

# INSTITUTIONAL FACTORS IN TRANSPORTATION RESPONSES TO CLIMATE CHANGE MITIGATION: PERSPECTIVES FROM LATIN AMERICA

*Carolyn McAndrews, Department of City and Regional Planning, UC Berkeley*

*Elizabeth Deakin, Department of City and Regional Planning, UC Berkeley*

*Lee Schipper, Center for Global Metropolitan Studies, UC Berkeley*

## ABSTRACT

In this research we sought to understand how policy actors in the urban transportation sector in Latin America adopt climate change considerations into their work, including the techniques they use to address it, including analysis, advocacy, and project planning and implementation. Are these practitioners' responses to climate change mitigation a departure from standard practice? Through interviews with transportation practitioners working in Latin America with international organizations and non-governmental organizations, primarily through the World Bank, we found that transportation practitioners in Latin America want to include climate change mitigation as a main objective of urban transportation projects, but encounter four major challenges. These challenges include (1) lack of local political support; (2) constraints imposed by climate change mitigation funding instruments; (3) disjointed transportation and land use planning in metropolitan areas; and (4) lack of support for interventions that slow motorization. Though our interviews centered on practitioners in Latin America associated with the World Bank, additional discussions with practitioners in China and California confirm that these challenges generalize to other regions.

"Science, politics, and administration are the names of for social processes and institutional complexes, that, among other things, warrant the coming to conclusions." Nelson Polsby

## INTRODUCTION AND RESEARCH OBJECTIVES

Climate change policy-making involves numerous public, private, and non-profit groups from different sectors working both trans-nationally and locally. On the world stage, national political leaders negotiate promises to reduce emissions of greenhouse gases, taking positions about the expected economic and equity impacts of pursuing climate change policies. Climate change is also a policy issue for other levels of government, including cities

*Experts in Urban Transportation Respond to Climate Change: Perspectives from Latin America*

*MCANDREWS, Carolyn; DEAKIN, Elizabeth; SCHIPPER, Lee*

and regions that have pursued their own responses to concerns about global warming. In addition to governments' activities, experts from international organizations, non-governmental organizations, academia, and civil society proceed with their own and their organizations' agendas to address climate change concerns through their work. All of these policy activities involve multiple, interdependent policy sectors such as energy, agriculture, transportation, and development.

We are interested in questions of how transportation experts working with governments, but not necessarily within government, adopt climate change considerations into their work. The rationale of this line of inquiry is that transportation and land use policy-making depends not only on the authority of local, regional, state, and national governments, but also on the activities of a larger network of actors including international organizations and non-governmental organization.

Analyzing activities in climate change policy-making in this complex environment depends on one's analytical vantage point. Everything from the broader policy agendas, to the details of program implementation may appear different depending on the region, sector, or actor networks involved. The research that we present in this paper focuses on one network within the global climate change policy community: experts in urban transportation working in Latin American cities primarily with the World Bank. We acknowledge the importance of the efforts made to adapt to a changing climate, but here we focus only on issues related to mitigating emissions of greenhouse gases.

The significance of studying climate change policy in the transportation sector in Latin America is two fold. First, carbon emissions per capita from the transportation sector in Latin America are increasing at a faster rate than the rest of the world, and most of these emissions come from light-duty vehicles operating in urban areas. Furthermore, car use in the region is expected to grow by 300% by 2030, outpacing the effects of green transportation technologies that could reduce emissions per kilometre by about 30%. (Schipper, et al., 2009) These trends reinforce the need for the transportation sector to address global warming concerns with a diverse set of strategies, including, but not limited to, cleaner vehicles and fuels, and interventions that reduce the vehicle-kilometers of travel.

The second point is that climate change is not a top agenda item for most Latin American countries (Mexico is a notable exception). Both popular and political opinion in the region hold that more advanced economies such as the US are responsible for global warming, and that climate change mitigation is not the problem for low- and middle-income countries in Latin America. This dynamic makes the Latin American case important because transportation professionals within organizations that *do* include climate change in their organizational agendas are working in an institutional environment that is not receptive to this policy stream. This situation is relevant outside of Latin American countries, and reflects a sentiment also found in the US.

Given this presentation of the problem, the research questions we ask are the following:

*Experts in Urban Transportation Respond to Climate Change: Perspectives from Latin America*

MCANDREWS, Carolyn; DEAKIN, Elizabeth; SCHIPPER, Lee

1. How do the urban transportation experts respond to national and organizational climate change policy agendas? Do these agendas influence their work, and if so, how? Do these experts seek to influence the climate change policy agendas, and if so, how?
2. How do experts in urban transportation in Latin America integrate climate change concerns into urban projects and policies? How do these concerns affect the selection, design, and implementation of urban transportation projects?
3. What administrative and bureaucratic politics that arise when urban transportation experts working in Latin America include climate change considerations in their work?
4. What institutional challenges do these practitioners face when including climate change considerations in their work?

This research originated with a project carried out in cooperation with the World Bank in 2008-2009 in which we asked how World Bank operations staff and consultants working in Latin America have addressed climate change considerations in the selection, design, assessment, and implementation of projects. We answered these questions based on interviews with World Bank staff and consultants, analyses of publicly-available project documents for all contemporary urban transportation projects in Latin America funded by the World Bank, and analyses of the economic and environmental reviews of these projects to identify whether carbon emissions were included in the analyses, and whether they could be included. (McAndrews et al., 2010; Schipper et al., 2009)

This analysis found that urban transportation projects relied on loans and grants to support a mix of infrastructure for transit, bicycles, and pedestrians, institutional strengthening, as well as roads. Only a few projects explicitly addressed climate change mitigation, and these were large public transit projects with accompanying infrastructure for non-motorized travelers. The mode choice and urban development impacts of these public transit projects, as well as the majority of the public transit projects in the World Bank's urban transportation portfolio, almost surely have positive effects compared to what would happen without them. In some cases, however, funding for road construction at the urban fringe may induce outward urban expansion and greater auto use (a significant proportion of urban transportation funding—about 30 percent—goes toward roads projects in urban areas), perhaps offsetting some of the benefits of the public transit investments. Specifically analyzing the carbon consequences of all projects, as well as their combined effects in the overall system, is not currently practiced by the World Bank for its urban transportation projects, but it would provide better ability to track and take credit for carbon mitigation and also could flag potential problem areas. A limitation of this prior study is that it focused only on World Bank funded projects. Future research comparing these projects with those funded by other international, national, and local organizations would enrich the findings.

*Experts in Urban Transportation Respond to Climate Change: Perspectives from Latin America*

MCANDREWS, Carolyn; DEAKIN, Elizabeth; SCHIPPER, Lee

In this paper, we present the results of the interviews with World Bank staff. Also, while we have expanded the interviews to include perspectives from experts from other organizations working on urban transportation in Latin American cities, the methods used here gather information primarily from one organizational setting. This focus on one organizational setting provides depth in the findings, but it is also a limitation. In future work we will expand the set of organizations from which we collect information.

Nevertheless, centering this research on the World Bank's operational work in the transportation sector offers a unique perspective on how responses to climate change shape cities and metropolitan regions. Furthermore, the World Bank performs several roles in urban transportation planning. It is a participant in policy discourse, a bank, a technical advisor, and a development organization pursuing the overarching goal of reducing poverty. This combination of roles makes its operational work on climate change a complicated, and therefore a more comprehensive case with which to examine how practitioners are responding to climate change. Despite the World Bank's unique position, we believe that these are relevant lessons for other transportation planning organizations, and even practitioners in fields, precisely because this case includes a broad range of technical, economic, and professional issues. Moreover, by including experts from both inside and outside of the World Bank, we present a wider perspective on the network of policy actors.

## LITERATURE AND BACKGROUND

This research draws from three interrelated literatures on agenda setting, expertise and policy making, and transportation, land use, and climate change. This section discusses each topic in turn.

### Policy Agendas

Since the middle of the twentieth century, theorists of policy making have updated the classical models of modern policy making with empirical studies, producing different ideas about organizational rationality, knowledge, and government. Classical models of policy making separated the work of politics (deciding what to do) from the work of administration (deciding how to do it). (Wilson, 1887) Although rational decision-making clearly has an institutionalized role in policy (Simon, 1997 [1947]), and indeed in transportation planning (Wachs, 1985), contemporary theory shows that organizations do not usually follow the rational model in practice. Instead, bureaus, experts, and others work in an environment characterized by uncertainty, and respond to problems through negotiation and deliberation. (Lindblom, 1959; Allison, 1971; Cohen, March, and Olsen, 1972) Moreover, in the field of urban development and transportation, the relevant actors range from real estate developers to air quality scientists, and the relevant agendas are intergovernmental and spatial. (Christensen, 1999)

John Kingdon (2003 [1984]) asked how policy communities in the health and transportation sectors created agendas, focusing on intergovernmental processes and the role of non-

*Experts in Urban Transportation Respond to Climate Change: Perspectives from Latin America*

MCANDREWS, Carolyn; DEAKIN, Elizabeth; SCHIPPER, Lee

governmental actors. These questions about the micro- and meso-level dynamics of policy making occurring among a network of actors relate directly to the questions we ask in this research. Kingdon (2003 [1984]) used two primary analytical constructs to analyze the dynamics: agendas and alternatives. According to Kingdon, the executive branch usually sets agendas, and mass public opinion influences them more so than expert advice and opinion. The technical experts, bureaucrats, lobbyists, and researchers, often working outside of public view, are more closely involved in creating the content of the agendas, and developing alternatives. (Kingdon, 2003 [1984]: 31) These divisions are usually not clearly defined, and bureaucratic politics and institutions shape agendas too.

Policy literature shows how technical experts in the field of urban transportation, environment, energy, and climate change have a significant role in the creation, implementation, and enforcement of climate change policies, even agendas. Yet, the work of these members of the policy communities—the “fifth branch” of technical experts—seldom receive analytical attention in proportion to their roles in the policy process. (Jasanoff, 1990) The research we present in this paper contributes to knowledge about how transportation policy communities integrate new ideas into agendas and alternatives, to use Kingdon’s constructs.

Questions about how experts shape policy agendas are important also because they influence the selection and design of transportation projects. For example, Bent Flyvbjerg analyzed a large data set of rail and roads projects in 14 countries and found that projects significantly overestimate travel demand for the infrastructure, and this was especially the case with rail projects. (Flyvbjerg et al., 2006) Some of these projects reflect poor forecasting, but most is misrepresentation of the data in order to see projects built. The reasons for this are mainly economic and political. (Flyvbjerg et al., 2002) Flyvbjerg’s research demonstrates the interaction of technical transportation planning and policy, and how these processes influence transportation outcomes. (Flyvbjerg, 1998)

## **Policy Communities and Networks**

While Kingdon’s analysis was systemic in nature, empirically based, descriptive of policy networks, it did not address directly the trans-national institutional issues of global policy. Hager and Wagenaar (2003) call out multi-level governance, radical uncertainty in policy and technological environments, complexity and differences among groups, interdependence, and issues of trust among the factors that characterize policy analysis since the 1990s. (Hager and Wagenaar, 2003) One of the major turns in contemporary policy making is that “...there are important policy problems for which political action either takes place next to or across [state institutions], thus challenging the rules and norms of the respective participants.” (Hager, 2003: 175) Old institutions may not fit contemporary policy practices. New institutions develop through the day-to-day policy work of the participants at all levels. Hager describes the dispersion of the decision-making orders around these new policy arenas (e.g., health, science, environment, global trade). In the research we present here, an orientation toward the new spaces of policy making is relevant, but the significance of state-oriented bureaus, agendas, and agents cannot be overstated.

Because we are interested in understanding how a particular policy problem—climate change—is becoming part of the transportation planning practices of both the World Bank and its local partners, the literature on discourse, politics, and practice within the World Bank and the larger network of policy experts is important. Our research focuses on the World Bank's operations groups, which work directly with borrowing countries and cities, the World Bank's clients. The operations groups are also connected with the World Bank's own central policy-making organization. Thus, these operations experts work between multiple agendas: those of their clients and those of their organization. None of these agendas are uniform or monolithic. Research on the World Bank shows how internal processes shape its agendas, as well as its relationships with external actors such as borrowing countries, the US administration, and other NGOs. World Bank staff and administrators do not construct models, theories, policies, and conditions solely through technical methods, and they are not implemented through bureaucratic routine. The safeguards for indigenous rights, resettlement, environment, and other issues developed through debates within the World Bank, sometimes involving activists outside of the Bank. (Sarfaty, 2005; Bebbington, et al., 2004)

## **Climate Change Concerns in Transportation Policy and Planning**

Policy agendas linking climate change and transportation focus on integrating sustainable transportation with development, rather than positioning these two policy areas as tradeoffs. Organizations such as the World Business Council for Sustainable Development (WBCSD) and the Organisation for Economic Cooperation and Development (OECD) construct the climate change and transportation agenda in this way, and define sustainable transportation principally as transport that is clean and efficient. In this model, sustainable transportation uses cleaner vehicle technologies and fuels, has greater efficiencies in traffic flows, includes mode shifts to less polluting modes, and leverages pricing, regulation, and other economic instruments to achieve such changes. (WBCSD, 2004; OECD, 2006; see also Sperling and Cannon, 2007) In general, the literature linking transportation to climate change approaches the connection as a technical problem of matching efficient and equitable funding strategies the proper technologies and countries. (Miller, 2008; Sierra, 2006). Increasingly, climate change policy specialists see potential to include regional land use and transportation planning in nationally appropriate mitigation actions (NAMAs). (Holger, 2009)

While the technical approach views climate change as a problem that can be solved with science, this is only one dimension of the political economy developing around climate change. In this particular case, it is important to note that Latin America is a relatively small emitter of greenhouse gases compared to the rest of the world. In 2006, the world average emissions per capita was 4.3 metric tonnes while Latin America's carbon emissions per capita were only 2.5 metric tonnes, or about 60 percent of the world average. Even by 2020, emissions per capita in Latin America will be small compared to those of the US or EU. (Schipper, et al., 2009) Nevertheless, the impacts of global warming may be significant for the Latin American region, bringing higher temperatures, more hurricanes, and more variability in rainfall. (de la Torre, et al., 2009; World Bank, 2009)

## METHODS AND DATA

This research draws primarily from interviews with transportation experts working in Latin American cities. These experts include World Bank staff, consultants to the World Bank, and employees of non-governmental organizations working on urban transportation in Latin America.

We conducted 23 interviews with 24 individuals: 19 with members of the World Bank staff, two with consultants to the World Bank, and three with transportation planners who do not work for the World Bank, but who work in Latin America, China, and other regions, sometimes on projects that have been partly financed with World Bank funding. The interviewees were selected based on their experience with urban transportation in Latin America, their availability, and their interest in participating. The interviews with World Bank staff working in Washington D.C. were conducted in person in Washington. Interviews with staff who were working in World Bank field offices outside of Washington D.C. were conducted by telephone or by videoconference. Interviews with transportation planners working in NGOs were conducted in person. World Bank staff cooperating with researchers during the first phase of the project accompanied the researchers to most of the interviews with fellow World Bank staff members. These interviews were conducted by the research team, but the World Bank staff sometimes asked additional questions that related to the research effort.

We structured the interviews to cover four topics: (1) the role or significance of climate change in the interviewees' work; (2) interviewees' experience integrating climate change considerations into projects; (3) interviewees' experience working with financial instruments relating to climate change; and (4) the role of transportation and land use planning institutions (e.g., land use plans, transportation plans, integrated transportation and land use models) in interviewees' work. Beyond these four areas of questioning, we aimed to have free-flowing conversations. In 17 interviews one researcher guided the interview while the other researcher typed a record of the conversation, capturing as much of the actual language as possible. In the remaining seven interviews, researchers guided the interviews and took notes. The researchers prepared the notes from all of the interviews within one day of the conversations.

In addition to interviews, we analyzed related project documents for urban transportation projects and reviewed climate change policy documents from governments, international organizations, and non-governmental organizations. The also researchers participated in four meetings and workshops with a mix of World Bank staff and others who participate in urban transportation policy making in Latin America. The notes from these events have also informed the findings of this research.

## **ANALYSIS AND FINDINGS**

### **The Work of World Bank Operations Staff**

Our interviews with World Bank staff members, former staff members, and consultants raised a number of issues about the challenges of integrating climate change considerations into projects. First, World Bank operations staff expressed a sense of constraint because urban transportation projects are mostly locally generated, rather than initiated by World Bank operations staff. It is not that World Bank operations staff have no role in defining projects, but it is increasingly the case that the proposals are well defined and detailed when they are put forward to the World Bank for consideration. As a result many Bank staff see their role in shaping projects as limited to “reacting” to the country’s proposal rather than shaping it. World Bank operations staff attributed the increasing detail in proposed projects to the increasing depth and sophistication of local technical capacity. If climate change is not already a priority for those who define the projects, then World Bank staff see themselves as having few and limited opportunities to include carbon emissions mitigation as an explicit objective, or even to adjust the project to be less carbon intensive.

These perspectives are different from what one usually hears about the World Bank having a supply-driven approach to policy development. While it is true that the World Bank’s loan conditions, safeguards, techno-rational style, and neo-liberal policy frameworks characterize its urban transport policies and projects, the World Bank staff in urban transport described another dynamic. Many acknowledged that the countries they work with have other choices for financing transportation projects and that the World Bank’s loans are relatively expensive because of their conditions. This presents a situation where the borrowing countries are in a stronger position to define the conditions under which they contract with the World Bank, notably for its expertise and experience in specific topics such as air quality and public transit. Thus in the case of urban transportation in Latin America, the World Bank’s loan conditions and safeguards are important institutional factors, but the organization’s direct influence on projects has limits, particularly from the perspective of operations staff in the organization whose roles are relatively “street level”. (Lipsky, 1980)

This perspective from operations staff may relate to the fact that the majority of urban transportation projects in Latin America occur in a few select countries. Of the 41 World Bank projects we reviewed in research complementing this paper, three quarters of the projects and over 90 percent of the lending were in five countries: Argentina, Chile, Brazil, Colombia, and Mexico. (McAndrews, et al., 2010) All are upper middle-income countries with large urban populations. With respect to urban transportation policy, several cities in these countries have embarked on reorganizing public transit through privatization, addressing subsidies, reorganizing labor markets, and creating new governance mechanisms for urban transit. However, these efforts to create “institutional change”, accompanied by technological change, do meet resistance at the local level where the politics of reorganizing public transit systems raises issues of transportation equity and service, as well as labor issues. This strategy of reorganizing urban mass transit was not

*Experts in Urban Transportation Respond to Climate Change: Perspectives from Latin America*

*MCANDREWS, Carolyn; DEAKIN, Elizabeth; SCHIPPER, Lee*

questioned by the staff whom we interviewed, and indeed was largely considered the organization's best chance for carrying out climate change mitigation goals.

World Bank staff expressed enthusiasm on the topic of technical assistance grants. While projects funded by loans are mostly locally initiated, World Bank staff members have more flexibility to use technical assistance grants administered by the World Bank to support policy design and development, planning processes, institutional design, data collection, studies for project preparation, training, and information exchange including peer group networking. For example, in a large urban transit project, the grant funds were used to analyze the institutional and organizational arrangements of the city's reorganization of its mass transit system. In addition, staff members actively engage with partner countries through technical assistance arrangements. According to our interviews, this is how the World Bank maintains "long-term engagements" with clients and form relationships that may influence the projects that partner countries eventually propose. For example, a technical assistance project—supported by grants as well as existing professional networks—produced an urban transportation policy strategy for a city. The policy strategy was classified a "study", and was not adopted as official policy, but it has had other effects such as reinforcing professional networks and being a reference for future policies.

Several interviewees talked about the role of the World Bank in influencing policies by providing expertise. In their view, the World Bank shapes the design and selection of projects through policy discourse, both by providing expert opinion that can influence decision-makers and by providing data and analyses that decision-makers can use to reach their own conclusions. These staff members saw the World Bank's own expertise in the urban transportation policy arena — in air quality, bus rapid transit, institutional design, and carbon calculations—as an important part of the broader project development process because it helps shape country and city policy. Interviewees' discussed specific transportation interventions that they see as potential means for reducing greenhouse gas emissions. These included high-level policy changes such as setting different fuel standards and vehicle emissions standards, which in some countries build on existing policies and capacity around improving air quality. Several saw the World Bank's expertise in air quality as an opportunity to introduce climate change mitigation into the discourse in the Latin American region.

Interviewees had different views on how climate change expertise might be introduced. Some talked of using a "champion to convince key stakeholders" with evidence and then following up with grants to support the development of projects – i.e., expertise was associated with persuasion. This is the way that they "make a difference and get good results." Others emphasized providing technical data and analysis to support the policy process while remaining "outside" of the ultimate decision-making process. Regardless of whether interviewees viewed their policy roles as technologists or advocates, most placed a very high value on quantitative indicators and evidence, even though many acknowledged that some of the most important outcomes of their work are not measurable quantitatively.

It follows, then, that indicators of performance and evidence of local benefits are important means of influencing local stakeholder proposals and actions. Interviewees said that

*Experts in Urban Transportation Respond to Climate Change: Perspectives from Latin America*

*MCANDREWS, Carolyn; DEAKIN, Elizabeth; SCHIPPER, Lee*

evidence of a climate change project's potential impact is necessary for demonstrating the merits of projects to other actors such as the boards that award grants (e.g., the Global Environmental Facility, internal management, and external evaluators). In addition, interviewees cautioned that another crucial point for climate change issues is to convince local stakeholders that local benefits can accompany strategies that reduce greenhouse gas emissions.

World Bank policy and financial instruments also play an important role in increasing attention to climate change issues. Interviewees described how the internal World Bank policies about climate change influence their increasing interest in using climate change-related financial instruments. Several World Bank staff have personal and professional opinions that, in general, countries in Latin America should not use loans to pay for climate change mitigation projects because loans should be used for local priorities, and because they believe other countries and regions (the US, the EU) should take primary responsibility for the costs of climate change mitigation. Instead of loans, these staff members prefer to use grants to fund climate change work, at least for now. While recognizing the importance of the climate change issue, some staff members also contested prioritizing climate change ahead of other "traditional" transportation goals including economic development, social equity, and environmental improvement. In theory, the goal of mitigating climate change does not necessarily compete directly with other transportation goals, but in current practice climate change competes for project resources (e.g., applying for grants, collecting data, conducting analyses), and can also be at odds with local political agendas, making it difficult to pursue directly.

Some of the staff did recognize that many transit and traffic management projects can reduce carbon emissions. Nevertheless they believed that resource constraints work against the consideration of CO<sub>2</sub> emissions impacts in many projects. Analyses are costly, and making an explicit link to climate change in a project is sometimes seen as a lower-priority use for scarce project resources, and even one that could delay or destroy the project. "Technical resources are scarce on this project. The team has four people. If one starts to work on certifying emissions, then giving up that one person kills the project." Introducing climate change mitigation components to existing projects would be resisted by the borrowers, and by the project managers, too, if the additional work would be a large hassle for only a minor piece of a project. Thus, funding climate change mitigation is not only a matter of directing resources to the capital requirements of projects, there are also important labor constraints that limit the capacity to do climate change work.

However, the development of new grant instruments, such as the new Clean Technology Fund, is an indicator of the growing status of climate change policy within the World Bank. The financial instruments created to fund climate change work institutionalize climate change policies and provide incentive for their inclusion in local projects, although they also treat them as "special efforts" rather than a new but ongoing part of the planning process. Other trust funds support climate change work, especially through technical assistance, and those that World Bank staff have used to support urban transportation in Latin America include the

*Experts in Urban Transportation Respond to Climate Change: Perspectives from Latin America*

MCANDREWS, Carolyn; DEAKIN, Elizabeth; SCHIPPER, Lee

Global Environmental Facility (GEF), Japan Policy and Human Resources Development Fund (PHRD), and Bank Netherlands Partnership Program (BNPP).

Another important factor is that the World Bank's orientation toward projects does not easily lend itself to consideration of systems effects, though improved data and models offer increasing opportunities for such analyses. If achieving a broad policy goal such as reducing greenhouse gas emissions requires a systems level assessment, then this suggests that coordination and integration across projects is critical. However, high-level planning documents such as the Country Assistance Strategy (or Country Partnership Strategy) do not currently serve this function, and project level analyses typically cannot make all the connections that would be needed to fully account for system effects. Many interviewees spoke about the fragmentation and idiosyncrasies that emerge from a project-based strategy to address complex policy issues such as air quality or greenhouse gas emissions, noting that a single project is too limited in scope to tackle these issues fully.

The bright spot here is that an increasing number of Latin American cities and countries are developing modern modeling systems and databases on urban travel, in part with technical assistance and lending from the World Bank. These models and data do support systems analyses and can greatly improve the quality of project analyses without greatly increasing costs.

Most of the interviewees thought that more integration or urban systems planning would benefit their project work. On the other hand, staff members also think that increasing the complexity of an already complex (and resource constrained) project by working across sectors and disciplines is a risk to projects that are already challenging to implement. Also, some interviewees said that the project focus is beneficial because it allows project managers to move forward expeditiously and to demonstrate key results (even of some of the secondary impacts are not accounted for).

Finally, World Bank staff recognize land use as a principal factor in the development of sustainable transportation, but most lamented the difficulty of including robust land use planning in transportation projects. In cases where land use was explicitly part of a project, these components were generally studies of the interaction between transportation infrastructure and land use and land value changes. Land use and transportation planning are funded through institutional strengthening and technical assistance, but these are not the primary components of projects. One interviewee explained that he recognized that land use is important, but it is, in his opinion, an institutional issue, which is difficult to combine with projects that focus on the technical aspects of urban mass transit reorganization.

### **The Work of Other Experts in Latin America**

The work of other experts in Latin America, working primarily in Brazil and Mexico, echoed the perspectives of the World Bank staff, and expanded some of the themes raised in the first round of interviews.

## *Experts in Urban Transportation Respond to Climate Change: Perspectives from Latin America*

*MCANDREWS, Carolyn; DEAKIN, Elizabeth; SCHIPPER, Lee*

As a policy issue in Latin America, climate change is more important at the national level than at the local level, though it is not a high priority now. Usually, when climate change is a priority, it is a priority for the environmentalists, or it is seen as a policy of the energy sector. Thus, transportation is not viewed as the sector through which a country or city will address climate change. When climate change is linked with transportation and urbanization, organizations tend to make plans based on what they are doing already. At the local level, few cities have the capacity to do this kind of planning and policy work, and those that do usually have existing capacity in environmental policy.

A major challenge to sustainable transportation projects of all kinds is the need for rapid execution of projects because of the turnover of elected officials. In many cases mayors have only two years to deliver projects, thus, they need to happen immediately. Sometimes, government agencies also deal with other issues such as corruption before they can turn to the development agenda. Another hindrance is a lack of institutional capacity and memory. Interviewees described the difficulty in continuing a policy issue from one administration to the next. One way to deal with this problem is to spend more time educating party members.

The integration of land use and transportation planning is also a serious institutional consideration. Cities, even those with relatively less capacity, have land use plans, but they are usually not followed. Robust transportation plans are even more rare than land use plans. Meanwhile, urban development is often driven by relationships between developers and elected officials. Subdivision laws often require that developers provide the services such as utilities, schools, and transportation, but after the subdivision is complete, and the elected officials' term limits are up, no one is accountable. Cities are left to maintain developments with poor services.

Finally, interviewees described the role of transportation business interests such as vehicle and system designers and manufacturers in influencing transportation planning and policy in Latin American cities. Decisions about urban mass transit projects are influenced by the lobbying of these groups, signalling the important role of politics and economic considerations in projects that also have significant technical considerations. The planning styles of the experts we interviewed, both within and outside of the World Bank, centered on balancing a political savvy on the one hand, with a techno-rational planning and policy process on the other, both styles operating simultaneously.

## **DISCUSSION AND CONCLUSIONS**

The experts in transportation whom we interviewed encounter many challenges to pursuing climate change as an explicit objective, including competing local goals, limited project resources, and difficulties demonstrating carbon savings from interventions' less quantifiable effects such as improving livability. The existing financial instruments that target climate change mitigation, such as the Clean Development Mechanism, have been used for narrow objectives such as fuel switching or cleaner vehicles but have been problematic for practitioners who seek financing for urban transportation projects that would reduce greenhouse gas emissions by reducing VKT. Also, the political and planning institutions in

*Experts in Urban Transportation Respond to Climate Change: Perspectives from Latin America*

*MCANDREWS, Carolyn; DEAKIN, Elizabeth; SCHIPPER, Lee*

many cities often work against coordinating transportation and land development, creating separate processes and incentives that neglect opportunities to improve urban sustainability.

World Bank policy and financial instruments can and do play an important role in increasing attention to climate change issues, yet project resource constraints may work against the consideration of CO<sub>2</sub> emissions impacts in many projects, especially if doing so is resource intensive. Making CO<sub>2</sub> analysis a standard evaluation element for all projects and investing in analytical tools that have multiple applications may reduce the resistance.

World Bank staff use technical assistance as an alternative to pursuing climate change mitigation directly through project lending arrangements. This technical assistance aims to provide information about mitigation strategies and to build skills in sustainable transportation planning and evaluation. Information and capacity, it is hoped, will tend to support a greater level of consideration of climate change issues in future project development. Using grants instead of loans can be a more acceptable way to introduce climate change considerations when a country's or city's political agenda does not explicitly address climate change mitigation, and grants are more flexible than loans.

The World Bank also can shape projects by influencing policy discourse, both by providing expert opinion that can influence decision-makers and by providing data and analyses that decision-makers can use to reach their own conclusions. Indicators of performance and evidence of local benefits are important means of influencing local stakeholder proposals and actions, but these benefits can be difficult to quantify when they involve land use, livability, non-motorized transport, and other aspects of urban transportation that have often lacked consideration in mainstream transportation policy and planning debates.

Although interviewees considered increasing motorization and use of the private automobile important trends that in many ways work against gains in sustainable transport, they also believed that curbing motorization or rationalizing the use of the automobile are not feasible areas for intervention, lamentably. The general sentiment was, "We can't tell Latin American countries that they can't have cars." Instead, World Bank staff focus on the re-organization of urban mass transportation systems to create more efficient service delivery and encourage a modal shift from private vehicles to transit. The main elements are restructuring the corridors and system design, using new vehicles and scrapping old ones (this selection depends on the broader energy and fuel policy in the country), and updating fare and fare collection systems. The carbon co-benefits of such strategies are likely positive.

## **ACKNOWLEDGMENTS AND DISCLAIMER**

Some of the research discussed in this paper was part of a larger project sponsored by the World Bank through the Center for Global Metropolitan Studies at the University of California, Berkeley. Statements in this report do not reflect the official positions or policies of the World Bank or the Center for Global Metropolitan Studies. Errors in this report are the authors'. The authors also thank two anonymous reviewers for their comments.

## REFERENCES

- Allison, G. (1971). *Essence of Decision: Explaining the Cuban Missile Crisis*. Little, Brown, & Co., New York.
- Bebbington, A.; Guggenheim, S.; Olson, E.; Woolcock, M. (2004). Exploring Social Capital Debates at the World Bank. *Journal of Development Studies*, 40(5), 33-64.
- Cohen, M.D.; March, J.G.; Olsen, J.P. (1972). A Garbage Can Model of Organizational Choice. *Administrative Science Quarterly*, 17(1), 1-25.
- Flyvbjerg, B. (1998). *Rationality and Power: Democracy in Practice*. Chicago, Chicago University Press.
- Flyvbjerg, B.; Skamris Holm, M. K.; Buhl, S. L. (2002). Underestimating Costs in Public Works Projects: Error or Lie? *J. of the American Planning Assoc.* 68(3), 279-295.
- Flyvbjerg, B.; Skamris Holm, M. K.; Buhl, S. L. (2006). Inaccuracy in Traffic Forecasts. *Transport Reviews*, 26(1), 1-24.
- Hajer, M. (2003). Policy without Polity? Policy Analysis and the Institutional Void. *Policy Sciences*, 36, 175-195.
- Hajer, M.; Wagenaar, H. (2003). *Deliberative Policy Analysis: Understanding Governance in the Network Society*. Cambridge University Press, New York.
- Holger, D. (2009). The Road to Copenhagen: Does Climate Change Matter for Sustainable Transport in Developing Countries. Berkeley, CA, September 1, 2009.
- Jasanoff, S. (1990). *The Fifth Branch*. Harvard University Press, Cambridge, MA.
- Kingdon, J. (2003 [1984]). *Agendas, Alternatives, and Public Policies*, 2<sup>nd</sup> ed. Addison-Wesley, New York.
- Lindblom, C.E. (1959). The Science of Muddling Through. *Public Administration Review*. 19(2), 79-88.
- Lipsky, M. (1980). *Street-Level Bureaucracy: Dilemmas of the Individual in Public Services*. New York: Russell Sage Foundation.
- McAndrews, C.; Deakin, E.; Schipper, L. (2010). Climate Change and Urban Transportation in Latin America: An Analysis of Recent Projects. *Transportation Research Record*, forthcoming.
- Miller, A. S. (2008). Financing the integration of climate change mitigation into development. *Climate Policy*, 8(2), 152-169.
- OECD. (2006). Decoupling the Environmental Impacts of Transport from Economic Growth. [http://www.oecd.org/document/7/0,3343,en\\_2649\\_34363\\_37676487\\_1\\_1\\_1,00.html](http://www.oecd.org/document/7/0,3343,en_2649_34363_37676487_1_1_1,00.html)
- Robinson, J.; Bradley, M.; Busby, P.; Connor, D.; Murray, A.; Sampson, B.; Soper, W. (2006). Climate Change and Sustainable Development: Realizing the Opportunity. *Ambio*, 35(1), 2-8.
- Sarfaty, G. A. (2005). The World Bank and the Internalization of Indigenous Rights Norms. *The Yale Law Journal*, 114(7), 1791-1818.
- Schipper, L.; Deakin, E.; McAndrews, C.; Scholl, L. Trapenberg Frick, K. (2009). Considering Climate Change in Latin American Transportation: Concepts, Applications, and

*Experts in Urban Transportation Respond to Climate Change: Perspectives from Latin America*

MCANDREWS, Carolyn; DEAKIN, Elizabeth; SCHIPPER, Lee

Cases. Research report for the World Bank. UC Berkeley Center for Global Metropolitan Studies.

Sierra, Katherine. (2006). An Investment Framework for Clean Energy and Development. 3 Oct 2006. [www.worldbank.org](http://www.worldbank.org).

Simon, H. (1997 [1947]). *Administrative Behavior*. Free Press: New York.

Sperling, D.; Cannon, J. S. (2007). *Driving Climate Change: Cutting Carbon from Transportation*. Amsterdam, Academic Press.

de la Torre, A.; Fajnzylber, P.; Nash, J. (2008). Low Carbon, High Growth: Latin American Responses to Climate Change, an Overview. The World Bank Group.

Wachs, M. (1985). Planning, Institutions, and Decision Making: A Research Agenda. Working paper from the Graduate School of Architecture and Urban Planning, University of California, Los Angeles. April 9, 1985.

Wilson, W. (1887). The Study of Administration. *Political Science Quarterly*, 2, 197-222.

World Bank. 2009 a. "Latin America and Caribbean Regional Brief."

<http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/LACEXT/0,,contentMDK:20340156~pagePK:146736~piPK:146830~theSitePK:258554,00.html>. Website visited June 16, 2009.

World Business Council for Sustainable Development. (2004). Mobility 2030: Meeting the Challenges to Sustainability: The Sustainable Mobility Project. <http://www.wbcsd.org/plugins/DocSearch/details.asp?type=DocDet&ObjectId=NjA5NA>.