

Health Aspects of Air Quality in Palestine (Occupied)

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The First Africa/Middle East Expert Consultation/Workshop on the Impact of Airborne Dust on Health

Organized by

World Health Organization (WHO)/Regional Centre
for Environmental Health Action (CEHA)

United Nations Environment Programme (UNEP)

World Meteorological Organization (WMO)

European Organization for the Exploitation of
Meteorological Satellites (EUMSTAT)

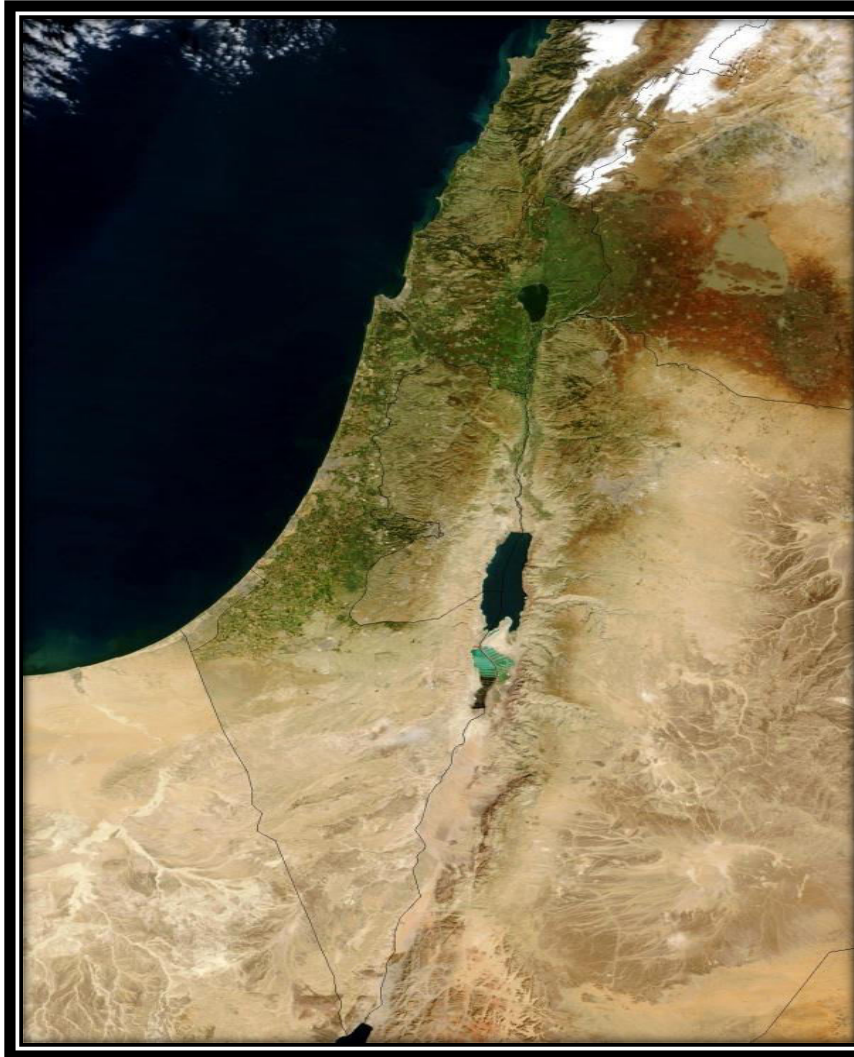
Meteorological State of Spain (AEMET)

Amman, Jordan, 2-5 November 2015

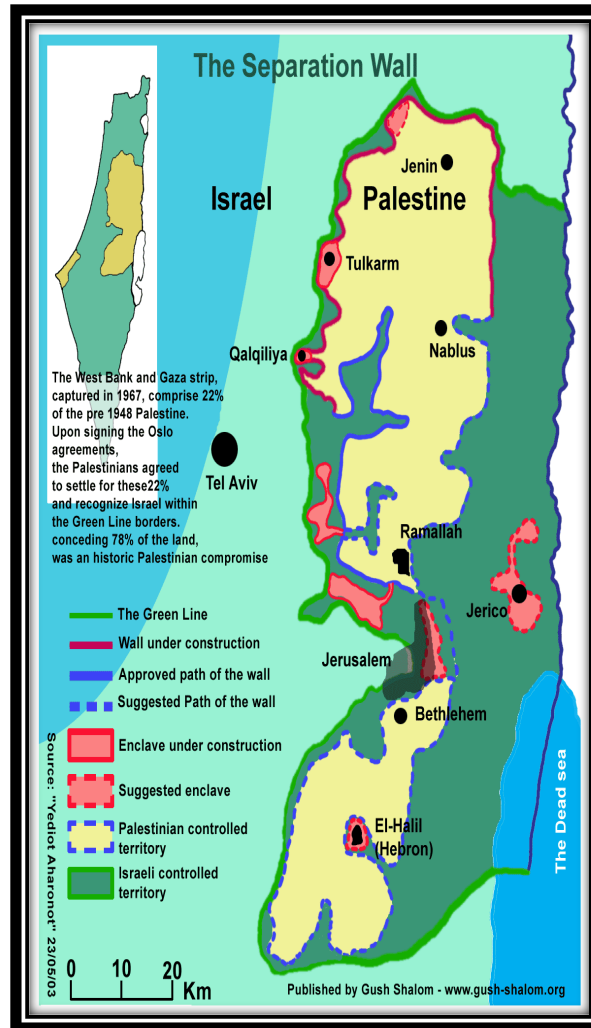
Subjects

- Historical Palestine, including Occupied Palestinian Territories (OPT).
- Background.
- Air Pollutants and Health Impacts.
- Sources of Air Pollution in Palestine (Occupied): Anthropogenic and Natural Sources – Examples.
- Air Pollution's Monitoring in OPT: Gaps and Obstacles.
- Outlooks: What is Needed to Combat and Control Air Pollution?

Maps of Historical Palestine and Western Jordan



Oslo Agreement's Division of the Occupied West Bank into Areas A, B and C, and Israel's Segregation Wall



Background

- The OPT (West Bank, including East Jerusalem, and the Gaza Strip) suffer from substantial air pollution, which is mainly resulted from: 1) The geopolitical conditions represented in the long standing Israeli occupation since 1967; 2) The ongoing Israeli wars, assaults, aggressions, intrusions, etc.; 3) The continuous building of Israeli settlements; 4) The severe Israeli restrictions; 5) The continuous Israeli seizing of Palestinian lands; 6) The expanding of Israeli industrial activities; 7) The transboundary air pollutants; and 8) The endless violations of environmental laws and regulations, and the lack of implementation of environmental treaties, including those related to air pollution, in OPT.
- Israeli pollutants end in OPT purposely and due to the wind effect from west to east.
- The impacts of Israeli occupation, and the lack of executive authority (Palestinian) have caused a tremendous weakness in enforcing the preventive legislations, regulations, codes and standards to protect people's health and the environment.

Air Pollutants and Their Impacts on Health

Air Pollutants

- Carbon Dioxide (CO₂)
- Carbon Monoxide (CO)
- Nitrogen Oxides (NO_x)
- Ammonium (NH₄)
- Particulate Matter (PM)
- Sulfur Dioxide (SO₂)
- Methane (CH₄)
- Volatile Organic Compounds (VOCs)



Air Pollution Impacts on Health

Common Health Effects of Air Pollution

Respiratory System (Breathing Problems)

- Coughing
- Throat irritation
- Asthma
- Chronic bronchitis
- More difficult to breathe deeply and vigorously
- Increase susceptibility to respiratory infections

Cardio Vascular System (Heart Problems)

- Triggers heart attacks, especially
- Individuals with existing heart disease

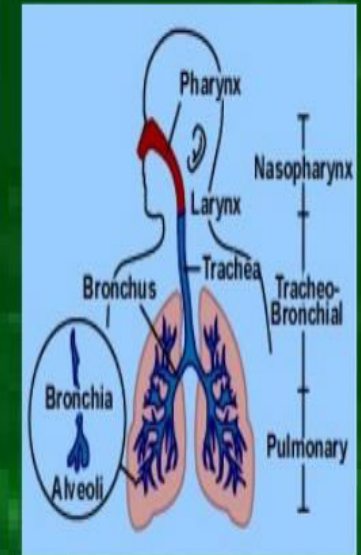


Inside Airway
Top: Normal
Bottom:
Red and Swollen



Effects on Human respiratory system

- Both gaseous and particulate air pollutants can have negative effects on the lungs.
- Solid particles can settle on the walls of the trachea, bronchi, and bronchioles.
- Continuous breathing of polluted air can slow the normal cleansing action of the lungs and result in more particles reaching the lower portions of the lung.
- Damage to the lungs from air pollution can inhibit this process and contribute to the occurrence of respiratory diseases such as bronchitis, emphysema, and cancer.



Sources of Air Pollution in Palestine (Occupied)/1

Anthropogenic (Man-Made) Sources:

- 1) The Israeli Occupation Forces' (IOF): Use of weapons during Israel's many wars (especially in the Gaza Strip), intrusions to Palestinian communities, fight against public demonstrations and uprisings (Intifadas), use of tear gases, etc.
- 2) Israeli manufacturers built illegally on Palestinian lands, including settlements.
- 3) Dumping of Israeli industrial and settlements' waste (solid and fluid) in the Occupied Palestinian Territories (OPT).
- 4) Industrial activities, particularly the stone industry (stone quarrying, cutting, transporting, etc.).
- 5) Transport sector.

(Examples Given Below)

Sources of Air Pollution in Palestine (Occupied)/2

Anthropogenic (Man-Made) Sources/Continued:

- 6) Tires' burning.
- 7) Landfills and open-air waste burning.
- 8) Open-air waste dumping (hazardous, chemical, industrial, organic, etc.)
- 9) Open-air animal slaughterhouse.
- 10) Use of chemical fertilizers, pesticides, herbicides, etc.
- 11) Smoking.
- 12) Wide use of fireworks.

(Examples Given Below)

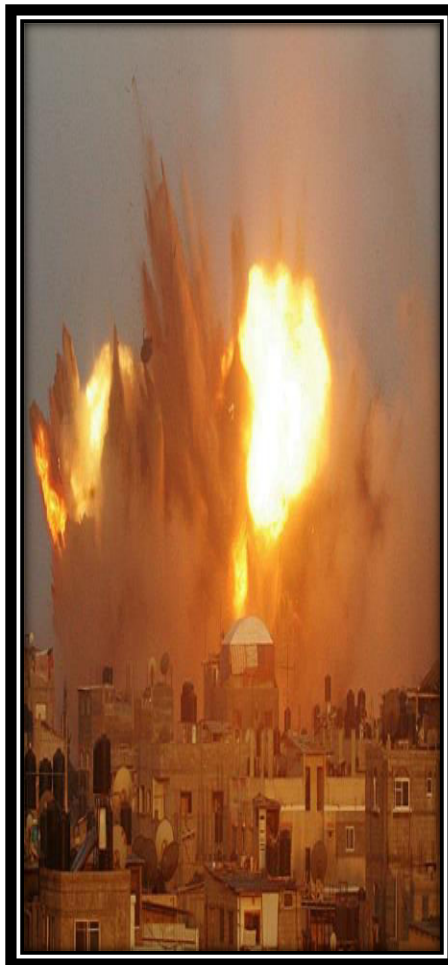
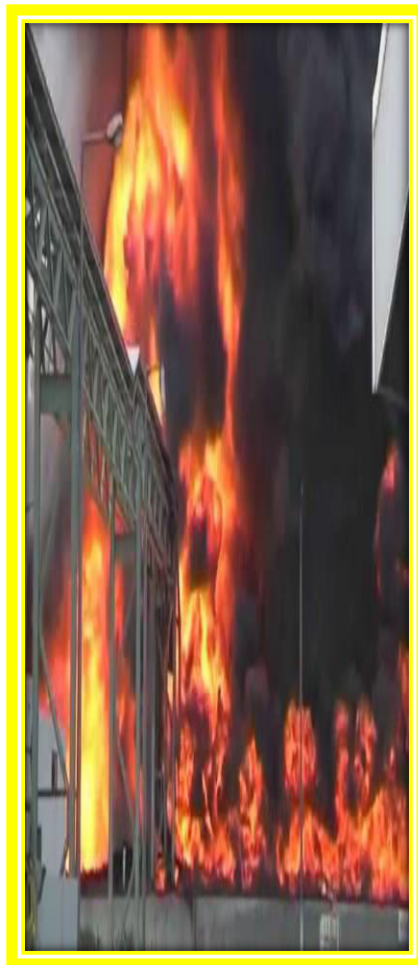
Air Pollution Resulted from Israeli Tanks' Destruction of Gaza's Only Power Plant

[http://www.dailymail.co.uk/news/article-2709233/Israeli-leader-Netanyahu-vows-continue-strikes-Gaza-entire-Hamas-tunnel-network-destroyed-North-Korea-](http://www.dailymail.co.uk/news/article-2709233/Israeli-leader-Netanyahu-vows-continue-strikes-Gaza-entire-Hamas-tunnel-network-destroyed-North-Korea-denying-providing-arms-Palestinian-group.html#ixzz3pYpWwGUZ)

[deny-providing-arms-Palestinian-group.html#ixzz3pYpWwGUZ](http://www.dailymail.co.uk/news/article-2709233/Israeli-leader-Netanyahu-vows-continue-strikes-Gaza-entire-Hamas-tunnel-network-destroyed-North-Korea-denying-providing-arms-Palestinian-group.html#ixzz3pYpWwGUZ) (Mail Online – 29 July 2014)



A Picture Worth A Thousand Words (Israel's Aggressions on Gaza Strip)/1

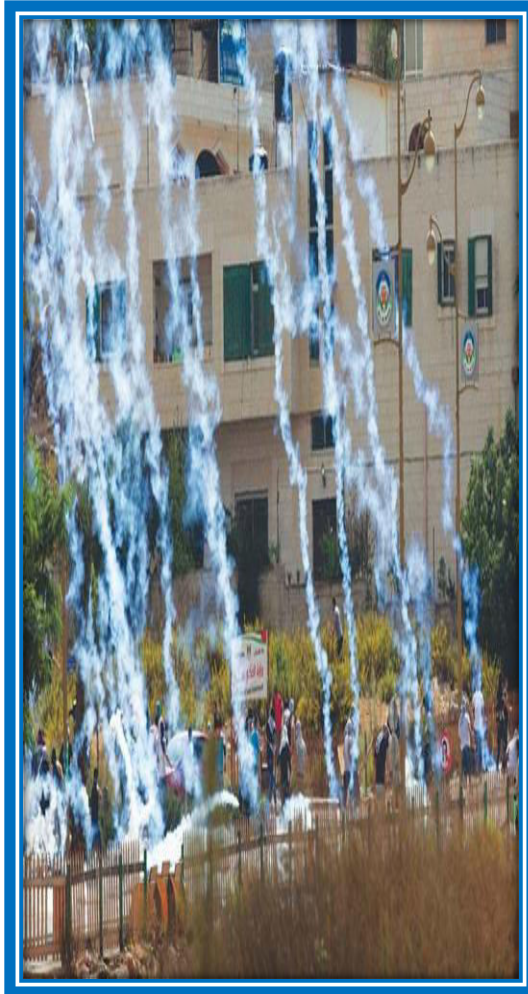


A Picture Worth A Thousand Words (Israel's Aggressions on Gaza Strip)/2



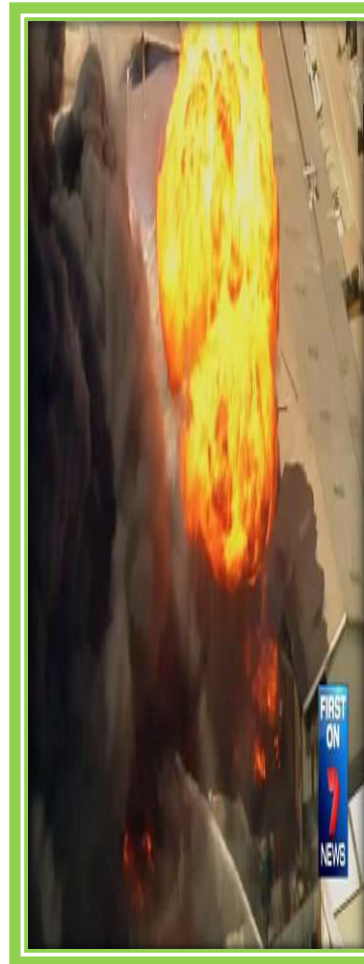
A Picture Worth A Thousand Words

Tear Gases Used by Israel in Occupied West Bank



Israeli Gishouri Factories Built Illegally on Tulkarm City Lands

Chemical Fertilizers and Pesticides, Dixon Gas Cylinders, Aluminum, Leather-Tanning, Textile-Dyeing, Batteries, Fiberglass, Plastics and Other Chemicals. They generate toxic gases polluting air, and heavy metals polluting soils and groundwater aquifers.



An Example on Air Pollution Studies in Palestine (Occupied)

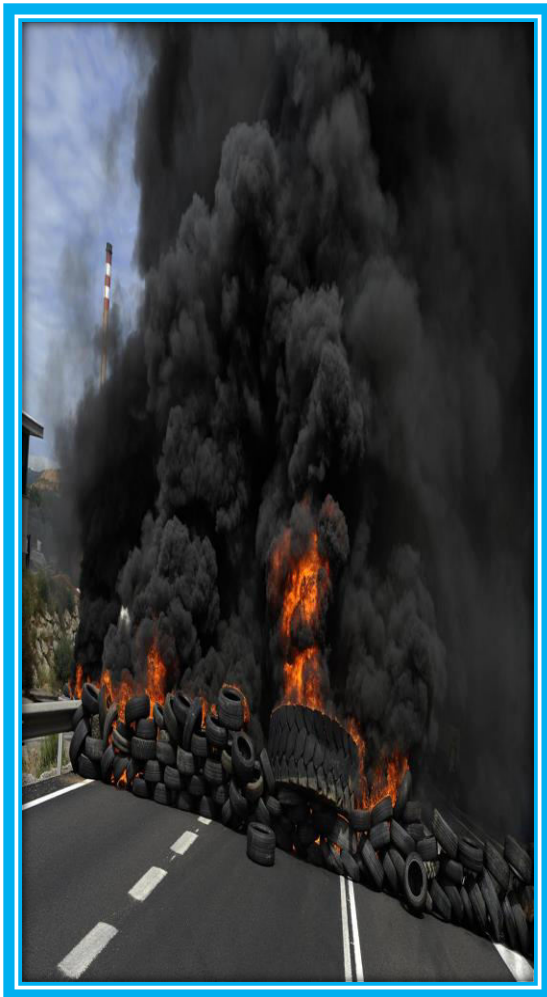
By Hilmi S. Salem

Salem, Hilmi S. (Editor and Project's Team Leader), 2009. "Environmental and Health Risks of the Israeli Manufactures [Gishouri Factories' Complex] Built on Tulkarm Lands, Tulkarm, West Bank, Palestine (Occupied)." Proceedings of the Workshop Held at the Palestine Technical University – Kadoorie (PTUK), Tulkarm, West Bank, Palestine (Occupied); 7 December 2009. Ibn Khaldoun Publishing Co., 115 pp. (Book). Published Online by Prof. Dr. Hilmi S. Salem, at: <http://independent.academia.edu/SalemSHilmi> and http://www.academia.edu/12845266/Dr._Hilmi_S._Salem_Environmental_and_Health_Risks_of_the_Israeli_Manufactures_Gishouri_Factories_Complex_Built_on_Tulkarm_Lands_Tulkarm_West_Bank_Palestine_Occupied_.Partially_in_Arabic_and_English

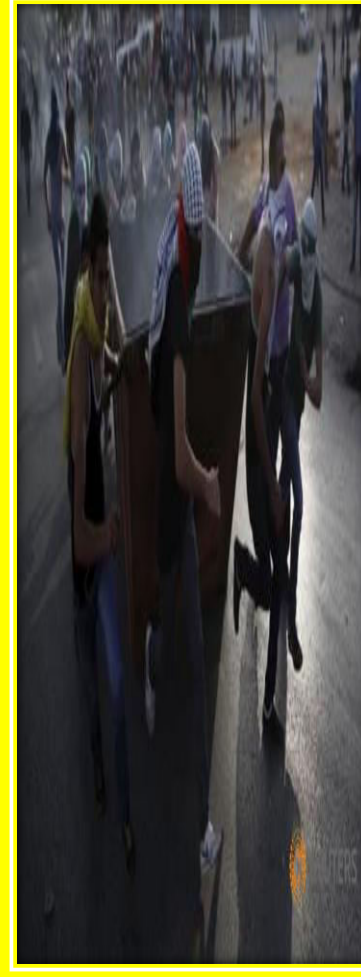


Tires' Burning in OPT

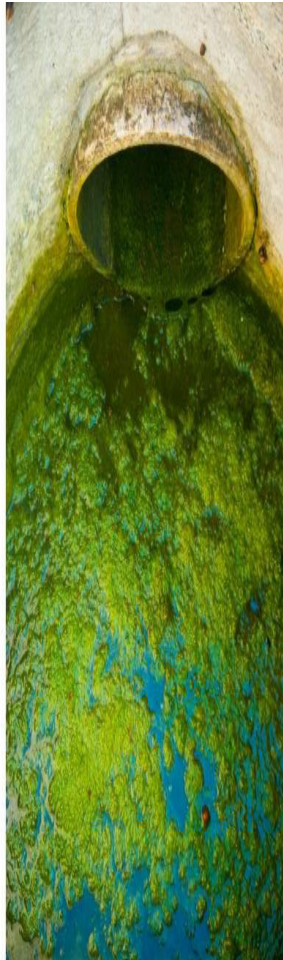
Demonstrations against the Israeli Occupation of the Palestinian Territories



Garbage Containers Used by Palestinian Youth for Another Purpose (As Cover to Face Israeli Soldiers)



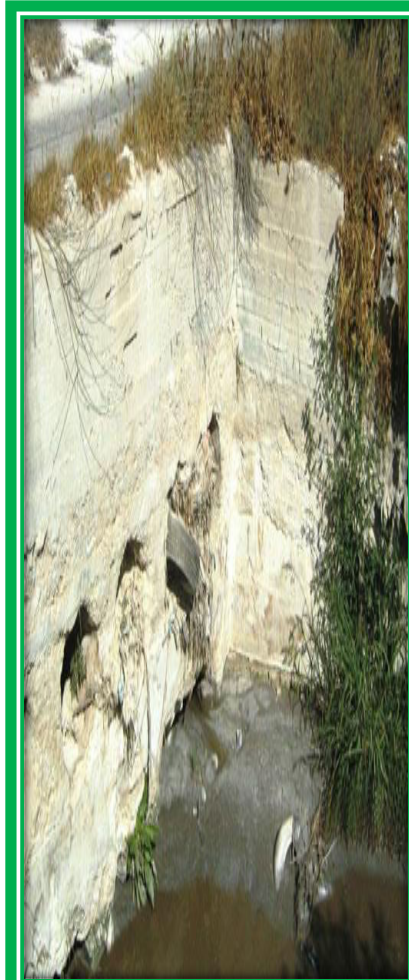
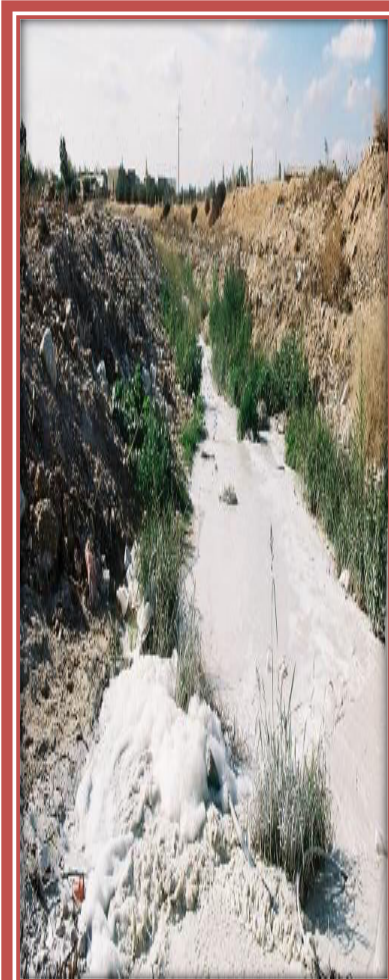
Israeli “Technicolor” Hazardous Waste Fluids and Wastewater Dumped in OPT



Air, Soil and Water Pollution Resulted from Stone Industry in OPT/1



Air, Soil and Water Pollution Resulted from Slurry of Stone Cutting in OPT/2



Dangers of Stone Industry in Occupied West Bank



Israeli Landfills in OPT



Garbage Everywhere



Open-Air Animal Slaughterhouse in OPT



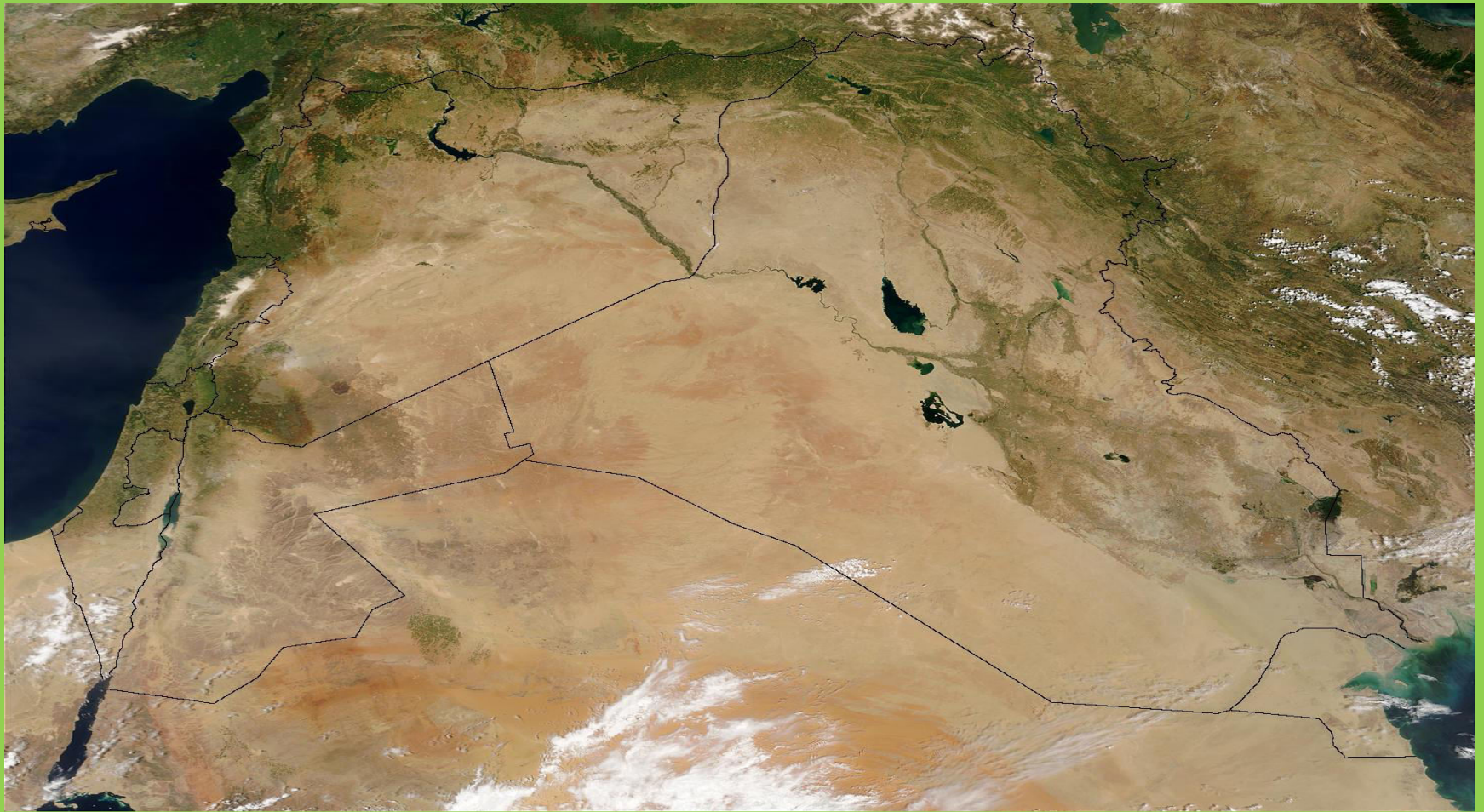
Air Pollution Sources in Palestine (Occupied)/3

Natural Sources:

- 1) Sand- and dust-storms (from Arabic: خمسين Khamsīn, Khamasin, or Khamaseen): It is Middle Eastern term for the dry, hot wind that blows in from the desert (Sahara in North Africa and Arabian Peninsula) from March through May.
- 2) The Khamasin wind reaches the end of its land journey over Historical Palestine before petering out at the Mediterranean Sea.
- 3) During Khamasin, mouth feels dry and mealy, nose congested, and air has vaguely rancid odor.
- 4) Unprecedented sandstorms: Started this year on 8 September 2015 and lasted for about a week, engulfed Iraq, Syria, Lebanon, Jordan, and ended in Historical Palestine). Caused a lot of damage (cities were totally blanketed in yellow sand, some death cases, and many other cases admitted to hospitals with breathing difficulties).

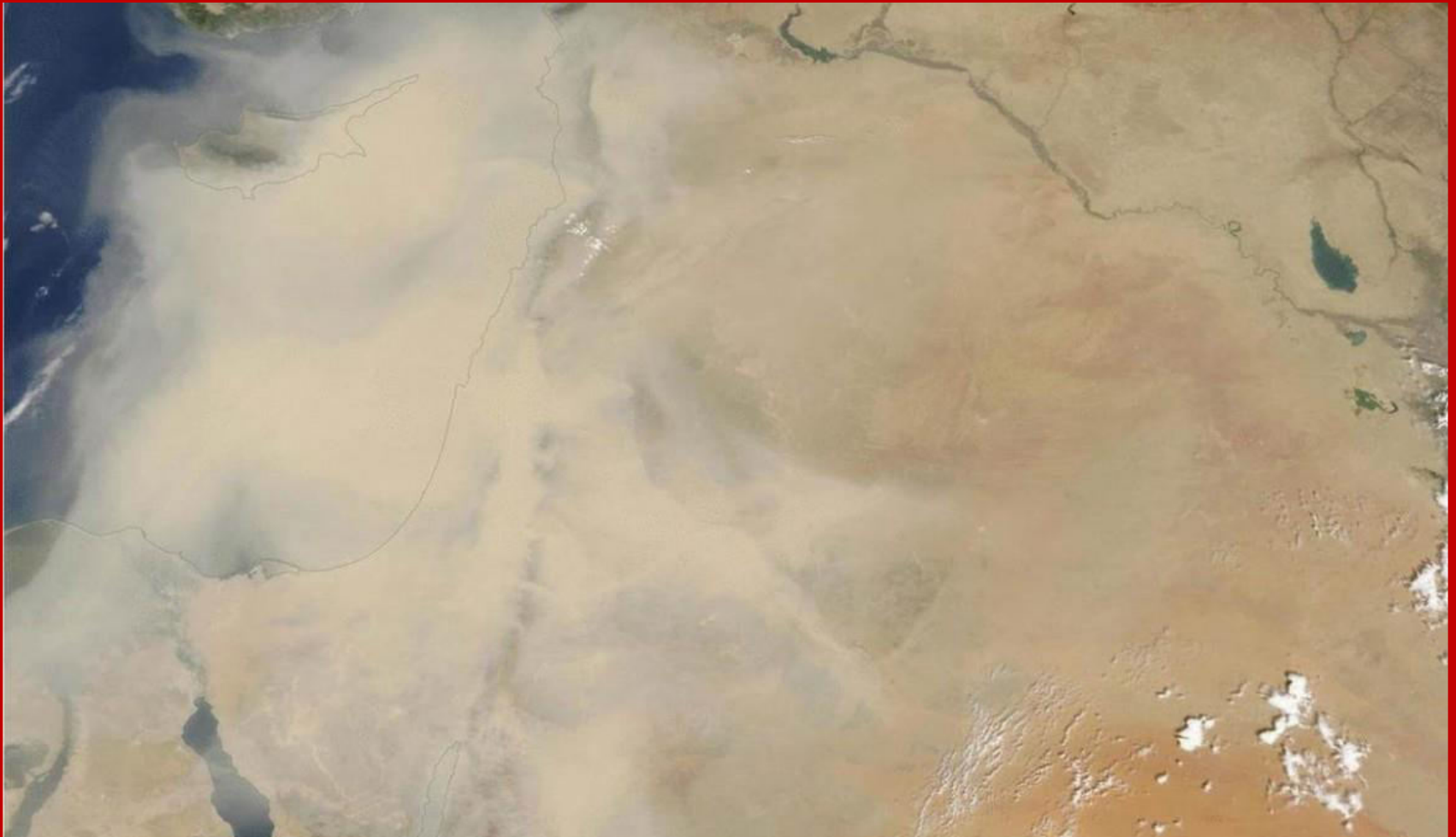
(Examples Given Below)

NASA's Spectacular Image of the Middle East (without Sandstorms)



NASA's Spectacular Image of the Sandstorm Swept the Middle East (September 2015)

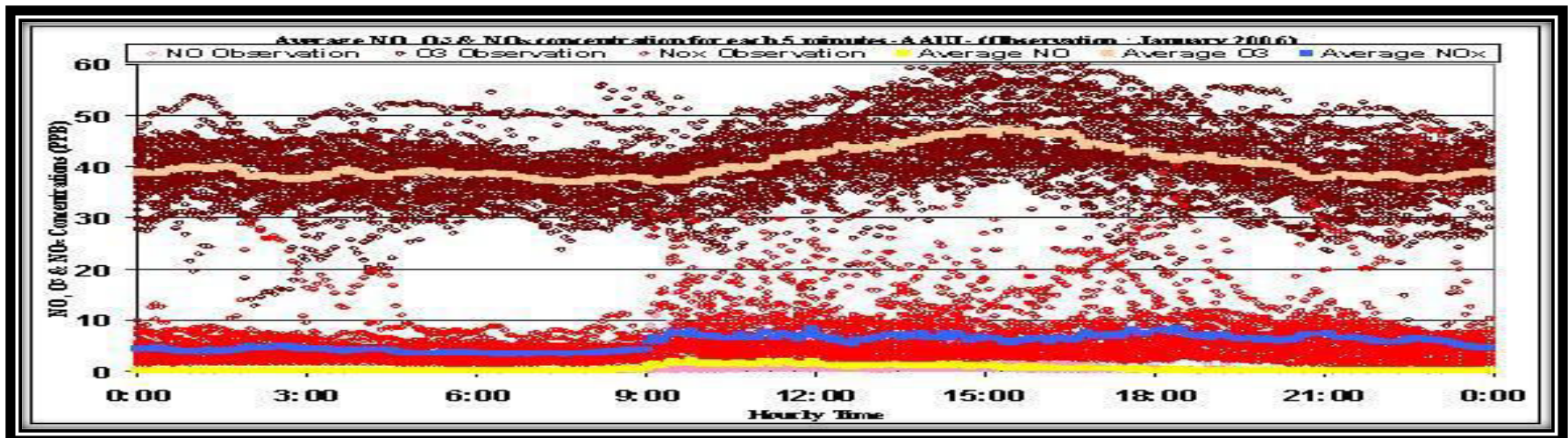
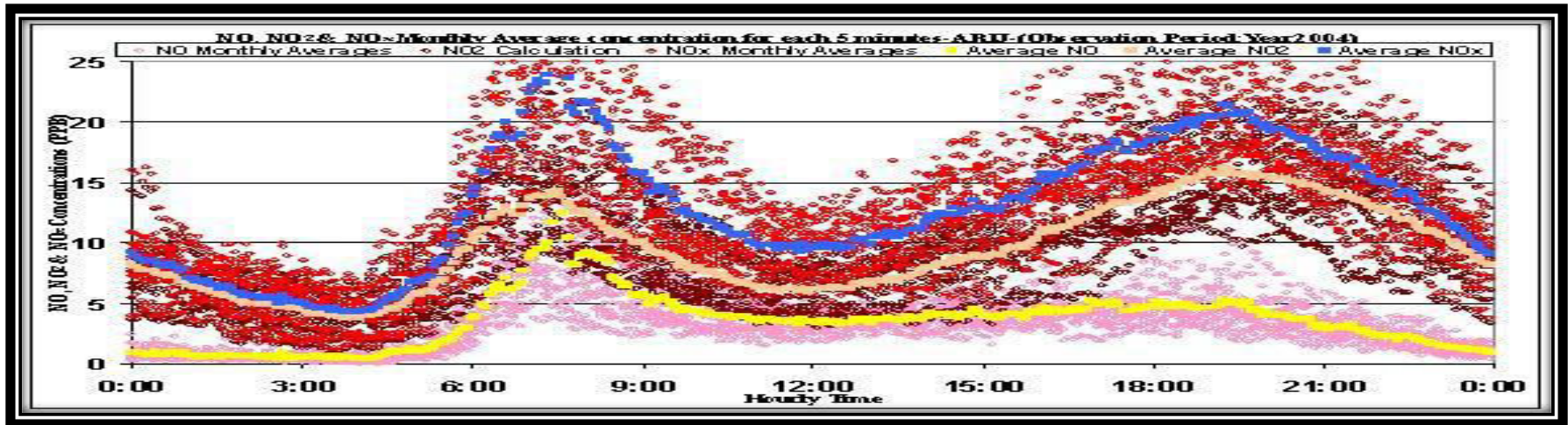
<http://www.israel21c.org/nasa-captures-sandstorm-hitting-israel-and-the-middle-east/>



Air Pollution's Monitoring in OPT: Gaps and Obstacles

- Monitoring of air pollution is very weak, according to PNA-EQA.
- Some meteorological and air pollution monitoring stations exist at a few locations, suffering from lack of maintenance.
- Lack of experienced professionals to deal with air pollution and meteorology, scientifically, technically, etc.
- Lack of periodical data on gas emissions in OPT and on that produced from the Israeli factories and Israeli settlements in OPT.
- Lack of official standards or maximum acceptable level for air pollution.
- Lack of awareness programs on air pollution and its impacts on health and the environment.
- Lack of official and individual responsibility in combating air pollution at all levels possible.

Examples of Air-Pollution Monitoring in OPT



OUTLOOKS: What is Needed to Combat and Control Air Pollution?/1

- **Politics**: End the Israeli occupation of the Palestinian Territories (OPT).
- **International Law**: Apply the international law (protocols, treaties, etc.) on OPT, in relation to air pollution caused by Israel (the Occupying Power of the Palestinian Territories). These, for instance, include: [Geneva Protocol](#) (Geneva, 1925: A treaty prohibiting the use of [chemical](#) and [biological weapons](#) in [armed conflicts](#)); [Convention on Long-Range Transboundary Air Pollution](#) (Geneva, 1979); [Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal](#) (Basel, 1989); and [Convention on Cluster Munitions](#) (Dublin, 2008).
- **Climate Change**: Implement the [Kyoto Protocol](#) (Kyoto, 1997: An extension of the 1992 [United Nations Framework Convention on Climate Change](#) (UNFCCC) that commits State Parties to reduce [greenhouse gases](#) emissions, based on the premise that (a) [global warming](#) exists, and (b) man-made [CO2 emissions](#) have caused it).

OUTLOOKS: What is Needed to Combat and Control Air Pollution?/2

- Technology: Install air pollution monitoring systems and meteorological stations in several locations of OPT, and train staff on using them and analyzing the data obtained.
- Data: 1) Assess and review the data obtained (including state of the data production, collection and analysis, data sources, users and needs); 2) Improve data collection through environmental surveys; and 3) Share data with national and international institutions.
- Legislations: Legislate laws, regulations and standards to protect the environment (including air pollution), and activate those in practice.
- Environmental Police: Establish an environmental police to monitor and enforce the laws, regulations and standards in a professional manner (similar to Jordan).
- Smoking: 1) Make awareness programs about bad impacts of smoking on health to encourage smokers quit smoking and youth not to start smoking; and 2) Prohibit, by law, smoking in public places.

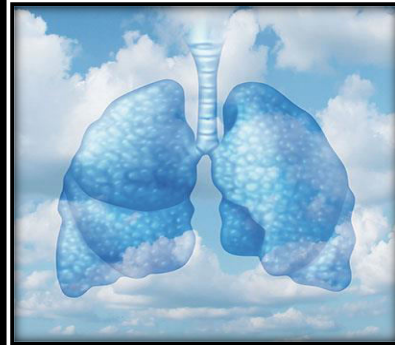
OUTLOOKS: What Is Needed to Combat and Control Air Pollution?/3

- Fireworks: Prohibit selling and using all products of fireworks.
- Transportation: 1) Include air emissions in the annual vehicle inspection; 2) Establish air emission requirements for motor vehicles; 3) Take out of service the old vehicles that are unable to meet the emission standards; 4) Encourage the use of unleaded gasoline to reduce the amount of lead emitted to the air; and 5) Look for alternatives of gasoline and diesel engines to use for vehicles to reduce emissions.
- Stone Industry: 1) Regulate the dust emissions from quarries and the slurry from stone cutting; 2) Enforce laws and regulations to protect workers; and 3) Take actions against those who violate the law.
- Old Tires and Motor Oils: Prohibit the re-use of old tires and motor oils, as a source of energy, in bakeries and pottery industry, etc.
- Chemical Fertilizers and Pesticides: 1) Regulate their use, and 2) Prohibit and take out of the market the expired products (which are mostly exported by Israel to OPT).



How to take care of our lungs

- Breathe clean fresh air.
- Cover your mouth and nose when walking or travelling in polluted areas.
- Do not smoke.
- Eat nutritionally balanced meals.
- Exercise regularly.
- Have enough rest and sleep.



"WHAT'S MORE IMPORTANT THAN THE
RIGHT TO BREATHE FRESH AIR, DRINK
CLEAN WATER AND EAT HEALTHY FOOD?"

DAVID SUZUKI

Thank You

Hilmi S. Salem

