

12. Environmental Management

A considerable amount of information exists on the causes and consequences of environmental degradation in Delhi. However, a strategic, integrated and co-ordinated institutional approach is not in place to address these issues. There is a clear lack of focus both in terms of policy, priorities and intervention.

The purpose of this environmental management framework is to define a systematic approach to:

- ensuring that the existing deficiencies are alleviated;
- managing future economic and employment growth and continued urbanisation to achieve positive effects on the environment and public health;
- setting an environmental management framework that will deliver and maintain national environment and health standards in the medium term (5-10 years) moving to international compliance in the longer term.

To achieve these aims, government, industry and communities must develop and achieve a shared vision for Delhi through an integrated environmental regime. This will operate to produce a win-win situation where the four strands of sustainable development (economic development, social progress, environmental protection and resource minimisation) are in harmony. It will produce a climate where Delhi takes its place in the international community as a bankable, competitive and liveable city.

Without an integrated strategy with matched investment to improve environmental infrastructure, services and management, the current problems will be compounded by growth resulting in:

- exposure to increasing degradation and greater health risks;
- reduced economic productivity and increasingly unreliable services;
- increased financial costs for maintaining even minimum levels of infrastructure and services;

- increased resource consumption.

Furthermore, the vision of Delhi as a sustainable city will be unachievable. In terms of economic and environmental justice, each of these factors will have a disproportionate negative impact on the poor.

12.1 Policy Framework

In order to achieve an integrated regime of environmental management there must be a common policy framework, shared across the Delhi government, from which the actors responsible for delivering environmental performance can derive a common purpose. The following framework is proposed:

- Delhi government ensures that sectoral environment and health objectives are at the heart of financial and resource planning, development initiatives, intervention strategies and performance monitoring;
- development agencies ensure that environment and health objectives inform planning for economic growth, urban and infrastructure development, land use and transportation;
- regulating bodies ensure that enforcement regimes are driven by the polluter pays principle with an increasing emphasis towards operator responsibility and self regulation within clear management standards;
- agencies ensure that pricing regimes for the distribution, utilisation and disposal of resources reflect the full costs of their use;
- Delhi wide institutions maximise the leverage of national and international funding to assist in delivering state of the art environmental planning and management;
- Delhi citizens take an increasing role in the setting and self policing of environment and public health impacts.

This policy framework is proposed as a means of ensuring a shared agenda and vision for environmental management in Delhi that will result in realistic and

prioritised development programmes, sustainable resource use, deliverable environment and environmental health improvements and efficient performance management.

The success of a shared suite of environmental policies will rely on efficient and co-ordinated institutional performance.

12.2 Institutional Framework

The delivery of the policies and programmes that will address the current deficits and achieve long term and sustainable improvements in environmental performance is the core business of those institutions responsible for Delhi's urban planning, infrastructure development, environmental services, regulation and resource distribution. To achieve the required turnaround in environmental performance and the quality of life in Delhi, concerted efforts will be required by all with responsibility to build new ways of working for the benefit of all.

The primary environmental institutional objectives are seen as being that:

- each of the Delhi urban and environmental institutions must develop methods for setting and monitoring long term objectives and standards for Delhi's environment and public health that not only embody specific sectoral targets but have commonality and resonance in other linked and associated bodies and programmes;
- Delhi government departments and responsible national bodies must derive common and integrated policies, priorities and actions to address environment and health issues;
- environmental agencies must ensure the effective regulation of industry, transport and local bodies;
- environmental bodies must develop tools and processes to deliver meaningful information regarding the problems and trends in the Delhi environment to decision makers and the public to ensure the continual review of policy and performance in environmental management;
- all responsible institutions should develop joint work in environmental

management to a common set of standards, derived through public participation.

These institutional development objectives will require investment in the capacity not only of the institutions themselves, their resources and management, but also in the mechanisms for joint working and cross sectoral co-operation.

This approach is based on the need for a co-ordinated understanding as to how resources like water, air, land, are obtained, used and reused, wasted or disposed off. Resource management lies at the heart of environmental management.

Experiences elsewhere suggests that for an urban environmental strategy to be effective, environmental concerns cannot be separated from an analysis of the operation and management of the urban economy.

To begin the adoption of this framework there are three initial requirements:

- Generate ownership of Delhi 21, not in one department or agency alone but across Delhi government as a whole.
- To focus on actions that are socially and politically acceptable, and financially supportable.
- To combine "top-down" and "bottom-up" approaches.

The responsibility for environment protection and abatement of pollution is not a duty of one department alone. It is not the task of the Government alone. It is an obligation on all. Government departments and agencies, public authorities, industry, non-governmental organisations and community based organizations each have a fundamental role to play. Hence the need for integration at all levels.

12.3 Implementing the Institutional Framework

As the main issue at stake for the environment of Delhi is poor institutional performance, it follows that institutional strengthening is a prerequisite for environmental improvement. As stated earlier, Delhi at present has no

environmental policy, although it has an industrial policy, an urban policy (as expressed through DDA) and a draft slum policy. This lack of an environmental policy has robbed Delhi of an opportunity to develop and grow as one of the world's great cities. The process of institutional reform and development outlined in Part E implies the need for the mainstreaming of environmental issues in the government of Delhi. There is a clear need for a system of central, GNTCD co-ordinated, effort in planning, financing and resource management for the Delhi environment.

12.3.1 Cabinet Committee of Delhi Government

One means to achieve this would be through interim arrangements within GNTCD, (possibly involving the setting up of a Cabinet Committee and a Project Management and Co-ordination Unit with Delhi wide institutional membership) prior to the wholesale reform of Delhi governance. These issues are dealt with fully in Part E. In addition, reform of specific institutions will also be necessary in order for specific sectoral and discrete management functions to be performed adequately.

12.3.2 Department of Environment, (DoE), GNTCD

Delhi 21 strongly recommends that the DoE be strengthened to take on specific environmental management functions. It is proposed that the DoE be responsible for policy formulation and overseeing the implementation of actions in the following areas:

- Environmental planning and management
- Environment and industry
- Community participation
- Natural resource management
- Environment and transport
- Public awareness

These issues require an advanced level of co-ordination across all government departments, not centralised control; it is

this context that DoE is recommended to act.

12.3.3 Delhi Pollution Control Committee (DPCC)

The DPCC will similarly require a great deal of attention if it is to perform to a standard anywhere near that required for a major city such as Delhi. Specifically this institution should perform within its statutory remit in order to deliver:

- Planning and review for DoE
- Information management
- Regulation and enforcement
- Monitoring and data analysis
- Training outreach and support,
- Appeal procedures

These issues require an advanced level of management capability and co-ordination across the DoE; it is in this context that DPCC is recommended to act. The creation of one single regulating body for issues relating to environmental impact assessment, permitting, environmental management and performance aftercare is an essential ingredient in ensuring sound environmental management in Delhi.

However, a key element of the proposed components for both DoE and DPCC is the training of the existing staff. It is proposed that a rapid review of resource capacity in both the institutions is conducted early to identify specific skill gaps. This should be followed by need-based targeted training.

12.3.4 Other Departments of GNTCD

Although DoE and DPCC are the key institutions who should be engaged in environmental management in Delhi, the remit of environmental protection rests with all concerned departments for effective implementation of the environmental protection policy framework. The establishment of an environmental cell in government departments engaged in developmental work would facilitate communications, allow better co-ordination of activities between DoE/DPCC and the concerned departments, will lead to sharing of burdens and responsibilities and will help

to bring environment management in the right perspective in governmental work.

12.3.5 Sectoral Issues

In addition to the institutional frameworks *per se*, there will be need for co-ordinated environmental management in the sectoral areas of:

- **Land use planning and management:** where land is valued as a vital resource for Delhi, and long term planning for its allocation and use must be integrated with regional planning for resource supply, solid waste removal and sanitation. Residential and employment land allocations must be informed by air quality and noise considerations. The co-ordination of communications by road or mass transit systems will be additionally essential.
- **Solid waste management:** where the requirements for adequate transfer and disposal sites for municipal, hazardous and bio-medical waste must be integrated with the broad regional; planning policies and land allocations.
- **Wastewater / sanitation:** where the necessary infrastructure developments are planned and co-ordinated to both long term supply needs and to sustainable resource management objectives and to long term environmental protection standards.
- **Water and energy supply:** where supply costs fully reflect the external additionalities and costs of the entire supply chain. Emissions and effluent discharges are brought in line with prescribed limits and standards are met.
- **Air quality:** where targets for air pollution are set in sustainable and deliverable terms and the development of emission standards for industry, road transport and energy generation are informed by affordable and acceptable technologies.
- **Traffic and transportation:** where transport planning reflects the needs of travel demand and the management of transport units for mass transit with no undue environmental cost.
- **Noise:** where targets for noise reduction are set in deliverable terms

and the standards for residential areas can be achieved.

- **Disaster management:** where off-site emergency planning and contingencies for natural disasters help in raising the level of management readiness and do not detract from the sustainable development of land for employment and residential areas.

12.3.6 Environment Pollution (Prevention and Control) Authority (EPPCA)

In 1998, the MoEF/Gol by order constituted an Authority known as the Environment Pollution (Prevention and Control) Authority (EPPCA) for the National Capital Region to exercise certain duties "for protecting and improving the quality of the environment and preventing, controlling and abating environmental pollution".

The EPPCA was first notified in for two years, and its life was further extended to another two years in January 2000. The Authority is empowered to take action on its own accord, or on the basis of complaints or on issues referred to it by the Central Government.

The matters it is empowered to deal with relate entirely to the functions of the DPCC and its very existence indicates a substantive lack of prowess in environmental management and regulation in Delhi. If this body is not reconstituted in 2002 to cover Delhi area it would be a clear indicator of the success of environmental management in Delhi.

12.4 Resource Mobilisation

12.4.1 General Principles

The funding mechanisms for initiatives identified in this strategy are based on the concepts of responsible financial management, value for money, and efficient resource pricing. Involved departments, institutes and organisations will be encouraged to finance O & M costs for implementing the ongoing initiative through: productivity gains, efficiency improvements, recovering full cost of

environmental services and incorporating polluters pay principle.

12.4.2 Potential Funding Sources

Resource mobilisation is the key to enabling implementation of policy. The following issues have to be addressed and may offer potential sources of funding.

Responsibility of operational departments to sell their activities

Government is not an everlasting source of funds. Spending departments will increasingly have to rely on generating funds to support their activities, (e.g. the supply of consultancy services or laboratory services to industry)

Funding operation and maintenance

Private sector involvement (from full privatisation to contracting out certain service and O & M activities), may have efficiency gains greater than increased costs, especially if in the process a saleable commodity is created.

Public Private Partnerships

The role of the private sector through partnerships and other forms of financing should be pursued where appropriate. The use of public funds in service development and capital investment should be tested against the principles of Compare, Challenge and Compete in order to ascertain the correct balance in the private/public funding mix.

'Earmarked funds'

It is necessary to introduce 'earmarked funds' so that, for example, funds generated by enforcing development controls can be used to improve that function. Fees for development planning assessments could also be earmarked for ambient emission.

Polluter pays principles

Allowing certain kinds of developments creates a high risk for the environment with higher costs to the monitoring and control agencies. This should be reflected in the charging system.

The user charges principle

This needs to be applied in a manner that has a minimal effect on those least able to afford it, and targets those with ability to pay. Consent to release charges, water cess and potential air cess could be earmarked to fund emission monitoring.

Subsidies

Subsidies and cross-subsidies are perfectly acceptable if they are open, fair, affordable and society has agreed that they are required. This, in conjunction with the user pays principle, may allow discounts in charges for registered organisations with a high social content in their activities.

Enforcement and fines

There is a case for establishing specific courts for rapid enforcement of standard fines, to allow confiscation of assets of offenders. 'Spot fines' may also have potential.

Investment

Funding for capital projects would require involvement of private sector and financial institutions while implementation of pilot projects will seek funding from external agencies like DFID, ADB, UNDP, JBIC or World Bank, etc.

The mobilisation of resources through investment is essential; without improving value for money in capital investment and operation and maintenance investors will invest elsewhere.

Delhi Environmental Fund Facility

This fund is proposed as a means to help local bodies and industries to implement such projects as waste minimisation or pollution prevention and control initiatives. Part of possible external assistance from agencies such as the World Bank, OECF, etc. could be credited to this fund. Also a part of the water cess and the proposed air cess may be diverted to this fund. One of the purposes would be to channel selected environmental funding through the DEFF so that a more effective, planned and equitable distribution of expenditure could be achieved. DEFF is intended to be a non-

lapsable revolving fund. It is not intended to supplement the budgetary resources of the DoE/DPCC, nor is it intended to be an emergency source of funds.

Government and International Aid

GNCTD and Gol have at the center of policy the need to create employment through strong economic growth. Government has to create the enabling framework to attract inward investment and persuade domestic wealth holders to take the risks of expansion and diversification. This includes creating a better physical environment in

which commerce and industry must operate.

12.5 Action Programme

The successful improvement of the Delhi environment will be dependent on a long term action programme that is designed to deliver a shared environmental vision and sustainable performance. The table 12.5 below presents a summary, in priority order of those specific actions that will develop and implement the proposed vision for environmental management in Delhi 2021.

Table. 12.5 Priority actions for environmental management capacity building

Recipient	Objectives	Components	Outcomes
Short term 0-5years			
DDA, MCD, NDMC, DJB, DTC	Capacity building for integrated, cross departmental plans, programmes and budgets	GNCTD co-ordination body set-up; Departments set up environment cells;	Co-ordinated environment interventions to common objectives and targets
DPCC	Capacity building for effective environmental regulation	MIS development laboratory services, staff training	Appropriate control of polluting processes and operators
DDA, MCD, NDMC, DJB, DVB, DTC	Capacity building for collection of meaningful environment and health data	MIS development, staff development	Information on environment and trends supplied to policy makers
DDA, MCD, NDMC, DJB, DVB, DTC	Development of information systems	Equipment procurement and commissioning, staff training	Delivery of meaningful environmental information to decision makers and citizens
Delhi Government	Citizens' Charter development	Public awareness raising and participation Developing responsiveness in public authorities.	Public participation in target setting and review
Medium term 5 -10 years			
DPCC	Development of automated environmental monitoring networks	Equipment procurement and commissioning, staff training	Efficient and verifiable data to inform information production
DDA, MCD, NDMC, DJB, DVB, DTC	Development of integrated environmental information management systems	Equipment procurement and commissioning, staff training	Common data and information sets to inform and policy making and review and public information
DPCC	Development of integrated environmental GIS	Equipment procurement and commissioning, staff training	Common tools for planning, infrastructure development and resource management

The cycle of objective setting, policy development, intervention, monitoring and review for environmental management is an essential and missing ingredient in Delhi governance. This proposed scheme of objectives, policy and institutional

frameworks with necessary investment will serve to work towards sustainable development for Delhi, turn round environmental decline and address the otherwise inevitable consequences of economic and population growth.