El Colegio de la Frontera Norte

GNEB
Environmental Advisors Across Borders

Climate Change Strategies for Mexico and Baja California

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Outline

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Mexico and Climate Change

- Mexico signed and ratified the Climate Change Framework Convention in 1992, this came into force on March 21, 1994. Mexico also signed and ratified the Kyoto Protocol on June 9, 1998 and September 7, 2000; respectively. The Protocol entered into force on February 2005 (UNFCCC, 2009). Mexico had an effervescent activity on tacking the climatic phenomena from 2006 to 2012. This, however, appears to be changed, the current national administration that started on 2012 has followed a different track not clear about the climate comprise; for example the approval of the Energy Reform based primordially on petroleum and the delay on the issue of the Energy Transition Law.

- However, treaties and agreements signed previously committed Mexico to responsibilities, some of the relevant actions taken to fulfill such are: 1) national communications to the UNFCCC, 2) institutional arrangements such as the creation of the Mexican Interdepartmental Commission on Climate Change, and 3) the development of Regional Programs of Climate Action.

Regional Climate Change Acts (PEACC)

In Mexico, there are 31 States and one Federal District; the first efforts to develop PEACCs date back to 2008, by 2010 all States had their PEACCs at several degrees of accomplishment. In addition, by 2011 there were nearly 50 municipalities in sundry regions engaged in developing Climate Change Acts at their own level and jurisdiction (SEMARNAT & INECC, 2012). In 2009, nine municipalities signed up in a pilot study, in the period 2012-2013, 200 municipalies joined the local climate initiative.

The main objective to developed these regional climate change acts –at State and Municipal levels- is to characterise and minimise local and regional vulnerabilities, enhance adaptation capabilities to face climate change, identify sources of Green House Gases (GHG); and implement mitigation and adaptation strategies at local level.

Regional Climate Change Acts (PEACC). By 2014

	PEACC	GHG inventory	Climate Change Agency	Local Law on Climate Change
Completed	12	18	20	10
Under development	17	12	0	11
Under planing	2	0	0	0
Updating	1	2	0	0
Information not available	0	0	12	11

Source: National Institute of Ecology and Climate Change, 2014

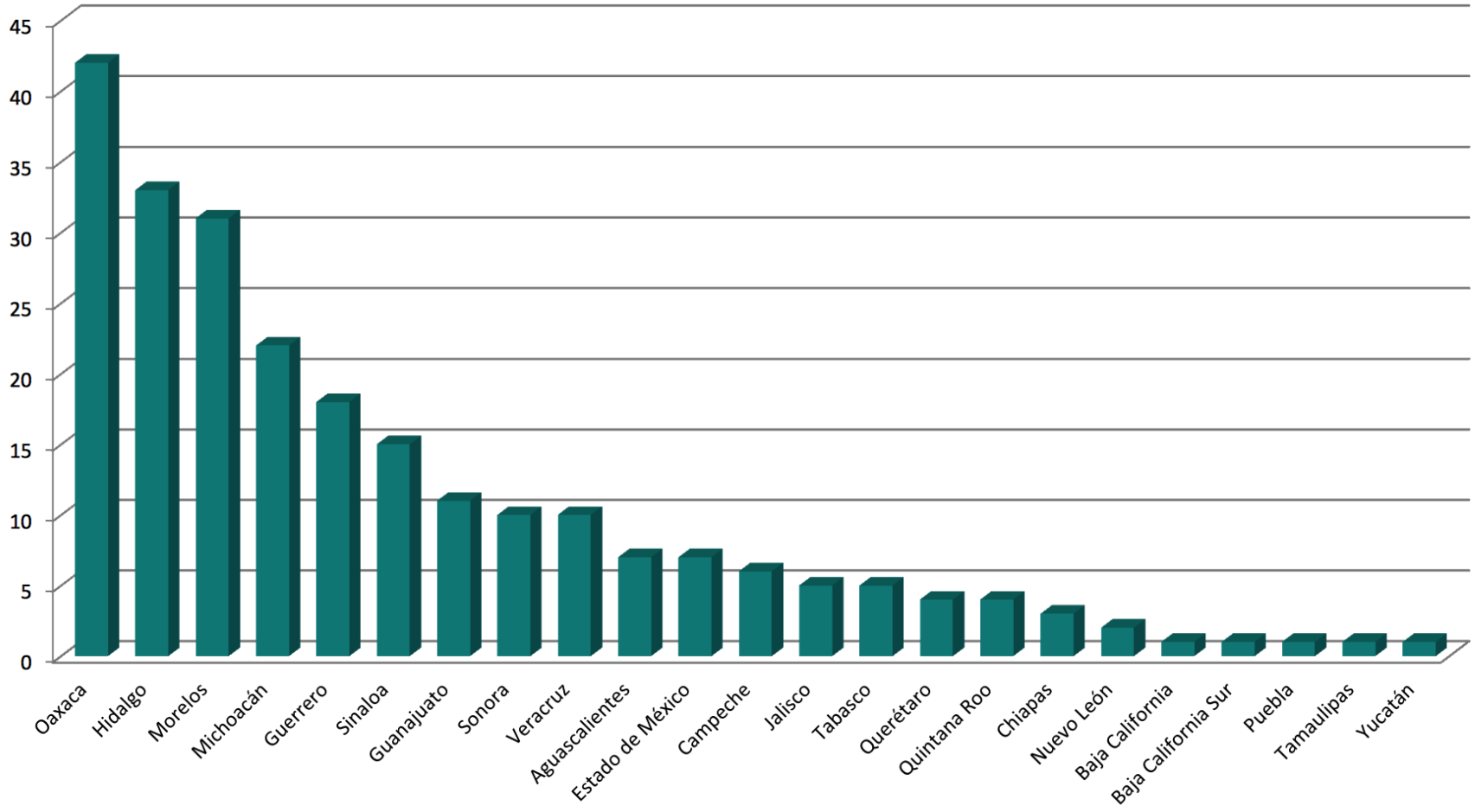
Regional Climate Change Acts (PEACC). 2014

	ENTIDAD	PEACC	IEEGEI	CECC	LECC
1	Aguascalientes				
2	Baja California				
3	Baja California Sur				
4	Campeche				
5	Coahuila				
6	Colima				
7	Chiapas				
8	Chihuahua				
9	Distrito Federal				
10	Durango				
11	Guanajuato				
12	Guerrero				
13	Hidalgo				
14	Jalisco				
15	E. México				
16	Michoacán				
17	Morelos				
18	Nayarit				
19	Nuevo León				
20	Oaxaca				
21	Puebla				
22	Querétaro				
23	Quintana Roo				
24	San Luis Potosí				
25	Sinaloa				
26	Sonora				
27	Tabasco				
28	Tamaulipas				
29	Tlaxcala				
30	Veracruz				
31	Yucatán				
32	Zacatecas				

Climate Change Acts at municipal level (PACMUN)

Source: ICLEI, 2013

Climate Change Acts at municipal level (PACMUN)

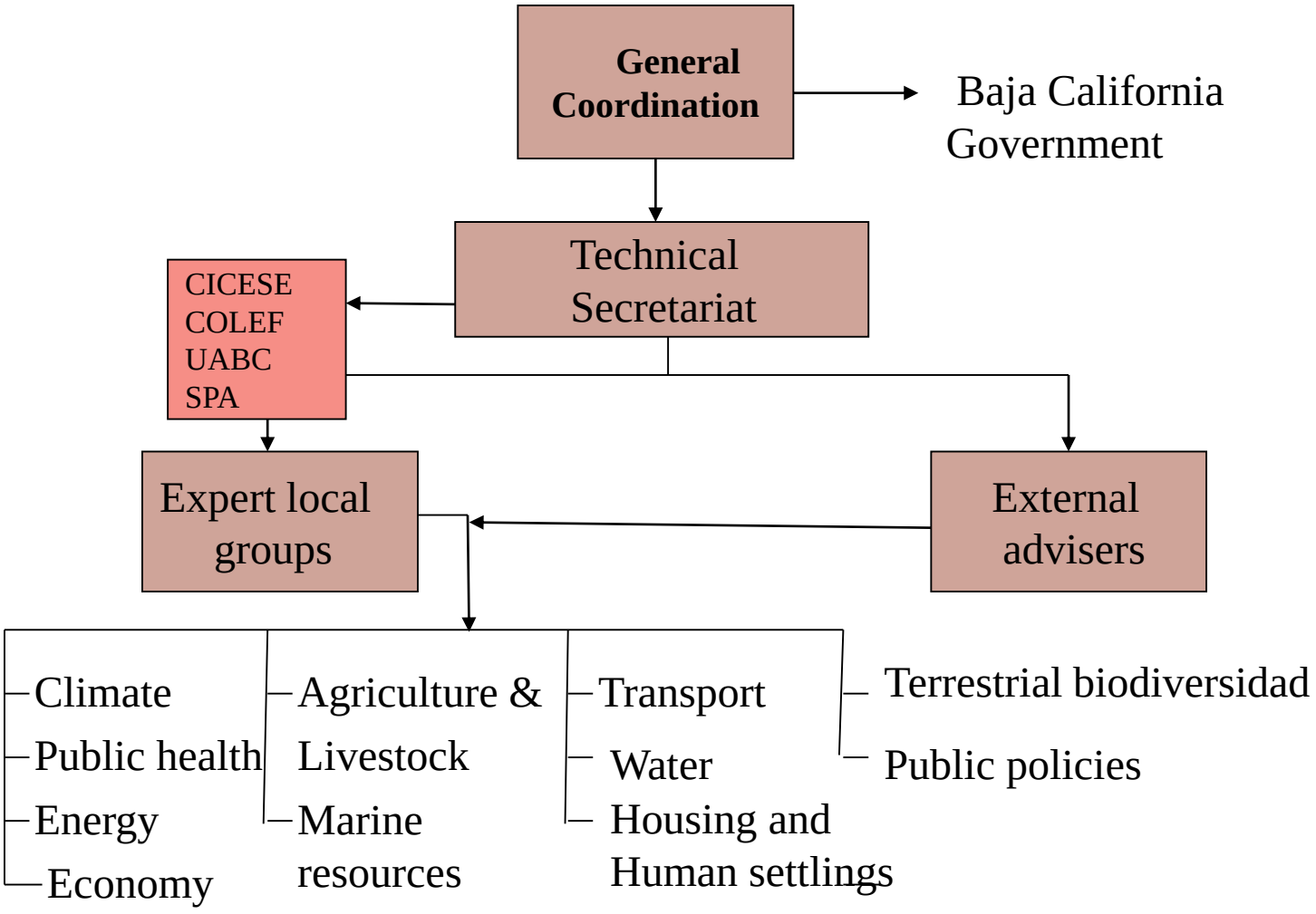


Source: ICLEI, 2013

PEACC BC

- The first steps towards a PEAC for Baja California started in 2008, creating collaboration agreements between the state responsibles for the environmental policy; and three regional leading higher education institutions: El Colegio de la Frontera Norte, CICESE and the UABC. This resulted in the establishment of a long term working groups regionally based and committed to design and evaluate the plan. Roles were designated as follows: academics provide analytical frameworks for diagnosis, proposal design and evaluation of achievements, while government agents would operate the plan.

PEACC BC



50 researchers specialists on their fields

PEACC BC

- PEAC's main objectives were: 1) the evaluation of the current and future vulnerability due to climate change in Baja California, and 2) the development, publishing and application of the PEACC BC. Specific measures to control and reduce GHG emissions were a central result expected from the team work.

- The main elements included in the plan were: 1) state-level GHG emissions inventories and scenarios forecasting, 2) regionalized climate scenarios, 3) impact, vulnerability and adaptation measures analysis for development priorities within the state, 4) proposals for mitigation and adaptation measures as well as for GHC emissions reduction, and 5) proposals for distribution of responsibilities among agencies to ensure the plan application and follow up.

PEACC BC

- In order to avoid institutional discord in the elaboration of Climate Change Policies in the PEACC BC, a bottom-up coordination between stakeholder was implemented.

- The (108) recommendations in all technical reports obtained from the vulnerability characterization in each sector were reviewed, ordered, priorised and filtered in three rounds, first and second of a technical nature and the second in charge of governmental agents.

- The methodology to translate recommendations to public policies of mitigation and adaptation to Climate Change in Baja California was the “logical framework”.

PEACC BC

- Selected policies were crossed against future governmental programs and the existing legal framework. The whole process produced 14 final recommendations in seven sectors; two in Energy, one in Urban Solid Waste, six in Agriculture and Livestock; and one in Land Use and Change of land use; these 10 composed the “Mitigation Plan”. On the other hand, two recommendation were related to each: Water and Urban Infrastructure; these conformed the “Adaptation Plan”.

Plan of Climate Change Mitigation for Baja California

Sector	Aim	Proposed action	Reduction (Gg CO_2e/year)	Cost	Economic and social benefits
Energy	Reduce the volumen of emissions generated from transport	Installation of a trolley system in each Tijuana and Mexicali	732.2	5.5 K million pesos	Reduction of fuel subsidies Improvement of the air quality Improvement of the urban transport
		Production of biodisel from animal waste	347.5	1.51 million dollards	Minimisation of waste streams
Waste	Management of Urban Solid Waste	Installation of a biogas plant	294.4	80 million pesos	Additional source of energy
Agriculture	Reduce agricultural Burns Management of agricultural soils	Reduction of agricultural burns Diminish fertilizer use Continue the programs for the sector.	377.7	500 million pesos	Increament of the eficiency in the sector Reduction of costs production
Livestock	Management of enteric fermentation	Reduction of number of animal per hectare Change in the animal diet Implementation of a management system of animal waste			
Change of land use and silviculture	Increment of carbon capture	Increment up to 5 m^2 of green área per inhabitant		20 million pesos	Improvement of the urban life standard Decrease of urban temperatures

Plan of Climate Change Adaptation for Baja California

Sector	Proposal	Social implications	Costos	Economic and social benefits
Water	Installation of irrigation systems in agriculture	Possible resistance of farmers	60 millions dollars	• Saving of 264 millions of water cubic meters (m3). This amount is equivalnet to 9.4% of the current amount used in Agriculture. • Saving of 3 million pesos per year in maintenance of adaptation infrastructure. • Saving of 11.4 million pesos per year in energy consumption.
	Increment of 1% in urban water fee	low social aceptance		• Saving of 2.7 thousand m^3 of water; distributed as follows: 0.18% in Tijuana and 0.86% in Mexicali.
Urban infrastructure	Development of a pulvial water system		3-6 K per millimeter of increased capacity	• Reduction of vulnerability to urban flooding
	Installation of hydraulic pavement		500– 2K pesos per square meter of infrastructure	
	Creation of a maintenance program for gutters and drainage systems		6 million pesos	• Minimization of flooding risk

Conclusions

- Current development patterns are the real cause for climate change; these very same patterns explain the degree of vulnerability of a region to climate change. This statement establishes the need to work on climate change and sustainability as a development problem and not as a sole environmental matter.

- Taking a development standpoint, regional or state level PEAC become a necessary instrument for any real territorial development discussion and requires a bottom-up approach able to mobilize all the resources existing at local levels, including political will and social pressure to accomplish medium and long term objectives.

Conclusions

- There is evidence that the most effective mitigation and adaptation measures require wide participation of key actors and that usually local and regional levels of government achieve better identifications of means and opportunities to bring them about.
- The way to deal with Climate Change issues differs widely not only between Mexico and the USA, but among American states themselves. And although it should be recognized that the idea of a common regional agreement is not feasible, it should be considered that a range of targets per region and sectors may be possible through the implementation of a progressive decoupling of the economic growth in the border region.