

Air Pollution and The Impact of Nitrogen Oxides

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The major component of Air Pollution is Nitrogen Oxides produced by huge fires and fossil fuel and combustion. *They are the primary elements in the ground level ozone, a pollutant harmful to human health and vegetation.* But new research led by a University of Washington shows that in some regions nitrogen oxides emitted by the soil are much greater than expected and could play a substantially larger role in seasonal air pollution than previously believed.

The Surprising Percentage

Nitrogen oxide emissions total more than 40 Million metric tons, worldwide each year, with 64 percent coming from fossil fuel combustion, 14 percent from burning and remaining 22 percent surprisingly from soil. The new research shows that the component from soil is about 70 percent greater than scientists expected. Instead of relying on scattered ground based measurements of burning and combustion and then extrapolating a global total for Nitrogen oxide emissions. The new work used actual observations recorded in 2000 by the Global Ozone Monitoring experiment aboard the European space agency's European Remote sensing-2 satellite.

Nitrogen oxide emissions from fossil fuel combustion are most closely linked to major population centers and show up in the satellites ozone-monitoring measurements of Nitrogen dioxide, a part of the Nitrogen oxides family. Satellite also picks up other Nitrogen oxide signals not attributable to fuel combustion or burning, and those emissions were found from soil. We were really amazed that we could see it from space, whereas the pulse is so big the satellite can see it. Soil emissions are seen primarily in equatorial Africa at the beginning of the rainy season, especially in a region called the Sahel and in the mid - latitudes of the Northern Hemisphere during summer.

Table -1 Environmental priorities for South Asian countries, Air Pollution

Country	Indoor	Outdoor
Bangladesh	High	Medium
Bhutan	High	-
India	High	Medium
Maldives	-	-
Nepal	High	High
Pakistan	High	-
Srilanka	-	-

The table 1 shows some diversity in the ranking of specific issues, an analysis of any specific area concern immediately suggests that regional as opposed to exclusively national actions may be required to tackle them.

The Sudden Pulse:

When the rains come to Sahel after a six-month dry season dormant soil bacteria awaken and begin processing nitrogen. Similarly, emissions in the mid latitudes of the northern hemisphere in the mid latitudes of the northern hemisphere spike during the growing season spurred by warmer temperatures after a cold winter but also perhaps magnified by fertilizer use, the soil emissions were much larger than we expected. The biggest areas were the dry tropical regions like the Sahel and in the mid latitude regions where we could find a lot of agriculture. During summer in North America, Europe and Asia Nitrogen oxides emitted from soil can reach half the emissions from fossil fuel combustion *"And this is at A Time When There Are Already Problems with Air Pollution"*. Nitrogen oxides comprise a group of highly reactive gases containing nitrogen and oxygen in varying amounts.

Conclusion

Besides producing ozone smog, they help form the dirty brown clouds that often hang over the major cities, they contribute to acid rain and they play a role in global climate change. In addition to equatorial Africa, hot spots for soil emissions include the central plains of the United States, South Western Europe, Primarily Iberian Peninsula, much of India and the Northern plains of Asia. A journal of England noted that

agricultural activity is likely to increase bringing more fertilizer use. which in turn could produce even greater soil emissions.

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