


Clean Air and Sustainable Environment (CASE) Project

a national initiative to reduce air pollution in Bangladesh

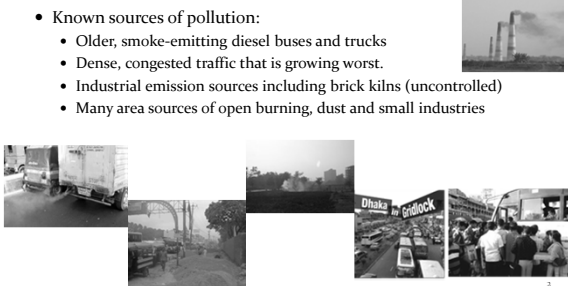


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CASE Project

Malé Declaration on Control and Prevention of Air Pollution and its Likely Transboundary Effects for South Asia

Air Quality Scenario in Bangladesh

- Major cities are highly polluted despite major efforts to date.
- PM is the significant pollutant, especially during the winter season.
- Known sources of pollution:
 - Older, smoke-emitting diesel buses and trucks
 - Dense, congested traffic that is growing worst.
 - Industrial emission sources including brick kilns (uncontrolled)
 - Many area sources of open burning, dust and small industries



Nature of Pollutants

Key pollutant
-PM, SO_x, NO_x, CO, O₃ and Pb

Sources specific Pollutants

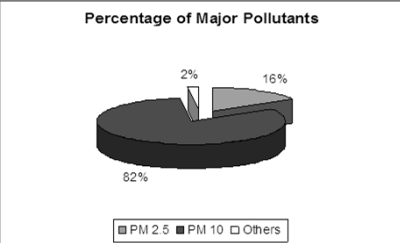
- Motorized vehicles
visible smoke, PM, SO_x, NO_x & toxic hydrocarbon
- Brick kilns
PM, SO_x, CO
- Soil dust including road dust
PM
- Industry (Pb based battery factory, re-rolling mills, cement factory, Galvanizing factory, etc)

Control of PM is important for protection of human health and climate

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Pollutants of concern for Bangladesh

Percentage of Major Pollutants

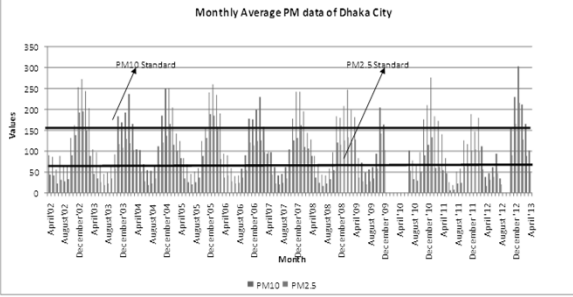


Pollutant	Percentage
PM 2.5	82%
PM 10	16%
Others	2%

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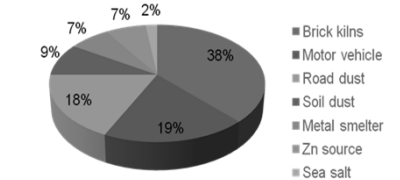
Trends Analysis of Particulate Matter in Capital Dhaka

Monthly Average PM data of Dhaka City



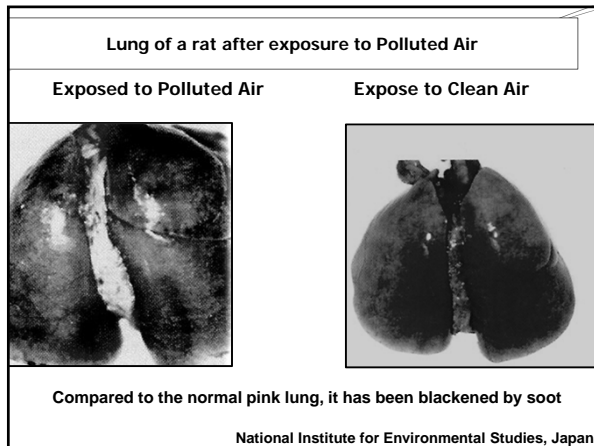
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Sources of fine particulate pollution in Dhaka



Source	Percentage
Brick kilns	38%
Motor vehicle	19%
Road dust	18%
Soil dust	9%
Metal smelter	7%
Zn source	7%
Sea salt	2%

Source: Begum, B.A., Biswas S.K. and Hopke, P.K. 2010. Key issues in controlling air pollutants in Dhaka, Bangladesh. Atmospheric Environment. In press.

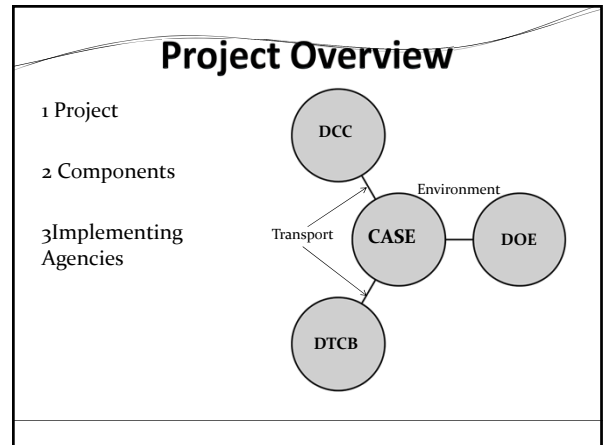


Clean Air and Sustainable Environment (CASE) Project

Project Cost : 44501.64 (In Lakh Taka)
 Project Duration : July-2009 to June-2014.
 Lead Agency : **MOEF**
www.case-moef.gov.bd

CASE Builds on Two World Bank Supported Projects: AQMP and DUTP

- The project builds on the experiences and lessons of two past Bank-supported projects in Bangladesh, namely the Air Quality Management Project (AQMP), and the Dhaka Urban Transport Project (DUTP).
- The project will address **air pollution abatement and improved mobility in Dhaka.**
- **CASE project integrates Environment and Transport** to deliver “co-benefits” by reducing health costs due to air pollution exposure and improving safe mobility as well as lowering energy consumption in brick industries and GHG emissions.



Objectives of the Project

- Strengthen capacity to plan, monitor, regulate and implement sustainable environmental initiatives in transport and brick sector.
- Greening the brick making industry.
- Increase pedestrian mobility.
- Reduce congestion by improving traffic flows
- Enhance the institutional capacity of multi-sector players to abate air pollution.

Environment Component

Three Sub Components:

- Capacity Building for Air Quality Management (AQM)
- Brick Kilns Emission Management
- Communication campaign and Clean air initiatives facility

Sub Component 1: Capacity Building for AQM

- Expansion of air quality monitoring network
- Establishment of central instrument Lab
 - Equip with simple repair facility and spare parts
 - Filter weighing laboratory
- Emission Inventory and modeling
- Source Apportionment studies
- Human Resources Development

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Cont'd

- Revision of vehicle emission standards
- Revision of national ambient air quality standard and air quality index (AQI) categories
- Development of auto fuel policy
- Enhanced Vehicle Inspection Program
- Industrial emission control (stricter standard and enforcement)

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Sub Component 2: Brick Kilns Emission Management

Institutional, Legal and regulatory aspects

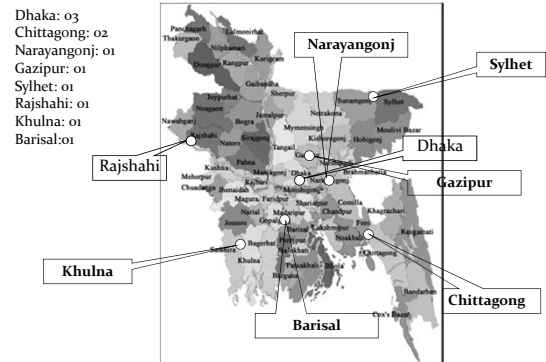
- Review and update regulatory framework (including emission standards)
- Pilot demonstration of energy efficient and cleaner brick making technology and practices
- Technical assistance for enhancing skills of brick workers towards & the industry as a whole.
- Competence building of various Govt. officials

Sub Component 3: Communication campaign and Clean air initiatives facility

Awareness building on air quality, health impact and remedies among public

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Expansion of Air Monitoring Network already been established Location of all CAMS sites in Bangladesh



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Analytical Studies: Emission Inventory, Dispersion Modeling, Source Apportionment, Dust Control and Industrial Emission

- TASK 1: Emission Inventory (Dhaka and Chittagong) – NILU with assistance from BUET and CU
- TASK 2: Pollution Dispersion Modeling (Dhaka and Chittagong) – NILU
- TASK 3: Source Apportionment (Dhaka, Chittagong, Rajshahi and Khulna) – NILU with assistance from independent consultants from BAEC.
- TASK 4: Dust Control Measure Assessment (Dhaka) – NILU with assistance from BUET
- TASK 5: Industrial Emission Estimates (Dhaka and Chittagong) – NILU with assistance from BUET

Collaboration with Norwegian Institute for Air Research (NILU) – BAPMAN project

- Established bilateral collaboration with NILU under financial assistance from NORAD in 2010
- NILU provided AIRQus system including a server and two client for enhancing AQM capacity within DoE
- Provided training (home and abroad) on using AIRQus system for AQM
 - Emission inventory
 - Dispersion modeling
 - AQ data quality control and quality assurance
 - CAMS operation and maintenance

Number of both DoE and CASE officials were trained

Vehicle and Industrial Inspection Program

Vehicle Emission

- *Expand VIP Program to Chittagong and other cities.*

Industrial Emissions

- *Existing Sources & Proposed New Sources*
- *Survey of Current Emission Controls by Industry*
- *Estimate Emission Reductions with Controls*

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Introducing cleaner technologies & practices through pilots & technical services development in Brick Sector

The project will support

- *Introducing cleaner technologies and practices through demonstration initiatives and technical service development*
- *Pilot demonstration to introduce new cleaner technology (proven in other countries) along with alternative building materials.*
- *Established Training Institute for Capacity development.*

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Potential for Energy Efficiency Gain and Emission Reduction

All Improved Technologies show considerable Energy Efficiency gain and emission reduction

- Energy Efficiency 40% or better possible
- Emission Reduction better than 50% possible.



- **Conversion of one Fixed Chimney (FCK) to Converted Zig-Zag kiln Including back process completed.**
- **Initial assessment showed reduction of coal consumption and 70-80% reduction in respect of emission.**

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Enjoy Clean Air

Thank you all