Long-term Impact Assessment

of the CEC's Work to Support AirNow-International

(2010–2015)

Commission for Environmental Cooperation

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Background

AirNow-International (AirNow-I) is a system that allows government agencies and organizations to collect, process, exchange, and communicate air quality observations and forecasts in real-time. With the goal of improving decision-making related to public health, AirNow-I also contributes to increased public engagement on air quality issues. Between 2010 and 2015, the Commission for Environmental Cooperation (CEC) invested C$452,000 to support and improve the sharing and comparability of ambient air quality data at the North American level and support the integration of Mexico's regional air quality monitoring systems into AirNow-I.[1]
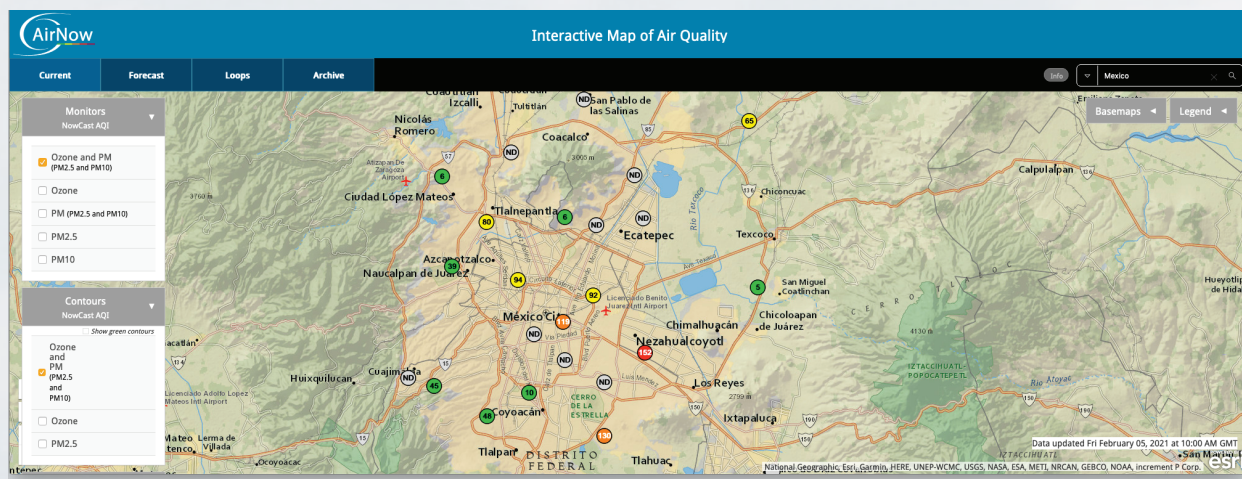
In 2020, the CEC commissioned a report to assess the outcomes and long-term impacts of these efforts. This report concludes that these projects were highly successful and resulted in increased ambient air data quality reporting and comparability within and among Canada, Mexico and the United States and increased collaboration among experts in the three countries on air pollution and air quality monitoring. In Mexico, particularly, this work strengthened existing air quality monitoring networks, improved data management and validation, and led to the creation in 2019 of Mexico's National Air Quality index. Moreover, by increasing access of real-time and high-quality air quality information to the public, the CEC's efforts led to better decision-making related to air pollution and health.

1. The projects were: Enhancing North American Air Quality Management, 2010, Task 3 budget = C$75,000; Capacity Building to Improve the Environmental Health of Vulnerable Communities in North America, 2011-2012, Task 1 budget = C$127,000; and North American AirNow-International Project, 2013-2014, budget = C$250,000.

Results and Successes

Assessment of the CEC's 2010–2015 AirNow work, which draws from CEC strategic and operational plans, published material, project documents, and expert interviews, highlights the projects' long-term influence, as follows:

- Increased data sharing at the North American scale. This project contributed to improving ambient air quality data sharing between Canada, Mexico the United States through AirNow-I, which provides a centralized structure and a mechanism for reporting reliable ambient air quality data in real time. These efforts support better air quality assessment and decision-making at the subnational, national, and North American levels, including in transboundary areas.

- Improved air quality monitoring and data management and validation in Mexico. This project reinforced the capacity of Mexico's air quality networks to produce reliable air quality data and information. Data management, analysis and validation were improved, and ambient air quality forecasting capabilities were enhanced. Moreover, CEC-facilitated knowledge-sharing activities between Canadian, Mexican and US agencies led to improving Mexico's National Air Quality Information System, Sinaica.

- Increased comparability and credibility of Mexico's air quality reporting. By meeting AirNow-I requirements for uniformized data formats and quality standards, Mexico has increased public availability of robust and reliable air quality data, which allows for increased transparency and comparability of ambient air quality information at the national and international levels, and contributes to promoting healthy communities and improved environmental health of vulnerable communities in North America.

- Enhanced public availability of timely air quality information for decision-making. The accessibility of real-time air quality data in Mexico and enhanced comparability with international data through AirNow-I provides stakeholders and citizens with the information to demand more transparent decision-making on air pollution.

- Facilitated Mexico's Air Quality Index development. This project facilitated several meetings between Canadian, Mexican and US experts to discuss guidelines and methodologies for developing a Mexican National Air Quality Index (*Índice AIRE y SALUD,* in Spanish). These efforts led to establishing in 2019 Mexico's Air Quality Index through the NOM-172-SEMARNAT-2019 national standard.

- Improved response to air quality-related episodes. Through the AirNow-I platform and its air quality analysis tools, such as AirNow-Tech, Mexico's decision makers improved their knowledge of pollution sources and trajectories and identified policy actions to respond to air pollution episodes.

Recommendations

Based on the conclusions and lessons learned of this impact assessment, including the input of interviewees, the following points emerged as priority recommendations for the CEC and its partners' future efforts in this area:

- Establish an Air Quality Policy Forum to serve as a mechanism to encourage the development of trinational cooperation and provide oversight and coordination of future ambient air quality efforts.

- Continue supporting efforts to improve the integration of environmental information among Canada, Mexico, and the United States. To this end, it would be highly relevant to resume national and trinational discussions on air quality monitoring to explore solutions and further collaboration for strengthening capacities and experience sharing with other Mexican cities, thereby increasing data coverage across North America.

- Promote the development of periodic comparative air quality monitoring reports at a trinational level. Binational and trinational efforts have mainly focused on the analysis of border regions, but these efforts should be expanded to the North American scale. To this end, it would be important to fully incorporate the analysis of trinational air quality issues in the CEC cooperative agenda, in addition to other related issues, such as emission control and emission inventories.

- Ensure the availability of training materials developed during the project to support Mexican states that struggle with staff capacity loss, as well as to allow knowledge sharing with other areas in Mexico with more basic air quality reporting networks.

- Mexico should assess the major technical and personnel issues faced by several air quality monitoring networks around the country.

- Mexico should explore regulatory mechanisms or other instruments that strengthen the structures of the smallest Mexican states to ensure that their air quality monitoring activities have continuity over time and between periods of government. This can reduce staff rotation, optimize resources, and preserve the capacities generated.

- Mexico should enable the connection and delivery of data directly from Mexico's National Air Quality Information System (Sinaica) to AirNow-I, in order to facilitate the participation of more Mexican cities in the reporting of air quality information. Sinaica's data validation and information reporting have greatly improved since 2010.

- Share knowledge with Mexican federal agencies about the US EPA Air Quality System (AQS), as well as on air quality data collection, reporting and enforcement mechanisms used by state, local, and tribal air pollution control agencies.

- The USEPA's AirNow-I program should consider options for displaying multiple air quality indices in order to minimize confusion of the Mexican population and increase the comparability of information at a trinational scale. Interviewees for this assessment recommend reporting the standard in concentration units.

- Establish an AirNow-I technical support mechanism, such as through a trinational technical assistance program, to address data flow and connectivity issues between AirNow-I and Mexican air quality monitoring networks.