

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Combating Industrial **Pollution**

Introduction

Mr. Sarfraz Ahmed Khan is presently serving as General Manager, Human Resource and Administration in Agriauto Industries Ltd, a company of House of Habib, since last 8 years. The company is manufacturing automobile components.

He has earlier served in Pakistan Army for 28 years.

He is a graduate from Command and Staff College Quetta and has done Masters in Business Administration.

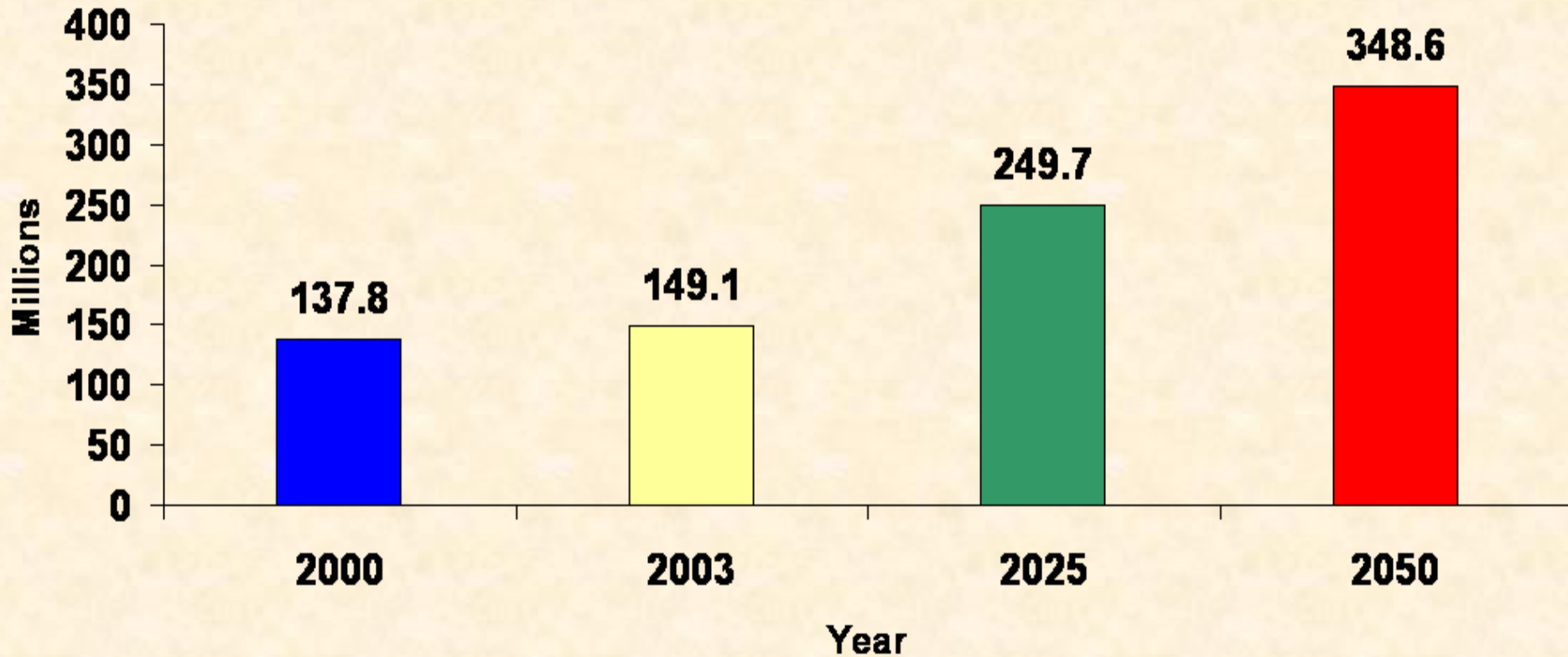
Sequence

- **Background.**
- **Overview of Developments Made.**
- **Role of FPCCI in the Environmental Movement of Pakistan.**
- **Environment & Pollution defined.**
- **Key Environmental Issues.**
- **Availability of Technologies for Control of Pollution.**
- **Major Intervention Areas for Sustainable Production.**
- **Recommendations to Combat Industrial Pollution**
 - ❖ **Actions by Industry.**
 - ❖ **Measures by the Government.**

“ A state, in spite of its territorial supremacy, is not allowed to alter the natural conditions of its own territory to the disadvantage of the natural conditions of the territory of the neighbour state

L. Openheim

Population Growth



Overview of Developments Made

- Pakistan Environmental Protection Ordinance 1983 (PEPO – 1983) and establishment of key environmental bodies, like Pakistan Environmental Protection Council (PEPC) and Environmental Protection Agencies.
- Pursuit of environmental objectives :-
 - a. The Pakistan National Conservation Strategy (NCS), which was approved by the Federal Cabinet on March 1, 1992.
 - b. The Government of Pakistan signed an agreement with the World Bank and affiliated donors for a technical assistance credit of US\$ 29.2 million for the Environmental Protection and Resources Conservation Project (EPRCP) on May 14, 1992.
- Establishment of National Environmental Quality Standards (NEQs).
NEQs were developed for :-
 - (i) Municipal and Industrial Effluent.
 - (ii) Industrial Gaseous Emissions
 - (iii) Motor Vehicle Exhaust and
 - (iv) Noise.
- Formulation of Pakistan Environmental Protection Act 1997 (PEPA-1997).
- Setting up of Environmental Standards Committee and approval of NEQs.

Role of FPCCI in the Environmental Movement of Pakistan

a. Environmental Technology Programme for Industry (ETPI)

Five components of the program include :-

- ❖ The development of a user-friendly database of relevant information.
- ❖ Institutional networking within and between key industrial institutions of the country.
- ❖ Dissemination and communication to promote cleaner industrial production.
- ❖ Institutional support. training to create in-house environmental capacity within chambers and industrial associations.
- ❖ Demonstration projects in 20 selected industrial sub sectors to demonstrate the economic feasibility and environmental efficacy of environmental technologies.

b. Magazine on Environmental News.

Environment & Pollution

Environment

“ Environment” means

- (a) Air, water and land;
- (b) All layers of the atmospheres.
- (c) All organic and inorganic matter and living organisms;
- (d) The ecosystem and ecological relationships.
- (e) Building, structures, roads, facilities and works;
- (f) All social and economic conditions affecting community life; and
 - The inter-relationship between any of the factors in sub-clause (a) to (f)

Pollution

Pollution may be defined as the introduction by man into the environment of substance of energy liable to cause hazards to human health, harm to living resources and ecological system, damage to structure or amenity, or interference with legitimate use of the environment.

The important concepts in this definition are :

- a. Pollution is caused by substances or energy.
- b. It has a source or sources, and they are created by man. Natural inputs of the same substances are excluded. Thus pollution is an increment added by man to bio-geo-chemical cycles.
- c. Pollution acts in the environment, as a result of these discharges, and follows a pathway, leading to the exposure of structure or organism.
- d. The significance of the pollution is related to its effects on a range of targets (or receptors), including man and the resources and ecological system.
- e. Pollution is judged by its impact on social values as well as environmental components, if these damage to structure or amenity, or interference with legitimate uses of the environment, the substances causing the effect are by definition, pollutant..

Key Environmental Issues

An overview of the key environmental issues facing Pakistan is presented below:

- Per capita water availability in Pakistan has been decreasing at an alarming rate. In 1951, the per capita availability was 5300 cubic meter which has now decreased to 1105 cubic meter just touching water scarcity level of 1000 cubic meter.
- Almost all fresh water resources are severely polluted due to discharge of untreated industrial and municipal wastes. Pollution of coastal waters. Pollution of coastal waters due to waste discharges and oil spills coupled with reduced freshwater flows is resulting in declining fish yields.
- About 55 percent of population has access to a relatively safe drinking water source. Potable water quality, assessed against WHO standards, fails to meet all the specified criteria, confirming evidence of extremely high pollutant loads.
- Approximately 35 percent of population has access to adequate sanitation facilities.
- Air pollution is on the rise, especially in urban areas. Recent surveys conducted by Pakistan Environmental Protection Agency revealed presence of very high levels of suspended particulate matter (about 6 times higher than the World Health Organization's guidelines).

- Noise pollution has become a serious issue in major urban centers.
- Of about 54,850 tons of solid waste generated daily in urban areas, less than 60 per cent is collected. No city in Pakistan has proper waste collection and disposal system for municipal, hazardous or healthcare wastes.
- The deforestation rate has been estimated at 0.2-0.5 percent per annum.

Forest cover, which was 4.8 percent of total land area in 1992, could hardly be increased substantially despite all efforts.

- Degradation and encroachment of natural forests, rangelands and freshwater and marine ecosystems are resulting in loss of biodiversity.

Availability of Technologies for Control of Pollution

Today, a variety of technologies for pollution control are readily available, classified as :-

- a. Mechanical.
- b. Electromechanical.
- c. Chemical process equipment.

The Government needs to :-

- a. Effectively implement action plan to focus on promoting the use of environmental-friendly technology and equipment.
- b. Developing indigenous capacity to produce.
- c. Market the related equipment and materials.

The local engineering industry already produces, or has the capability to manufacture, the required mechanical equipment including dust collectors, blowers and pumps, bag filters, sieves, scrubbers, separators, incinerators, electrostatic precipitator, and chemical process equipment such as columns, towers, vessels etc. It is expected that the national R&D activities may come up with innovative technologies in the field as well.

The examples of successful applications of innovative environmental technologies in the Western countries include:-

- a. Industrial use of plant (natural) dyes in textile processing.
- b. Recycled plastic bags.
- c. Waste/emission-free galvanising plants in engineering sector.

In compliance with the Environmental Protection Act 1997, it is mandatory for the sponsors of all the development projects, in any economic sector, to conduct a comprehensive Environmental Impact Assessment (EIA) study, along with project feasibility study, and accordingly propose and implement mitigation and remedial measures to ensure control of pollution and thus clean environment. Project sponsors are also required to submit periodic reports during project construction, and later, on operation, the status of mitigation measures employed.

Major Intervention Areas for Sustainable Production

➤ Major intervention areas are as follows :

- Process improvement by installing environmental equipment.
- Heavy metals recovery plants.
- Energy conservation equipment.
- Raw material conservation systems and equipment.
- Waste water treatment plants.
- Waste water recycling technologies.
- Solid waste water recycling technologies.
- Solid waste disposal systems and technologies.
- Hazardous waste management systems and technologies.
- Air emission monitoring and pollution abatement technologies and equipment.
- Occupational Health and Safety gadgets.

Recommendations to Combat Industrial Pollution

Actions by Industry

- The offices and houses having appropriate methods to maintain ecological balance, improves quality of surrounding environment..
- Automobile industry should put emphasis to use devices to control auto emission as carbon monoxide, hydrocarbons and oxides of nitrogen.
- Industries should control smoke and thermal pollution.
- The industries should treat their waste water before dumping in to rivers.
- Detergent manufacturer should study the alternative additive of phosphate, other wise phosphate discharge dump in to the river destroyed algae and marine life change the ecological balance.
- Thermal power should control and reduce solid waste and recycle them before dumping.
- The manufacturing instrument industries put more emphasis on pollution caused by these machine, should be reduced.
- Coastal area and dry land bio-diversity and survey management should be checked regularly.
- Clean drinking water initiative should be taken.
- National awareness campaign on energy efficiency and environmental protection.

•In order to encourage the growth of industry without causing damage to environment and country have sustainable development and growth, following action are needed.

- Develop pollution control Board.
- Pollution assessment committees.
- Research and Development Unit.
- Dissemination of information and Training.
- Fuel efficiency in road transport sectors.
- Industrial efficiency and environmental management sector development.
- Hospital and domestic waste management in major cities of Pakistan.
- Mass awareness and education program.
- Pollution- the contamination of air, water or soil with substance harmful to life, has been a seemingly inevitable by-product of industrialisation and urbanisation, should be reduced.
- Geo-thermal power brings thermal pollution of air and surface water, contamination ground water, increase, hydrogen sulphide and sulphuric oxide pollutants in the air, create problems in the disposal of salts.

Measures by the Government

Pollution caused by liquid and solid waste in the country shall be prevented and reduced. For this purpose, the government should:

- Strictly enforce the National Environmental Quality Standards.
- Introduce self monitoring and reporting system nationwide.
- Introduce discharge licensing system for industry.
- Make installation of wastewater treatment plants an integral part of all sewerage schemes.
- Develop and implement the National Sanitation Policy.
- Implement the Master Plan for Treatment of Urban Waste Water.
- Develop and implement a strategy for establishment of combined treatment plants in industrial clusters.
- Establish cleaner production centers and promote cleaner production techniques and practices.
- Promote ISO 14000 certification.
- Encourage reduction, recycling and reuse of municipal and industrial solid and liquid wastes.
- Establish standards for receiving water bodies.
- Launch phased programs for clean up and gradual up-gradation of quality of water bodies.

- Develop and enforce regulations to reduce the risk of contamination from underground storage tanks.
- Finalize the National Oil Spill Contingency Plan.
- Establish a Marine Pollution Control Commission. Frame Pakistan Oil Pollution Act.
- Develop and enforce rules and regulations for proper management of municipal solid waste and industrial, hazardous and hospital waste.
- Regulate production / import of hazardous substances and wastes.
- Develop and implement strategies for integrated management of municipal, industrial, hazardous and hospital waste at national, regional and local levels.
- Strengthen capacity of institutions involved in waste management.
- Encourage involvement of the private sector in waste management.
- Establish facilities for recovery of raw material and energy from waste. Create market for recovered and recycled materials.
- Promote research and development focusing on low-waste technologies and technologies for waste recovery and reuse.
- Develop environmental risk assessment guidelines for existing industries as well as new development interventions.
- Develop national emergency response and accidents preventions plans to prevent, and mitigate the effects of, accidents involving pollution of environment.

Health and Environment

To prevent, minimize and mitigate detrimental health impacts associated with environmental hazards, the government shall:

- Incorporate environmental health and healthcare waste management components into medical teaching and training programs.
- Develop and enforce occupational health and safety rules and regulations.
- Introduce effective waste management system in all healthcare facilities.
- Make the provision of safe water and sanitation facilities mandatory for all public facilities such as hospitals and schools.

Legislation & Regulatory Framework

- The existing environmental legislative and regulatory framework shall be strictly enforced.
- Necessary rules, regulations and standards shall be developed for operationalization of environmental policy at the Federal, Provincial and District level.
- Existing environmental legislation shall be revised and new legislation shall be enacted where required and appropriate.
- The number of environmental tribunals in the country shall be increased.

Public Awareness

- A national environmental information management system shall be established to provide accurate and timely information for informed decision-making as well as ensure public access to environmental information.
- A national strategy shall be developed and implemented for raising environmental awareness of the general public as well as selected target groups (e.g. elected representatives, religious scholars) at the union council, tehsil, district, provincial and federal levels.
- Environmental education shall be integrated into all levels of curriculum and syllabi from primary to university levels.
- Establishment of environmental education and training institutions shall be encouraged.
- Educational institutions throughout the country shall be supported in establishment of environmental clubs.

“We all moan and groan about the loss of the quality of life through the destruction of our ecology, and yet every one of us, in our own little comfortable ways, contributes daily to that destruction. It's time now to awaken in each one of us the respect and attention our beloved Mother deserves.”

Ed Asner

Thank You

References

1. Country paper a Industry & Environment – by Vice President FPCCI.
2. Environment issue in Pakistan from Wikipedea, the free encyclopedia.
3. Article ‘Almring increase in industrial Pollution’ by Mr. Hassan Ahmed Siddiqui.
4. National Environment Policy of Pakistan, 2005.
5. Pakistan-Country Profile. Information provided by Government of Pakistan to UN Commission on Sustainable Development – April 1997, New York.
6. World Population data sheet 2003; Population Reference Bureau; demographic Data and estimates for the Countries an Regions of the World.
7. Ministry of Environment; Local Government and rural Development (Stat-IGF).
8. The Natural Environment Research Council (NERC 1976), Research on pollution of the natural environment; report of the adhoc preparatory group “F” on environmental pollution research; Publication series “B”, No. 15; London; Natural Environmental Research Council.
9. Environmental Protection Agency, Air Pollution Control; Air Quality Criteria for nitrogen oxide (Washington, D.C; Government Printing Office 1971); 1-2 p.
10. Fazle Karim Khan; A Geography of Pakistan; Environment; People, and Economy; Oxford University Press; 1991; 245 p.
11. Government of Pakistan; Environmental Act XXXIV of 1997; Islamabad.
12. The documents of the United Nation Conference on human Environment (The Stockholm Conference).