Public Administration Review is a professional journal dedicated to advancing theory and practice in public administration.

Speak Your Mind

Climate Change and Public Administration: A Blog Commentary Symposium

Guest Editors
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Climate change is among the defining issues of our time. In spite of the US withdrawal from the 2015 Paris Agreement, almost all countries of the world along with several US states and cities continue to work on climate mitigation and adaptation. Given the enormity of the climate challenge and the crucial role of public policy and administration in responding to its many dimensions, this symposium showcases blog-commentaries on important ideas and themes in climate policy. But how to present this important research in an accessible way? Academics get frustrated when policy makers do not learn from our work. But academics also share some blame for this. For one, even educated readers outside our discipline often find it difficult to understand our technical and jargon-infused writings.
One might argue that technical communication and analytical rigor are the essential tool kits of our trade. We agree, but suggest that academics need to expand their tool kit in order to enhance the policy impact of their work. Specifically, they need to communicate their powerful ideas clearly and in an accessible format.

This is where blog-commentaries make an important contribution. With their direct, jargon-free language and short lengths, they allow readers to engage with our ideas. As co-authors of over 40 blog commentaries, we can attest to the enormous interest blog commentaries can generate among scholars, practitioners, and concerned citizens. Further, blog-commentaries can be easily read on smart phones that have emerged as important devices for accessing information.

If we are to be believed, the job description of academics just got tougher! They need to expand their skill set: in addition to publishing high quality and technical research in peer reviewed journals, academics must acquire expertise in public scholarship.

**Public Scholarship in Climate Policy**

We decided to work on a “blog-commentary symposium” to showcase high quality and interesting work on climate change and public policy. We thought *Public Administration Review (PAR)* will be the ideal journal to host it. In addition to its status as the premier global public administration journal, *PAR* is read by a wide range of practitioners. Among professional journals, it is in a unique position to further public scholarship on climate policy.

We approached Jim Perry, *PAR*’s editor-in-chief, with a proposal outline and received a quick and favorable response. We were elated. Thanks to Jim, *PAR*’s “Speak Your Mind” initiative is hosting probably the first blog symposium of its kind in social science. We would also like to note the enormous effort Paige Settles, PAR editorial assistant, has put into designing the article layout and the web-based production process.

The Call for Submissions (which was circulated on various listservs) asked contributors to address issues such as:

- How have various units of government (city, county, state, national, and supranational) responded to this profound human challenge? Specifically, what policies have they put in place for both climate change mitigation and adaptation? Have they created new units/agencies or have they simply added climate change mitigation or adaptation to the existing ones?
- How is the scale of policy provision and policy production decided?
- How do administrative units measure performance of their climate policies?
- To what extent have these policies met their stated objectives? What might be the best practices that other governments might adopt?
- How do these units finance climate policies? Are these policies crowding out other pressing policy needs?
- To what extent are governments rebranding existing policies under the label of climate change? What is motivating this policy fudging?
How have governments collaborated with nonprofits and businesses in developing and implementing these policies?

Who Responded?
Based on the Call for Submissions, we received 39 pitches. In terms of diversity, 21 of these pitches had women as authors or co-authors; 11 pitches were from scholars working in non-US institutions. Given the excellent quality of these pitches, we have commissioned 20 blog commentaries (14 of which have women as authors or co-authors; 5 of them are from scholars located in non-US institutions). Once the authors sent in their 1,000 word blog commentaries, we copy edited these commentaries. All authors, without exception, responded very well to our sometimes extensive editorial and substantive suggestions.
**What Insights does this Symposium Provide?**

Much of climate policy literature focuses either on climate change mitigation or adaptation. Because many polices have implications for both mitigation and adaptation, we decided to organize blog-commentaries along analytic themes. This way these blog commentaries will illuminate core theoretical concepts in the study of public administration and show how these issues could be studied via the lens of climate change. Here are some lessons.

1. After the US withdrawal from the Paris accord, several commentators believe that cities and subnational units will pick up the policy slack. In addition to reducing their own carbon footprint, local governments could use their purchasing power to encourage climate action in their supply chains ([Darnall, et al.](#)). Further, cities probably will experiment with innovative collaborative solutions to climate problems ([Sterett and Eckert; Clarke and Ordonez-Ponce; Baldwin](#)).

While the excitement about local leadership on climate change is encouraging, scholars and practitioners should recognize challenges as well.

   - The ability of local governments for policy innovation depends on the existing relationships of power and administrative mandates between the federal and state/local governments ([Ang; Fuhr et al.](#)).
   - In the US context, there are potential legal problems in local governments unilaterally adopting climate mitigation policies. Such adoption can create a patchwork of different regulations across the country and therefore face a legal challenge under the Commerce clause ([Coglianese and Starobin](#)).
   - When climate mitigation policies do not generate immediate and visible benefits, local governments may be reluctant to embrace them ([Opp and Mosier](#)).
   - How local governments respond to climate action depends on what administrative unit is assigned to work on it. Ironically, environmental departments are perhaps not ideally suited, especially if the goal is to develop a multi-faceted policy response to climate challenges ([Woodruff](#)). Further, city executives with planning expertise and training seem to be more likely to commit their governments to climate change mitigation and adaptation than mayors elected for their political prowess ([Gorina et al.](#)).
   - Many voluntary programs that cities have embraced might require participating units to spend substantial resources to document their activities and emission reductions. These “transaction costs” might discourage cities to participate in these programs in the first place, or leave these programs once they have joined them ([Bendlin](#)).

2. Policies to generate public awareness about climate change adaptation can work even in poor regions of developing countries if the message is conveyed in local languages and the required behavioral changes are culturally appropriate ([Das](#)).
3. Market-based instruments have their pros and cons (Turaga and Sugathan). A crucial challenge about emission trading is how the emission quotas are distributed (Patnaik and Rivera). Thus, instead of simply buying into the mantra of efficiency, we need to investigate who wins and who loses from quota allocations, and how short term efficiency goals cohere with long term decarbonization efforts (Mildenberger).

4. Opposition to climate initiatives may come from unlikely sources. A carbon tax may not secure support from the environmental community if it seeks to be revenue neutral instead of raising revenues to fund new climate policies (Lenferna). To be successful, climate policy needs to incorporate other societal goals, and its policy processes actively include a range of stakeholders.

5. Relocating communities as a strategy to rising sea levels or extreme weather events is complex and problematic (Day). In addition to dealing with history of forced relocation, it is not clear if there is a clear policy framework to address all dimensions of climate change induced relocation (Herrmann). Creating new specialized agencies to oversee or coordinate mitigation or adaptation efforts will be required for successful climate mitigation and adaptation.

6. Local governments do not function in isolation on climate policy (Sciara). They are often linked with other units and these sorts of linkages can influence how they address climate challenges (Palazzo et al.).

To conclude, we hope readers will find this symposium to be exciting and accessible. Given its focus on analytic themes, this symposium could serve as an excellent pedagogical tool as well. For example, professors could ask students to comment on specific blog-commentaries, or illustrate a specific idea introduced in a commentary with an empirical example. Students’ comments could be posted on PAR’s website to allow all PAR readers to engage with them. These sorts of approaches will encourage students to become active public scholars. The pedagogical opportunities are immense and we hope this symposium will encourage pedagogical innovation.

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In 2005, Martin Chávez won reelection as the mayor of Albuquerque on a platform that included climate action. To pursue his sustainability agenda, Chávez formed a “Green Ribbon Task Force” which identified building energy use as a major opportunity for savings and recommended changing the city’s building code to require more energy efficient hot water heaters and heating, ventilation, and air conditioning (HVAC) equipment. The Task Force led to negotiations between Chávez and
city council-members over a new building code that in 2007 imposed more stringent efficiency standards.

In spite of these city leaders’ political commitment and fervor for combating climate change, the otherwise notable Albuquerque experiment proved a failure in the end as the result of litigation successfully pursued by industry. This outcome should offer a dose of realism to the many state and local leaders who, in the wake of President Trump’s announcement to pull out of the Paris Climate Change Agreement, have expressed their own commitment to combating climate change. The Albuquerque experience offers a vital lesson for today’s subnational leaders and scholars of public administration: success requires more than just meritorious motives; careful legal analysis is needed too.

**Albuquerque’s Green Building Code**

The policy process does not end once a law has been passed or a regulation has been adopted. In the United States, those who are unhappy with a policy outcome can avail themselves of the courts to seek relief. As a result, public administrators need to assess the possibility of legal challenge and factor litigation risk into their decision-making.

In the Albuquerque case, trade associations for HVAC and water heating products were unhappy with the recommendations of the Green Ribbon Task Force and sued to challenge the new city building code. They saw in the code the seeds of an undesirable patchwork of potentially conflicting rules from one jurisdiction to the next.

Central to their legal case was the issue of whether Albuquerque could—through the creation of its own green building code—effectively override federal law that, since 1992, had imposed different nationwide energy efficiency standards. Industry argued that Congress had expressly preempted state and local governments from regulating the federally covered products—having established initial energy efficiency standards itself and further assigning to the Department of Energy (DOE) the responsibility of updating them. Industry contended that the Albuquerque ordinance imposed energy efficiency standards that were more stringent than the federal standards.

A federal district court agreed with industry and issued an injunction against the enforcement of Albuquerque’s standards. The judge wrote: “The City’s goals in enacting Albuquerque’s Energy Conservation Code and the Albuquerque High Performance Buildings Ordinance are laudable. Unfortunately, the drafters of the Code were unaware of the long-standing federal statutes governing the energy efficiency of certain HVAC and water heating products and expressly preempting state regulation of these products when the Code was drafted and, as a result, the Code, as enacted, infringes on an area preempted by federal law.”

Albuquerque’s legal loss probably could have been prevented, as a later case involving a Washington State green building code suggested. That later court rejected a similar industry challenge after finding “substantial differences” between the codes in Washington and Albuquerque, indicating the importance of well-crafted legal design.
Subnational Climate Regulation and Its Legal Risks

Industry’s legal victory in Albuquerque resulted in a major setback for an ambitious locality eager to do its part to mitigate climate change at a local level. Much the same prospect could await today’s state and local leaders. After President Trump’s announcement on the Paris Agreement, former New York City Mayor Michael Bloomberg optimistically predicted that, owing to subnational initiatives, “[w]e’re going to do everything America would have done if it had stayed committed.” Bloomberg could well prove correct. But making serious progress at the state and local level will not come easily. Without careful coordination, subnational climate policies could yield fewer benefits than expected, especially if these policies encourage “leakage” of carbon-intensive industry to less regulated jurisdictions.

Moreover, subnational policies also face legal risk. Businesses that operate across multiple jurisdictions can be expected to complain about a complex patchwork of rules. The Trump Administration itself may seek to defend its national policy of “energy dominance.” Overall, subnational officials can expect one or more of at least six potential legal challenges.

First, even as the Trump Administration retreats from Obama-era climate policies, much federal environmental and energy law will remain on the books and could give rise to challenges like those Albuquerque faced. The Department of Energy, for example, continues to regulate HVAC equipment—and those standards have support from industry because they avoid a patchwork quilt of state laws.

Second, subnational climate regulation could raise “dormant” Commerce Clause challenges. Even when no federal law exists to conflict with state or local regulation, subnational rules can be unlawful if their burden on interstate commerce is “clearly excessive in relation to the putative local benefits”—a test the Supreme Court announced in Pike v. Bruce Church, Inc. Legal challenges under Pike are generally hard to win; however, with climate regulation, even cities and states with the greatest environmental susceptibility could find their rules facing legal vulnerability. The marginal benefits of a single local jurisdiction’s requirements on a global environmental problem will necessarily be small.

Third, once the Trump Administration actively withdraws certain federal climate change regulations, the Commerce Clause will no longer be completely “dormant.” Challengers to subnational regulation will likely argue that state and local efforts to fill in the new void are preempted by affirmative federal policy decisions to create such a void—not mere indifference.

Fourth, assuming the Clean Power Plan is rescinded in spite of the likely legal challenges by environmental groups, any subnational regulation of the power sector will likely increase prospects for legal or administrative challenge to utility rate requests prompted by increased regulatory costs. After all, these costs will no longer be mandated by federal law.

Fifth, state automobile emissions regulations depend on a U.S. Environmental Protection Agency (EPA) waiver from federal standards. California has received such a waiver which has allowed other
states to adopt California’s more stringent standards. But at his Senate confirmation hearings, EPA Administrator Scott Pruitt expressed a willingness to reconsider California’s waiver—a move the auto industry would presumably support but that will also generate litigation by environmentalists. Finally, expect to hear the argument that climate policy is foreign policy—and thus is under federal control. Whether this argument will win remains to be seen. For one thing, as our colleague Jean Galbraith insightfully suggests, courts may prefer limits arising under domestic rather than foreign affairs law. But foreign affairs lawsuits seem all the more plausible with each additional climate meeting that California’s Governor Jerry Brown holds with foreign leaders.

**Conclusion**

With the federal government’s receding role on climate change, subnational governments may offer the only meaningful hope for the United States to make significant policy progress. Although state and local affirmation of the Paris Agreement provides reason for optimism, a necessary condition for success of subnational regulation will be careful attention to larger legal constraints, a hard lesson Albuquerque officials learned nearly a decade ago.

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Every time we turn on the kitchen faucet, the garden hose, or the shower, we encounter the interface of climate change and public policy. Droughts, which are regular occurrences in many regions throughout the globe and are expected to increase in intensity with climate change, require public policy responses to ensure stable water supplies. During California’s extreme drought, Governor Jerry Brown implemented mandatory water use reductions in urban areas for eight months.
beginning in April 2015. The 25 percent statewide water use reduction target was met, but compliance varied significantly at the level of individual “urban water districts”, or localized water management units. 

Our recent study analyzed the factors predicting water conservation for a sample of 300 California water districts during the policy enforcement period. A key finding was that water districts that were institutionally connected to others via imports of water were significantly more likely to achieve mandated statewide conservation targets than those districts not linked to others. 

Interconnections facilitate conservation

The problem of supplying urban water has been a central issue in California politics for decades. The key infrastructure challenge is to move water from areas of high precipitation largely in the California Sierra to urban population centers in drier regions of Central and Southern California. For this, a massive water delivery and management structure has been established that includes enormous infrastructure projects like the State Water Project, which utilizes over 700 miles of canals and pipelines to bring water to 25 million people.

Some urban water districts are served by a single institutional unit using only local groundwater (by pumping it) or surface water (by diverting it from a river or canal). In other urban areas, water is supplied to end users through multiple institutional levels. These institutional levels might include, for example, a very large utility company like the San Francisco Public Utilities Commission, which facilitates the transfer of water from the Hetch Hetchy reservoir through intermediary organizations to many smaller, local water districts throughout the San Francisco Bay Area. By being connected to other institutions, these water districts are able to access both state scale water resources like the State Water Project and local resources like groundwater wells. Our study found that districts that were part of a network like this achieved significantly greater relative conservation during the mandatory restrictions than the districts that relied on local water resources only. This was true even after controlling for the diversity of water sources.

Why so? One benefit of interconnected, or multi-level institutions, is that efficiency programs and conservation best practices can be passed between those districts more easily. For example, the largest water district in California, the Metropolitan Water District of Southern California, developed a rebate program for the installation of water-efficient devices such as low-flow shower heads. The rebate programs were then implemented in the dozens of water districts to whom Metropolitan sells water and may have contributed to those districts’ greater conservation. This coheres well with insights generated by international trade scholars: when countries trade, they not only sell stuff, they also share norms such as environmental protection or respecting labor rights, and best practices to translate these norms into policies.

Another reason might be that interconnected districts conserved more because of a cost incentive. Importing water from afar requires a lot of energy, and the cost of that energy is more variable than the cost of pumping local water. So, when water is in short supply, districts relying on imported water may be especially motivated to conserve water and promote efficiency because of the risk of increased costs.
Whichever the reason (and it is likely a combination of reasons), we are left with an intriguing result: California’s interconnected institutional system facilitated water conservation even though it was originally created to provide more diverse and secure water sources. This finding suggests that policies that support interconnected water management institutions, in California and other drought-prone regions, can offer the dual benefits of risk-hedging and better water savings during drought.

**Public administration and drought**

Overall, California’s mandatory water use reduction policy was a success, and the state achieved its urban water use reduction goal. However, the state has since lifted mandatory use restrictions, leading to a relaxation in conservation practices. This makes it even more imperative for policymakers to draw lessons from the recent drought, as the intensity of such events is likely to increase and as vulnerability to climatic drought increases with a growing population. Looking forwards, analyses of interconnected water management structures in other regions beyond California may lead to further insights into how to effectively promote water conservation. Finally, for scholars of policy and administration, we suggest an interesting insight: going “local” is not always the best idea; having “global” connections can have unanticipated policy payoffs.

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Climate change is a global problem and in response several global governance initiatives have emerged. Scholars study which countries join these initiatives and whether they lead to emission reductions. We explore another dimension and ask how and to what extent global climate governance initiatives have affected — or even changed — the way in which public authority is exercised in the Global South. More precisely, we study the impact of global climate governance initiatives on the distribution of competencies across different governmental levels in the environmental policy domain. Thus, our research project sheds some light on the influence exerted by new global climate initiatives on domestic politics and institutions.

**Top-Down versus Bottom-Up?**
We postulate that the type of governance initiative matters for the formulation and implementation of public policies. From the perspective of the nation-state, some initiatives exert pressure on public
administrations in a ‘top-down’ manner (e.g. global market-based instruments), and others put pressure on public administrations in a ‘bottom-up’ fashion (transnational networks of sub-national, non-profit, and business actors). While top-down initiatives predominantly target the national level, bottom-up initiatives are directed at the sub-national level. Moreover, due to huge amounts of climate finance channeled by external actors to developing countries, we expect changes in administrative decision-making. Consequently, we assume that such initiatives affect the distribution of competencies across governmental levels and take such changes as a proxy for the supposed reconfiguration of public authority.

There are two assumptions for our analysis. First, we presume that the more resources are channeled via top-down governance initiatives, the more likely national governments will act as regulators and monitoring institutions, with the effect that the central public administration is strengthened vis-à-vis sub-national administrations. Second, we suppose that the more resources are channeled via bottom-up governance initiatives, the more this will lead to decentralized policy-making and a strengthening of sub-national governments and their administrations.

**Empirical Cases**

Let us compare a top-down initiative (Reducing Emissions from Deforestation and Forest Degradation, REDD+) with a bottom-up initiative (C40 Cities Climate Leadership Group, C40). In our case studies in Brazil, India, Indonesia, and South Africa, we trace the changing patterns in climate policy-making between central, regional, and local governments.

Our cases indicate that there are no easily discernible patterns. Each country case has specific historical, constitutional, and political backgrounds that strongly influence their climate policies and set their pace. Nevertheless, two findings stand out: First, there are mixed results with regard to the impact of global city networks – C40 in our case – and the engagement of local governments in climate policy-making. On the one hand, there is scattered evidence that C40 has supported the development of local climate initiatives in South Africa. It has also fostered urban climate action in Brazil. In India and Indonesia, on the other hand, C40 did not manage to get local climate projects off the ground. Overall, C40 seems not to have altered the way in which national climate policies are carried out, and there does not seem to be a clear-cut trend towards more “decentralized” climate policy-making. It appears that the effects of transnational city networks on public policies and administrations are more limited than widely assumed.

Second, as far as the global instrument on deforestation and forest degradation (REDD+) is concerned, the results are not clear-cut either. While governments in Brazil and Indonesia have already received significant amounts of REDD+ funds, South Africa and India have not yet engaged in externally supported REDD+ preparation activities. Our cases stress the importance of external donors, but also highlight the significance of constitutional preconditions in the forestry sector. Interestingly, central governments in Brazil and Indonesia have considerably invested in joint REDD+ activities, but have mostly failed to agree upon appropriate intergovernmental cooperation with sub-national governments, which are supposed to address deforestation in practice. In Brazil’s
federation, for example, some states were keen to directly participate in global REDD+ initiatives, but the central government acted as an effective gatekeeper by imposing conditions towards a more attentive monitoring, reporting, and verification of forest resources. Indonesia’s government has been able to avoid such conflicts so far, most probably due to the constitutional framework, which provides provincial governments with much less autonomy. Although REDD+ has not undermined sub-national competencies in forest management, it seems to have supported the pooling of responsibilities at the central governmental level. Thus, in a nutshell, there is little evidence that global city-networks, such as C40, have significantly “decentralized” effective climate policymaking and action, whereas REDD+ appears to have strengthened the competencies of central governments.

**Conclusion and Outlook**

Even in an era of global governance, it seems that domestic politics and institutions influence how real policy-making is actually carried out. There are no universal implementation templates: global climate governance initiatives work very differently on the ground in different public-administrative systems. This suggests that scholars and practitioners concerned with the global response to climate change need to dedicate more attention to the local administrative contexts under which new modes of climate governance work.

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The Dilemma of Orchestrating Non-state Climate Action

Lena Bendlin

Public authorities such as the metropolis of Rennes, France, encourage affiliated municipalities to make voluntary climate commitments to the Covenant of Mayors. Credit: Lena Bendlin

Voluntary climate change mitigation commitments have emerged as an important aspect of global climate governance. These include commitments from national governments (as in the 2015 Paris
Agreement) and from non-state actors such as local governments and the private sector. But the crucial issue is: do they work?

Take the case of the Covenant of Mayors (CoM) that was launched by the European Commission in late 2008. It has gathered more than 7,500 signatures. Local governments pledge to implement the European climate and energy targets and to report regularly. My research finds that the key contribution of the CoM so far has been to document existing contributions to emission reductions instead of stimulating additional reductions. Viewed this way, the CoM is a sorting mechanism and not a shaping mechanism. As a signaling device, it helps outside stakeholders to identify existing climate leaders. However, it does not stimulate these leaders to take climate actions beyond what they are already doing.

**How Does the Covenant of Mayors Work?**

The European Commission lacks the competences and resources to directly address municipalities located in its member countries. But it recognizes that along with specifying targets, it may need to provide technical help to municipalities that have joined this program on even seemingly simple topics such as how to document and report their emission reduction efforts. Therefore, it established the CoM Office, a secretariat that issues handbooks and guidelines for municipalities. It comprises several regional and national helpdesks in order to respond to municipalities’ domestic framework conditions.

In addition, the CoM invites public authorities to serve as Covenant Coordinators. They provide tailored training and practical assistance for reporting emission reductions as well as climate planning and policy-making more generally. Rennes Metropolis, an agglomeration in Brittany, France, was particularly successful in convincing its member municipalities to sign the CoM. Few mayors wanted to stay behind when their peers took the public commitment to engage in climate action. For continuous networking and technical assistance, Rennes Metropolis assigned the local energy agency with animating an inter-municipal working group.

**So, does the Program Work?**

Municipalities make use of the CoM in many ways such as internal policy-making or in political negotiations with outside actors. The number of CoM Signatories continues to grow, despite the suspension of participants who defaulted on their obligation to report regularly to the CoM Office. But this has also posed a problem. The CoM Office is unable to stay in touch with all participants, let alone to provide as detailed assistance as they would wish for. Hundreds of Signatories have been suspended for overdue reporting. Many municipalities complain of high workload to fulfil CoM reporting obligations.

Further, it seems the onerous reporting requirements may be preempting resources required for real climate action. Take the German case where many municipalities already have well-functioning climate policies. But they rely on a different methodology to document their efforts and benefit less by adopting the new reporting guidelines that the CoM requires.
In light of the proliferation of schemes motivating local governments to undertake climate action, it is sometimes difficult to document the unique or additional contribution CoM participation makes towards emission reductions. One way to approach the double counting issue is to create a registry where the joining party registers its specific policy devoted to climate mitigation. This way the registrar can make sure that this party does not take credit for the same policy under different programs. For a practical application of this idea, take the case of the Non-State Actor Zone for Climate Action (NAZCA), launched in Lima 2014. NAZCA registers commitments made under various schemes, including the CoM.

**Lessons for Public Administration**

These findings point us to tensions between local and global politics. The CoM brings together public administrations from the European to the municipal level. They have different priorities in mind when they participate in the CoM. For international actors such as the European Union, the documentation of voluntary commitments is what to **push** for more ambitious national contributions within the international climate negotiations. This requires reliable data generated by local authorities. However, the local authority perhaps secures little benefit from establishing a database documenting its climate actions. It finds the workload for reporting to be high but tangible benefits from CoM membership or support it receives from the EU or other higher level authorities to be modest.

Two lessons emerge. First, voluntary programs that impose extensive burden on participating actors must provide tangible benefits. Otherwise, participating units will have incentives to put in the minimal effort with the objective to retain their membership, instead of implementing the program objectives in their true spirit. Second, public administrators should wonder about the marginal benefits of creating yet another voluntary program to motivate local climate action. Apart from the double counting problem, multiple programs create an information overload for external stakeholders, thereby reducing the reputational payoffs participants receive from joining a single program.

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“Think globally but act locally” has always been a catchy slogan calling for individual and community-level action to protect the environment. However, in the wake of recent changes in the United States federal environmental policy this slogan has taken on a more important meaning. If local policy efforts are the front line of climate policy, we must critically examine their effectiveness. Drawing on a recent survey, this commentary briefly outlines what is known about local
sustainability policy adoption in the United States. We find that cities adopt policies that generate visible and immediate co-benefits. Climate mitigation policies, on their own merits, simply do not sell. Second, we find that most cities are not doing enough to evaluate the effectiveness of their climate policies.

**What do we know about local policy efforts?**

Some scholars studying local policy efforts related to climate change and sustainability in the United States find that local governments tend to adopt policies that are the least expensive and have visible co-benefits. Co-benefits, sometimes called multiple-benefits or synergistic benefits, reflect the fact that they provide indirect and non-climate specific benefits. Furthermore, these scholars report that few cities adopt policies focused on climate change and/or GHG reduction goals only. The 2010 nationwide survey, conducted by the International City County Management Association (ICMA), found that only 11.5% of cities report having a GHG reduction target for government operations while over 60% of the cities report having conducted energy audits of government buildings, an action with obvious co-benefits of lowering energy expenses.

Our own 2016 survey reaffirmed that cities adopt policies that generate immediate economic co-benefits, as opposed to GHG reduction policies without such benefits. See Table 1 for a full list of adoption rates. For example, of the 110 policies catalogued in the survey, 15 policies have clear economic co-benefits through either cost reduction or through increased tax collections, and another 13 policies have co-benefits related to broad-scale service or amenity provision to the community. Four policies are singularly focused on climate change without any added co-benefits. The average adoption rate across all 110 policies is 19%. In contrast, the average adoption rate for the policies with clear economic co-benefits is 49% and service provision is 34%. However, only 10% adopt climate specific policies.

How can we explain the above findings? In part, the political tension surrounding climate change may lead to cities focusing on other non-controversial aspects of climate mitigation, typically the ones with clear local benefits (as opposed to solving a global commons problem). Additionally, given the budgetary squeeze many cities face and the fear that climate policies may crowd out pressing local needs such as roads, schools and parks, cities feel obligated to provide a compelling economic rationale for adopting climate mitigation policies.

**Effectiveness in Local Climate Change Policy**

Organizations typically do not get every policy right on the first try. They sometimes put in systems to evaluate the effectiveness of their policies. This can help in modifying these policies, or even discontinuing them if they do not work. This leads to better policies and perhaps increases political support for such policy efforts. But do cities evaluate the effectiveness of their climate policies? Our 2016 survey provides a bleak picture: only 38.5% of the cities indicate that they routinely evaluate or measure the performance of any of their sustainability policies. The findings appear even bleaker when narrowing the focus to climate change and GHG reduction policies only. Only 9.7% of the cities with GHG reduction policies routinely collect GHG emissions levels, 2.9% collect nitrogen
dioxide concentration levels, 3.8% collect sulfur dioxide concentration levels, and 4.2% collect ozone concentration data. This means that even among the small number of cities with climate change policies, the vast majority do not assess their effectiveness. This is a cause for concern. Local governments must be held accountable for their policies and they must have the information to decide whether or not to continue with specific policies. This is especially important in the context of climate change policies because cities are now expected to do the heavy lifting. A policy without accountability could even undermine political support for such climate change actions. While citizens might want their cities to work towards climate mitigation, they probably also want cities to do this effectively and not waste scarce resources on policies that do not work or achieve benefits. Broader sustainability efforts have gained widespread acceptance in part due to the co-benefits associated with them; however, in absence of these benefits, accountability and demonstrable effectiveness may help move the needle a bit on these important local efforts.

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City Scale: Cross-sector Partnerships for Implementing Local Climate Mitigation Plans

Amelia Clarke and Eduardo Ordonez-Ponce

Barcelona works with 800+ organizations from across sectors on a commitment to climate. “We want Barcelona to lead the way and act as a benchmark in climate protection”.

Local governments play a leading role in climate change efforts as up to 70% of global greenhouse gas (GHG) emissions occur in cities. In particular, with support from international networks such as ICLEI Local Governments for Sustainability, C40, Compact of Mayors, and Global 100% Renewable Energy, local governments around the world are committing to aggressive carbon reduction targets for their cities. However, sustainability challenges such as climate change are too large and complex to be addressed by any single organization alone. Thus, local governments are creating cross-sector social partnerships (CSSPs) at the local level; entities created for addressing social, economic, and/or environmental issues with partner organizations from the public, private
and civil society sectors. CSSPs for voluntary action at the local level are important to complement regulatory and market approaches, but they must be designed well to be effective. This commentary shares findings from over 10 years of research through a global project on implementing community sustainable plans, highlighting examples, and offering details on how to design large city-wide cross-sector partnerships to mitigate climate change.

**Cities and Climate Mitigation**

Research on CSSPs implementing community sustainability plans shows that among the sixteen sustainability challenges commonly being addressed around the world, climate change is one of the four most common issues, after waste, energy and water (which are also highly relevant to climate mitigation). There are two types of local climate action plans: corporate and community (i.e., city-wide). Local governments generally control decisions around land use, transportation planning, waste management, and greening of public infrastructure. They can also influence emissions from energy and other economic development. Local governments tackle these topics through corporate climate action plans (where the corporation is the local government itself and the corporate plan focuses on actions within their control and influence). Community climate action plans, in comparison, consider all GHGs emitted within the local geographic boundaries, including from industry, home heating, burning fuel in vehicles, etc. It is these community plans that require large multi-stakeholder partnerships to be successful.

Partners in these partnerships generally include the local government departments, other government departments, utilities, large businesses, Chamber of Commerce, some small and medium sized enterprises, universities, schools, and local civil society groups. The partnership aims to implement the community climate action plan through joint projects and through individual partners taking specific actions within their organizations.

**Partnership Design**

Research shows that the partnership’s structural features enable the achievement of plan outcomes, such as reducing GHG emissions, while also generating value for the partners. For successfully achieving the partnership’s purpose, five structural features are required:

1. A multi-stakeholder entity (e.g., a committee or an organization) overseeing the partnership’s plan formulation and implementation.
2. A mechanism for attracting new partners and having them commit to taking specific climate-related actions.
3. Partner organizations implementing actions within their own organizations (and not just providing advice on what the local government should do).
4. A communication system that connects the network, shares knowledge among partners, recognizes organizations who are proactively contributing to the goals of the partnership, and keeps the public informed on the partnership’s progress. For example, communication might occur through a website, e-newsletter, training sessions, and awards events.
5. A monitoring and reporting system that allows for assessing progress (in terms of partner actions and city-wide impacts) in order to make the necessary adjustments in due time to ensure the goals are met. For example, if the city-wide trend is not on track to meet the goal, then the partnership needs to consider engaging new partners and/or different partner actions. There are limitations on what can be achieved through voluntary partnerships, even if they are successful in involving large emitters and most large employers in the city. Thus these partnerships should complement regulatory and market approaches.

Examples
Over **10,000 local sustainability partnerships** of different sizes have proliferated around the world, with some specifically focused on climate, and others embedding climate goals (and action plans) within a larger community sustainability strategy. An **exploratory study** of community climate action plans in Canada found that most of these involve fewer than 10 partner organizations and are focused on the shorter term reduction goals. Toronto is an exception to this, with a **new report** for how to achieve a reduction of 80% of GHG emissions by 2050. To achieve aggressive community climate mitigation targets (such as the 80% reduction goals) large partnerships with 100+ partners will be needed given the diversity of organizations than can directly impact emissions in cities. One large partnership is preferred over numerous smaller partnerships as it tends to be the same organizations involved in helping achieve different actions, especially if broader sustainable development goals are considered.

As an example, **Barcelona, Spain**, as part of its sustainability plan developed in 2002 and renewed in 2012, has a multi-stakeholder Council (with working groups) overseeing the partnership. This is supported by a staff team in the local government’s Department of Ecology. This team handles communication, monitors progress with respect to specific indicators, and engages more than **800 partner organizations** from across sectors. Since 2005, Barcelona has been a member of **ICLEI’s Cities for Climate Protection Campaign**, and it has recently included a **climate action plan** into its sustainability strategy, thereby leveraging the large network for its implementation. For example, one of the initiatives in the new plan is “a pilot project for a mosaic of roofs with facilities that combine renewable energies with agricultural, green and rain water-collecting spaces, adapted for several types of buildings and users”. Numerous partners own buildings and can participate in this initiative. Another initiative is focused on the circular economy and engaging retailers in “deposit, refund and return systems” for packaging. Barcelona, through the actions implemented by partner organizations, reduced its energy consumption and CO₂ emissions by **2% and 29% per capita** between 1999 and 2012.

In conclusion, the **IPCC, UNFCCC, UN-Habitat**, federal governments, and numerous local governments are beginning to focus on cities as a lever for climate change mitigation. Large local partnerships will be a part of the solution. But, all cross-sectoral partnerships are not created equal; institutional design influences their efficacy. Successful partnerships involve stakeholder organizations taking actions to help achieve the collective goals, have open communication channels,
and ensure robust monitoring of progress. Further, they incorporate flexibility in institutional design to enable updating the action plan and partners over time, and to ensure that feedback from monitoring is incorporated quickly so that the partnership is able to work towards its desired objectives.

Reference list can be found [here](#).

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Working With What You Have: California’s SB 375

Gian-Claudia Sciara

The US withdrawal from the 2015 Paris Climate Accord has raised the stakes for subnational policy and action to reduce greenhouse gas (GHG) emissions. California has something to teach on this score. Worth studying is the state’s effort to encourage future growth patterns that will temper the amount Californians drive and how the state is using existing, federally-required regional planning bodies to influence cities in this regard.
39 percent of California’s GHG emissions come from transportation (compare this with roughly 27 percent for the U.S.) California has sought to reduce these emissions in three ways. First, it encourages automakers to roll out more efficient vehicles, and consumers to buy them. Second, it aims to reduce the average GHG intensity of transportation fuels. Finally, it aims to reduce the need to drive in the first place. I examine the Sustainable Communities and Climate Protection Act of 2008 (SB 375) that seeks to reduce vehicle-miles of travel by changing land use patterns and the transportation investments supporting them. California’s SB 375 uses regional planning to nudge local decisions toward more compact center-focused development and more efficient regional transport. Local governments’ land use policies shape the spatial arrangement of places where humans work, sleep, study, shop, dine, worship, and recreate. They consequently affect how far, how often, and by what transport modes we travel to those activities, and so they affect GHG emissions too.

**MPOs and Climate Policy**

_Metropolitan planning organizations_ (MPOs) operate across the U.S. in urbanized areas. Federal law requires MPOs to develop long range plans and make near-term investment decisions for metropolitan transportation systems. An MPO’s board—comprised largely of city and county officials along with federal, state, and local transport agencies and other regional stakeholders—approves the plans and funding for any regionally significant or federally supported transport improvement, such as building and repairing roads or installing protected bicycle lanes. This is where an MPO’s leverage over its constituent local governments resides, though that leverage can be uneven for complex reasons.

Federal statute has long required MPOs to consider how planned transport projects will interact with future growth patterns. In California, SB375 goes one further. The state’s 18 MPOs now include in their required plans a “forecasted development pattern” that—along with supportive transportation projects—will reduce transportation-related GHGs.

This puts California MPOs more squarely, though still indirectly, in the land use planning business. Golden State local governments retain ultimate authority over land use. No matter how GHG-busting or how walk-/bike-/transit-friendly an MPO’s suggested regional development pattern may be, its implementation rests on local cooperation. This approach anticipates MPOs will leverage transportation dollars to incentivize local land use decisions supporting GHG reduction.

**Does it Work?**

Using land use policy to realize GHG reduction is hard, but vital. Scholars acknowledge that increasing land use density, diversity, and accessibility can reduce driving but these reductions can also be modest. Competing priorities, like _revenue generation_, can also lead local governments to make land use decisions antithetical to compact growth and GHG reduction. Complicating matters in some areas of California, significant developments that would reinforce car-centric patterns—including New Town projects and large-lot subdivisions—are already planned and entitled,
grandfathered pre-SB 375. “We have this reservoir of capacity due to the prior planning,” one MPO analyst explained recently to the Sacramento Bee. “That reservoir is going to drain out very, very slowly.”

Using MPOs and their transportation funding carrot may be a “second best” but pragmatic option to nudge local land use. MPOs are not formal units of government and possess limited compliance mechanisms for steering local growth to regional “priority development areas” or “focus corridors.” Some local activists have also rejected the perceived empowerment of unelected regional planning boards with land use responsibilities. However, MPOs do direct billions of dollars in transportation investment. Federal law already compels them to grapple somewhat with transportation and development interactions.

Nearly ten years after SB 375’s passage, there is a natural impulse to ask, “Is it working?” Answers will be premature, however, and will depend on how and over what time horizon we measure its effects. The arc of land use change is long. It is also observed in myriad incremental choices over matters like accessory dwelling units, building and lot size standards, housing permits, farmland conversion, and so on. Because local governments have tended to overlook the implications of land use policy for regional transportation and for climate change, SB 375 and its GHG-informed regional planning approach could have a profound impact in the future.

To conclude, changing urban growth patterns is a long term project. Capital investments in buildings and infrastructure are durable. They have lasting transportation and GHG consequences. California’s SB 375—warts and all—has begun using MPOs to try getting local growth right. The California model is also somewhat exportable; it overlays GHG goals atop the transportation planning process already required in US regions. Some other states may not have an extensive air quality administrative system like California’s Air Resources Board, but they will have an MPO (or more); over 400 operate across the country.

Why not use these organizations to promote local development that improves outcomes for transportation and for climate, especially where fast and abundant growth threatens to reproduce auto-centric patterns? Not doing so may leave many US regions in the same car-dependent climate pickle some 30 or more years from now.

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**Why China Can’t Fix Its Environment Simply By Adjusting Targets**

Yuen Yuen Ang

While democracies usually struggle to get anything decided and done, autocracies seem **unencumbered**. As Samuel Huntington famously **declared**, “The one thing that communist governments can do is govern; they do provide effective authority.” Hence, it’s logical to assume that in China, as soon as the authoritarian leadership sets its mind on certain goals, the goals will be met in due time. Beijing needs only to change the targets it assigns to
local officials throughout the country. Once targets change, so will the priorities and actions of the local governments, right?

Wrong. Even in a top-down command system, things are in fact not so simple.

**Beijing’s ambitious environmental targets**

Undoubtedly, China seems to have emerged as a key global leader in fighting climate change. After President Trump announced his decision to withdraw from the Paris Agreement, Premier Li Keqiang reiterated that “China will stand by its responsibilities on climate change.” The top Chinese leadership is serious about tackling climate change. The latest Five-Year Plan, which guides social and economic development from 2016 and 2020, places environmental stewardship at the center-stage. The plan has set many ambitious targets, including reduction of carbon intensity (carbon dioxide emissions per unit of GDP) by 15% and energy intensity by 20% by 2020, improvement of air quality in hundreds of cities, and more.

Will these targets get implemented? This is where local and bureaucratic politics comes in, even in an ostensibly centralized state like China.

**Adjust targets—a simple fix?**

In the Chinese political system, local officials are evaluated according to targets set by the next higher level of government. Each target is assigned points, adding up to a total of 100. Local leaders’ career prospects and bonuses are tied to their ability to meet annual targets.

Traditionally, economic targets were given the top priority and concretely measured in terms of GDP and revenue growth. Not surprisingly, economic targets accounted for the majority of points for evaluation. Hence, they were dubbed “hard targets.” By contrast, lesser social goals like forest conservation were “soft targets.” This design of targets largely explains local officials’ single-minded pursuit of rapid growth, even at huge social costs.

If Beijing wants local officials to pay more attention to climate change mitigation, it seems logical that it should decrease the weight of growth targets and elevate that of environmental targets. As Stephen Green, head of China research at Standard Chartered Bank stated, “China’s pollution problem can be solved only if measurable environmental targets are prioritized.” This opinion is widely echoed in academic literature as well. One study concluded that “explicitly rewarding cadres with promotions for improving environmental conditions” is the way to go.

**Why adjusting targets won’t work**

These policy recommendations would make complete sense if local officials were only given a small number of targets. In this scenario, adding environmental targets would tip the scales and force them to reevaluate their priorities.
The problem, however, is that China’s officials today are over-loaded with numerous targets. In my book, *How China Escaped the Poverty Trap*, I provide a detailed comparison of targets assigned in the 1990s and 2009. This comparison shows a stark pattern of “mission creep.” For instance, in 1989, township leaders were only assigned six targets, with economic targets taking up the lion’s share of evaluation points, all packed into one page. By 2009, the list of targets has ballooned to five pages. Environmental targets were included, but so were targets on education, hygiene, public order, birth control, petitions, party-building, and you-name-it. Altogether, there were 112 detailed targets. Further, there was an additional list of 27 “penalty” items that do not add points but failure to meet them will result in penalties.

Environment-related targets were assigned 3 points. Higher-level governments could marginally increase their weight, but they cannot dramatically raise it, say to 30 points. Bear in mind that there are 111 other targets for which points must be assigned, and economic goals must continue fetch the highest priority. Even if the number of points on environmental targets were increased, local officials must still attend to numerous other tasks, despite limited resources and time.

Moreover, it is nearly impossible to fairly assign credit and blame for environmental targets such as air quality, which is now a mandatory target in many cities. Unlike industrial output, air quality is affected by spillovers from surrounding locations, which local officials cannot directly control.

Worse, when over-pressured by targets that cannot feasibly all be met, local officials may resort to extreme, deceptive measures. Recently, officials from a district-level environmental protection bureau in Shanxi province were indicted for tampering with devices that measured air quality. Some cities imposed periodic blackouts in order to meet targets on reducing energy consumption.

**More research on targets**

Classic theories of public administration tend to focus on capitalist democracies. In democracies, accountability is primarily achieved through elections. Politicians who fail to meet their constituents’ goals may be voted out of office. In China’s authoritarian system, there are no elections. Instead, targets provide the accountability mechanism; they signal what the goals of appointed officials should be. But when there are many targets and every target is important, the system loses its signaling function.

Targets are as politically fundamental to autocracies as elections are to democracies. Yet our understanding of how targets are designed and function in practice is only a small fraction of our abundant research on elections.

Beijing’s policy wand is powerful. But making new policies will not magically fix China’s environment. Both students of public administration and climate change must look into the practical challenges of implementing the central government’s goals in China.
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Washington State’s Carbon Tax Initiative: Lessons in getting carbon taxes via referendums

Alex Lenferna

Volunteers gathering signatures for Washington’s carbon tax initiative. Credit: Carbon WA campaign photo archive, Creative Commons

In November 2016, Washington State voted on the first state-wide carbon tax ballot initiative – Initiative 732. The ballot was ultimately unsuccessful, securing 41% vote. The opposition to Washington’s initiative foreshadows a broader potential national divide regarding carbon pricing approaches.
I-732 would have placed a gradually rising tax on carbon emissions. To make the tax progressive, and at the same time, allay the conservative fear that a carbon tax is yet another way to raise taxes, the initiative was designed to be revenue neutral. It did so through a reduction in the (regressive) sales tax, the provision of tax credits to low income households, and a reduction in the business and occupation tax on manufacturers.

Despite proposing an aggressive carbon tax, and a major improvement to Washington’s deeply regressive tax system, which relies heavily on a sales tax, I-732 was opposed by a seemingly unlikely array of actors. Alongside the state’s largest polluters, and out-of-state fossil fuel interests, I-732 was also opposed by labor, environmental, and social justice groups. What lessons does this hold for both scholars and practitioners of public administration that seek public support for new and bold policies?

Environmental Opposition

Perhaps the most surprising opposition to I-732 came from within the environmental community. Organizations, such as the Washington Environmental Council, claimed that, despite proposing one of the stronger carbon prices in the world, I-732’s carbon price was not sufficient to drive emissions reductions fast enough, partly because it did not invest in clean energy, environmental protection and responses to climate change.

While one could debate the efficacy of the carbon tax, this opposition revealed two issues: some environmental groups distrust a reliance on market mechanisms to reduce greenhouse gas emissions. Second, some want a carbon tax should be revenue positive to fund clean energy and climate adaptation. For them, seeking buy-in from businesses and conservatives through revenue neutrality is not an important political goal.

Labor Groups Opposition

Opposition to I-732 also came from the leadership of the Washington State Labor Council, which complained about insufficient investment in worker transition programs to green jobs. Interestingly, though, independent analysis by Sightline Institute, showed that fossil fuel industry workers only make up 0.1% of Washington’s job sector, many of whom are relatively well off. Their analysis suggested that I-732’s gradually phased in carbon tax would not have had as detrimental an impact as some claims had suggested, while other analysis showed that revenue carbon tax reform could lead to overall job creation.

While ensuring a just transition for fossil fuel workers is strategically and ethically important, it raises the question about the extent to which preferences of fossil fuel workers (that form a small percentage of the workforce) should dominate the urgent need to reduce greenhouse gas emissions and the potential for creating green jobs in the low carbon economy.

Local Climate Justice

Some of the more vocal opposition against I-732 came from Front and Centered, a Washington-based coalition of environmental justice organizations. They argued that the initiative fell short of their Principles of Climate Justice, and did not adequately represent the interests of low income communities and people of color. Front and Centered’s main critiques of I-732 revolved around
worries that it might turn out revenue negative, that it did not target investments directly into those communities, and that it did not properly include them in the design of the policy.

The critique of inclusion in policy design provides an important lesson for public administration: to ensure robust procedural justice and strategic coalition building it is crucial to include multiple stakeholders early on, especially those historically marginalized and most impacted. Notably absent from critiques of procedural justice around I-732 though, were how to include the voices of young people, who are set to be disproportionately impacted by climate change, and who were often the driving force behind Initiative 732.

Furthermore, the initiative would have reduced regressive taxes, pollution and climate change, all of which disproportionately impact communities of color and low income families. Perhaps recognizing this, most majority minority districts supported the initiative at the ballot, raising tricky questions regarding how the preferences of these communities were represented politically to oppose I-732. It also exposes the difficult tension between using the revenue from a carbon tax to offset its regressiveness, versus using it to for investments such as community-directed investments.

What Are Lessons For Policy Through Referendum?

I-732’s experience reveals competing visions of the purpose of a carbon tax. Should it be viewed as a new source of revenue to fund a range of projects and priorities, or should it be used to replace the existing tax structure, which favours carbon-intensive production processes, by a system that taxes fossil fuels and uses the new carbon revenues to offset existing tax revenues? Alternatively, if we are to combine such approaches, how do we navigate the difficult policy trade-offs that doing so would entail?

Ultimately, despite being designed to reach across the political aisle, most support for I-732 came from urban, minority, young and Democratic voters. Such support would likely have been higher were it not for factors such as: opposition from the left; lower voter turnout; an overcrowded ballot; and the fact that Carbon WA, the small grassroots organization behind I-732, lacked sufficient resources to educate around a first-of-its-kind initiative.

Washington’s experience demonstrates one of the major challenges facing public administrators navigating highly polarized policy issues. Efforts to reach across the aisle to create a bipartisan coalition may be opposed from those traditionally favouring climate action, while not gaining the bipartisan support hoped for.

Looking forward, exit polling suggests that future efforts at carbon pricing, perhaps with a different design, still have a chance at succeeding. Washington’s experience provides useful lessons for public administrators and climate advocates on how to navigate such a highly polarized space.

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Beyond the Blame Game. How Norfolk is Building public solidarity to respond to Climate Change

Susan Sterett and Adam Eckerd

Credit: Resilient Cities Blog
The Hampton Roads region in Virginia is central to shipping, the United States navy, and tourism. The 'Roads' is a large natural harbor, one of the first places settled in North America by Europeans, and today includes more than 1.5 million people. It is a coastal planning district comprising low lying cities affected by water. Cities within it include Norfolk, a city with a major naval installation, Virginia Beach, a popular beach vacation spot, and Newport News, a predominantly African American community that does not have the benefit of being either of national military concern or of great tourism interest.

Norfolk is particularly vulnerable to nuisance flooding and rising sea level. For it, climate change is real. But it also recognizes that climate change is a multi-dimensional problem with environmental, infrastructural, and social dimensions. Specifically, for Norfolk, climate change is also a housing problem. Nuisance flooding forces its residents to relocate. But relocation or rebuild policy intersects with longstanding problems of segregation, inequality, and land use issues. Because climate change creates complex problems, Norfolk has two options. Either it plays the blame game and revels in policy paralysis. Alternatively, it turns this into an opportunity to build community relying on partnerships with citizens, universities, nonprofits, and government officials. As we show, Norfolk has chosen the policy of finding solutions rather than assigning blame.

**Constructive Response to Policy Complexity**

Norfolk has been called a “canary in the coal mine” with respect to sea level rise related to climate change. Norfolk has recognized this threat and has mustered nonprofit and government grants, urban planning and community engagement, to address the complex problem of recurrent flooding. The city has recognized that the problem is tied to 400 years of building on an archipelago, segregation, and storms. The city addresses community concerns about adaptation via discussion fora, organized around questions community organizations raise.

Causes for Norfolk’s recurrent flooding are multiple. Much of the city is built on infilled land. This infilled land is sinking while seas are rising. Storms and tides erode the city’s land. Vulnerable land includes predominantly African American historic neighborhoods of single family homes, with homeowners and renters of modest incomes. People cannot manage flooding for each individual home; a collective response is required.

Norfolk’s strategic importance to the United States means that its citizens are not relocating inland. The naval installation brings shipping and ship repair as a significant industry, in additional to a large influx of naval personnel. The city also has a long history of racial inequality. School desegregation in the 1950s, which the state of Virginia resisted, heightened separation between nearby Virginia Beach and Norfolk, and this makes relocation challenging. Assessing how best to rebuild to respect stream flow and protect people requires working with people’s attachment to community.

City officials have worked on reconciling priorities by engaging the community in several different ways. For example, Norfolk’s historic Chesterfield Heights neighborhood experiences recurrent
flooding. After a design competition run by the Virginia nonprofit **Wetlands Watch**, the area was chosen for flooding mitigation efforts. Students designed permeable pavers and underground cisterns to catch water. This project brought together students at **Hampton University**, an historically black private university, as well as students at **Old Dominion University**, a state university. Norfolk included the student work in its application to the **Housing and Urban Development’s National Disaster Resilience Design Competition** for which Virginia received a $120 million grant in 2016. The city of Norfolk has planned to implement the students’ design for the Ohio Creek Watershed. The city also has a ‘Retain Your Rain’ project, with community workshops, and a Facebook page.

These examples illustrate the multidimensional approach Norfolk is taking to adapt to the problem of sea level rise and storms. Norfolk is one of the **Rockefeller 100 resilient cities**, and as a result the city employs a full-time resilience officer to coordinate its efforts to adapt to a changing environment. Its **2015 plan issued under the Rockefeller stamp** emphasized multiplicity, long history and response in challenges to people’s well-being. Norfolk relies on multiple actors, including nonprofits and educational institutions, and has the advantage of federal government interest in ensuring that important national assets are protected.

**Public administration as managing complexity rather than solving problems**

Climate change has been called an existential threat, which discourages people from acting. Arguably, some people may not accept science when scientific framing attacks core values such as distrust of government; they challenge science because they interpret climate change as an invitation for more government intervention. Therefore, to get the buy in on climate action, the problem framing needs to change. Norfolk has done this in two ways. First, it has adopted a problem-solution approach of public administration that focuses on technical solutions such as pavers, or retaining rain. But it has gone beyond it because climate change is a social and political problem as well. To address these dimensions, it has invoked a communitarian frame to address different issues together. Norfolk is attempting an approach that recognizes that environmental, engineering and social issues posed by climate change are intertwined.

Norfolk is not indulging in a climate blame game. Instead, it is building an infrastructure, creating organizational capacity through resilience officers and university partnerships, updating flood maps, creating strategic plans and creating platforms for public engagement. Taken together, these efforts are building the ‘civil solidarity.’ Programs like design competitions, public charrettes, visioning, and engaging with civil society build the networks of organizations (public, nonprofit, and private) and citizens that translate complex issues into manageable component parts. In turn, the components hold out the hope of helping with racial inequity in housing, of bringing communities into conversation, of understanding local history, and of participating in the excitement of competitions, grants and public events—and ultimately of building the capacity that the city will need to adapt to a different future.
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The impacts of climate change – more frequent flooding, extreme heat waves, longer droughts, shifting disease vectors – have drastic consequences for multiple governmental sectors and departments. Yet, climate change has predominately been framed as an environmental issue and early adaptation efforts were led by environmental departments. Recent research examining the quality of climate change adaptation plans at the national, regional, and local scales indicate that who is involved in preparing the plan has a critical influence on the level of public participation, coordination, and breadth of strategies. Adaptation planning is an important tool for governments at all scales – national to local – to assess climate change impacts and establish adaptation priorities. In that last four years, I have analyzed
more than 100 adaptation plans from different governmental scales. In this research, I used content analysis to compare plans to established plan quality criteria. Plans are scored based on the percentage of criteria they include. High quality plans are defined as those that provide clear assessments of climate projections, determine vulnerability, define goals, outline adaptation policies, and provide guidance for implementation. Moreover, high quality plans engage multiple stakeholders and the public in the planning process.

My analysis of adaptation suggests that urban planners and taskforces produce significantly higher quality plans than environmental departments. Planners and taskforces tend to engage more stakeholders in the planning process and consider a broader range of adaptation policies.

**National Scale**

In a preliminary evaluation of 38 national adaptation plans from across the globe — including China with a population of 1.3 billion and Vanuatu with under 300,000 people, Somalia with a GDP per capita of $549 and Australia with a GDP per capita of over $56,000, highly autocratic and highly democratic countries — the most important predictor of plan quality was whether a multi-departmental committee was engaged in the planning process. On average, plans written with the engagement of committees scored 16% higher.

Plans developed by committees had significant higher levels of public participation and coordination as shown in Figure 1. This difference is particularly important considering that a primary goal of national adaptation planning is to facilitate coordination of actors and provide a systematic approach to climate preparedness efforts. Coordination of actors from different sectors and scales is a persistent challenge for climate adaptation. Past studies critiqued national adaptation plans for their failure to engage multiple sectors and scales.

Plans developed by multi-departmental committees also tended to include a wider variety of adaptation strategies. For example, Albania’s plan, written by the Ministry of Environment, narrowly focuses on capacity building and the integration of adaptation into planning processes. While committees tended to include additional types of strategies. Developing a portfolio of different types of adaptation strategies such as education, physical infrastructure, and policy may help countries for the broad consequences of climate change.

**Local Scale**

Within countries, there is also variation in how local governments are engaged in adaptation planning. In a study of 44 U.S. county and municipal governments, adaptation plans written by the planning department scored on average 14% higher than plans written by other authors including consultants and environmental departments.

Similar to national plans, local adaptation plans written by planning departments have significantly stronger coordination among stakeholders and include significantly more types of adaptation strategies. Adaptation plans written by planners also tend to have stronger goals and implementation guidance (Figure 1).

**Future Adaptation Planning**
Some cities are experimenting with placing climate change adaptation within a broader resilience framework. Using a broader frame is intended to help illuminate the interdependencies between climate change and other community issues and motivate broader action. **100 Resilient Cities**, a $164 million initiative to reshape how cities manage economic, social, and physical stress and shocks, is a high-profile example of this effort. **100 Resilient Cities** provides financial support for participating cities to create a new position, a chief resilience officer (CRO). CROs help coordinate resilience efforts across departments and guide the city through the process of creating a resilience strategy. In the U.S., 23 cities have been selected for **100 Resilient Cities** and 8 have already released their resilience strategies. These strategies vary considerably from other local adaptation plans in the U.S. Preliminary analysis indicate that 100 Resilient Cities strategies have significantly higher coordination across stakeholders, but weaker analysis of climate projections and vulnerability as shown in **Figure 2**. Resilience strategies also include broader policy recommendations. Pittsburgh’s strategy, for example, includes traditional adaptation policies such as using green infrastructure to manage stormwater as well as policies to improve community-police relations and to make public schools hubs for social service provision. The **100 Resilient Cities’** strategies suggest that creating a new governmental position and framing adaptation more broadly can benefit coordination and strategies.

In conclusion, preparing for climate change will require actions across sectors from public health to economic development to public works. And it will require a broad portfolio of strategies that includes actions to reduce exposure to climate change impacts as well as actions that transform the social and political processes that produce vulnerability in the first place. Taskforces and planners may be better equipped to engage multiple sectors and motivate deeper action. Housing climate change adaptation in environmental departments may limit the engagement of other sectors and narrow the type of adaptation strategies considered.

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At least twenty-six states have adopted policies to reduce greenhouse gas (GHG) emissions by requiring electric utilities to meet ambitious energy savings goals. Under these policies, utilities develop products and programs that help customers save energy, allowing utilities to procure “negawatts” and thus reduce the demand for electricity.
However, these policies also radically upend relationships between regulators, regulated utilities, and customers. Utilities must shift from selling to saving electricity; citizens act as co-producers of energy savings; and regulators must ensure that programs are cost-effective and equitable. To meet the governance challenges presented by these shifting roles, states as diverse as Arkansas and Connecticut have developed innovative multi-actor approaches by bringing a range of public, private, and non-profit actors into electric sector governance. While these multi-actor approaches have emerged as part of states’ GHG mitigation efforts, they also highlight governance trends that are of interest to public management scholars. In this Commentary, I summarize findings from an ongoing study of state energy efficiency (EE) collaboratives, and highlight its relevance to the broader study of public management in the 21st century.

**When do Collaborative Approaches Work?**

State EE programs and policies are not new. Since the oil crisis of the 1970s, modest investment in EE programs has helped to reduce consumers’ bills, address air pollution, and manage peak load. As EE has emerged as an important tool for GHG mitigation, however, many state policy makers have required utilities to ramp up their EE programs to meet savings goals.

As savings goals have become more ambitious, states’ approaches to regulation have also become more deliberative and collaborative. A recent report by the Department of Energy identifies multiple approaches that vary in their scope and formality, but that all strive to advise decision makers through consensus-oriented deliberation among diverse stakeholders. Collaborative approaches are widely viewed as crucial for successful implementation of state EE programs. Of course this raises issues such as whether and why EE collaboratives are effective, why we see multi-actor processes in this particular policy area but not in others, and how policy makers can structure these collaboratives to best achieve policy goals.

EE programs require information such as how to induce consumers to participate, and how to estimate and verify energy savings. This poses governance challenges because utility personnel, program vendors, EE advocates, and energy analysts – not regulators – are most likely to possess this information. Regulators’ roles thus shift from being the technical experts to acting as stewards of the public interest by soliciting policy relevant information.

Second, while a diverse array of actors possesses technical information, their goals are not always directly aligned with the public interest. The best-informed actors tend to have a stake in the outcome of the program or policy decisions: utilities and vendors will want a set of programs that benefit their shareholders, environmental advocates will seek to maximize energy savings, and consumer advocates will focus on programs’ rate impacts. Stakeholders are well aware of this challenge, and many states have adopted ratemaking approaches and other strategies that work to align key actors’ goals. One such strategy is the creation of collaborative, deliberative approaches to governance that allow stakeholders to raise their individual concerns and work toward the creation of EE programs and policies that will maximize benefits across stakeholder groups. Deliberation
does not always resolve all conflicts between stakeholders, but it can reduce the number of issues in conflict.

Third, collaboration functions in the shadow of a strong regulator. Of course the hope is that stakeholders will identify emergent problems, resolve challenges as they emerge, and provide political support for the programs. But what if consensus is not possible? In many states, there is a strong norm of regulators adopting the “consensus” position; this creates incentives for all actors to work something out and not wait for the regulators to impose their solution on all.

**Connecticut’s Experience**

Connecticut’s [Energy Efficiency Board](#) (EEB) provides an illustration of how energy efficiency collaboratives can help states meet policy objectives. Connecticut’s EEB is created by statute, and brings together a diverse array of stakeholders to help utilities devise EE programs, as well as to provide analysis and advice to policy makers. The EEB members represent utilities, environmental advocates, consumer advocates, industrial consumers, and municipalities, among other interests. Together, the EEB’s members help the state’s utilities develop a suite of EE plans and programs that meet mandated savings goals and that are fair to ratepayers. As a group, the EEB hires an independent consultant to produce policy-relevant analysis about projected savings. And while regulators are not bound by the EEB’s recommendations, regulators normally adopt policy positions that represent consensus among the EEB members. Since its inception in 1998, the EEB has helped to ensure that utilities meet their savings goals and advocated for the preservation and expansion of funding for new EE programs, and in doing so has helped to make EE programs a centerpiece of Connecticut’s ambitious GHG mitigation plans.

**Implications for Public Management Research and Scholarship**

State EE collaboratives are just one illustration of a broader phenomenon within public management: the shifting role of public managers from neutral, technical experts to actors who convene other stakeholders and act as stewards of the public interest in decision making. Major events like climate change have a tendency to accelerate this shift in roles by creating new problems that require the development of new solutions and new approaches to public policy. The approaches to governance that emerge as a result – such as EE collaboratives – give public management scholars a new context to learn about governance and a crucial opportunity to synthesize and provide advice to policy makers.

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What Can We Learn from Native American Relocation as a Response to Climate Change?

Shane Day

Climate change will lead to extreme weather events that will necessitate communities to relocate to other areas. Native American communities are particularly vulnerable in this regard. But relocation is a complex exercise and not much thought seems to be given to this subject. The native American experience can offer valuable lessons in this regard.

Uprooting individuals, households and communities is a culturally sensitive issue. The legacy of the “Indian removal period”, in which dozens of tribes were forcibly resettled from their existing land bases to the Great Plains, casts a shadow over any proposal for relocation, as Native peoples
rightfully fear that such relocation might represent a continuation of the cultural assimilation goals of earlier removals. Additionally, existing cases suggest that intra-tribal conflict is a major barrier to relocation efforts, with tribal elders in particular resisting it on the basis of a “they’ve lived there, they’re going to die there” mentality. Furthermore, any relocation is unlikely to be politically viable to a tribe unless the new land base is familiar and supports traditional cultural and subsistence practices. Given this backdrop, a generalizable lesson may be that for relocation to be a viable option, obtaining community consensus from the bottom up is necessary.

**Where is the Administrative Infrastructure for Relocation?**

Even assuming that community buy-in has been established and a tribe is willing to move, there is no lead agency authority, centralized funding stream, nor rationalized process for facilitating such a move. Existing policy overwhelmingly focuses upon limited mitigation efforts and/or post-disaster temporary emergency assistance through agencies such as FEMA. The actual costs of relocation can be significant, and entails both the procurement of a new land base and implementation costs for the actual move. The establishment of a new land base has not followed a consistent pattern, with some tribes negotiating land swaps with various federal agencies for adjacent land on higher ground, others purchasing small tracts of land with their own limited resources, and still others obtaining funding through ad hoc federal grant programs. Furthermore, even if a suitable land base can be identified and procured, the cost of relocation can be highly variable and significantly impacted by factors such as the relative remoteness of the tribe, leading to stalled or piecemeal implementation as a tribe taps into whatever financial support they are able to obtain. Alaskan Native villages in particular face dramatically higher costs for community-wide relocations.

In the handful of instances where relocation has occurred or is underway, comparative analysis yields no consistent pattern or process. A frequently-cited case, the Biloxi-Chitimacha-Choctaw tribe of Louisiana, provides few if any lessons in that the tribe is not federally-recognized, and obtained $48 million from a one-time natural disaster resiliency competition grant program for local, not tribal, governments sponsored by the Department of Housing and Urban Development. This is a process most federally-recognized tribes are unaccustomed to, and potentially hostile towards, going through as most tribal governments expect services owed to them under treaty provisions or the federal trust responsibility to be implemented through the Bureau of Indian Affairs and other related agencies that they have a history of working with. Furthermore, the promise of potentially favorable land swap deals is very likely limited to a small handful of potential cases, and dependent upon political support and lack of popular opposition. In the few instances where such transfers have occurred, it has involved remote communities and entailed particular federal agencies having their own institutional interests at stake. In the case of Newtok, Alaska the village negotiated a land swap with the US Fish and Wildlife Service for adjacent higher ground, in part because the old village site held promise for fish habitat restoration activities. Land exchanges involving the National Park Service (NPS) are much more difficult owing to the agency’s different mission. As one employee states, “the NPS doesn’t transfer park lands casually, and it doesn’t happen often”. In the case of the Hoh tribe in Washington State, most of their new
land was procured with their own money, with a relatively innocuous 37 acre connecting corridor of former National Park land swapped with the tribe as a result of the support by the state’s congressional delegation. Such support comes amid the backdrop of past state-tribal conflict over fishing rights, with recent years demonstrating a marked improvement in state-tribal relations. A more conflictual contrasting case involving the nearby Quileute Nation, involving a more significant 785 acre land swap, met with greater resistance from the NPS. The Quileute, whose existing land base was under two square miles in size and subject to coastal erosion, tsunami impacts, and other issues, had been unsuccessful in negotiating a land swap and resorted to cutting off public access to two popular beaches in Olympic National Park that could only be accessed through tribal territory. In most circumstances, such a move by a tribal government would likely be met with fierce public outcry, but the Quileute, who figure prominently in the popular film and book franchise The Twilight Saga, marshalled this pop culture status to pressure Congress to intervene on their behalf. The NPS ultimately signed off on the deal on the basis of restored beach access and assurances that tribe will preserve much of the land as wilderness.

In conclusion, if negative impacts of climate change continue to increase in native communities, a more standardized program for facilitating relocation will be necessary. Yet, relocation efforts will probably be viewed with some skepticism given the experience Native communities have had with federal programs over the last two centuries. In light of the current administration’s reduction of support for climate policies however, tribes will likely face a decreased range of options to support their efforts at relocation, with potentially dire results that would represent a violation of the federal trust responsibility towards tribes. The challenge for public administrators is to think creatively on how the interests of the underprivileged are protected, and through what sorts of administrative interventions, as the challenges posed by the changing climate mount.

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As of May 2017, at least 17 communities have already begun the process of managed retreat inland due to the effects of climate change. Yet, the US federal government remains ill-prepared to deal with the immense policy challenge at hand. At present, there is no dedicated funding, lead agency, or policy framework to guide communities in need of relocation. And only one of the 17 communities
engaged in climate-induced relocations, the **Isle de Jean Charles** in Louisiana, has received enough federal funding to move their town in full. During its final two years, the Obama Administration took a number of executive actions to guide federal action on climate-induced relocation. But because President Obama faced a hostile Congress, his Executive initiatives were tentative and failed to leave a strong, lasting impact upon which future policy work could build. Still, in spite of their shortcomings, they offer important lessons on climate-induced relocation policy for the field of public administration moving forward.

**Change of Guard: From Obama to Trump**

President Obama first spoke on climate-induced relocation during his visit to Alaska in September 2015, when he became the first sitting President to visit the Arctic. After holding a successful conference on global leadership in the Arctic (**GLACIER**) in Anchorage, President Obama traveled above the Arctic Circle to Kotzebue. En route, he flew over the Native Village of Kivalia, one of Alaska’s communities that is most at-risk of complete inundation. Citing his flyover as part of his inspiration, President Obama mandated that the **Denali Commission**, an independent federal agency in Anchorage, would “play a lead coordination role for Federal, State and Tribal resources to assist communities in developing and implementing both short- and long-term solutions to address the impacts of climate change.” To further this cause, the President pledged $2 million to help with voluntary climate-induced relocation efforts in Alaska. (Though it must be noted that the pledged sum covers less than two percent of the cost to relocate one Alaskan town, estimated at $100 to $200 million). The following year President Obama announced an **interagency working group** on community-led managed retreat and voluntary relocation to develop a framework and action plan for managed retreat following a **Symposium on Climate Displacement, Migration, and Relocation** in Hawai’i hosted by the White House Council on Environmental Quality.

And, in a hopeful nod towards the next administration’s work, **President Obama’s White House Budget** for FY 2017 included a $2 billion Coastal Climate Resilience Program to provide resources over 10 years for at-risk coastal States, local governments, and their communities. The budget noted that “a portion of these program funds would be set aside to cover the unique circumstances that climate change forces some Alaskan communities to confront, such as relocation expenses for Alaska native villages.”

Unfortunately, as with many other climate policies, most of the above initiatives have been defunded or scrapped by the Trump Administration.

President Trump’s own **proposed budget plan** eliminates key programs for coastal adaptation research and capacity building like the **National Sea Grant College Program**; it reduces the US Army Corps of Engineers’ construction account by more than 50 percent, one of the most involved government entities in relocation planning; and it cuts dozens of EPA programs, including infrastructure assistance to Alaska Native villages. Perhaps most telling, the **Denali Commission** is
now shut down, and its budget is zeroed out in President Trump’s proposed plan, and the
interagency working group has been silent since January 21st.

The Need for A Federal, Comprehensive Framework for Relocations
Federal programs for disaster assistance are limited and mostly unavailable to towns that require
climate-induced relocation. Relief programs focus on sudden natural disasters, like Hurricane Sandy,
and on rebuilding in place rather than supporting the relocation of towns facing gradual inundation
or other slow-onset disasters.

Importantly, current policies like the Federal Emergency Management Agency’s (FEMA) Flood
Mitigation Assistance Grant Program privilege individual household buyouts at the expense of
relocating an intact community. Relocating a community together requires more than buying out
homes; it necessitates programming and funding to maintain social support systems, safeguard
cultural heritage, build communal infrastructure at the new site, and mitigate the psychological
distress of moving. Because of these gaps, coastal communities facing slow-onset challenges across
the country rely on ad hoc federal and state grants and attempt to rebuild and relocate in bits and
pieces, in the hope that the work will be done before an emergency evacuation is needed.

Many of President Obama’s policy initiatives and funding allocations prolonged this cobbled
approach to relocation. Each relocation decision during the last Administration, from the Denali
Commission to the funding of the Isle de Jean Charles relocation through a competitive Housing and
Urban Development grant competition, came as one-off resolutions. These actions failed to establish
a durable, comprehensive framework at the national level to guide relocation decision-making and
support. The interagency working group, instituted in December 2016, was a necessary first step in
this process, but came too late to make any lasting impact.

Whether they are initiated by this administration or the next, federal-level policies must move past
ad hoc actions to instead embrace a lasting administrative framework capable of addressing the
guidance, legal, funding, and socio-cultural needs of the relocation process. This is particularly
important because at least 414 towns, villages, and cities across America will be partially flooded by
the end of this century no matter how much humans decrease greenhouse gas emissions. All of these
will require transformational adaptations, and some will choose partial or full retreat away from
America’s eroding edges.

From this, two crucial lessons for the study of public administration emerge. First, complex policy
issues that require action from multiple administrative units must be coordinated. While Homeland
Security might not be the best example, it certainly reveals an attempt to bring administrative
coherence to actions of different administrative units to address a common problem. Second, the
scale of the response must have some resemblance to the scale of the problem. Small efforts such as
one time grants or trips to the Arctic can prove important, but only if they are implemented within a
coherent, comprehensive framework for relocation.
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The Future of Emissions Trading: Implications for Public Administration

Sanjay Patnaik and Jorge Rivera

German Chancellor Angela Merkel speaks about Emissions Trading at the UN climate conference in Paris in 2015.
In recent years, emissions trading schemes (ETS) have become the preferred regulatory tool for many governments for reducing greenhouse gas emissions. While ETS have several potential advantages vis-à-vis other policies, their proponents rarely acknowledge the complex public administrative structures required to implement them. The European Union Emissions Trading Scheme (EU ETS), launched in 2005, is currently the most established and largest multi-national ETS for greenhouse gases in the world. Covering more than 11,000 plants in a variety of industries across the EU, it has provided important lessons and a template for other active and planned ETS by numerous sub-national and national governments around the world (including China, California and South Korea).

Based on insights generated from our multi-year research projects on the EU ETS, we identify three best practices for the design and implementation of ETS: (1) the elimination of free emissions permit allocation to the regulated firms and plants, (2) the harmonization of cross-country administrative structures and rules when linking different ETS, and (3) the provision of more stringent market oversight by regulators.

**Who Gets The Allowances?**

The first and most essential element of an ETS is setting an overall emissions limit for regulated entities and then allocating the “rights to emit” (i.e., emissions allowances) to them. Since emissions allowances are valuable assets (i.e., they give the owner a property right to pollute and are priced by the market), the allocation of emissions allowances by regulators can become a hotly contested political process.

Similar to the EU ETS, regulators often allocate these allowances for free to existing polluters. The idea is to use free permits to get “buy-in” from firms and reduce their incentives to oppose the new scheme. However, free allocation is a complex administrative task because there are several different ways to allocate these allowances such as, using historic emissions or industry benchmarking on plant efficiency. With a limited number of allowances, regulated firms and industries have an incentive to lobby for a larger share of allowances for themselves.

To avoid this allocation problem, regulators could auction allowances off instead of allocating them for free, an approach that is increasingly being implemented by regulators (including in Phase 3 of the EU ETS and in the Californian ETS). The auctioning approach might be particularly attractive for countries whose political systems lack transparency. Although the design of auctions can be subject to inequitable corporate influence as well, allocation by auction can improve the legitimacy of the system.

**Linking Emissions Trading Schemes Across Countries**

The second issue worth highlighting relates to the linkage of different ETS and permit markets across countries such as the planned integration of ETS across California, Ontario and Quebec, and the connection of the EU ETS with emissions offset credits generated outside the EU. A linkage implies that, for instance, firms in California can then use permits from Québec and vice versa. Our research
suggests that allowing companies to use different types of emissions permits from distinct markets leads to obvious problems. For one, the cost of acquiring a permit to emit a ton of carbon dioxide can differ between California and Ontario (depending on how many permits were allocated in that jurisdiction in the first place). These price differentials can help companies that have the resources to closely follow multiple emission markets, specifically multinational companies. To alleviate this potential issue, we propose that the administrative structures and regulatory rules for linked ETS need to be rapidly harmonized to provide the affected firms with the same rules across markets.

**Trust But Verify**

A well-functioning ETS requires an oversight system that ensures accurate measurement and verification of emissions levels of the regulated firms, permit traders have the proper credentials and emissions permits in circulation are not fraudulent. This is similar to the stock market where oversight mechanisms such as the Securities and Exchange Commission have been used for a long time. As the experience with the EU ETS shows, a new ETS can be vulnerable to criminal activities and fraud. We therefore suggest that public administrators provide more stringent market oversight and institute government-led verification procedures when implementing an ETS. This could be challenging in developing countries with weak administrative capacities. In sum, market-based mechanisms might function best in high capacity states; essentially more market, more state. This is an important lesson for the study and practice of public administration.

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What Makes Market Mechanisms for Emissions Abatement Work in India?

Rama Mohana R. Turaga and Anish Sugathan

Environmental policy traditionally relied on command-and-control approaches in which government plays a central role in policy design and implementation. The developed economies, since the late 1980s, however, saw the emergence of “new environmental policy instruments”, such as market-based instruments, information-based policies, and voluntary agreements. In the context of climate change policy, developing countries such as India have been experimenting with market-based instruments such as “Perform Achieve and Trade (PAT)”, which seeks to improve energy efficiency in industries in India.

What is PAT?
India launched the National Action Plan on Climate Change in 2008, even before it voluntarily committed to emission reductions at the 2015 Paris Climate summit. Under this plan, India established the National Mission on Enhanced Energy Efficiency (NMEEE), which is aimed to
improve energy efficiency in the economy through market-based instruments such as tradable permits, energy labeling, and financial incentives. PAT is the flagship program of this mission and seeks to improve energy efficiency in eight energy-intensive industrial sectors that contributed to 36% of India’s total energy consumption in 2009-10.

The first phase of PAT started in 2012 after extensive consultations with several stakeholder groups, undertaken by the Bureau of Energy Efficiency (BEE), the public agency responsible for design and implementation. The program set mandatory targets for reduction of specific energy consumption (consumption per unit product) for each of the 478 firms regulated under the program. The “market” component of the program involves issuance of energy saving certificates for those firms, which reduce energy consumption below their targets. These certificates can be traded in specified energy exchanges with other regulated industries that failed to meet their targets.

In PAT implementation, BEE, as the central actor, conducted extensive stakeholder consultations, set up technical committees, and coordinated with many other stakeholders for monitoring and verification. To ensure ease of transactions, the government created new infrastructure, including a technology platform for reporting by all the stakeholders and a new trading platform in the existing energy exchanges. The program also had a role for Central Electricity Regulatory Commission, the regulator of electricity markets in India’s federal government, to set the rules for trading.

The initial assessment of the first phase of PAT indicates that the regulated firms collectively exceeded the reduction target by 30%, leading to 31 million tons of CO₂ reduction or approximately 2% of India’s total CO₂ emissions. Only the thermal power plant sector failed to reach their target. However, certain issues of program efficacy remain unclear: (i) would rising energy prices have led to emission reductions even in the absence of PAT, (ii) given the lack of certainty regarding future caps, does PAT incentivize only short-term investments by industries in energy efficiency and (iii) will the promised cost effectiveness be realized in light of the likelihood of low volumes of trading for certificates? Despite these issues, more industrial sectors and units are planned to be covered under the program in the next few years.

Governments Continue to Matter

As the India’s experience with trading in energy saving certificates suggests, governments continue to play an important role in the design and implementation of even the non-traditional environmental policies. Energy consumption certificate trading, in particular, shows the key role of the government in designing the program, in enforcing targets, in creating demand for certificates, and creating a platform where these certificates can be exchanged. The next step is to compare the design and effectiveness of various types of market-based mechanisms for climate change mitigation across countries to figure out what works, where, and why. Arguably, implementing complex governance mechanisms might be less feasible in developing countries that lack institutional capacity. After all, one needs significant technical expertise in the design and implementation of such schemes. If so, the diffusion of new governance mechanisms might be impeded by differences in state capacities across countries.
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Climate policy instruments tend to be judged by their efficiency: the ability to reduce carbon pollution at the lowest marginal cost. At first glance, this seems sensible. Transitions to a low-carbon economy will involve substantial adjustment costs. Businesses, workers, and publics will face economic disruption. How could we ever justify policy designs that impose more costs and spend more money to deliver the same level of carbon pollution reduction?
Yes, a move away from “efficiency” can be unsettling. Rhetoric about efficiency is deeply engrained in virtually every policy debate. Yet, a focus on short term efficiency has its pitfalls.

I suggest that serious decarbonization efforts may benefit from “inefficient” climate policies in the short run when these policies also nurture the growth of pro-climate political coalitions over time. Specifically, I highlight the problems of climate action getting locked-in to emissions trading schemes (ETS) that promise to deliver carbon emission reductions at least marginal costs. ETS coupled with carbon offsets offer attractive alternatives to costly domestic abatement targets. Underlying their arguments is an assumption that a ton of carbon pollution abated in one part of the world or in one part of the economy, is equivalent to a ton of carbon pollution abated in another part of the world or another part of the economy. This has obvious implications for environmental justice. But it can also have pernicious effects on long-term decarbonization efforts because it tends to reward the existing carbon-dependent industries and undermine the emergence of a low-carbon industry coalition.

**Efficiency or Equity?**

Our atmosphere makes no distinction between a molecule of carbon dioxide released by a coal-fired power plant in Wyoming or by a rainforest fire in Brazil. Yet, the choice to target Wyoming coal or Brazilian deforestation has substantial political repercussions: decisions about who should bear the cost of climate mitigation today reshapes who will have political voice during future rounds of climate policymaking.

In political terms, one ton of CO₂ reduced in one sector in one part of the world is *not the same* as a ton of CO₂ reduced in a different sector in a different part of the world. Why? These tons may have the same direct effect on atmospheric carbon stocks; however, they have different indirect effects on long-term political support for future climate reforms. The right to release carbon pollution into the atmosphere provides an implicit subsidy to particular economic actors. When a carbon polluter is allocated emissions allowances, or when a country/company decides to purchase emissions credits abroad instead of reducing emission at home, this helps maintain that actors’ profitability and enhances their longevity.

The policy of “subsidizing” specific polluting sectors even extends to carbon taxes. The tax, as we are told, work through the market by putting a price on pollution for everyone. But specific sectors are exempted from carbon taxes in virtually every carbon tax implemented anywhere in the world.

For example, Norway was the second country in the world to enact a carbon tax in 1991 but [exempted most of its onshore industries](#) (While these industries are now part of the EU Emissions Trading Scheme, they joined as clear economic winners under that policy’s allowance distribution scheme). At the same time, carbon taxes on the offshore oil industry were calibrated to avoid radical disruption to that industry’s growth. [These exemptions stemmed from the outsized political influence of carbon-intensive industries within Norwegian policymaking debates](#).
But it gets more interesting. Reluctant to impose significant costs on domestic producers, the Norwegian government has championed such initiatives as the Climate and Forestry Initiative, to fund carbon pollution abatement opportunities outside of Norway. In this way, efficiency rhetoric has allowed successive Norwegian governments to maintain the political and economic status quo. Meanwhile, domestic emissions have increased 3.3% since 1990.

The Virtues of Inefficiency
Inefficient policies can sometimes reshape the distribution of political power when they explicitly redirect resources to new industries. Consider debates over whether renewable energy support policies are desirable after a country passes an emissions trading scheme. In the United States, conservative Democrats opposed the inclusion of a renewable energy standard in the 2009 Waxman-Markey bill because they believed it to be inefficient and superfluous. Australia’s Clean Energy Finance Corporation, a government-initiated effort to finance clean energy deployment set up in parallel to the country’s emissions trading scheme faced the same criticism. According to these critics, mandates for clean energy along with national carbon caps don’t reduce net national emissions; instead, renewable energy deployment simply creates “slack” within allowance markets. Again, this is true in a direct sense. Yet, this criticism neglects a key fact: decisions about the distribution of climate policy costs, even under a cap, have significant political repercussions. When policymakers promote clean energy, regardless of whether a national carbon cap exists, they nurture new political actors whose policy preferences for future carbon policy probably differ from that of the fossil fuel dependent status quo sectors. For example, the renewable energy sector will probably mobilize to support and expand climate and energy reforms. This political benefit can be crucial to long-term decarbonization efforts even if renewable energy support policies are narrowly inefficient in the short run in relation to emission trading.

Moving Beyond Marginal Abatement Costs
In conclusion, public administration scholars need to go beyond merely comparing the marginal abatement costs of different policy instruments, the declaring the one with the lowest to be winner or the desired one. We need to ask whether in some contexts efficiency arguments offer cover for established carbon polluters to avoid domestic costs. Might policies that target higher-cost abatement opportunities allow new green energy coalitions to emerge? If it takes inefficient policies in the short-term to support the redistribution of political power, will long-term efficiency gains (from the increased political power of pro-climate coalitions) dominate these short-term costs?

The climate threat is not a single-round policy game. It will instead involve repeated rounds of policy bargaining over decades. Consequently, short-term policies must be designed and implemented in a way that generates strategic opportunities for future climate reformers. Sometimes it’s the inefficient policies that unlock more effective – and eventually more efficient – decarbonization opportunities over time.
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Moderating the Impacts of Extreme Weather Like Heat Waves Through Public Awareness Campaign

Saudamini Das
Does Awareness help save one’s life during heat waves? Based on my independent evaluation study, I suggest it does.

Heat waves are one of the biggest killers among extreme weather events. Although poor communities are disproportionately affected by such waves, developed countries are not immune from them: recall the horror of 2003 heat waves in Europe and 2010 heat waves in Russia, each killing more than 50,000 people. Since the mid 1990s, India is witnessing large number of deaths due to heat waves: most recently 2,500 in the year 2015. I find that interventions that raise awareness enhancing interventions can reduce the impact of such extreme weather events. Thus, to address climate change, in addition to “hard” instruments that require creation of physical infrastructure, countries should pay careful attention to “soft” instruments that seek behavioral changes for climate adaptation by raising awareness of the problem and outlining simple, culturally appropriate solutions.

**How Should Public Health Departments Respond**

Heat waves are becoming more frequent and deadly in recent years. Take the case of the state of Odisha in eastern India having 60% of its population below poverty line and a per capita annual income of less than $100. Odisha experienced severe heat waves in summer of 1998 that killed 2,041 people within 30 days. Though people had never heard of heat waves prior to 1998, these have become almost regular there after (Table 1).

It seems that simple lifestyle changes at the individual level can help protect against heat waves. In a state-wide program, the Odisha public health department in collaboration with the disaster management department, has sought to increase public awareness about the dos and don’ts during peak heat periods: eat yogurt rice, wear light colored cotton clothes, never go out on an empty stomach, drink enough water and carry water bottle if going out, take special care of elderly (Odisha has joint family system) and sick, avoid alcoholic drinks, etc. These messages were conveyed in the local language. Importantly, they were direct and straight forward telling people what to eat, what to wear, what to avoid, how to move around etc. during extremely hot time.

Separately, during this period, the United Nations Development Programme and Government of India sponsored Disaster Risk Management (DRM) project was implemented in some part of the state (16 of the 30 districts) and this facilitated the heat wave management programs. The information was distributed in various forms like pamphlets, advertisements in television, newspapers and radio, jingles in radio, hoardings at public places. The idea was to convey these messages through pictures, bright colors, eye catching images, so that even illiterate people could understand it. Additionally, the grass root health workers in DRM districts were trained and advised to explain and give this information in each village personally. This campaign started in 2003 and was intensified each subsequent year by involvement of more electronic media, especially visual media replacing print media over years (Figure 1).

**Did this Work?**
Though the number of heat wave days every year have remained high (Table 1), the average death counts have declined after 2005 (Figure 2). I conducted an independent evaluation of this intervention (Das and Smith 2012; Policy Brief 2013; Das 2015; Das 2016) and find clear indications that public awareness interventions contributed to this declining mortality. Specifically, I found that:

- Districts where DRM program was implemented suffered significantly lower deaths compared to non-DRM districts in spite of witnessing more heat wave days.
- More than 95% of the vulnerable population (low income workers doing manual job in open environment) were found aware of the dos and don’ts and were more or less adapting these advices in their daily lives.
- Information dissemination via television was more consistently and significantly associated with decline in deaths. Newspapers came next. Surprisingly, radio dissemination did not show a significant effect. This suggests that visual media is more effective in bringing behavioral change in public. Another interesting finding was that the cumulative use of these media (television and newspaper) over the period, not the same day use, was associated with decline in deaths.

In conclusion, public health department’s use of public awareness campaigns has successfully brought about behavioral changes among people in one of the poorest regions of India. The messages were in local vernacular, clearly mentioned what to do, emphasized traditional life style, required no extra skill to put the advices into practice, involved no extra expenditure (just relocation), etc. and probably that explains the success of the awareness campaign in reducing mortality occurrences in the state. The broad lesson is that public awareness campaigns must be sensitive to the local context, and convey actionable information in simple terms. Not all challenges created by climate change need complicated, resource-intensive solutions. Some issues can be tackled by simple but imaginative interventions as well.

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How Cities Are Addressing Climate Change Through Sustainable Purchasing

Nicole Darnall, Justin M. Stritch, Stuart Bretschneider, Lily Hsueh and Won No

The Trump Administration’s withdrawal of the United States from the Paris Climate Accord has increased the focus on local governments to address climate change. In response to this
U.S. mayors, representing 65 million Americans, have committed to decrease greenhouse gas emissions (GHG) in their cities. How might cities accomplish this? While cities can reduce emissions by purchasing fuel efficient fleets, retrofitting their building with better insulation, etc., mitigation is limited if cities continue to purchase goods and services that are produced with carbon intensive technologies. The opportunity here is for cities to focus on their overall carbon footprints, as opposed to their direct emission reductions only. To do so, they will need to implement a sustainable purchasing policy (SPP).

Sustainable purchasing represents a major opportunity because U.S. cities annually purchase $1.72 trillion of goods such as chemicals, electronics and office materials, which is comparable to the size of the Italian economy, the 9th largest in the world. These purchases have a carbon footprint nine times that of buildings and fleets, which create significant GHG emissions in cities. By purchasing climate-friendly products, cities not only reduce their carbon footprint, they also help green their supply chain, thereby making it easier for other customers to purchase climate-friendly products as well.

To assess the how cities are pursuing sustainable purchasing, Arizona State University's (ASU) Center for Organization Research and Design created the Sustainable Purchasing Research Initiative (SPRI) and conducted a survey of directors in U.S. cities. The findings of this survey inform a research agenda for sustainable purchasing in public administration, as presented below.

Sustainable Purchasing: Advancing a Public Administration Research Agenda

Organizations do not always evaluate policies with fresh eyes. They are often bound by routines and past practices. If they buy carbon intensive carpet, they are likely to repeat such purchases in the future. How might they be persuaded to purchase climate-friendly carpet instead? We find that the adoption of such SPP can unleash the process of organizational change. This is important at a practical level, but also to help us understand core public administration issues:

A. Complementary Policies. Organizations typically do not adopt an SPP on its own; such initiatives reflect a broader organization vision that is supported by complementary policies. For example, we found that 76% of cities with a city-wide environmental policy, were also SPP adopters and the same proportion of cities with a green building policy were SPP adopters. This compares to only 15% of cities with an environmental sustainability policy and 17% of cities with a green building policy that were non-SPP adopters.

B. Public Sector Information Systems and Technology. Cities’ information systems and technologies can gather and store sustainable product information about vendors and previous purchases. These systems can also be used to track the extent to which purchasing officers use green product information in the purchasing process. Understanding more about the relationships between information systems, technology and cities’ use of SPPs is relevant to public administration research on information gathering, information credibility, and the role of information in decision-making. Our initial research shows that these topics justify additional investigation. Indeed, 45% of cities with SPPs have green product/service lists available to departments when making purchasing
decisions. These lists are designed to help purchasing officers identify sustainable products. By contrast, only 13% of cities without SPPs have access to green product/service lists.

C. Leadership and Management. Making policy shifts can create political problems within organizations. Sometimes the benefits from the new policy are not visible in the short run and this leads to internal backlash. This is where leadership comes in. Public administration research has long been interested in the role of leaders and organizational entrepreneurs. Sustainable purchasing provides a window to assess how leaders such as mayors can persuade their cities to pursue a broader sustainability agenda. More than two-thirds (69%) of cities with SPPs report that top management facilitates or strongly facilitates their ability to implement sustainable purchasing. This compares to under half (48%) of cities without SPPs.

D. Balancing Public Values. Public managers may have to balance issues of sustainability with social equity objectives (e.g. buy-local policies, women and/or minority owned business purchasing initiatives and small business purchasing policies). For instance, the City of Phoenix has a buy-local policy and a minority owned business policy. However, some climate-friendly products are not sold locally or through minority owned businesses. Implementing the City of Phoenix’s SPP has required purchasing officers to consider sustainability alongside other social equity objectives and the city has had to address tensions that arise when pursuing multiple social objectives.

With respect to other U.S. cities, about two-thirds (67%) of SPP adopters have a buy-local policy, as compared to 39% of non-SPP adopters. Similarly, 53% of SPP adopters had a minority-owned business purchasing policy, while only 21% of non-adopters had these policies. What is not clear is the extent to which these policies conflict, as in the case of the City of Phoenix, or whether they are simply part of a broader social purchasing agenda. Assessing these issues will offer practical insights, but also scholarly understanding, about the ways that public managers balance different public values.

In sum, within the U.S., cities have emerged as leaders in climate governance. Sustainable purchasing is an important way by which cities can demonstrate this leadership. It also offers public administration scholars a unique opportunity to expand our knowledge of how public managers adopt and implement policy and manage organizational change.

About ASU’s Sustainable Purchasing Research Initiative: SPRI’s goal is to provide both actionable advice for practitioners implementing SPP’s while advancing public administration research.

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The 2010 ICMA survey on local government sustainability policies and programs suggests that many American cities are still at the early stages of developing and implementing climate mitigation policies. While over 95 percent of the respondents view the environment as at least "somewhat a
priority,” close to 50 percent do not recognize climate change as a policy priority in their jurisdiction. The low level of explicit commitment to climate change mitigation at the level of single local jurisdictions is not surprising because climate change mitigation is a global public good that is both non-rival and non-excludable. Widely distributed benefits, high costs of provision, and a high potential for free-riding creates disincentives for local governments to invest in climate mitigation.

Yet, cities do engage in a wide range of sustainability-related policies and activities that address environmental concerns. The ICMA survey lists 109 sustainability-related activities across twelve dimensions of environmental sustainability and, on average, governments engage in about 20 of these activities. The most common of them include recycling, water and energy conservation, transportation and energy use improvements. Not surprisingly, the least common policies involve climate-change mitigation practices such as the use of alternative energy, transportation alternatives, and monitoring and reduction of greenhouse gas emissions.

**Are Cities alike in Pursuing Environmental Sustainability?**
Cities differ widely in the scope of their sustainability commitment. Cities in the West of the U.S. are significantly more committed to sustainability practices than cities in other regions, as evidenced by a higher number of sustainability initiatives they pursue. Larger cities with higher median household incomes are also more likely to commit to sustainability goals and practices. This finding provides support to the notion of the environmental Kuznets curve, where the demand for environmental protection grows along with the growth in wealth after the latter reaches a certain level.

Interestingly, **how cities are governed matters as well**. Cities governed by city managers are more likely to adopt sustainability practices than cities with other governance arrangements (such as strong elected mayors). Arguably, this reflects the role of professional administrative training in responding to the modern challenges of urban development. Cities in the states that pursue and promote sustainability are also more likely to adopt sustainability measures, highlighting that local sustainability adoption is responsive to the state-level policy environments. Our own analysis of the data on municipal sustainability and voting behavior suggests that the median voter political ideology also affects sustainability commitments. A strong negative association exists between the share of Republican-voting residents in a city and its willingness to pursue sustainable development.

**Budgets and Sustainability**
It is not clear how sustainability commitment affects allocations to different policies in municipal budgets. On the one hand, when sustainable initiatives are funded from additional revenues, spending on sustainability should not cut into other spending categories. On the other hand, most city governments may not have much leeway in tapping into new revenue sources if they operate in a challenging budgetary environment. As a result, a sustainability-oriented municipality may need to redirect spending to a few prioritized programs to meet its sustainability objectives. Climate change mitigation may not fall in this category.
In conclusion, after President Trump’s announced withdrawal from the 2015 Paris Accord many commentators claimed that cities will be able to pick up the slack. We urge caution in this regard. It is important to recognize that climate mitigation policies involve sizeable costs, and most cities are already finally over-stretched in meeting their existing obligations. Of course, climate action does not have to crowd out existing policies. But this assumes that cities can and are willing to raise additional revenue. Cities could raise taxes, float bonds, and introduce levies to finance climate mitigation policies. All true but there is a significant political downside to asking citizens to pay for policies that benefit the world, instead of policies that create local, visible, and immediate benefits. Climate mitigation policies often do not fall in this category (adaptation policies might not have the same political problems). Hence, instead of uncritically accepting the sound bites about how cities will pick up the slack on climate change mitigation, public administrators and scholars will need to carefully watch the extent to which cities are walking the climate talk.

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