

Climate change mitigation in agroindustries in Mexico

Agribusiness in Mexico contributes an estimated 63.1 million tons of CO₂ per year, equivalent to 9.8 percent of Mexico's total CO₂ output. Nationally, the primary source of emissions is livestock, followed by agriculture and then motor transport.

The extraordinary level of emissions coming from livestock offers high potential to reduce emissions. At the same time, livestock, dairy and meat packing are industries where Mexico is keen to continue modernizing, reach higher health and safety standards and a project like one being introduced by the World Bank and GEF can help attain these goals, while stimulating the use energy efficiency and creating a platform for renewable energy.

The *Sustainable Rural Development Project* in Mexico seeks to capitalize on this opportunity by merging agriculture with energy efficiency and renewable sources of energy. The project received the WB-ARD **Good Practices in Agriculture and Rural Development Award** in 2009 for innovation in bridging rural development and efforts to mitigate climate change.

Agriculture and climate change have strong synergies

The project, to be implemented by the Mexican Secretary of Livestock, Rural Development and Fisheries (SAGARPA) adoption of energy efficient and emission-reduction in agribusiness. Using blended financing from IBRD, GEF, funds, beneficiaries' contributions, and eventually carbon project promotes increased private investment in energy practices and renewable energy sources in existing small scale agribusiness.



The project is channeling resources toward the installation of solar paneled units to heat water used in meat packing, food processing, and distilleries. Funding also supports agribusinesses that seek to complement their energy consumption with photovoltaic solar systems that will be connected to the national grid. This way, excess energy generated from the panels can also reduce demand on the national electrical system.



Agriculture, supports the technologies Government financing, the efficiency and medium-

resources

At the same time, it is promoting the installation of bio-digesters to capture biogas, which is generated from animal waste at hog and dairy farms. Biogas from these bio-digesters can generate energy and displace traditional energy consumption, thus reducing energy demands from livestock industries, currently the most energy intensive sector in the country.

Through this project, the Government of Mexico, with complementary funding from the World Bank and GEF, is promoting a remarkable win-win situation: agri-businesses decrease their production costs, through adopting energy-savings technologies or meeting their energy needs from managing the waste they produce. The national economy wins from energy saved and less ground water pollution; and globally, the environment gains through less emissions of green-house effect gases. Given these national and global benefits, support to private sector to help them bear the costs of the initial investments is entirely justified and clearly worthwhile.

In addition to promoting new technologies, the project also supports at least 140 agribusinesses with training on the adoption of energy efficiency practices. These will enable businesses to reduce unit costs and emissions. The most common energy efficiency measures are directed at improved efficiency of caldrons, substitution of light bulbs for energy saving units, the substitution of old motors for newer, more efficient

versions, the isolation of heating and cooling systems, and the reuse of energy from sources such as vapor. Through the use of such measures, agribusinesses will also see considerable savings in their operating costs.

Finally, the project also strengthens the Secretary of Agriculture's institutional capacity to effectively address the agricultural sector's impact on the environment and reduce from agriculture.

By pursuing these objectives, the project will contribute to goals under the National Strategy on Climate Change and commitments under the Kyoto Protocol.

Project Benefits

Mexican officials expect the activities carried out under the Project to contribute to a total reduction in GHG emissions of about 1.65 million TonCO₂e, a reduction in electric generation of about 54.3 Gwh, a total energy savings of about 11.5 Gwh, and a savings of combustible fossil fuels equivalent to 100 million liters of diesel.

More specifically:

- ❖ The use of thermal solar systems is expected to generate a cumulative savings in the consumption of fossil fuels.
- ❖ Use of the bio-digesters is expected to generate energy, reducing the demand on the grid.
- ❖ Use of the photovoltaic systems connected to the grid should bring about a reduction of traditional electricity which translates into a reduction of GHG emissions.
- ❖ The adoption of general energy efficiency measures is expected to lead to significant energy savings represents a large reduction in GHG emissions.

The project will also bring about a reduction in the contamination of resources such as soils and water, will benefit conservation and help improve environmental management.

SAGARPA: a partner in promoting energy efficiency in agriculture



SAGARPA has been an active player in promoting sustainable rural development in agriculture. In the 1990's it supported the use of solar energy for pumping water. This gave way to a Renewable Energy Project for Agriculture (PERA), which began in 2000 and opened the door to the use of renewable energy in agriculture.

The Secretary of Agriculture created the *Fideicomiso de Riesgo Compartido* (FIRCO), an initiative designed to provide financial incentives to small and medium sized rural agribusinesses for adding value to primary products.

FIRCO has actively promoted energy efficiency measures in agriculture, and is the responsible for implementing the project.



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