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INTERNATIONAL WORKSHOP
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The Leading Role of Local Governments in Achieving a Sustainable City

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Abstract

There is a clear link between the actions of the cities about climate change and the larger goals of being a low-carbon economy, poverty eradication and global environmental governance. The role of cities in this new institutional architecture, as defined by the United Nations, is a unique opportunity for cooperation. Cities serve as a catalyst for national governments, aiming to provide support to public policies, creating a virtuous circle. The purpose of the present work is to demonstrate that, faced with a troubling and urgent climate reality, local governments have taken responsibility and have been working in the formulation of public policies with the participation of various actors in society.

Keywords: *sustainable city, local governments, government policy*

Introduction

The political managers of cities seem willing to take steps to protect their cities against the phenomenon of global warming. That phenomenon may exacerbate urban pressures of rapid population growth, poverty and pollution. There will be another “knock-on”¹ effects because of the concentrated and integrated economic activity of cities, highly complex infrastructure systems and social services and governance in several layers (Cortese, 2013).

In recent years, strategically emerged several alliances between the mayors of cities around the world, as shown on Figure 1 and described below:

1) Cities Climate Change Leadership Group (C40), launched in October 2005, comprises the 40 largest cities in the world and 19 associated cities. The C40 initiative's main objectives are the creation of cooperation in reducing emissions of greenhouse gases and the promotion of group actions between business, government and society, to combat climate change. One of the group's spheres of operations is to increase energy efficiency in municipal buildings through retrofitting. Have been

1. The domino effect ripple effect or chain reaction suggests the idea of an effect be the cause of another effect generating a series of similar events of medium, long or infinite duration.

performed nearly 300 Retrofit projects in municipal buildings in Seoul, Johannesburg, Houston, London and Melbourne.

2) WMCCC – World Mayors Council on Climate Change, founded by the mayor of Kyoto in December 2005, following the entry into force of the Kyoto Protocol. The dome gives city leaders the opportunity to demand a seat in the Framework Convention of the United Nations on Climate Change, helping them to obtain funding to implement their policies. There are currently over 50 members (mayors and former mayors) of WMCCC.

Figure 1



Source: <http://www.nature.com/nature/journal/v467/n7318/full/467909a.html>

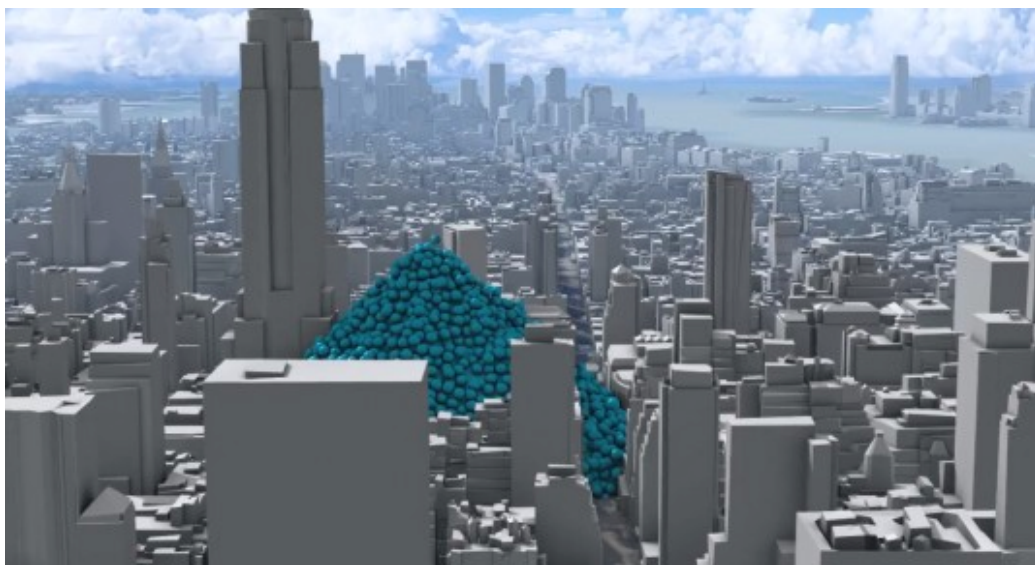
Some cities have been especially proactive, for example, New York, which has gained considerable recognition for their sustainability plan, PlaNYC 2030 (New York City 2011). The goal of PlaNYC is to reduce emissions of greenhouse gases by 30% from 2005 levels over the next 20 years; about the same as the goal of the federal government of the United States of America - USA, which is to reduce the country's emissions by 28% of 2005 levels by 2020. As almost 80% of emissions come from New York buildings, the PlaNYC 2030 includes mandatory energy audits in commercial buildings over 4,645 square meters (50,000 square feet). The city also has a "Task Force" for Adaptation to Climate Change, made up of 40 public and private entities that manage: the energy of the city; water and waste; natural resources; transport; and communications infrastructure. The PlaNYC 2030, together with a group of scientists and experts led by Cynthia Rosenzweig (Rosenzweig et al, 2010), provides data and information on the risks of climate change to the "Task Force", including projections of rising sea level and a skeleton for the development of city planning and resilience to climate.

A revision of the local law was held in 2013, promoting some significant changes, such as: Local Law 83 - which is intended to prevent sewage backflow during floods and flooding; Local Law 96 - on

the date of adoption mapping points of floods, Local Law 111 - which extends the use of natural gas for energy storage systems.

This concentration of political efforts demonstrates the urgency in the scientific community of new and timely research on how climate change will affect urban areas - including long-term trends, potential tipping points and surprise opportunities. Local leaders need to know what will happen in their cities and the most effective ways to combat the problems. The "bubbles" of carbon dioxide formed on urban areas (Figure 2) need to be better studied and understood, allowing local authorities to measure and verify changes in local emissions of greenhouse gases (Dickinson and Tenorio, 2011). There are important questions about how air pollution will interact with future temperatures in NY, so as to affect the health of the population. Ecosystems of the cities need to be studied, including the role of parks and leisure areas and softening the effects of heat islands; the effects of climate change on urban vector diseases such as rats or allergens like pollen. Scientists should investigate the combined effects of the migration patterns of population and climate change, aiming to estimate the response costs - especially for the poorest people and populations at risk.

Figure 2



Source: <http://inhabitat.com/nyc/carbon-quilt-video-shows-new-york-swallowed-up-by-giant-greenhouse-gas-bubbles/>.

New York has expanded its climate resilience in accordance with the intensification of the risks that face the city. All this work is the result of a joint effort of the "New York City Panel on Climate Change" (NPCC), formed by a team of scientists and academics who evaluate new information and compare with projections made in the past. The result of this effort is the development of an assessment tool of the current and future climate risk faced by the city (New York City 2014).

It is essential that scientific research and the discovery of new technologies are applicable and regularly communicated to the actors of society - government, private sector and civil society - so that they can develop and implement effective public policies and that resonate positively in society. For example, discussions about the possibility of investing in renewable energy sources need to be connected to discussions on energy costs and environmental impacts of the installation and the

generating power plant operations. Issues such as water supply and sustainable solutions for sewage treatment should be evaluated for its links with climate change concerns (Cortese and Natalini, 2013).

Research networks need to be expanded to include more and more cities around the world, both developed and developing countries, especially small and medium-sized cities, where limited resources should be used as efficiently as possible. To be effective, these efforts should be monitored consistently and regularly updated.

Other actors have been extremely active at the international level, promoting and questioning measures in the climate issue. One is the Organization for Economic Co-operation and Development - OECD, whose mission is to promote policies to improve the economic and social well being of people around the world. The OECD is a forum in which governments can work together to share experiences and seek solutions to common problems; understand what drives the economic, social and environmental change. Productivity and global trade and investment flows are measured, analyzed and compared the data to predict future trends (OECD, 2010).

There is also the international network of non-governmental organizations and other social movements, entitled "The Climate Action Network" - CAN. It brings together 550 organizations from around the world, in order to promote individual actions and governments to limit climate change to be considered sustainable levels (Biderman, 2010). The network operates through the exchange of information and development of coordinated strategies at the international, regional and national levels on climate issues. There are regional network offices in all parts of the world, such as Africa, Australia, Europe, Latin America, North America, South Asia and Southeast Asia.

The complex challenge for large cities in the management of climate change can be addressed by formulating local policy aimed to eliminate the risks to health and the environment, to collaborate in the mitigation of climate change related to human action and at the same time safeguarding effective social inclusion of significant parts of the population (Viola, 2002).

The purpose of the present work is to demonstrate that, faced with a troubling and urgent climate reality, local governments have taken responsibility and have been working in the formulation of public policies with the participation of various actors in society.

From global to local

In these circumstances, therefore, it is important to emphasize that the city of São Paulo, given the need for a policy set by the society through its representatives, has gained visibility and global relevance in the context of municipal public policy discussions on climate change, which can be identified by your choice to join the steering committee of the international C40 network. São Paulo stands out in the international debate as one of the urban centers that are experiencing the problem and providing concrete solutions.

São Paulo was also the first city in Latin America to join the Cities campaign by the International Council for Local Climate Protection Environmental Initiatives - ICLEI. The campaign is based on an innovative performance structure through five milestones with which local governments are committed (ICLEI, 2010):

Mark 1 – To build an inventory of emissions and prognostic patterns. Based on energy consumption and waste generation, the city calculates emissions for a base year and forecast year. The inventory and prognosis provide a performance test whereby the city can measure progress;

Mark 2 – To adopt emission reduction targets for the year prognosis. The city sets emissions reduction targets. The goal setting promotes political will and creates a favorable environment to conduct planning and implementing measures;

Mark 3 - Developing Local Action Plan. Through process involving stakeholders, the city developed a Local Action Plan that describes which local government policies and measures will be taken to reduce emissions and achieve the reduction targets. Most plans include a chronology, a description of funding mechanisms and a liability waiver for departments and teams. In addition to direct reductions in emissions of greenhouse gases, most plans include public awareness and education efforts;

Mark 4 – To implement policies and measures. The city implements policies and measures in the Local Action Plan. Typical policies and measures implemented by the participants of the campaign include improvements in energy efficiency in public buildings and water treatment facilities, street lighting, improvements in public transport, installation of renewable energy practices and methane capture from landfills;

Mark 5 - Monitoring results. Monitoring and verification of progress in implementing measures to reduce or avoid emissions of greenhouse gases is an ongoing process. Monitoring starts as soon as the measures are implemented and continue along the implementation time thereof, providing important feedback that can be used in improving measures over time.

These milestones allow local governments to understand the relationship between decisions at the municipal level and how these affect energy use and how they can help to mitigate climate change while improving the community's quality of life (Cortese, 2013).

In the specific case of São Paulo, was instrumental in the process of decision-making to develop and implement a Municipal Policy on Climate Change - PMMC, and the participation of the Municipality of São Paulo in public debates and consultations. The draft bill of that public policy was developed for approximately one and a half year, including the draft formulation, review and comments by experts, researchers, government agencies of other spheres, organized civil society and consultation to all instances of the municipal government relevant to the matter.

The formulation of the PMMC began in March 2007 and ended in late 2008, when the draft bill was referred, as a legislative initiative of the Executive, for consideration of the City Council of São Paulo. There was express direction of the Mayor for the development of the law be guided by consultation with all relevant stakeholders, through consultations within the City Council, even before the formal presentation of the draft bill. Thus, it was sought to anticipate issues that could prove to be controversial in, or even map interests and eventually locate faults not detected by the formulator group of the draft bill.

There is a clear link between the actions of the cities about climate change and the larger goals of being a low-carbon economy, poverty eradication and global environmental governance. The role of cities in this new institutional architecture, as defined by the UN, is a unique opportunity for cooperation. Shares of cities serve as a catalyst for national governments, aiming to provide support to public policies, creating a virtuous circle (C40, 2010).

The Megacity São Paulo

The city of São Paulo is a pioneer in Latin America, in the formulation and adoption of Municipal Law nº 14.933 of 05 June 2009, establishing a Municipal Policy on Climate Change - PMMC - and shows that it is possible to face this issue in a political and technical way.

São Paulo is, according to the concept established by the United Nations, a megacity (Figure 3). The process of urbanization and climate change interact and generate impacts that can be separated into two categories: the impacts that originate in urban areas and have negative effects on climate change; and climate change that have negative effects on urban areas (Schneider, 2006).

Figure 3



Source: http://www.imagens.usp.br/?attachment_id=685

Considering the rapid process of urban sprawl and the delay in the implementation of adequate infrastructure at the rate of growth of cities, they are not prepared for the effects of climate change. This is the case of the Metropolitan Region of São Paulo.

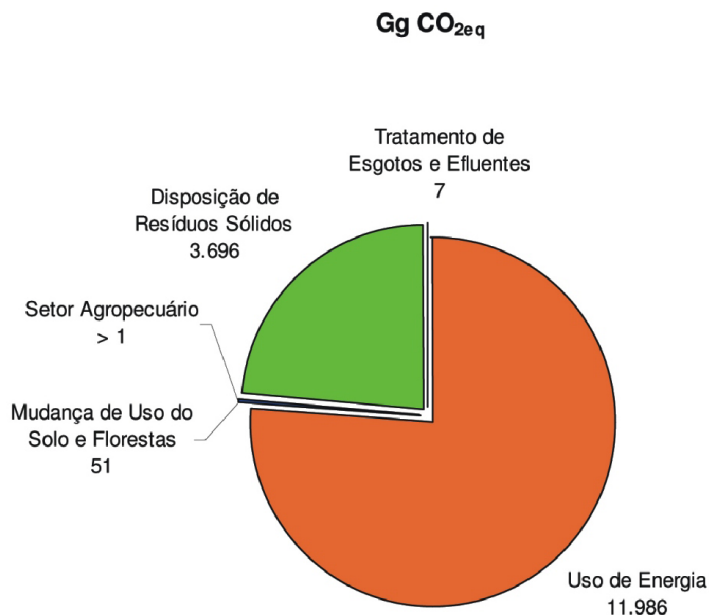
The question of adapting cities to climate certainly requires time, financial resources and large amount of materials, making urgent conducting studies which contribute to the management decision-making processes in general and guide the society about the risks associated with social and environmental problems and investment priorities for coping (Agopyan and John, 2011).

Currently the city's population is 11,253,056 inhabitants (IBGE, 2007) and the population of the metropolitan area is 20,141,759 inhabitants.

It was the first climate strategy of a local government in Latin America. To guide the formulation of this policy was used as a reference the Inventory Gas Emissions Greenhouse in São Paulo, prepared in accordance with the rules of the Intergovernmental Panel on Climate Change – IPCC

and the United Nations – UN. Figure 4 demonstrates that the City issued about 16 million tons of carbon dioxide per year (Sao Paulo, 2005).

Figura 4



Source: www.prefeitura.sp.gov.br/arquivos/secretarias/meio_ambiente/sinteseinventario.pdf

The PMMC is to ensure the contribution of São Paulo to the fulfillment of the United Nations Framework Convention on Climate Change purposes - UNFCCC; and achieve stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system, in sufficient time to allow ecosystems to adapt naturally to climate change (Brazil, 2009). The PMMC aims also to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner (São Paulo, 2009).

To achieve this goal, established a 30% reduction target of aggregate anthropogenic emissions coming from the municipality, expressed in carbon dioxide equivalent of the greenhouse gases listed in the Kyoto Protocol in relation to the expressed level in the inventory held by the City of São Paulo.

In proposing a law with this target, the municipal administration seems to have understood that mere voluntary compliance would not be enough, positioning which placed as an advocate for a cutting-edge vision in the climate agenda. And maybe, with this initiative, demonstrate the possibilities for the federal and state governments to support and follow.

Unfortunately, the discussion on climate change is still restricted to academic, political and market means. A major challenge is to translate for ordinary citizens like climate change affect you on a daily basis and which part of the responsibilities incumbent on it. Measures involving behavior change

require membership of the population. For this, you need knowledge. According to the guidelines of the Program of Education for Sustainable Societies, WWF- Brazil, the role of environmental education is to help people understand the problem and engage in practical, everyday projects. Examples include recycling projects, reforestation, sustainable consumption, reduced carbon footprint, among others (WWF Brazil, 2003).

Closing remarks

Any significant change has positive and negative outcomes for those who implement them. The important thing is to have conviction and send it to the society, that this change is necessary and will improve your life.

The information described here is to demonstrate that local governments are not waiting for the command of federal or state laws or decisions from international treaties such as the Kyoto Protocol, to act in favor of the global climate balance. Municipalities have acted in defiance of the traditional distinctions between local environmental policy, national and global, pressing from the bottom up, adopting urgent and concrete measures, without waiting the dictates of international standards whose definition walking at a slow pace and relies on a set of interests that combines aspects of international trade, geopolitics and security, among others (Bulkeley and Betsill, 2010).

It is essential that there is coordination through different mechanisms available in São Paulo, to ensure synergistic action with other levels of government. In addition to federal regulations, it is necessary to pay attention to the legal framework of the state of São Paulo, under which the municipality is located, with which SP must act in a coordinated manner.

The importance of advancing knowledge on environmental management and its interface in promoting public health, social justice and economic viability in urban areas is indisputable. Always having transparency as a permanent principle.

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