for climate change policy, and a more workable complementary approach needs to be adopted, such as the Tompkins technological fix and social behaviour change approaches discussed.

This paper has also explored the rise of MLG and the way in which it further challenges the continued support of the climate change dichotomy, and the risks this support poses, for dynamic and synergistic policy development in local government and cities. The main point is that, policy in the climate change sphere needs to continue to successfully research and scope policy problems in the most optimal and dynamic way, this requires acceptance that methods for grouping and identifying issues must evolve rather than stagnate. Stagnation can be identified when the flow of information between levels of government falls to the same networks of stakeholders over long periods of time, without changes to these networks, often coupled with institutional inertia. This is particularly concerning in an area where the prominence, complexity and strategic nature of climate change adaptation policy has grown exponentially over time, and where originally very local and grassroots in nature, its radical shift into the strategic and national policy realm has not been reflected in the way it is funded and resourced. In reflection on Ostrom’s work, this evolutionary pathway from a grassroots collective action model could be its greatest strength, yet the pathway it now needs to take requires the reform of institutions and the way in which we value and take up behavioural and technological solutions to address climate risks without dividing these solutions into two artificial policy streams. Further stakeholder-mapping exercises, combined with mapping technological options would provide a very useful framework in achieving this end.

Therefore, it is hoped that this brief exploration of the MLG approach, with its emphasis on increasing government responsiveness to shifting power relationships; broadening the constituency of actors with varying levels of power and influence; providing these actors with the opportunity to navigate their climate change policy activities in a legitimate and trusted environment; has contributed usefully to the debate on the best governance framework for climate policy in the future, in a dynamic policy environment. Overall, it is hoped that this exploration has illustrated the potential for such a governance framework to ensure an institution is sufficiently agile, and has the capacity to make assessments that provide for responsiveness to climate risks at the optimal time. Where the MLG framework can provide for the opportunity for this responsiveness to take place, without the current burden of long lead-in times for some responses and decision-making where scientific evidence is uncertain. An institution that is MLG aware and networked, can respond within short timeframes to responsiveness requirements, this is particularly relevant where impacts are subject to flexible attributes "where an organisation is sufficiently agile to be able to adapt to changing conditions at short notice" (Tompkins. 2010:2).

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