

# **SS6G2 The student will discuss environmental issues in Latin America.**

**Explain the major environmental concerns of Latin America regarding the issues of air pollution in Mexico City, Mexico, the destruction of the rain forest in Brazil, and oil-related pollution in Venezuela.**

**What is the impact of development and trade on the environment?**

# Hook

Directions: Place a plus (+) if you agree and minus (-) if you disagree.

- One cause of air pollution is exhaust from vehicle emissions.
- Air pollution can cause many problems for people. It can cause breathing problems, eye irritation, acid rain, and even skin cancer.
- Oil pollution can be harmful to the environment. But the need for oil outweighs the risks of producing it quickly.
- Oil pollution along the Gulf of Mexico and the Caribbean Sea is harmful to plant and animal life alike.
- Both air pollution and oil pollution is believed to contribute to global warming.
- The Amazon rainforest produces a large percentage of the worlds oxygen and is important to human survival.
- Things like building roadways and being able to raise livestock and farm are extremely important and necessary to those in the Amazon Basin .
- The governments of ALL countries should lend a hand in developing solutions to environmental problems.

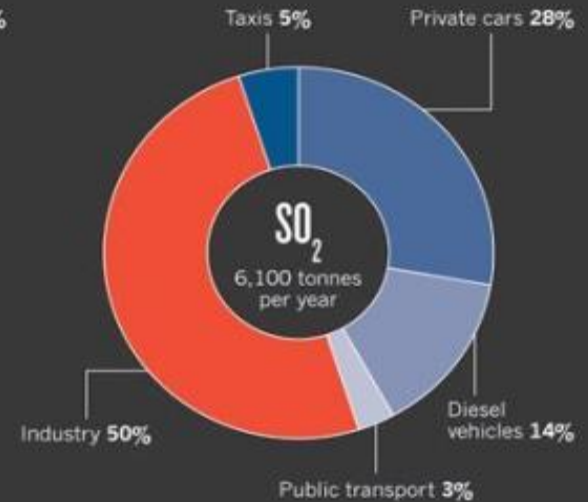
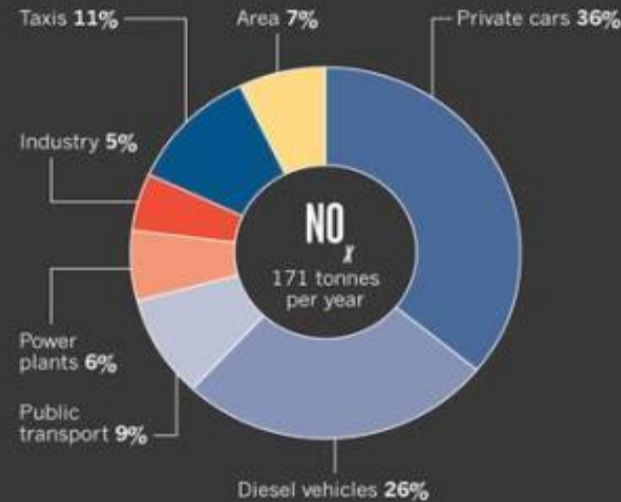
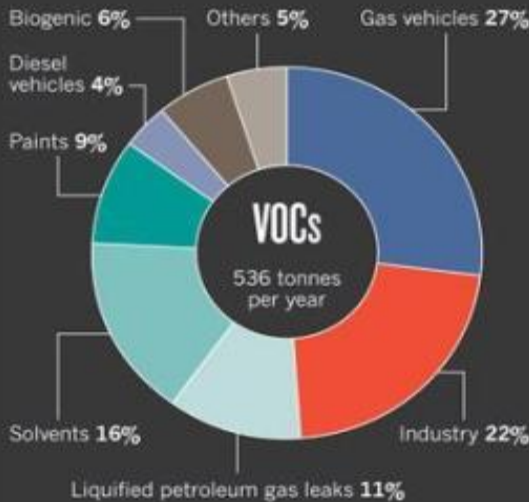
# Air Pollution in Mexico city

## SOURCES OF AIR POLLUTION IN MEXICO CITY

The complex brew of chemicals includes volatile organic compounds (VOCs) and nitrogen oxides ( $\text{NO}_x$ ), which react to form damaging tropospheric ozone. Sulphur dioxide ( $\text{SO}_2$ ), another harmful compound, comes from the combustion of sulphur-laden fuels and other sources.

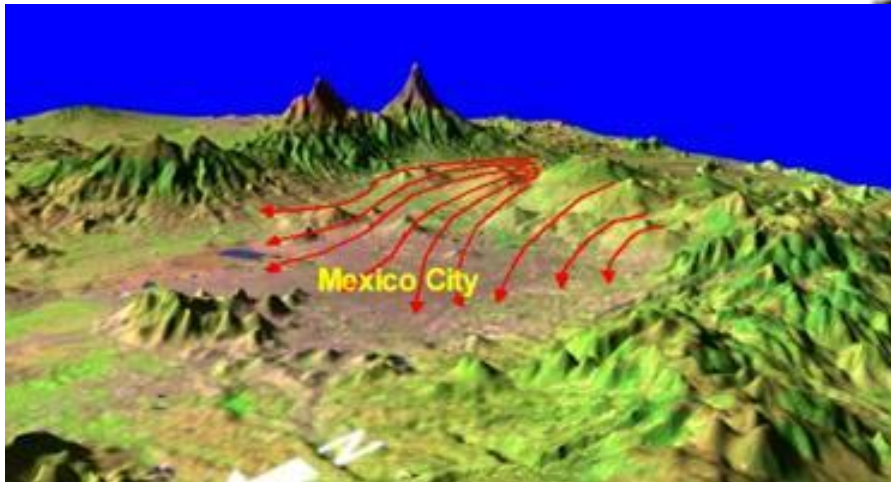
TRANSPORTATION CONTRIBUTES TO:

**31%** of VOCs **82%** of  $\text{NO}_x$  **50%** of  $\text{SO}_2$

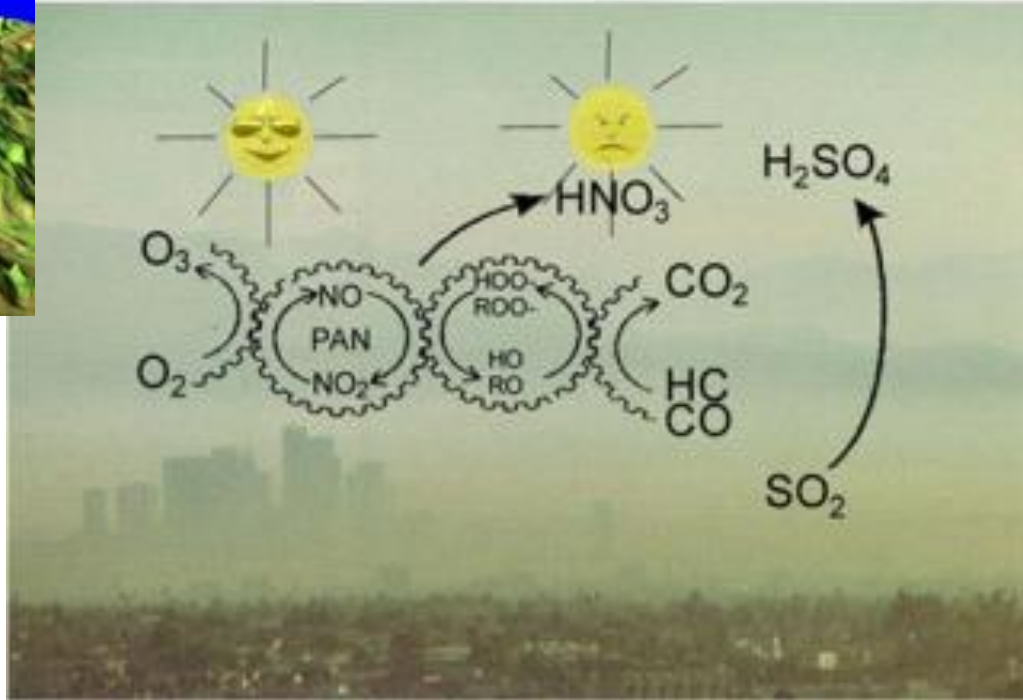
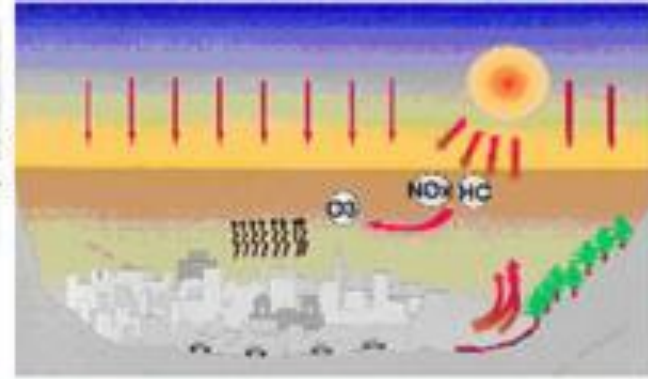


1. What are the above graphs providing information about?
2. What do the initials VOC mean?
3. List 5 things that contribute to Mexico's air pollution problems.
4. By looking at these charts are there any possible solutions you think might help Mexico City?

# Air Pollution in Mexico city



The Smogmachine

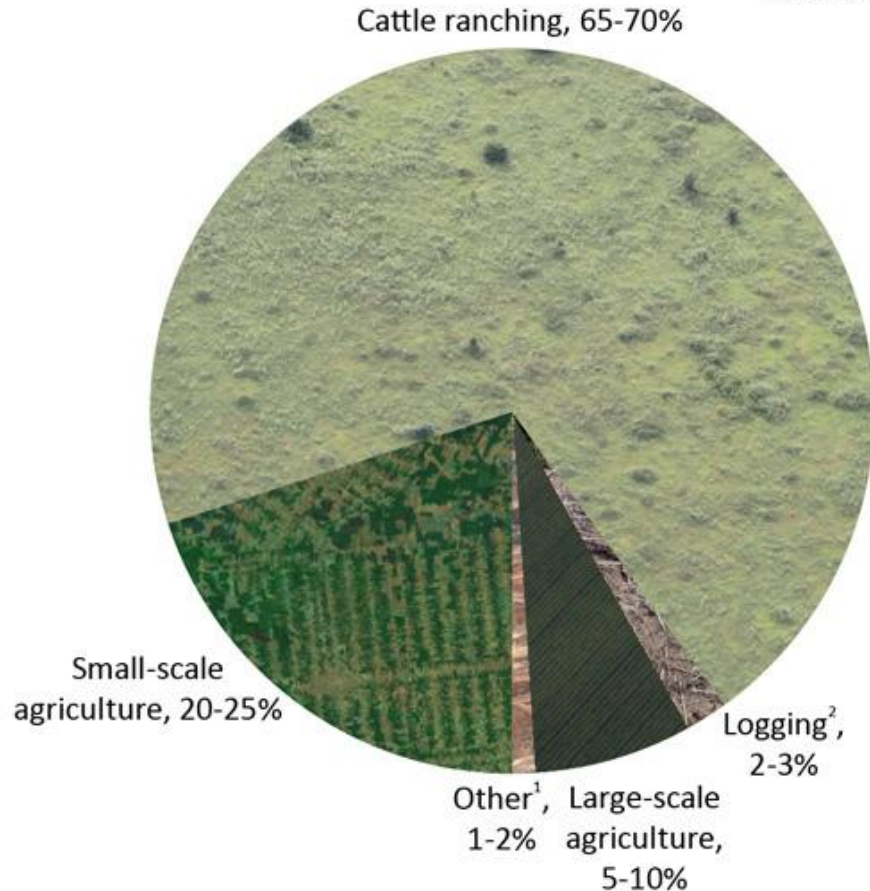


1. Look at the picture to the above left. What is one reason you think Mexico City has such a pollution problem? Explain.
2. The photo to the left represents protestors feelings in Mexico City, as they did this to multiple statues. What do you think the protestors were trying to say?
3. Look at the diagram above, What role does the sun play in Mexico City's smog?

# Destruction of the rain forest in Brazil

## Causes of Deforestation in the Brazilian Amazon, 2000-2005

source: mongabay.com



1. According to the chart what categories are the causes of deforestation in Brazil?
2. Which of the causes seems to cause the most destruction?
3. What things are included in the “other” category?
4. Why do you think that some deforestation necessary in Brazil? Consider it’s people and economy.
5. What are some possible solutions do you think might slow the deforestation process down?

Share of deforested land ultimately converted for extensive agriculture<sup>3</sup>



1) Other includes fires, mining, urbanization, road construction, dams; 2) Logging generally results in degradation rather than deforestation, but is often followed by clearing for agriculture; 3) Data from Holly Gibbs 2009

# Oil-related pollution in Venezuela.

Venezuela's oil industry Spilling over

**An oil spill bodes ill for the president's re-election campaign**

Feb 18th 2012 | CARACAS | [From the print edition](#)

ON FEBRUARY 4th Hugo Chávez, Venezuela's president, held festivities to celebrate the anniversary of a failed coup attempt he led in 1992. He had busloads of public workers brought into Caracas for the occasion. Among them were high-ranking employees of PDVSA, the state oil company.

That same day, a pipeline carrying pressurised oil fractured in the state of Monagas. The crude soared 25 metres (82 feet) into the air and flowed for a full day. Anywhere from 40,000-120,000 barrels poured into a river that supplies drinking and irrigation water. Some 550,000 people now lack water at home. Although city-dwellers can fetch it from drums that PDVSA is leaving in streets, people in remote areas are going without. It may take months to clean the supply.

Few details are available about the spill's cause, size or the damage it has inflicted. PDVSA's website quotes Alejandro Hitcher, the environment minister, ruling out an "environmental disaster". But there has been little further communication. PDVSA's spokesman neither answers his phone nor returns calls to his office. A representative of the Monagas government says no one can comment because "we're working short hours on account of the water situation", though it is providing updates on Twitter.

That has left the spill ripe for speculation in a heated political climate. It will surely provide ammunition for Henrique Capriles, a state governor who won the opposition's primary on February 12th and became the challenger to Mr Chávez in the October presidential election.

PDVSA has struggled under Mr Chávez. In 2002 its workers went on strike to try to force him from office. In response, he fired 18,000 PDVSA employees, including senior managers. He then stuffed the company with tens of thousands of loyalists from what would later become his United Socialist Party (PSUV).

Since then oil output has stagnated, and accidents are on the rise. According to Eddie Ramírez, one of the sacked managers, the "old" PDVSA averaged less than two accidents per million man-hours. In 2010 there were 9.4 accidents and almost six deaths per million man-hours. In December 15 people died after petrol leaking from a PDVSA tanker caught fire on a main road.

A full account of the latest spill is a long way off. But José Bodas, the head of the oil workers' union, blames corrosion and faulty maintenance. "PDVSA is falling to pieces," he says. "As long as you're a member of the PSUV, they don't care if you're incompetent." Mr Hitcher insists that no oil has reached the San Juan river, which flows into the ocean. But Mr Bodas says it is already on its way.

# Oil-related pollution in Venezuela.

- What is the PDVSA? Who owns it?
- What happened on Feb 4 during the Venezuelan president's day of festivities and celebration?
- What effect did this incident have on Venezuela and the local people there?
- Why do you believe Alejandro Hitcher, the environment minister, is ruling out an "environmental disaster"?
- From reading this article what do you think an underlying cause of this accident might be? Why?
- Are there any other threats due to this accident, if so what?
- What concerns do you have about what happened in Venezuela? Explain.

# Task

- You will choose one issue (air pollution, oil pollution, or destruction of the rainforest). You will need to pick a side from a specific viewpoint (for example, a business owner, an environmentalist, the government, a logger, an oil company, an animal in the rainforest, or any other credible viewpoint). Argue your position from the side you have chosen. If you chose to be an environmentalist, you would argue that oil pollution is bad and tell the environmental reasons why. If you were an owner of an oil company, you would argue that the pollution is not as bad and tell of the good things that happen because your company produces oil.
- You will create a flyer for your environmental issue that reflects your viewpoint. Your flyer may be done on paper or on a computer.

Your focus should be on the following:

- Cause & Effect of Issue
- Economic benefits gained through the activity
- The people affected by this issue include...
- Regulations on this issue include...