

# Creating a spatially explicit inventory of Mexico's 2015 anthropogenic methane emissions



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## Project

Mexico has committed to reduce oil/gas methane emissions 40-45% by 2025, but national estimates of oil/gas emissions have significant uncertainty. We create a spatially explicit inventory that can be confronted with satellite observations to improve Mexico's national emissions estimate.

## Methods

Mexico's national inventory is used to report emissions to the United Nations Framework Convention on Climate Change (UNFCCC). We spatially allocate these emissions to a 0.1° x 0.1° grid using various geospatial datasets, including the locations of oil/gas infrastructure, coal mines, industrial facilities, landfills, and wastewater treatment plants.

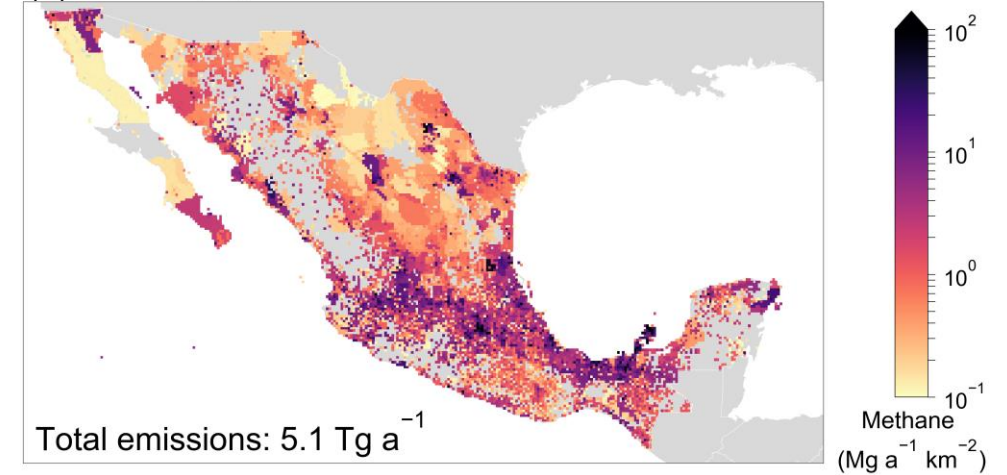
## Results

Mexico's methane emissions are highest in central Mexico and along the east coast with contributions from all major emission sources (livestock, oil/gas, landfills, wastewater). We identify 16 emission hotspots (20-119 Gg a<sup>-1</sup>), including coal mines in northern Mexico, landfills near Mexico City, and offshore oil/gas fields.

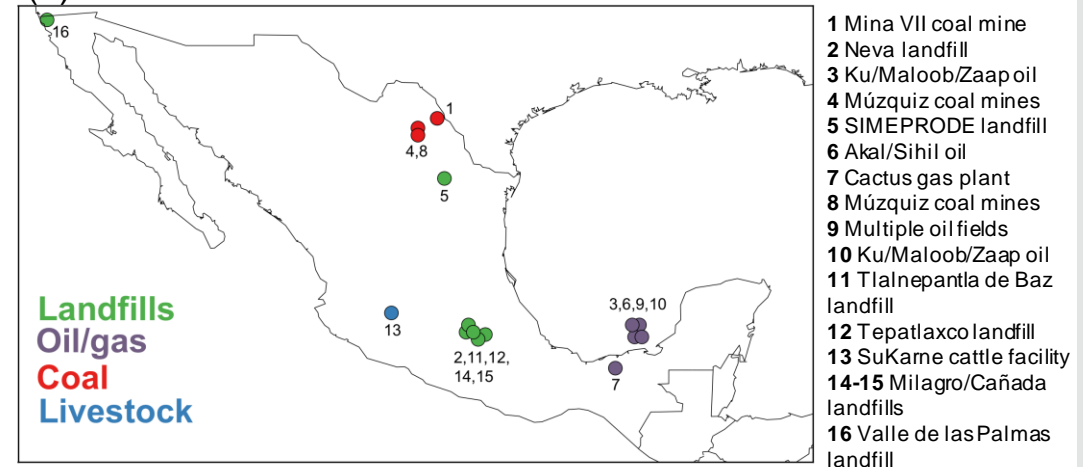
## Further work

The gridded inventory will be compared to satellite observations directly and through inverse modeling with results used to improve national emissions estimates and better inform Mexico's national climate policies. The gridded inventory is available at <https://doi.org/10.7910/DVN/5FUTWM>.

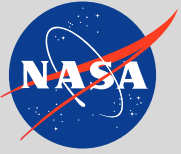
(a) Anthropogenic methane emissions in Mexico



(b) Methane emission hotspots in Mexico



**Figure 1.** Our 0.1° x 0.1° gridded inventory's (a) spatial distribution of emissions and (b) emission hotspots each emitting over 20 Gg a<sup>-1</sup> (2.3 tons h<sup>-1</sup>).



# Comments



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