

# Veracruz, Mexico

## Veracruz Program on Climate Change

The Veracruz state government aims to reduce Green House Gas (GHG) emissions by 5 per cent by 2016; this is the equivalent of 1.4 million tons of carbon dioxide. To achieve this, the state government prepared the Veracruz Program on Climate Change. This program is a combination of methods aimed at mitigation and adaptation and has 7 strategic themes; Detection and Tracking, Reducing GHG Emissions, Biodiversity, Water Resources, Coastal Ecosystems, Economy, and Society which are the basis for implementing climate change policy in the state of Veracruz.

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ICLEI Case Studies

April 2012

### Abstract

Climate change is a key thematic issue within the overall environmental policy of the State of Veracruz. A new state law was published on November 3rd 2010: 'The Mitigation and Adaptation to Climate Change Effects Law'. It was the first of its kind in a Mexican federal authority. The State of Veracruz has also developed a State Program on Climate Change, which was one of the first climate change related programs to be developed in the country. This program proposes actions to improve institutional capacity and knowledge in order to identify actions to reduce GHG emissions in the transport, waste and energy sectors. Another key priority of the program is the conservation of biodiversity and environmental services aimed at preventing further loss of vegetation, while maintaining connectivity of ecological systems and the availability of water resources. Both the State Program on Climate Change and the Mitigation and Adaptation to Climate Change Effects Law has provided a strong institutional basis in Veracruz in addressing the challenges of climate change.

### The challenge of climate change in Veracruz

The State of Veracruz is one of the most vulnerable states in Mexico to the impacts of climate change. Based on studies conducted by the University of Veracruz, with due regard to climate change scenarios in the state of Veracruz, it is predicted that there will be a 50 to 150 cm increase in sea level by 2100. This means that the Mexican coast of the Gulf of Mexico would potentially lose half a million hectares of pasture, a quarter of a million hectares of farmland and 8,000 hectares of existing tropical forest villages. Furthermore, an estimated temperature rise of 2 °C and a reduction in rainfall of around 10 per cent is envisaged.

These changes in weather patterns will affect the agriculture production sectors of the state, particularly crops such as corn and oranges. A reduction of land suitable for these crops is expected, with yields adversely effected by increases in temperature and drought. However, the state must act decisively. A preliminary inventory indicated that the state emits about 27 million tons of carbon dioxide. This represents about 8.9 per cent of Mexico's total emissions. Bearing this in mind, the Veracruz Program on Climate Change and the State Law on Mitigation and Adaptation to Climate Change Effects is pivotal in promoting actions to address these challenges.



#### Population/Land area

~7,65 million (2010)  
71,735 km<sup>2</sup>

#### State budget

US\$ 5.77 billion

*Veracruz joined ICLEI in 2010*

This case study is part of a series of local sustainability case studies compiled as part of ICLEI's preparation for Rio+20.

## Case Study



Workshop for business plan development for renewable energy power generation for municipalities, June 2011.

### State context

The State of Veracruz has 7.65 million inhabitants in 212 municipalities and localities. It accounts for 4 per cent of Mexico's Gross Domestic Product (GDP). It is the largest producer of electricity in the country with six hydroelectric plants, and 3 nuclear power plants. Furthermore, it accounts for 40 per cent of national sugar production and is highly important in terms of crop and general food production.

Of the 71,735 km<sup>2</sup> land area of the state, 72 per cent of the area has been transformed and used for agricultural or urban development. This is particularly important when one considers Veracruz's vulnerability to the adverse effects of climate change. The risks of climate

change are different for each Mexican state and Veracruz, in particular, faces a high degree of vulnerability associated with drought in one part of its territory in certain seasons and extreme rainfall events, floods and rising sea levels, in another. These extreme weather events have a direct impact on human health, agriculture, food production and biodiversity, adversely impacting the overall state economy.

Therefore, it is necessary for the State of Veracruz to reduce the risks associated with climate change through adaptation strategies while at the same time taking steps to reduce carbon emissions. While promoting climate change mitigation and adaptation initiatives, the state government needs to also ensure the welfare of the population and maintain economic development. To achieve this, it believes that interagency and intersectorial coordination will help address the states climate related challenges.

### Veracruz Program on Climate Change and the state law on Mitigation and Adaptation to Climate Change Effects

The State of Veracruz has a goal to achieve a 5 per cent reduction in GHG emissions and a goal to implement necessary actions to reduce the vulnerability of the population, the ecosystems and the productive sectors to the negative effects of climate change.

**Local Government Action.** The responsibility of the programs belongs to the Ministry of Environment of the State of Veracruz. The state has already made progress in developing the institutional architecture to combat climate change. In 2008, the Center for Climate Studies was founded, located in the Department of Civil Protection at the state university. This was followed by the introduction

of the Veracruz Program on Climate Change in 2009. On November 3<sup>rd</sup> 2010, the state law: 'Mitigation and Adaptation to Climate Change Effects' was published. Subsequently, the Department of the Environment of the State of Veracruz was established on December 14<sup>th</sup> 2010.

Following the creation of this essential statutory framework, the State of Veracruz established an important institutional capacity building agenda, most importantly the State Board for Mitigation and Adaptation to Climate Change Effects was established. This board is responsible for the interagency coordination of actions and its advice contributes to the programs development as well as assisting in developing the statewide strategy for the next six years.

**The Veracruz state government** has embraced the changes in government policy and is committed to implementing policies which deal with climate change. Thus it provides an excellent example for other local governments in the country. The government:

- Promotes the participation of different sectors of society in the state's climate change policy making programs. This is done through the State Council for the Mitigation and Adaptation to Climate Change Effects.
- Monitors compliance with the state law on mitigation and adaptation to the impacts of climate change and identifies and promotes actions to adapt to climate change.
- Encourages and promotes coordinated management actions to reduce GHG emissions and adaptation processes with different public and private sectors, institutions and social actors.
- Encourages the use of renewable energy in the state and promotes programs that are conducted for the application of clean technologies.
- Has established and promoted collaboration with research and academic institutions as well as with international aid agencies for the development of studies that underpin the design and implementation of actions to tackle climate change.
- Has managed national and international resources to finance actions to reduce GHG emissions and adaptation to climate change effects.
- Is training men and women at state and municipal level to develop techniques relating to the mitigation and adaptation to climate change impacts and the promotion of self-management of resources.

## **Activities & Results**

Following the implementation and approval of the various programs mentioned, the necessary institutional capacity for practical mitigation and adaptation strategies, was developed. A number of initiatives have been pursued as a result.

### **Campaign 'Biodiesel: The Power of the People'**

On June 5<sup>th</sup>, a cooperation agreement was established with the company de Mexico SA Biofuels de CV. The campaign for 'People's Energy' was established and signed, the aim of which is to promote the collection of used cooking oil for conversion into biodiesel. This initiative provides the following environmental benefits:

- Deposits the used cooking oil properly;

- Avoids contamination of the water;
- Promotes the use of alternative and renewable energy;
- Reduces GHG emissions by using biodiesel in transportation or industry.

After 4 months of this campaign there has been considerable achievements. 153 liters of used cooking oil in the city of Xalapa have been collected and other municipalities such as Coatepec and Teocelo have joined the campaign.



Campaign 'Energy of the People' to promote the collection of used cooking oil for biodiesel.

### Promotion of renewable energy

In coordination with the United States Agency for International Development (USAID), 67 local authorities in 25 municipalities in the state underwent training through the Workshop for the Development of Business Plans for Electric Power Generation with Renewable Energy for Municipalities. As a result, five business plans were developed, since the workshops were developed.

Additionally, cooperation began with the Mexican Center for the Advancement of Copper AC (Procobre) with the intention to promote solar energy use for heating water in the agribusiness and industry sectors. Proposals to amend the building regulations in the state to introduce solar energy use in new constructions was encouraged. The state municipality hosted a conference on the 'Solar Water Heating

for Industry and Agribusiness' which focuses on success stories and financial planning. This was attended by 30 entrepreneurs from the region and beyond. Another workshop, the 'Sustainable Energy Expo' took place on June 24<sup>th</sup> & 25<sup>th</sup> 2011. There have also been a number of other exhibitions and conferences held on sustainable energy in the State of Veracruz.

### State council for the mitigation and adaptation to climate change effects

The State of Veracruz is working on proposals for the establishment of a State Council for the Mitigation and Adaptation to Climate Change Effects. This would be an instrument of institutional coordination to perform the actions that state law has set out in the mentioned plan. Its powers will allow the council to support and guide the actions that are developed in the state to mitigate and adapt to climate change.

### Coordination with the local university Universidad Veracruzana

Coordination with the local university to support the Veracruz Program on Climate Change has been established. The university research capabilities is vital to measure emissions, update the inventory on GHG emissions and provide guidance and policy research on climate change adaptation initiatives.

### Technical cooperation with development agencies

Technical cooperation with USAID was established to share knowledge on renewable energy technologies with the municipalities. Veracruz State also received funding from the British Embassy for the preparation of a study on solar energy utilization. Furthermore, the National Ecology Institute selected the City of Alvarado to undertake a pilot action project within the World Bank funded project for adaptation in coastal wetlands in the Gulf of Mexico.

Veracruz also succeeded in establishing an agreement between the State Government and the Ministry of Environment and Natural Resources (SEMARNAT) in order to avail of 25 million pesos/US\$ 2 million for 3 projects under Annex 31 of the Expenditure Budget of the Federation 2011.



## Lessons learned

To adequately drive climate change policy in the state, it is necessary to use existing information, such as that contained in the Veracruz Program on Climate Change as well as the inventory of GHG emissions. Coordination with research institutes in the respective university is also extremely beneficial.

It is also imperative to involve stakeholders and public participants in shaping public policy. This allows for a participatory democracy approach, whereby active citizenship provides a strong basis for the implementation of climate mitigation and adaptation programmes, as well as support for the local government's initiatives.

In order to carry out actions that address climate change it is essential to create a body for monitoring and interagency coordination. Therefore the state authorities need to ensure that implementation is undertaken in a coordinated fashion.

It is also important to have a legal framework for action to tackle climate change under state law. Therefore enacting the state law on Mitigation and Adaptation to Climate Change Effects was vital to success. It provided the necessary statutory framework for implementation and enforcement.



Photo: © Ministry of Environment, State of Veracruz

Reforestation and tree planting,  
State of Veracruz.

## Replication

For replication to occur in the country, or elsewhere, it is important that states have baseline information of current levels of GHG emissions. Veracruz's inventory of GHG emissions is the basis for planning actions to reduce emissions as it highlights the human activities that produce most emissions. This inventory must be annually updated in order to fully account for levels of GHGs being emitted.

It is also important to strengthen environmental policies within the context of climate change, by incorporating environmental planning with climate change scenarios to strengthen the actions taken, especially in territorial planning.

## Budgets and finance

The actions and climate change programs mentioned have been financed within state budgets and with federal and international financing. Nevertheless, the Veracruz Program on Climate Change Technical Paper, which is the basis for governmental activities in the matter, states that to be able to cope efficiently with the negative effects of climate change it would require a total investment of approximately US\$ 45 million.

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## Acknowledgements

- This ICLEI case study is part of the Local Sustainability 2012 Case Study Series.
- Authors: Paulina Soto Villaseñor (ICLEI Mexico), Beatriz del Valle Cárdenas and Isabel Martínez García (Ministry of Environment of the State of Veracruz).
- Reviewers: Edgar Villaseñor Franco and Itzel Alcérreca Corte (ICLEI Mexico).
- Editors: Shay Kelleher, Richard Simpson (ICLEI World Secretariat).



GOBIERNO DEL  
ESTADO DE VERACRUZ

This case study compliments the publications prepared for the Rio+20 Conference and is part of the 'Local Sustainability 2012 Case Study Series: Showcasing progress in local sustainability'. This project is generously supported by the Fondation Charles Léopold Mayer pour le Progrès de l'Homme. The case studies can be accessed online at [www.iclei.org/casestudies](http://www.iclei.org/casestudies)

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April 2012