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Development of GHG Emissions Inventories & Forecasts in the Border States of Mexico

Introduction

- Background information
- Objectives
- Inventory structure

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Background information

- June 2007
  - CCS and the state of Sonora entered in a technical assistance agreement
- April 2008
  - Remaining border states enter into a technical assistance agreement
- August 2008
  - Sonora's GHG Emissions Inventory and Forecast completed
- December 2008
  - Phase I Inventory development activities begin for remaining border states
  - Phase II Inventory development completed

Objective

- Develop GHG emission inventories for years 1990 to 2005 and GHG emission forecasts for the years 2006 to 2020.
- Develop technical capacity within the border states to prepare future updates to the GHG inventory forecast.

Inventory structure

- Covers the period from 1990 to 2020 and
- Includes emissions for each of the six gases recognized by the Intergovernmental Panel on Climate Change (IPCC).
- Both sources and sinks of carbon dioxide (CO_2) are included and reported in terms of their carbon dioxide equivalents (CO_2e).
- State-level emissions are categorized into the following eight sectors:
  - 1) electricity supply and use;
  - 2) residential/commercial/industrial fuel combustion;
  - 3) transportation;
  - 4) industrial processes and product use;
  - 5) fossil fuel industries;
  - 6) agriculture;
  - 7) waste management; and
  - 8) forestry and land use.

Methods

- General principles
  Specific considerations
  Significant sources

General principles

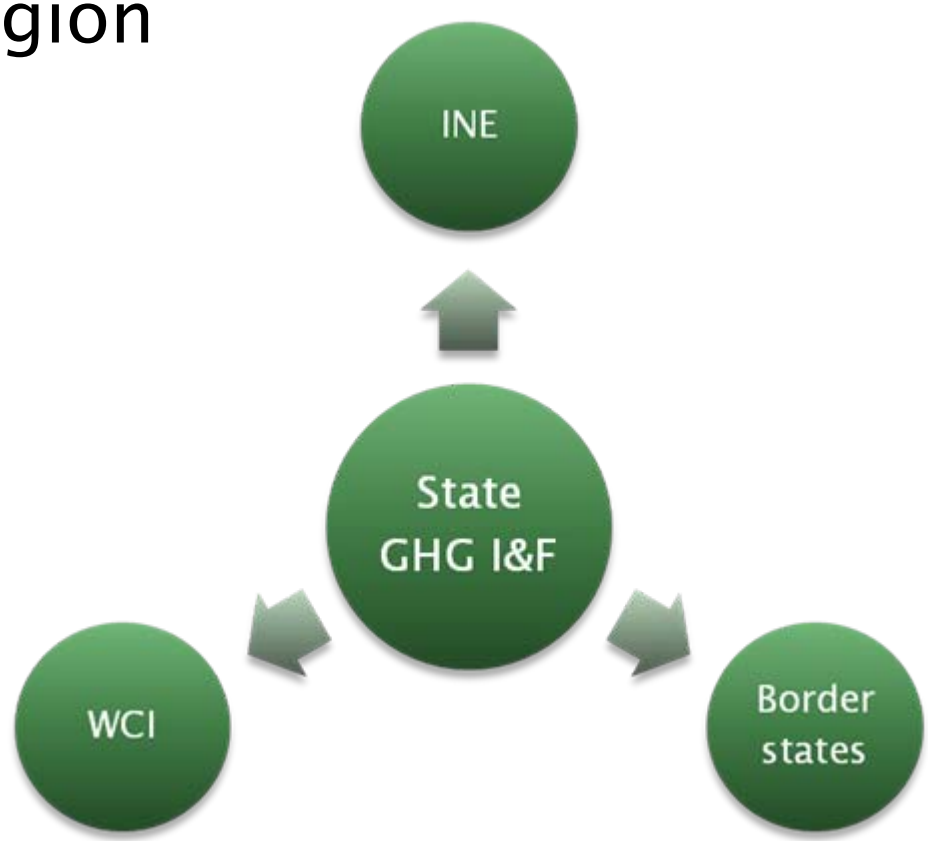
- **Transparency**
  - Open for comments and review
- **Consistency**
  - Designed to be externally consistent with current or likely future emissions reporting systems
- **Priority**
  - To local and state data sources
  - To significant sources
- **Comprehensive**
  - CO_2, CH_4, N_2O, SF_6, HFC, PFC; 1990–2020

General principles

- **Use of consumption-based estimates**
  - Relevant to the energy supply sector.
  - Approach reflects more accurately the impact of state-based policy strategies such as energy conservation.

Specific considerations

- Maintain consistency with GHG accounting methods utilized by existing climate change players in the region



Specific considerations

- References
  - IPCC: 2006 guidelines
  - INE: Mexico's GHG emissions inventory (INEGEI)
  - EPA: U.S. GHG Inventory
  - EPA: State Inventory Tool (SIT)
  - CCS: Expertise (17 state inventories)

Methodologies	Identification of significant sources	Organization of results
• 2006 IPCC • EPA SIT	• INE: INEGEI • CCS: Expertise	• CCS: Expertise

Significant sources

- Mexico GHG inventory 2002

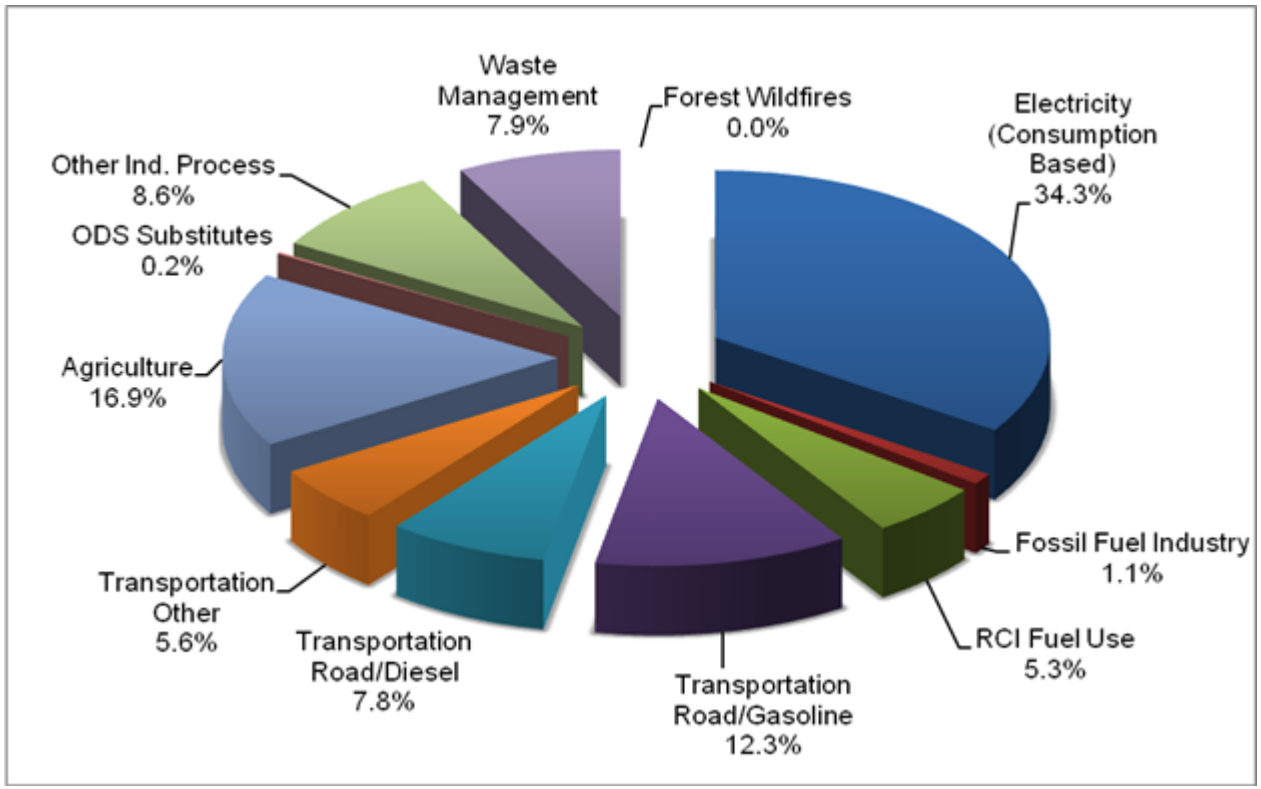
Sources	Emissions [Gg CO2e]	Distribution %
Total	643,183	100%
Energy – Fuel consumption – Electricity generation	152,469	24%
Energy – Fuel consumption – Transportation	111,959	17%
Energy – Fuel consumption – Manufacturing	51,025	8%
Agriculture – Enteric Fermentation	37,366	6%
Energy – Fugitive fuel emissions – Gas and petroleum systems	37,020	6%
Energy – Fugitive fuel emissions – Petroleum refining	36,690	6%
Waste – Solide waste management	34,960	5%
Industrial Processes – Mineral products	30,618	5%
Waste – Wastewater management	28,566	4%
Energy – Fuel consumption – Other	25,160	4%
Industrial Processes – Metal production	15,322	2%
Agriculture – Agricultural soils	7,449	1%
Other	74,579	12%

Results

- Sonora
  Border States (preliminary)

Sonora

- Gross GHG Emissions by Sector, 2005



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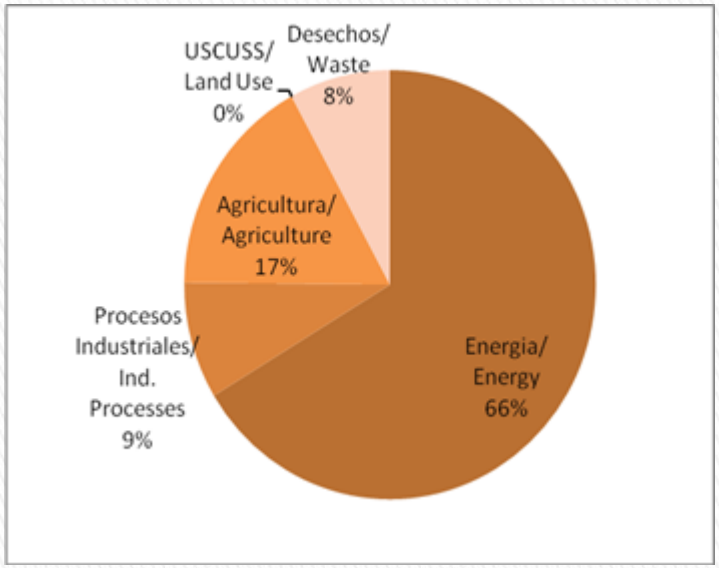
Sonora

- Gross GHG Emissions by Sector, 2005



Sonora

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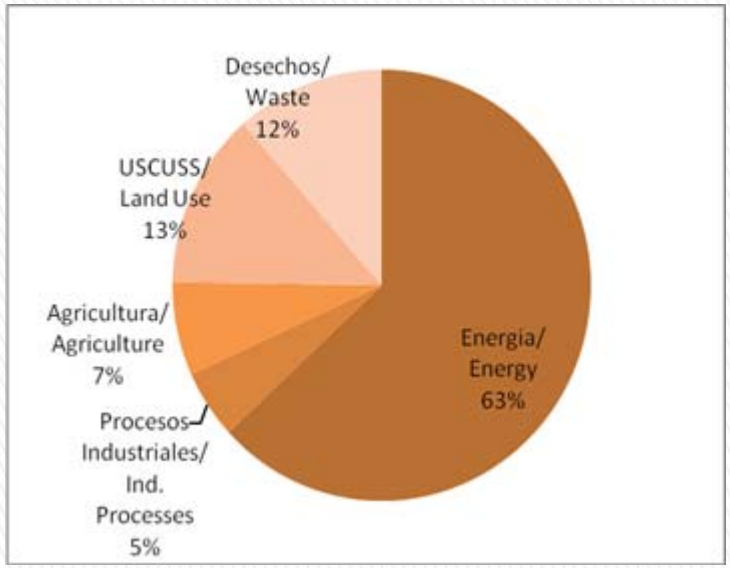
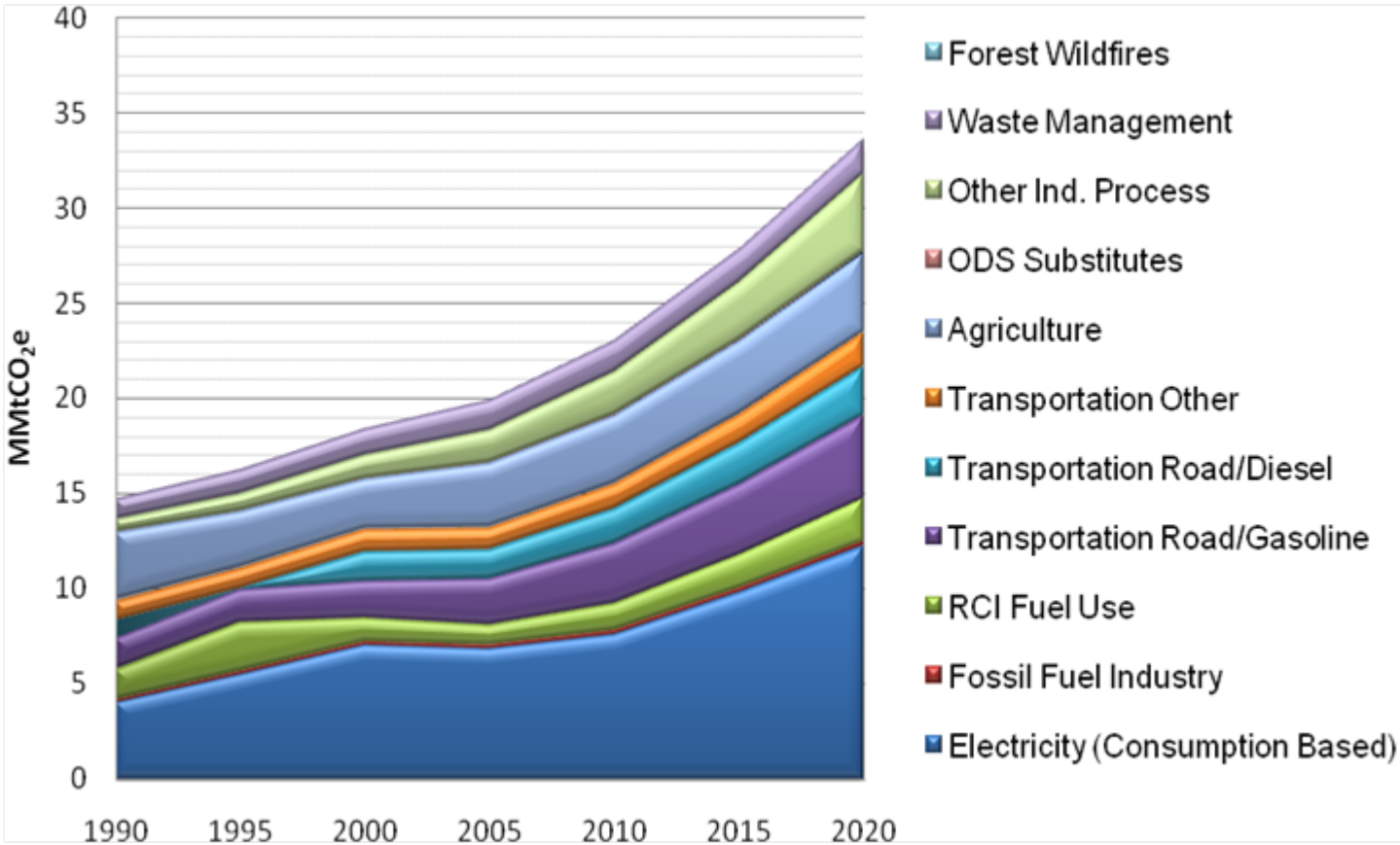


Mexico

Sonora

- Inventory & Forecast 1990-2020

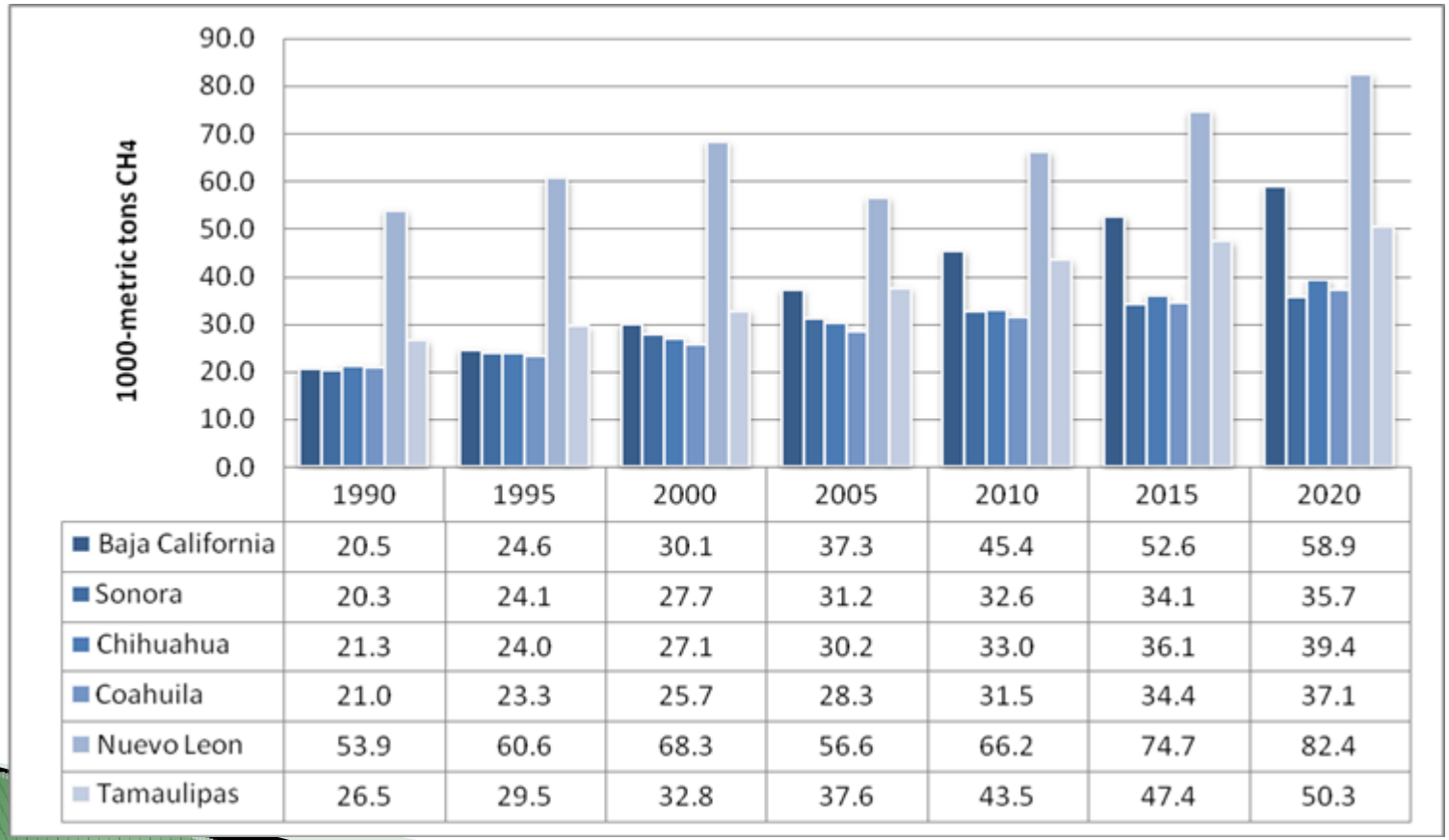


Border States

- Methane emissions from landfills represent an important sector in the region.
- There is interest in developing landfill projects where landfill gas is either captured and flared or used as an energy source.
- Emission reduction credits can be traded in voluntary programs in North America (e.g., the Voluntary Carbon Standard)
- In the presence of a healthy carbon market, these projects could attract foreign investment, create local jobs, and mitigate GHG emissions.

Border States

- Methane emissions from the management of municipal solid waste



	1990	1995	2000	2005	2010	2015	2020
Baja California	20.5	24.6	30.1	37.3	45.4	52.6	58.9
Sonora	20.3	24.1	27.7	31.2	32.6	34.1	35.7
Chihuahua	21.3	24.0	27.1	30.2	33.0	36.1	39.4
Coahuila	21.0	23.3	25.7	28.3	31.5	34.4	37.1
Nuevo Leon	53.9	60.6	68.3	56.6	66.2	74.7	82.4
Tamaulipas	26.5	29.5	32.8	37.6	43.5	47.4	50.3

Conclusions

- Border states are gaining an understanding of important source sectors
- State I&F are important inputs to inform the types of policies and the stringency needed to meet reduction goals.
- Results are important sources of information regionally for climate change mitigation in Mexico and North America.

Questions & Answers

Juan Maldonado
E.H. Pechan & Associates, Inc.
703-813-6700, x115