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Session: E2 Enabling local action on adaptation: Planning and policy tools and frameworks

Presentation: Climate Action Planning for municipalities: An opportunity for resilience

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Abstract

This article presents the ICLEI Mexico's experience in developing the so called "Municipal Climate Action Plans (PACMUN for its acronym in Spanish)" which support cooperation between local, subnational and national stakeholders to encourage a public policy framework on climate change mitigation and adaptation. The PACMUN guide facilitates knowledge exchange between stakeholders and municipal officers to ensure resilient measures address all sectors and socio-economic backgrounds. In 2013, the aim has been to further expand the use of PACMUN at the local, national, and international level. As a planning document, in a national level, has shown its benefits, so a dramatic growth in PACMUN's national acceptance is being presented.

Keywords:

Adaptation, Municipal Climate Action Plans, PACMUN, Resilience, Vulnerability

1. Municipal Climate Action Plan

The Municipal Climate Action Plan (PACMUN) [1] is a Mexican initiative from ICLEI-Local Governments for Sustainability with partnership of the Mexican National Institute of Ecology and Climate Change (INECC, for its acronym in Spanish) [2] and the funding of the Prosperity Fund From the British Embassy in Mexico [3] to address the climate challenge, seeking ways to produce cleaner energy and provide steady supplies of fresh water; also studies human behavior in the face of change as a way to improve how to make decisions, and the policy and legal tools that can be used to implement measures to tackle climate change. ICLEI Mexico, Central America and the Caribbean Secretariat (MECS) [4] is the bridge between Local Governments (LG) and the different entities acting in multi-level governance framework and technical support.

1.1. PACMUN Objective

The overarching goal behind the efforts of PACMUN is to achieve environmental sustainability in the context of a world of environmental challenges—from rapid population growth and climate change to extreme poverty and social vulnerability.

PACMUN identifies innovative and low cost effective solutions to environmental management problems in order to reduce greenhouse gases emissions (GHG).

The raising awareness about climate change between the municipality's stakeholders will facilitate the planning actions on climate change through a methodology designed to identify, analyze, evaluate and prioritize mitigation actions for municipalities and the creation of public policies that allow the development of strategic actions and sources of financing for the implementation of sustainable mitigation and adaptation measures.

Since last year (2012), the General Law on Climate Change [5] has been approved in Mexico and PACMUN will be the catalyst for its implementation at the local level. By 2015, there will be a transformational change through PACMUN matching the institutional framework specifically for the climate change at the local level contributing to implement the General Law on Climate Change.

1.2. Methodology

A guide for the elaboration and implementation of PACMUN has been developed, which is the starting point for spreading basic knowledge regarding climate change to a municipal level that facilitates the planning of actions in relation to climate change.

By using this guide, each municipality can identify its key GHG sources, such as those of the largest contributions and, as a result, the proposal analysis and evaluation of different mitigation and adaptation

measures, as well as, the possibility of impacts in different productive sectors, and therefore in the quality of life of people.

The elaboration of PACMUN is divided into three main methodological areas:

- Local GHG inventories,
- Mitigation, and
- Vulnerability and Adaptation.

1.3. Scope

At the first stage of PACMUN Project, we had 9 representative pilot municipalities geographically, throughout the country. These pilot municipalities had different characteristics and local realities; we took into account big cities, rural and coastal municipalities. As an outcome we have 30 PACMUN's finished documents, and at present as part of the second stage, we have more than 250 municipalities [6] working with the PACMUN Program in their plans (see Fig. 1).



Figure. 1. Status PACMUN 2013.

1.4. Potential

Until now, we work with 10% of 2445 municipalities in Mexico [7], this means about more than 15% of the Mexican population (see Fig. 2). The project has shown, a little real situation about climate change in

Mexico and demonstrates transversal mitigations and adaptation actions, with a possibility for future implementation.

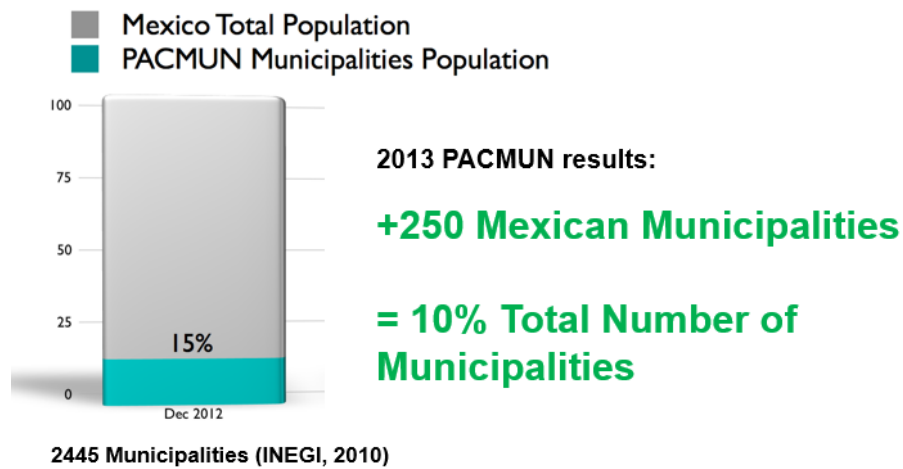


Figure. 2. Mexican-PACMUN's Municipalities population.

2. Vulnerability and Adaptation

The climate vulnerability is a function of the character, magnitude and rate of climate variation to which the system is exposed, as well as the sensitivity and resilience of the system [8].

The General Law of Climate Change (LGCC) defined adaptation measures and adjustments in natural or human systems, in response to climatic stimuli projected or real, or the effects that can moderate harm or exploit the beneficial effects. Then, Adaptation measures are done to reduce vulnerability or enhance resilience and should be encouraged to culminate in public policies and search for their implementation [5].

2.1. Adaptation planning factors

Throughout history there is evidence that disasters are more expensive than prevention (see Fig. 3) [9]. It is urgent to increase efforts in developing adaptive capacities to climate change impacts. Adaptation's planning in the country depends on:

- Vulnerability Assessment,
- Historical climate impacts,
- Data quality, and
- Understanding and interpretation of climate change scenarios.

There is a great deal to handle threats, due to the uncertainty of frequency and intensity on hydrometeorological events, in this sense, we will only be able to work with vulnerability.

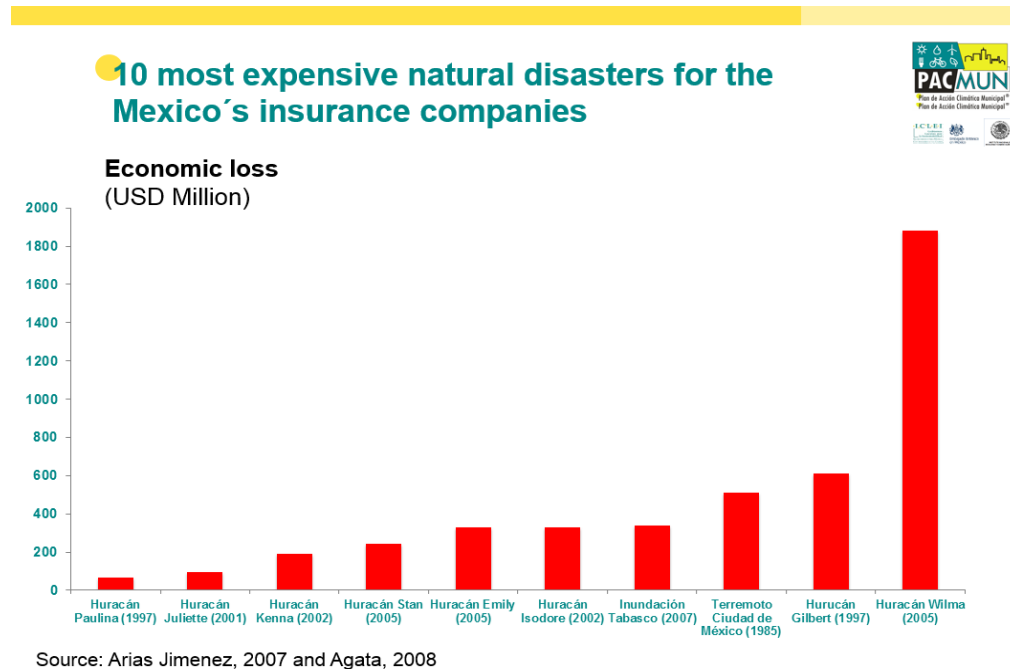


Figure. 3. Ten most expensive natural disasters of Mexico's insurance companies.

2.2. Impacts and Threats

The findings of vulnerability assessments in 30 Mexican municipalities are reflected through the threats we can see in the next graph (see Fig. 4), where heavy rain, droughts and heat waves are those most manifested, while the related impacts are floods, damaged infrastructure, landslides and water shortage. It is important to realize that these are findings of a sample of municipalities, not the representation of Mexico's vulnerability assessment.

**Vulnerability
30 municipalities**

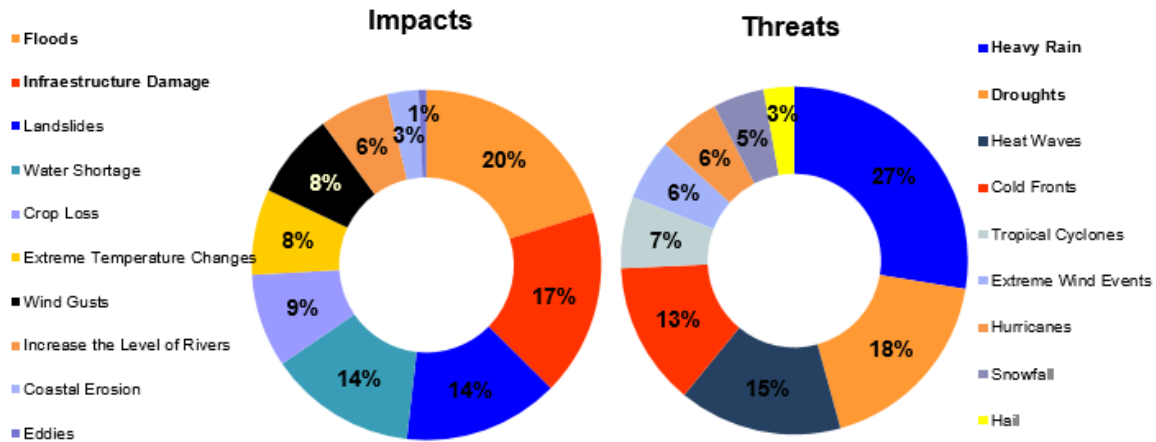


Figure. 4. Impacts and threats of 30 PACMUN's municipalities.

2.3. Adaptation actions and resilience

The assessments led to the identification of about 500 adaptation actions in which clearly one of the main key systems to work with is "Awareness", which not only suggests the need of social awareness, but also includes decision makers awareness and the need of capacity building, in order to comprehend the country's climate change situation, so the municipal decision makers may lead sustainable development which will lead to achieve resilient cities in Mexico.

In Figure 5 we can see findings of the adaptation key systems, such as: urban infrastructure, water resources, training and planning, and several others.

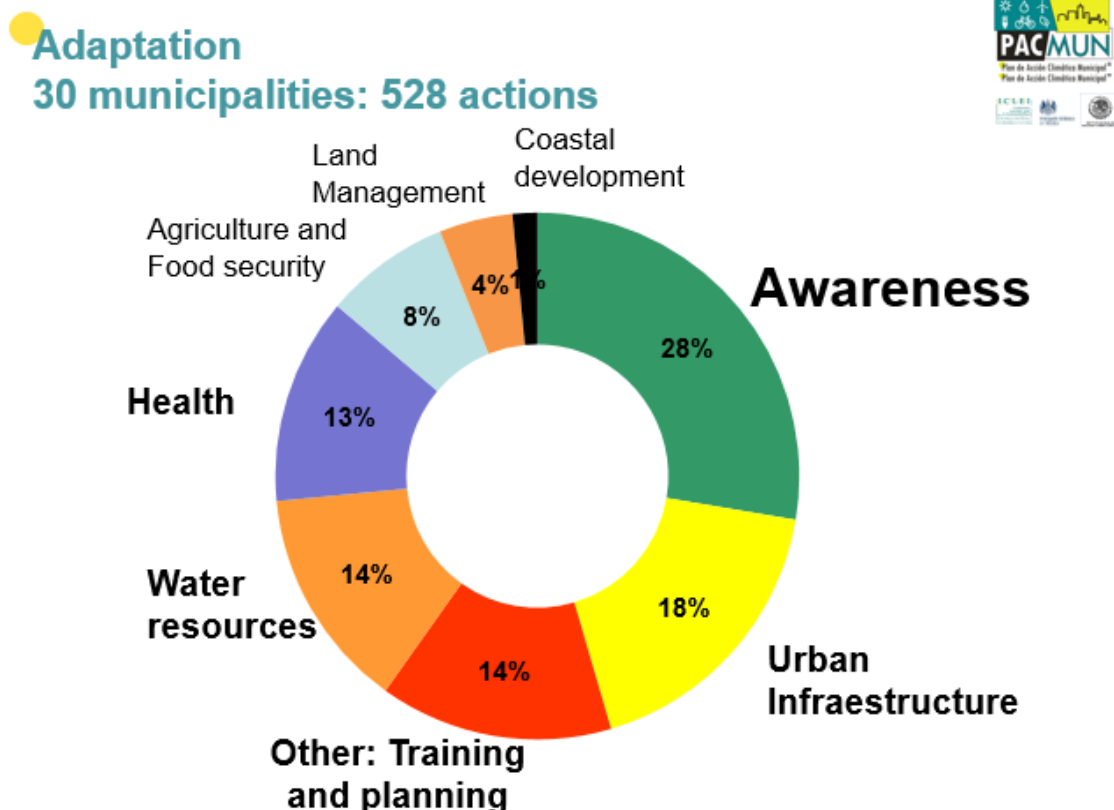


Fig. 5. Adaptation actions.

3. Experience acquired and forward work

3.1. Lessons Learned

It was found that assessments done by ICLEI Mexico's highly skilled personnel of the Implementing Unit in each area of PACMUN's development during the training, using clear examples for eliminating the false idea that problems can only be tackled on the basis of difficult mathematical calculations, influenced the PACMUN's acceptance.

Another important factor is that mitigation and adaptation measures proposed by municipalities are decided according to their possibilities and on a consensus among the municipality's different sectors. Municipalities normally face a heterogeneous reality, making it important that each municipal council manages the best option, taking into account the feasibility of the project.

Finally, the timely and systematic tracing of each municipality represents a factor of success that leads to a better communication among stakeholders. Therefore, the quick assessment of ICLEI's Implementing Unit for recognition of different types of mistakes that could be solved on time, is crucial.

3.2. Roadmap

The roadmap for the next two years at the local level is to perform a Cost-Benefit Analysis for projects, primarily in water management, food security, urban planning, and risk management, as a first step to local governments, to begin building resilient cities. In that way, PACMUN addresses this subjects to study the possibility to implement adaptation actions, taking into account the different stakeholders, to jointly promote the increase of adaptive capacity at the local government.

3.3. Second phase

The next step for the second phase of PACMUN is to ensure the fulfillment of the ICLEI's 8 Agendas [10], as well as looking for replicability of the project in Central America and the Caribbean. Another important issue is to bring local governments to GHG emissions accountability in CARBONN platform [11]. There is also a need to examine the global and national funding options for implementation. Besides, a particular goal is the report of ICLEI and PACMUN to the federal government, to be included in the 6th National Communication of Mexico to the UNFCCC.

4. Conclusions

The PACMUN guide facilitates knowledge exchange between stakeholders and municipal officers to ensure resiliency measures address all sectors and socio-economic backgrounds.

By using the guide for the elaboration and implementation of PACMUN, the municipalities get knowledge and basic skills of climate change and the policy making in mitigation and adaptation.

PACMUN planning document has been elaborated in a friendly way, avoiding, unnecessary mathematical calculations, taking into account municipal socioeconomic realities, systematizing the teaching mechanism for strengthening municipal skills and those regarding replication.

In 2013, PACMUN has been spread at the local and national level, it has shown a dramatic growth in the scope of Mexico's municipalities, reaching 10% of the entire Mexican municipal universe and 30 PACMUN documents finished so far.

It has built a vulnerability assessment sample of 30 municipalities which depicts a wide landscape of threats and impacts for them. Thus, more than 500 adaptation actions were identified in order to strengthen cities' resilience.

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Future work will be focused in Cost-benefit Analysis for implementing PACMUN projects, harmonize PACMUN's actions with the 8 ICLEI Agendas, promote local GHG's emissions accountability, catalyze projects funding, international expansion and increase influence in local sustainability policy.

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