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# The air pollution monitoring network for Egypt

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The Egyptian Environmental Affairs Agency (EEAA) has been supported by Danida to establish an Environmental Information and Monitoring Programme (EIMP) for Egypt. Experts from the Norwegian Institute for Air Research (NILU) were appointed responsible for the development of the national air quality monitoring programme. This programme consists presently of a total of 42 measurement sites covering most of Egypt.

## Suspended dust

Suspended dust (measured as PM<sub>10</sub> and TSP) is the major air pollution problem in Egypt.



Annual average concentrations of PM<sub>10</sub> range between 100 and 200 µg/m<sup>3</sup> in urban and residential areas and between 200 and 500 µg/m<sup>3</sup> near industrial areas.

Daily average concentrations of more than 6 times the Air Quality Limit value for Egypt are being recorded occasionally in the urban areas of Cairo. The natural background concentration of PM<sub>10</sub> in Egypt has been evaluated to represent levels close to or around the Air Quality Limit value of 70 µg/m<sup>3</sup> as a daily average.

## SO<sub>2</sub> and NO<sub>2</sub>

The concentration levels of SO<sub>2</sub> and NO<sub>2</sub> have also been observed to exceed the Air Quality Limit values in industrial areas and during some occasions in the big cities.

Both the long term (annual averages) and the short-term (1-hour average) Air Quality Limit levels have been exceeded. Eight-hour average CO concentrations in streets and along roads in Cairo frequently exceeded the Air Quality Limit value. During the 4 years of data collection we have seen a trend of improved air quality in the city centre of Cairo.

## The monitoring programme

The air quality monitoring programme designed and established of the EEAA includes:

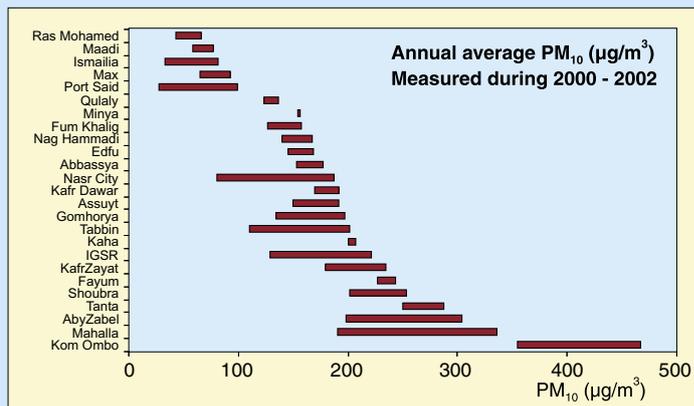
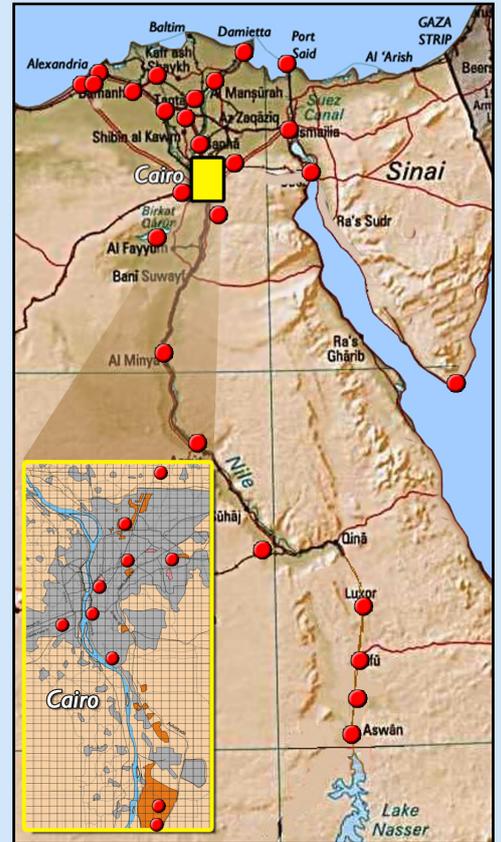
- Data collectors; sensors and monitors
- Data transfer systems and data quality assurance/control procedures
- Data bases including data statistics and
- Data reporting and distribution systems.

The Centre of Environmental Hazard Mitigation (CEHM) at Cairo University and the Institute of Graduate Studies and Research (IGSR) at Alexandria University are operating the sites and instruments on behalf of EEAA.

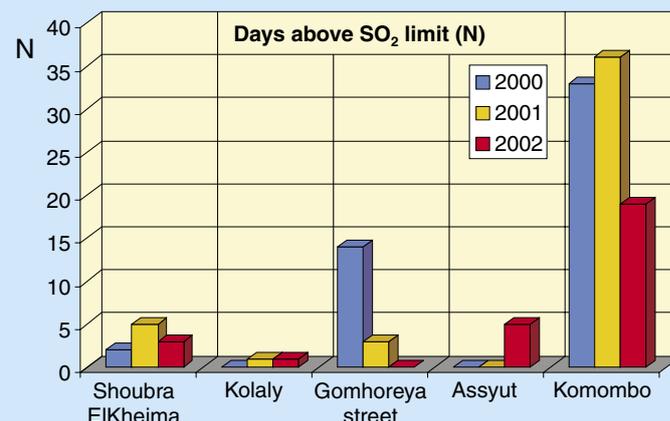
The network consists of:

- 14 sites located in the Greater Cairo area,
- 8 sites in Alexandria area,
- 7 sites in the Delta,
- 3 sites in the Canal area and
- 10 sites in Upper Egypt and Sinai

Statistical analyses and comparisons of ambient concentrations with national and international standards indicates that the main problem in Egypt is linked to suspended dust (TSP, PM<sub>10</sub> and black smoke). Occasionally we also record high levels of SO<sub>2</sub>, Ozone, CO and NO<sub>2</sub>.



A large range of PM<sub>10</sub> concentrations are found. PM<sub>10</sub> in urban and industrial areas frequently exceed 100 and 200 µg/m<sup>3</sup>.



SO<sub>2</sub> concentrations exceeding the Egypt air quality limit values occurs in the city centre of Cairo and downwind from industrial areas.