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## PROGRESS MADE BY THE REGION TO REDUCE AIR POLLUTION

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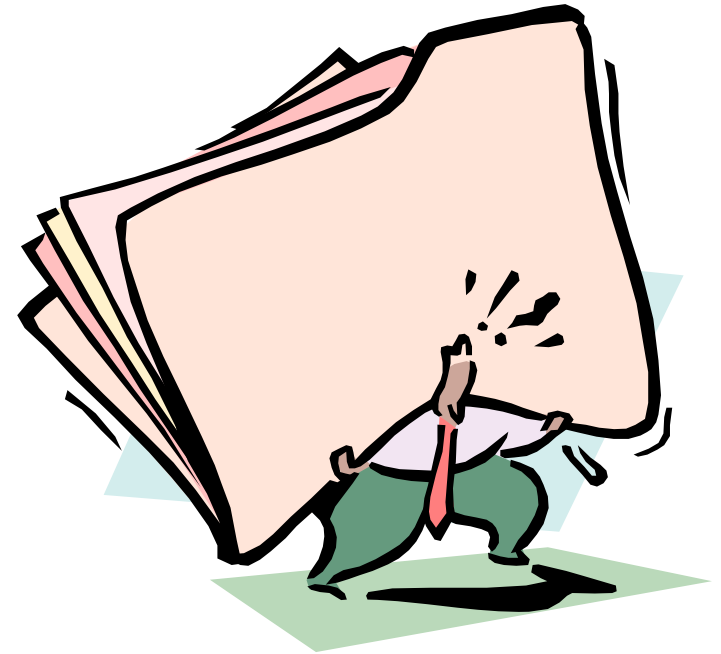
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# Outline

- Major sources of Air Pollution
- Magnitude of the Problem
- Identified gaps and challenges
- Progress made to reduce urban air pollution
- Wayforward



# Major Sources of Air Pollution

- Air pollution is a growing problem in both rural and urban areas in the region.
- Major Sources of Air Pollution
  - Transport sector – 40% of imported petroleum, used vehicles
  - Manufacturing Industries (cement, steel mills)
  - Agricultural and livestock activities – pesticides, machinery, manure
  - Mining activities (gaseous emissions, dust)



# Major Sources of Air Pollution (...2)

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- Poor waste disposal (open burning, incineration) – 60% of SW burnt/buried
- Biomass burning – fuelwood account for >90% of the energy consumed - indoor air pollution
- Energy production – thermal power plants
- Forest/ bush fires

# The Magnitude of the Problem

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- Air pollution is currently not seen as a serious problem due to the fact that there is inadequate data and information on the extent/impact of air pollution to inform the policy makers
- However, if proactive and integrated approach is not taken immediately in addressing the air pollution problem, the problem is already serious from the few studies done.
- For instance, the urban air pollution problem is growing as economic development drive increases combustion of fossil fuels for industrial processes and transportation.

# Identified Gaps and Challenges

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- a) **Weak regulatory regime** - The Environmental Management Acts exist in the region but relevant regulations are yet to be formulated/finalised.
- b) **Limited institutional capacity and technical infrastructure** such as funding, equipment and human resource;
- c) **Very limited information and data** - No systematic quantitative assessments of the magnitude of the air quality problem due to inadequate capacity and resources;

# Identified Gaps and challenges(...2)

- d) Low public awareness on the air pollution problems and associated adverse effects to human health and the environment;
- e) Rapid growth of rural and urban population coupled with poor urban planning which allows for inappropriate allocation of economic activities leading to air pollution;
- f) Inadequate institutional coordination and collaboration leading to lack of common strategies;
- g) Inadequate involvement of major stakeholders (e.g. local communities, NGOs, the private sectors, industries) in addressing environmental problems; and
- h) Inadequate integration of environmental considerations in the planning and development of programmes.

# Progress made, Tanzania example

- Implementation of relevant Multilateral Environmental Agreements (MEAs)
- Tanzania is a Party to several MEAs that are of relevance to mitigation of air pollution. These include:
  - The Vienna Convention on the Protection of the Ozone Layer and its Montreal Protocol on Substances that Deplete the Ozone Layer
  - The United Nations Framework Convention on Climate Change and its related Protocols
  - Basel Convention on the Control of Transboundary Movements of Hazardous Waste and their Disposal; and
  - The Stockholm Convention on Persistent Organic Pollutants
- Enforcement of the Environmental Management Act (2004)
  - Environmental standards on air quality for mobile and stationery sources have been formulated. Development or relevant regulations is ongoing.
  - Each Sector Ministry has established Environmental Coordination Units/Section

# Need to have air quality standards

## Why Environmental Standards?

- Economic activities degrade the environment
- Economic gain obtained through environmental degradation is not sustainable
- To have sustainable economic gains we have to manage the environment
- Proper environmental management requires Policy (strategy/action plan)
- Strategy must have objectives and targets
- Standards are policy tools for ensuring attainment of Policy Objectives

*A standard is a value;*

- fixed by authorities
- enshrines in legal regulation

*A standard determines;*

- maximum permissible concentration of substance in food, water, air/soil
- maximum permissible stress from exposure to environmental factor, e.g., noise or radiation.

Need to have ambient standards for specific key sectors

- Manufacturing Industries
- Mining
- Vehicular
- etc

# Air Standard in Tanzania (...1)

- TZS 845: 2005 – Air Quality Specification (Environmental Quality Standard)
- TZS 846: 2005 – Tolerance Limits of Emissions Discharged to the Air by Cement Factories (Emission Standard)
- EMDC 2 1758: 2005 Air Quality: Vehicular exhaust emission limits (Product standard)
- TZS 836: 2004 Air quality: General Consideration - Part 1: Vocabulary
- TZS 836: 2004 Air quality: General Consideration - Part 2: Particle size fraction definition for health related sampling
- TZS 837: 2004 Air quality: Sampling and test methods - Part 1: Guidelines for planning the sampling of atmospheric and location of monitoring stations
- TZS 837: 2004 Air quality: Sampling and test methods - Part 2: Sampling of gaseous pollutants
- TZS 837: 2004 Air quality: Sampling and test methods - Part 3: Stationary source emissions - Manual determination of mass concentration of particulate matter
- TZS 837: 2004 Air quality: Sampling and test methods - Part 4: Stationary source emissions - Determination of mass concentration of sulfur dioxide - Hydrogen peroxide/barium percolate/thorium method

# Air Standard in Tanzania (...2)

- TZS 837: 2004 Air quality: Sampling and test methods - Part 5: Stationary source emissions - Determination of mass concentration of nitrogen oxides - Naphthyethediamine photometric method
- TZS 837: 2004 Air quality: Sampling and test methods - Part 6: Stationary source emissions - Determination of carbon monoxide, carbon dioxide and oxygen. Performance characteristics and calibration of automated measuring systems.
- TZS 837: 2004 Air quality: Sampling and test methods - Part 7: Stationary source emissions - Determination of gas and particle - phase polycyclic aromatic hydrocarbons - sample preparation, clean-up and determination
- TZS 845: 2006 Air Quality Specification
- TZS 846: 2004 Air Quality: Tolerance limits of emission discharged to the air by cement factories
- TZS 847: 2004 Air Quality: Guidelines of emissions discharged to the air by cement factories
- EMDC 2 1817: 2006 Air Quality: Stationary source emission - Guidelines for online gas analyzer
- TZS 931:2006 Protection against ionizing radiation –Limits for occupational exposure
- TZS 932:2006 General Tolerance Limits for Environmental Noise

## Progress made, Tanzania example (...2)

### ● Cleaner Production Initiative

- The promotion of cleaner production technologies and techniques in industries begun in 1994 (Cleaner Production Centre of Tanzania) - information dissemination, training, demonstration and assessments in various enterprises in the country. A total of **more than 69 industries** have benefited.

### ● Air Quality Monitoring Capacity Building Project – Dar es Salaam City

- The project begun in 2004 up to December 2007 with assistance from USEPA/UNEP. The Project offered training and air quality monitoring equipment (6 monitoring stations)

## Progress made, Tanzania example(...3)

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- Sustainable Cities Programme – now Urban Development and Environment Management Programme
  - Raised understanding of Local Government Authorities in planning and integrating environmental management in their development plans
- Modern mass transit public transport – Dar es Salaam City (2009+)
  - Dar es Salaam City Council is in the final stages of implementing a Bus Rapid Transit (BRT) Project that will improve public transport services and reduce associated air emissions.

# Progress made, Tanzania example(...4)

## ● Transport sector

- Phasing out of leaded fuel in 2005
- Use reduced sulphur fuel underway
- Initial use (testing) of natural gas in few vehicles

## ● Energy

- A total of 16 industries have switched to natural gas from Songosongo including a cement factory (TPCC)
- Electricity generation from solid waste dump site (2008+)
- Biofuel production facility to be established in Sumbawanga
- Briquette making from rice husks and saw dust
- Sustainable solar packaging – public facilities - schools, hospitals

# Other Initiatives (...5)

- Mining
  - Presidential Award on Mining Environmental Excellency enhances corporate responsibility in environmental protection
- Inventory on Persistent Organic Pollutants (POPs) (2004)- estimated releases and potential hotspots for Dioxins and Furans
- Promotion of improved cooking stoves reduces indoor air pollution



# Recommendations

- Promoting public awareness and education
- *Awareness creation efforts should continue targeting key stakeholders (policy and decision makers, journalists, industrialists) as well as mainstreaming air quality management in school curricula. It may be worth supporting NGOs and professional associations dealing with awareness creation action*
- Promoting energy conservation and renewable energy sources
- *The goals to be pursued include minimization of wood fuel consumption through the development of alternative energy sources and wood fuel energy efficiency; promotion of sustainable renewable energy resources; assessment and control of development and use of energy; and energy efficiency and con*
- Improving waste management
- *A more coherent, coordinated and well planned approach to manage the increasing waste volumes. Preparation of Waste Management Strategy and Action Plan to serve as framework guide for better management of wastes. The Strategy takes into account elements of the hierarchy of waste management namely, waste prevention and reduction at source, reuse, recovery and recycling, treatment and disposal.*

# Recommendations (...2)

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- Capacity building to include training of scientists in learning institutions focusing on modelling and impact assessment of air pollution.
- Improving public transport
- Motorized transport is one of the major sources of air pollution particularly in urban areas due to traffic congestion since vehicles release more pollutants when idling than when speeding; and inefficient motor vehicles especially second-hand vehicles which not only pose mechanical problems but also environmental problems.
- Noise and radiation pollution in urban areas to be taken on board
- Promoting cleaner production techniques and technologies
- Emission of thermal plants, transport and open burning of waste to be addressed

# Recommendations (....3)

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- Establish appropriate regulations, standards, guidelines, and by-laws
- Regional harmonization of legislation and standards
- Strengthen enforcement of environment related laws
- Establish continuous monitoring system/schemes
- Emission inventories at national and regional levels
- Conduct impact assessment on Health and environment
  
- Multi stakeholders dialogue to discuss implementation of planned activities and various agreements
  
- Involve all key actors in air quality management such as Ministry of Finance/Planning, Economy and Empowerment/ Education

**Need to work together as each one's**  
**' Action Counts in Environmental Conservation '**



**Thank you for your kind attention**