THE RESPONSE OF U.S.-MEXICO BORDER CITIES TO CLIMATE CHANGE: CURRENT PRACTICES AND URGENT NEEDS

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Abstract

The purpose of this article is to report the results of a survey on local responses to climate change in the U.S.-Mexico border. The survey's main goal was to compile an inventory of climate related activities implemented or about to be implemented by cities, counties and municipalities in the border region. Another goal of the survey was to evaluate the level of coordination across the region and identify existing information and resource needs on both sides of the border. This assessment is a critical input in designing, implementing and supporting outreach and capacity building programs to improve local response to possible regional impacts of climate change. It is also an important tool to alert border planners, policy-makers and institutions about actions needed to develop more effective mitigation and adaptation measures within a sustainability framework extending across the border.

INTRODUCTION

The international boundary between Mexico and the U.S. draws an imaginary line over the territorial limits of both countries and extends approximately 1,950 miles from the Pacific Ocean to the Gulf of Mexico. Due to its vastness, the U.S.-Mexico border region contains a wealth of diverse natural resources and ecosystems that extend across the international boundary. Freshwater, marine and wetland ecosystems, deserts, rangelands and several forest types constitute sensitive and invaluable natural features shared along the border. In general, the borderlands exist in an arid climate with limited water resources.

Occupied for centuries by human communities, only during the last 50 years the borderlands began experiencing rapid urbanization. Urban growth rates averaged 2.6% annually between 1950 and 2000. The growth rate has since slowed down to 1.8 percent (Anderson and Gerber, 2007). In 2005 California, Arizona, New Mexico and Texas had in their border counties a population of 6.8 million persons, which was about 10% of their state populations combined. Across the border, Baja California, Sonora, Chihuahua, Coahuila, Nuevo León and Tamaulipas had in their border municipalities a combined population of 6.7 million persons or nearly 37% of their state populations. The population of the region is concentrated in large urban areas, particularly in transborder urban corridors. In 2005, four of each five persons on the Mexican side of the border region were living in towns with more than 50,000 residents, while on the U.S. side large metropolitan urban agglomerations like San Diego, Tucson and El Paso concentrated most of the population in their respective areas. In 2008, approximately 80% of the border's population lived in cities. This number will increase to 70% by 2050 (Plan Indicativo, 2009) which amounts to roughly 19.4 million people.

The large urban population and the complex set of interactions connecting natural and urban systems make the border region highly vulnerable to the effects of climate variability. Threats of sea level rise, more severe and frequent storms, coastal erosion, diminishing biodiversity, drought, flooding, extreme cold and heat, and increasing heat related diseases like malaria and dengue fever due to global climate change are of special concern for researchers and scientists with expertise on border cities. Urban centers are also the predominant source of anthropogenic carbon-dioxide emissions – perhaps as much as

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78% by some accounts (Stern 2006). Direct sources of greenhouse gas emissions in cities include energy generation, vehicles, industry and the burning of fossil fuels and biomass in households. The electrical energy for public lighting and transportation, and industrial, commercial and household consumption is also a major contributor. In addition, reduced green cover in urban areas diminishes a city's ability to reabsorb CO2. Poor waste management releases CFCs and gases such as methane into the atmosphere.

The combination of a rapid demographic growth and rising population densities in a territory marked by fragile ecosystems and limited natural resources situates the US-Mexico border among one of the most climate-sensitive regions in North America. On the other hand, it is well known that initiatives focused on the city level are better equipped to deal with climate change because of the capacity of local jurisdictions to adopt energy reduction strategies for buildings and transportation, integrate and encourage renewable energy resources into their planning portfolio and implement programs that target offsetting COs (UN Habitat, 2009). Cities are also better equipped to adapt to climate change by enacting land use regulations, mandating infrastructure development codes and communicating with citizens more efficiently. However, great variation remains in how cities cope with these issues, due to a diversity of perceived opportunities and constraints.

Even as some cities and municipalities along the U.S.-Mexico borderland are gradually becoming more mindful of the unusual risks that climate change creates – prompting greater recognition that mitigation and adaptation measures are urgent – most border communities are failing to take sufficient steps to prevent climate instability from presenting even larger dangers in the future. While large U.S. border cities like San Diego and El Paso are taking action, smaller urban areas on both sides of the border are falling behind even in adopting basic commitments to protect people and property from climate variability. National differences in the level of response are also apparent. This article presents an assessment of the actions being adopted by cities and municipalities along the U.S.-Mexico border to respond to climate change challenges. Based on the result of a survey, the aim is to identify current mitigation and adaptation strategies, explore existing needs and characterize the level of coordination across the border. Understanding the characteristics, extent, dynamics, and sustainability of these responses is relevant in assisting communities in the U.S.-Mexico border to better address the challenges created by climate change.

LOCAL RESPONSE TO GLOBAL CLIMATE CHANGE

Local Climate Action across Borders

The Intergovernmental Panel on Climate Change (IPCC) influenced most of the early national policies toward climate change protection as most national programs include the goals of the Kyoto Protocol to reach an 80% reduction in GHG emissions from 1990 levels by 2050. Recent years have witnessed an increasing number of urban responses to climate change mainly via municipal transnational networks. Local Governments for Sustainability (ICLEI, 2010), founded in 1990 as the International Council for Local Environmental Initiatives, is one of such networks. ICLEI is an international association of national, regional and local government organizations committed to sustainable development. In 1991, ICLEI implemented in 14 cities across the US, Europe and Canada a project to reduce urban carbon emissions, the first such measure in local climate action in the world. Since then, ICLEI has sponsored a variety of programs targeting both developed and developing countries, such as the Cities for Climate Protection Campaign (CCP). CCP formulated the tools to initiate local mitigation and adaptation actions in both developed and developing countries, and provided key inputs in global climate advocacy efforts of cities and local governments. The CCP program pioneered the five-step process for addressing climate change (Gore and Robinson, 2009). Within this program participating cities are expected to begin climate change planning using a milestone approach, including five steps: (1) conduct a baseline emissions inventory and forecast; (2) adopt an emissions reduction target for the forecast year; (3) develop a local action plan; (4) implement policies and measures; and (5) monitor and

verify results. In February 2007, CCP had 674 participants from 30 different countries (Gore and Robinson, 2009)

Other international networks of municipalities working on climate change include the Clinton Climate Initiative's "C40 Cities" program to support forty large urban centers committed to tackling climate change. An example of C40's work can be found in Mexico City that in 2008 adopted a Climate Action Plan Program, which commits the City government to reduce greenhouse gas emissions by 12 % of the annual GHG emission by 2012(Climate Change: Cities in Action, 2009). In order to achieve this goal, the plan proposed 26 greenhouse gas mitigation actions addressing issues such as sustainable buildings, renewable energy, efficient lighting, operation efficiency, infrastructure construction and improvement, and sustainable transportation. The City formed a Waste Commission to build four waste processing centers to recycle compost or incinerate Mexico City's trash and generate renewable power. Also, the GDF is providing taxi replacement subsidies to encourage taxi drivers to replace older taxis with more fuel efficient ones. Through energy efficiency programs in municipal facilities and individual homes, the City is expected to cut CO2 by nearly over 400,000 tons per year by 2012. The City is planning to distribute 10 million compact fluorescent lamps in homes that are expected to save 270,000 tons of CO2 each year. Transportation related greenhouse gas emission accounts for the majority of greenhouse gas in Mexico City. According to the Climate Action Plan, some of the most significant reductions in greenhouse gas emission are from actions taken on transportation emissions. Mexico City is committed to replace all its City fleets with energy efficient, low contamination units by 2012, which could bring reduction of 109,000 tons of CO2 each year. According to its Climate Action Plan, the City is also committed to expand public transit is expected thereby reducing CO2 emission by 400,000 tons each year.

So what are cities across the world doing to address global warming? Until now, municipal action on global climate change has taken place mostly in the developed countries. However in the Copenhagen Accord that was signed at the COP 15 summit in December 2009, developing countries have made voluntary commitments to reduce the carbon intensity of their economies. Countries such as India and Mexico have announced targeted Cap and Trade systems to lower the GHG emissions in certain sectors. Such policy action will invariably result in a growth in the number and nature of climate-related local measures.

Local Climate Action in the United States

Starting in the 1990's and encouraged by the Kyoto protocol, many cities in the United States began to study the potential local effects of global climate change.The impetus to respond to climate change issues comes in various iterations through institutional, economic, social and scientific means. Riding the wave of global awareness and EPA climate programs, cities began implementing actions that fall within the concept of climate change mitigation and adaption strategies. In many cases, these actions were integrated into the planning repertoire of cities by granting jurisdictional approval of comprehensive plans, referred to as climate action plans (Wheeler, 2008). There is also a response related to the rising cost of oil in the US, which spiked in 2006 causing a greater concern to be devoted to the potential of peak oil and gasoline dependence (Newman, Beatley, & Boyer, 2009).

In general, the propensity of a city to respond to climate change threats are correlated with its level of vulnerability to the risks of climate variability and the receptivity of its social and civic organizations to opportunities for local action on GHG emission targets (Brody, et. al. 2008). The Sierra Club's Cool Cities Campaign, the US Green Building Council (USGBC), ICLEI and the US. Conferences of Mayors Climate Protection Agreement are all programs meant to provide U.S. cities with opportunities to act locally on global climate change issues. These programs sponsor efforts that range in nature and intensity and their actual impacts in reducing GHG and increasing the resilience of urban communities in the US are still waiting to be assessed.

For example, ICLEI sponsors a campaign to support local governments in "generating political awareness; establishing plans of action towards measurable sustainability targets; working towards meeting these targets through the implementation of projects; and evaluating local and cumulative

progress toward sustainable development". Though ICLEI is now a global initiative with membership from 68 countries, almost half of its memberships consist of U.S cities[3]. Among them we can count large border metropolitan like Phoenix, Arizona; San Diego, California and El Paso, Texas but also smaller jurisdictions like Chandler, Arizona, Chula Vista, California and Silver City, New Mexico.

The U.S. Conference of Mayors, by means of its Climate Protection Agreement, is the primary municipal platform engaged in GHG emission reduction and climate mitigation efforts in the U.S. The Agreement specifies a group of three actions cities signing the Agreement commit to take in order to "advance the goals of the Kyoto Protocol": (1) local adoption of a GHG reduction target equal or stricter than the Kyoto Protocol targets; (2) work with federal and state governments to enact policies allowing the US comply with the reduction targets proposed by the Kyoto Protocol for the country[4], and (3) promote the passing of a bipartisan legislative package to reduce GHG in the U.S.

Cities participating in initiatives like ICLEI and the U.S. Mayors Climate Protection Agreement probably epitomize what has been referred by Heinrichs and colleagues (2009) as "proactive cases" and their current strategies and actions are perhaps second generation practices stimulated by programs created by the EPA and other federal agencies to promote the greening of U.S. cities. A survey of cities and counties in California indicated that jurisdictions that are members of ICLEI and the Mayors' Climate Protection Agreement are much more likely to be developing inventories and action plans (Hanak, 2008). This study also reveals important variation in the level of efforts by municipality and region. According to a survey conducted by the Mayor's Conference in 2007 (U.S. Conference of Mayors, 2007), the most widespread responses of cities participating in the agreement are (a) the utilization of more energy-efficient lighting technologies in public buildings, streetlights, parks, traffic signals, and other applications; (b) the use of renewable energy; (c) the conversion of public building into more energy efficient, healthier, and environmentally sustainable installations; (d) the promotion of green technologies among private developer and constructors; (e) the reduction of greenhouse gas emissions as part of programs to improve air quality and promote active living among residents; (f) conferring with other mayors, elected county officials, or other leaders in the region to encourage them to sign on to the Agreement and/or take action on climate protection; and (g) running vehicles in city fleets on alternative fuels and/or use hybrid-electric technology.

Existing studies indicate that cities shape their plans to address issues that are pertinent to their regions including urban forestry, renewable energy, and waste management and transportations initiatives. For example, Wheeler (2008) is critical of the progress that cities are making because, in his opinion, their goals are short-sighted, measures are inadequate and progress is too slow. He cites problems with implementation, public involvement and an insufficient level of understanding necessary to tackle these issues in a competent fashion. This is reaffirmed by the fact that half of US states have not adopted a climate change plan and a majority of municipalities have not signed a reduction agreement.

Local Action in Mexico

International campaigns like ICLEI's Cities for Climate Protection have had a more limited success in Mexico. As to December, 2009 only seven Mexican cities were listed as members of ICLEI, the second largest participation of any Latin American country after Brazil[5]. An additional indicator of the limited response of Mexican sub-national governments to climate change is the fact that in 2009 the only jurisdictions with completed climate action plans were the State of Veracruz and Mexico City, and along the border only Baja California and Nuevo Leon were in the process of completing their plans. The lack of participation of Mexican municipalities and cities in climate change initiatives is indeed multifactorial.

[3] As to February 2010, ICLEI's membership comprised of 1107 cities, towns, counties and their associations, in 68 countries worldwide. The U.S. contributes a total of 545 members.

[4] The target is a 7% reduction from 1990 levels by 2012

[5] The list includes Aguascalientes, Cuautitlán-Izcalli, Ciudad de Mexico, Queretaro, San Nicolas de los Garza, Ciudad Valles y Zacatecas.

First, policy-making in Mexico is still highly centralized, with the federal government playing a central role in setting priorities and providing the instrument and resources needed for the adoption of mitigation and adaption measures. In 2007, President Felipe Calderon announced the National Strategy for Climate Change (ENACC), putting low carbon growth of one the priorities of the country and setting intermediate and long term adaptation and mitigation targets. This announcement was followed in 2009 by the unveiling of the Special Program for Climate Change (PECC), which is considered part of the National Development Plan 2007-2012 and it is attempt to make the ENACC operational. The review of these documents makes apparent that the perspective of the Mexican government prioritizes actions from federal agencies like the National Water Commission, Federal Electricity Commission, and PEMEX and leaves no room for local actors.

Another factor that explains the low response of Mexican cities is that limited information and awareness of local governments of climate change threats and opportunities for action. Climate-related priorities in Mexico are still centered in the production of basic research to understand the potential impacts of weather variability in regions and ecosystems. Such priorities include the integration of databases to feed models necessary to developed scenarios and visualize the impact of climate change on public health, food production, drought, flooding, extreme temperatures and other event with huge implications for local communities. A related deterring factor is the dominant view in Mexico that sound and effective climate-related strategies will result only from the work of hard-science specialist and that common citizens and public officers will be moved to act automatically by the simple act of giving them access to information produced by scientists (Romero-Lankao, 2007).

Third, most local governments in Mexico are overwhelmed by the structural failures that are characteristic of urbanization in developing countries. Climate actions compete with chronic unbalances in the provision of basic public services and infrastructure such as drinking water, sanitation, transportation, open space and safety. The level of priority of mitigation and adaptation to climate change will remain low in the agenda of Mexican municipalities until more pressing problems like access to clean water or safe neighborhoods remain unsolved or they connection with climate change become evident to local citizen and policy makers.

Despite these barriers, Mexican cities and municipalities are now more likely to respond to climate change embracing a pathway that is reflective of the particular institutional milieu and social conditions. The amount of attention provided to climate change by the national media in recent years has had an impact in this regard. The huge coverage of the IPCC fourth report and the subsequent actions taken by the United Nations and other international organizations highlighting the importance of promoting not only mitigation but also adaptation actions has apparently pulled the attention of local governments in Mexico. Though many actions are still merely declarative stances, they suggest a change in attitude and willingness to act. In contrast to responses in the U.S., Mexican cities are more likely to focus predominantly on adaptation. Also, it is possible that local government will favor public action over other strategies. This means that municipalities will coordinate their effort with state and federal agencies, will collaborate with public universities, and will use planning and other regulatory tools to "teach with the example" and foster action in the private sector.

The US-Mexico Border

On April 16, 2009, the White House announced the US-Mexico Bilateral Framework on Clean Energy and Climate Change (The White House, 2009). The bilateral framework emphasizes the importance of cooperation in the border region as a way to promote reduction of greenhouse emissions, encourage local adaptation to the impacts of global climate change and strengthen the reliability and efficiency of transborder energy flows. In term of strategies, the framework highlights the importance of training, information exchange, emissions inventory, gas reduction strategies, and the application of market mechanisms.

There is still much to be learned to fully understand the implications of a policy like this for the US-Mexico border. There are many important questions still unanswered, ranging from: What

jurisdictions have committed to respond to climate change? What are those responses? What actors are involved in those responses? What are the driving factors for those responses? What are their institutional settings? Are the major differences in the responses by size of the urban area and by country? Are these responses based on cooperation across jurisdictions, both nationally and internationally? Is there a balance between mitigation and adaptation responses? Are there perceived consequences in terms of equity? Can the current capabilities and resources support long term and effective climate action on both sides of the border? In the following section we attempt to provide an answer to some of these questions.

METHODS

Given the larger number of municipalities without an identified climate change response program and our interest in identifying current and planner actions, as well as constrains, this research involved the collection data from a large number of municipalities instead of in-depth data from a smaller number of municipalities or respondents. A survey was sent to department head or senior staff in all 67 municipalities/counties and cities of both sides of the border with population greater than 10,000 people in 2005. Municipal staff, specifically department heads or senior staff members were selected as survey respondents instead of elected officials, community members, NGO staff or staff from federal agencies, because of their contribution to the municipal policy and program development process. Since climate change is not an issue that falls neatly into the responsibility of one municipal department, key informants with responsibility for the following municipal functions were included: public works, environmental management, urban planning, transportation, park and recreation, and civil protection. For smaller municipalities without multiple department heads and/or senior staff, the city clerk, mayor or chief administrative officer was selected.

Given the large number of key informants and the research goals, a self completed internet survey, available in English and Spanish, was selected as the research instrument. The survey contains 40 closed-ended questions inquiring about climate change awareness, perceived scenarios, actions and actors, constrains, and collaboration. In total, surveys were returned by municipal staff members in 38 of the municipalities surveyed representing a response rate of 50%.

SURVEY RESULTS

Responses

To develop a picture of border jurisdictions activities to address climate change and emission reductions, the survey asked a series of questions ranging from the general to the specific: First, does the city or municipality have staff working on climate change issues? Second, is the local government undertaking an assessment of carbon emissions or developing a climate action plan? Third, are regular planning and regulatory processes being updated to limit emissions or adapt to climate change? Fourth, has your city or municipality obtained grants or assistance from the federal or state government? Does your city or municipality need assistance? Fifth, is the city or municipality collaborating with other jurisdictions in the U.S. or Mexico? In the following sections, we examine these answers in turn.

Actions

Border-wide, a third of the jurisdictions reported having staff working on climate change issues. This situation seems to be more common in Mexican municipalities, where slightly more than half of the jurisdiction reported people working full or part-time in activities intended to reduce green house emissions or mitigating impacts of climate change.

Table 1. Does your city/municipality have staff working on climate change issues?

	México	USA	Region
No	7 (46.7)	15 (78.9)	22 (64.7)
Yes	8 (53.3)	3 (15.8)	11 (32.4)
Don't know	0 (0.0)	1 (5.3)	1 (2.9)
Total	15 (100.0)	19 (100.0)	34 (100.0)

One of the most concrete steps a local government can take as part of an emission reduction program is to conduct an emissions inventory. Such inventories help identify the main sources of emissions (and hence potential areas for reduction), and they are a necessary component of any programs that track emissions over time. The survey asked whether local governments had already done or were planning to do emissions inventories. The responses suggest a weak level of local government involvement in this more detailed type of activity (Table 2). Regionally, slightly over 10% of jurisdictions surveyed have completed or plan to complete a carbon emission inventory.

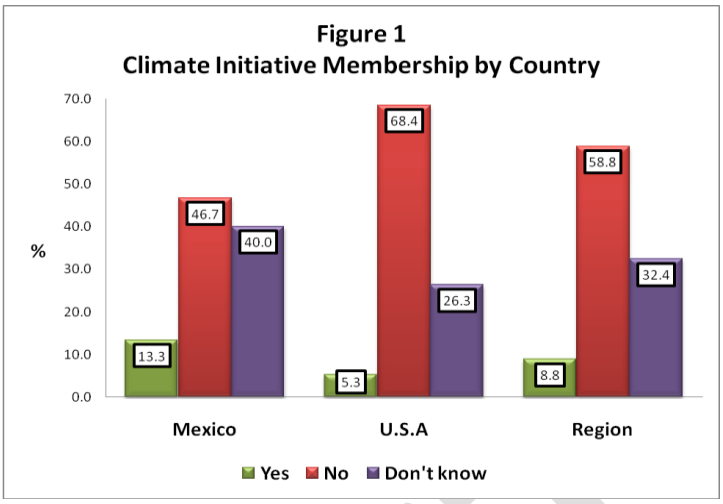
Table 2. Has your city/municipality conducted a carbon emission inventory?

	México	USA	Region
No	11 (73.3)	15 (78.9)	26 (76.5)
Yes	3 (20.0)	1 (5.3)	4 (11.8)
Don't know	1 (6.7)	3 (15.8)	4 (11.8)
Total	15 (100.0)	19 (100.0)	34 (100.0)

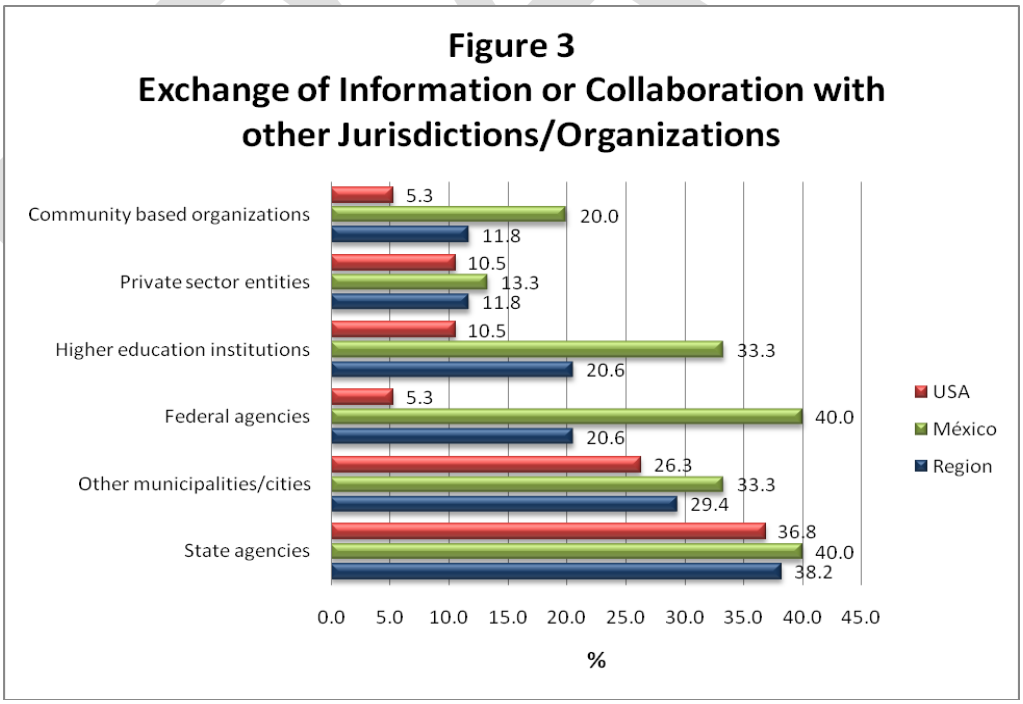
It is noticeable that more jurisdictions in Mexico reported undertaking of inventories that in the U.S. This is probably due to the fact that most Mexican jurisdictions are large municipalities, while U.S. jurisdictions are mostly small localities with limited resources and capacity to undertake this type of actions. An emission inventory is a basic input for the elaboration of a climate change action plan. A climate action plan can be used to identify emission reduction targets and the policies and programs that will be employed to reach them, as well as other actions the community may wish to undertake to prepare for the impacts of climate change, such as prolonged drought and higher temperatures. Very few jurisdictions have such plans completed, and all of those responding positively where located in Mexico (not shown). Because the role of state governments in promoting local actions plans, municipalities in Baja California and Nuevo Leon have already developing action plans.

Actors

Local governments typically partner with outside parties to conduct the inventories or undertake actions to mitigate climate change impacts. ICLEI's Cities for Climate Change Protection has been a particularly important partner of local governments in both countries and the Mayor's conference in the U.S. Less than 10% of the jurisdiction on both sides of the border have joined to these or other initiatives. Again, Mexican municipalities are more likely to be involved in collaborative networks than U.S. counties or cities.



Mexican jurisdictions are more likely to work in coordination with federal and state agencies. Higher education institutions are also a common partner of Mexican municipalities because their capacity to support in the analysis and formulation of policies and programs. U.S. cities and counties are more likely to coordinate efforts with state agencies and other municipalities. Federal agencies and universities played a less important role than in the case of Mexican jurisdictions. Both Mexican and U.S. jurisdiction reported collaboration with private sector entities and community based organizations. However, Mexican municipalities are more likely to work with community organizations in climate related actions.



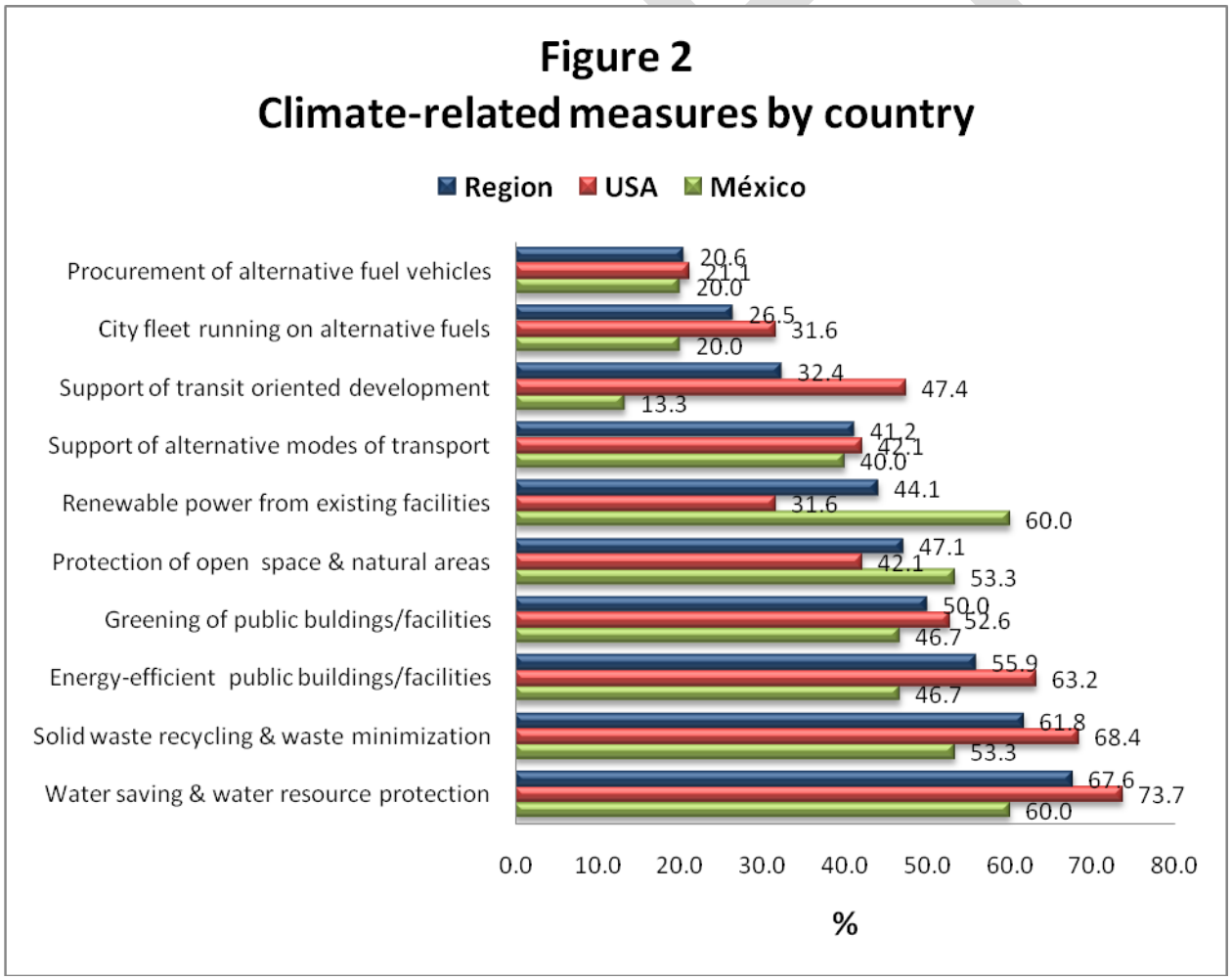
When asked whether this collaboration included partners in the other side of the border, a third of the Mexican municipalities reported exchange of information or collaboration with U.S. entities. In contrast, only one U.S. jurisdiction reported collaboration with a Mexican entity.

Instruments

The survey also asked respondents to identify whether they had already adopted or were considering adopting policies or programs in a groups of areas that are known for their capacity to limit greenhouse gas emissions. To acknowledge that activities might be adopted primarily for reasons other than climate change, the question was formulated in the most general terms.

Figure 3 summarizes the proportion of jurisdictions in both sides of the border that were undertaking or were planning to undertake activities in each area, ranked in order of prevalence.

First, there is generally a lot of similarity in the type and level of activity undertaken on both sides of the border. All jurisdictions reported existing or planned programs in all the areas of interest. The most prominent areas are water saving and water resource protection, followed closely by waste reduction. Next in importance were energy efficiency and greening of public building and facilities. The high level of water protection and waste reduction activities is likely due in large part to prior work at the local level as a result of drought awareness and the pressure of growing waste streams on local landfills.



Second, even though activity rates are similar for most areas, there are some striking differences across the border. Mexican municipalities tend to be more active than their U.S. counterpart in renewable power being generated in existing facilities. This is a surprising fact that might be associates with Mexican municipalities being large jurisdiction and possessing relatively new and large landfills with capacity to generate power. On the other hand, U.S. counties and municipalities are more active in the promotion of transit oriented development, a planning technique barely known in Mexico.

Challenges

The final part of the survey asked respondents to provide their assessment of the extent to which information, resources, and institutional barriers were limiting their local government's ability to develop climate-related policies and programs.

Table 3. Do you consider your city/municipality needs more information on climate change?

	México	USA	Region
No	2 (13.3)	5 (26.3)	7 (20.6)
Yes	13 (86.7)	12 (63.2)	25 (73.5)
Don't know	0 (0.0)	2 (10.5)	2 (5.9)
Total	15 (100.0)	19 (100.0)	34 (100.0)

When asked whether they needed more information to develop effective climate-related policies or programs, 73.5 percent of survey respondents answered in the affirmative (Table 3). Significant differences were observed on both sides of the border, with the highest necessity reported among Mexican municipalities.

CONCLUSIONS AND POLICY RECOMMENDATIONS

Climate change action in urban areas on the U.S.-Mexico borderlands should give priority to the following aspects. First, since adaptation and mitigation are organically related in ways that have important ramifications for effective regional action, large and small cities along the border must adopt a sustainable perspective toward climate change policy, including not only defensive measures but also introducing changes in land use, transportation systems, energy systems, water systems, and built environment that will dramatically reduce emissions of greenhouse gases in the borderlands. Second, cross-border planning and cooperation across national and institutional boundaries are critical to design, formulate and implement effective regional action plans in the face of threats from climate change.

Municipal governments on both sides of the border have considerable authority over land-use planning and waste management and can play an important role on transportation issues and energy consumption, all of which have implications for greenhouse gas emissions.

As indicated by the survey, cities on both sides of the border can act to mitigate global climate changes even if they don't have a formal action plan. They can, for example, audit municipal buildings and operations to find ways to save energy and money, as by replacing lights, inefficient air condition equipment and water pumps. This can be complemented with policies promoting efficient use of municipal buildings and facilities such as turning lights and computers off during evenings and weekends. A green products procurement program is another option that can be adopted out of a formal climate action plan.

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