
FRAGMENTED LEGAL ACCOUNTABILITY FAILURES IN URBAN PLASTIC WASTE MANAGEMENT: A COMPARATIVE STUDY OF DELHI AND MUMBAI

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ABSTRACT

Despite an extensive statutory and constitutional framework, plastic waste governance in Delhi and Mumbai demonstrates persistent enforcement failure.¹ The ongoing buildup and improper handling of plastic waste in many places point to systematic implementation flaws rather than a lack of legislation, even though there is a comprehensive statutory and constitutional framework governing plastic waste management.

This paper examines the issue of fragmented legal accountability that results from the division of statutory duties among state-level authorities, State Pollution Control Boards, and Municipal Corporations. The effective application of plastic waste management legislation has been undermined by this fragmentation, which has led to overlapping jurisdiction, unclear enforcement mandates, and decreased regulatory accountability. While municipal corporations retain operational control over collection and segregation, pollution control authorities exercise supervisory oversight, creating a governance structure marked by coordination deficits and diffused enforcement responsibility. A substantial gap exists between the normative strength of the legal framework and its practical enforcement at the city level, including municipal legislation, Plastic Waste Management Rules, and constitutional environmental requirements. Inadequate inter-institutional coordination, uneven compliance monitoring, and an excessive dependence on judicial intervention to rectify administrative shortcomings all contribute to this disparity.

This research paper adopts a doctrinal and comparative legal approach, constitutional mandates, and statutory laws regarding the legal framework governing plastic waste management in Delhi and Mumbai.

Keywords: Urban Environmental Governance, State Pollution Control Boards, Municipal Corporations, Plastic Waste Management Laws, Fragmented Legal Accountability

¹ Central Pollution Control Board, *Annual Report on Implementation of Plastic Waste Management Rules, 2021–22* (CPCB 2023).

Introduction

Plastic waste management has become a challenge in governance in metropolitan centres like Delhi and Mumbai despite the availability of formal municipal and environmental governance structures. It is non-biodegradable and has a high volume, which increases threats to urban sanitation, human health, environmental integrity. Even with specialised regulatory frameworks introduced, the 2 cities have been facing ongoing gaps in collection, segregation, processing, disposal.² This means that issue is not solely in growth of waste but in governance and enforcement as well.

A case study of urban waste management in Delhi and Mumbai has shown structural issues that emerge due to separation of statutory responsibilities to various parties. Environmental statutes are regulated by State Pollution Control Boards, which are in charge of waste management, but operational task of a municipality is to collect waste at sites and handle it. State governments retain oversight and policy-making powers. Such division of powers creates overlaps in jurisdictions, lack of coordination, ambiguity in enforcement. As a fact, enforcement of rules on managing plastic waste is often not accountable, and this allows breaches of regulations without any corrective measures. To conduct this research, fragmented legal accountability is term used to mean spread of statutory responsibility among various authorities in society without good mechanisms to coordinate enforcement and liability assurance.

Although the statutory and constitutional framework governing plastic waste management is formally comprehensive, doctrinal analysis of its city-level implementation remains limited. City-specific legal analysis that examines the impact of fragmented institutional accountability on the urban implementation of plastic waste management regulations is conspicuously lacking.

Acknowledging this, the research paper aims to examine ‘Whether the fragmentation of statutory responsibilities between municipal corporations and pollution control authorities undermines the effective implementation of plastic waste management laws in Delhi and Mumbai.’ as the primary research question.

² Delhi Pollution Control Committee, *Annual Report 2021–22*; Maharashtra Pollution Control Board, *Annual Report 2021–22*.

Historical Background

The legal framework governing the management of plastic waste in Delhi and Mumbai has developed in parallel with the broader development of municipal solid waste law. Historically, municipal regulations that prioritised public health, cleanliness, and nuisance control over segregation, recycling, or environmentally responsible disposal of plastic waste regulated the management of municipal solid waste in these cities.³ Plastic waste was treated as part of the broader municipal solid waste stream, without a distinct regulatory framework.

A more structured environmental regulatory approach emerged with the introduction of specialised municipal solid waste rules under central environmental legislation. While acknowledging the oversight function of pollution control agencies, this legislation increasingly imposed more explicit obligations on urban local bodies for garbage collection, transportation, and disposal. Proper enforcement was, however, still based on municipal inter-corporation and inter-State coordination, but without a defined hierarchy of responsibility.

The Plastic Waste (Management and Handling) Rules, 2011, were supposed to deal with specific environmental risks that plastic waste poses.⁴ These rules subjected several stakeholders such as manufacturers, local governments, regulatory bodies to responsibilities. Nonetheless, it was essential to have cooperation of State Pollution Control Boards and municipal corporations to enforce it.⁵ Plastic Waste Management Rules, 2016 increased framework with introduction of Extended Producer Responsibility and increased obligation to comply. These modifications made institutional responsibilities at local more complex although they formed a more extensive legal framework.

In Delhi, restructuring of municipal governance altered the institutional distribution of waste management responsibilities. The Delhi Pollution Control Committee took on regulatory supervision duties in accordance with environmental legislation, while the Municipal Corporation of Delhi maintained primary responsibility for on-site garbage collection and handling.⁶ Coordination issues and confusion about enforcement accountability have historically come from this division of authority.

³ *Delhi Municipal Corporation Act 1957*, s 42; *Mumbai Municipal Corporation Act 1888*, s 61.

⁴ *Plastic Waste (Management and Handling) Rules 2011*, issued under the *Environment (Protection) Act 1986*.

⁵ *Plastic Waste Management Rules 2016*, rr 6 and 7.

⁶ *Delhi Municipal Corporation Act 1957*, ss 42 and 43.

In Mumbai, plastic waste management has historically operated within a comparatively centralised municipal framework, with the Brihanmumbai Municipal Corporation having a significant role in it. The regulatory body for this is the Maharashtra Pollution Control Board. It has the role to ensure that environmental norms are adhered to. Although this reflects institutional consolidation at the municipal level, enforcement deficits have persisted despite the presence of a formal regulatory authority.

Therefore, the evolution of plastic waste management in Delhi and Mumbai has been one of the increasingly complex regulatory frameworks coupled with a certain degree of ambiguity in terms of responsibility. This historical evolution laid the foundation for the present condition of fragmented legal accountability.

Constitutional Perspective on Urban Plastic Waste Governance

Environmental governance in India operates within a constitutional framework that has been judicially expanded to encompass environmental protection and urban sanitation. Although waste management is not expressly mentioned as a separate subject in the Indian Constitution, the judiciary has expanded the constitutional provisions to cover environmental protection and urban sanitation. Plastic waste governance therefore derives constitutional legitimacy from these expanded interpretations, which impose obligations upon the State and public authorities.

Article 21 of the Indian Constitution has been judicially construed to include the right to a clean and healthy environment.⁷ The Supreme Court of India has consistently held that environmental degradation and unscientific waste management are direct violations of this basic right⁸. Judicial pronouncements have linked deficiencies in municipal sanitation and waste management directly to constitutional violations. This judicial interpretation places a positive obligation on the State and its authorities to ensure the effective enforcement of environmental laws.

Article 48A of the Indian Constitution directs the State to protect and improve the environment.⁹ Although not justiciable, this provision has been highly influential in informing legislative and administrative action on waste management. The Courts have relied on Article

⁷ *Subhash Kumar v State of Bihar* (1991) 1 SCC 598 (SC) 605.

⁸ *MC Mehta v Union of India* (1987) 4 SCC 162 (SC).

⁹ *Constitution of India 1950*, art 48A.

48A to reinforce the statutory obligation under environmental laws¹⁰, especially in circumstances where administrative authorities have defaulted in their obligations. In the context of Delhi and Mumbai, Article 48A reinforces the expectation of coordinated action among state authorities and municipal bodies.

Article 51 A (g) of the Indian Constitution imposes a fundamental duty on citizens to protect and improve the natural environment.¹¹ Judicial interpretation of this provision has supported the regulatory framework that places obligations on individuals, businesses, and plastic product manufacturers. Although primarily directed at citizens, the provision has supported stricter enforcement of segregation and plastic regulation norms in urban areas.

The Seventh Schedule of the Constitution allocates legislative competence between the Union and the States, shaping the governance architecture of waste management.¹² The powers of municipalities in relation to sanitation and waste management are classified under the State List and are implemented by municipal legislation. Pollution control and environmental regulation are exercised by state governments under central environmental laws. This constitutional sharing of authority meant that jurisdictions of municipal corporations and pollution control boards in metropolitan areas overlapped.

The National Green Tribunal has passed various orders regarding management of plastic waste in Delhi and Mumbai¹³, indicating absence of coordination between municipal corporations and Pollution Control Boards. Such orders have frequently pointed to absence of clear accountability and absence of clear authority to organise efforts. The decisions of Delhi High Court and Bombay High Court have determined cases of waste segregation, plastic ban, municipal compliance which display administrative lapses and enforcement delay.¹⁴

Consequently, constitutional framework offers powerful normative base for plastic waste management in Delhi and Mumbai. Nevertheless, continued lack of enforcement suggests that constitutional requirements will not suffice without well-defined statutory responsiveness and efficient coordination of institutions.

¹⁰ *MC Mehta v Kamal Nath* (1997) 1 SCC 388 (SC)

¹¹ *Constitution of India 1950, art 51A(g)*.

¹² *Constitution of India 1950, sch 7, list II, entry 6*.

¹³ *Almitra H Patel v Union of India*, Original Application No 199 of 2014 (NGT, Principal Bench).

¹⁴ *Court on its Own Motion v Government of NCT of Delhi* (2013) 200 DLT 365 (Delhi HC); *CREDAI v Vanashakti* (2025 INSC 1326) (Bombay HC).

Institutional Fragmentation and Overlapping Jurisdiction

Plastic waste management law requires proper implementation which is based on statutory duties that are well defined and accountability features that are enforceable. Plastic waste management systems in Delhi and Mumbai have a complicated institutional structure featuring several agencies overlapping in their duties.

- **Institutional Fragmentation in Delhi**

Municipal Corporation of Delhi has overall duty of collecting, segregating, disposing municipal solid wastes in Delhi in accordance with Municipal Laws and delegated environmental rules. The Delhi Pollution Control Committee has regulatory authority under environmental laws, such as authority to issue authorisations, regulate compliance, commence enforcement actions.¹⁵ With its urban development and environment departments, the Government of National Capital Territory of Delhi has policy and administrative supervisory jurisdiction.

These functions are defined in regulatory instruments, but their operation has been overlapping significantly. The municipal authorities are ones who implement it on ground level but lack authority to enforce environmental violations independently.¹⁶ The control of waste management in daily operations of Delhi Pollution Control Committee lies with authorities that can and must regulate and act on non-compliance but don't control daily operations. Such a separation of authority over operations and regulations has created massive enforcement lag, as each of 2 organisations has found itself accusing the other of collapse of implementation in its respective area. Courts documents reveal that instances of non-observance of plastic waste management regulations are usually addressed interdepartmentally instead of by taking effective action.

The intervention of State Governments creates another level of policy/financial management, which further dilutes accountability. Policy and financial allocations affect the ability of the municipal body, while regulatory control remains with the pollution control committee. This multi-level governance has historically resulted in

¹⁵ *Plastic Waste Management Rules 2016*, r 13.

¹⁶ *Environment (Protection) Act 1986*, s 5.

diffused responsibility, making it difficult to assign blame for the failure of plastic waste management in the city.

- **Institutional Fragmentation in Mumbai**

The Brihanmumbai Municipal Corporation exercises consolidated operational control over waste collection, transportation, processing, and disposal infrastructure.¹⁷ This integrated operational model is often cited as administratively cohesive. However, enforcement of regulatory control lies with the Maharashtra Pollution Control Board, which is mandated to monitor compliance with environmental norms under federal law.¹⁸

The Urban Development Department of the Government of Maharashtra is a crucial determinant of municipal policy for large-scale waste management schemes. While the municipal corporation is mandated to adhere to regulatory norms set by the pollution control board, enforcement action against the municipal corporation has traditionally been limited. Enforcement action has often been driven by judicial review or public interest litigation rather than regular monitoring of compliance.

This arrangement has created imbalance of accountability. The municipal corporation is in control of infrastructure operationally, whereas pollution control board is in control of enforcement without operational control. The regulatory gaps in Mumbai are identified but not effectively dealt with in time because of operational restrictions.

Municipal activity, regulatory rule-making, and state-level control of policy reinforce each other to undermine consistent enforcement in both cities. A lack of an effectively defined body with a final responsibility has allowed noncompliance to persist despite existence of well-defined legal norms. This structural deficit is common in judicial intervention by constitutional courts and National Green Tribunal, where regular instructions have been given to various authorities. Institutional fragmentation between 2 cities of Delhi and Mumbai, supports argument that overlapping of statutory mandates undermines efficiency in enforcement.

¹⁷ *Mumbai Municipal Corporation Act 1888*, ss 61 and 63.

¹⁸ *Water (Prevention and Control of Pollution) Act 1974*, s 17.

Enforcement deficits and Regulatory Gaps

Plastic waste management legislation effectiveness relies not only on correctness of legal provisions but equally on power of enforcement systems and level of compliance with regulations. In Delhi and Mumbai, there has been a high level of implementation restriction due to weak enforcement despite the formal comprehensive legal framework.

a. Weak Penalties and Limited Deterrence

Even though Plastic Waste Management Rules include requirement of authorisation and compliance, character of enforcement was frequently restricted to notification, warnings or fines that do not have a significant deterrent impact.¹⁹²⁰ The municipal authorities, entrusted with the responsibility of detecting violations on the ground, have often lacked the authority or capacity to enforce penalties.²¹ The pollution control authorities, though authorised to enforce penalties, have less often resorted to coercive measures against municipal authorities or large-scale commercial organisations.²² Section 5 of the Environmental (Protection) Act empowers authorities to issue binding directions, yet such powers are sparingly invoked in cases of municipal noncompliance.²³

The judicial proceedings before the National Green Tribunal show that there have been concerns about noncompliance and delayed enforcement, with the tribunal often directing the authorities to improve penalty mechanisms²⁴. However, in the absence of follow-through action by the administration, these directions have not always led to better compliance on the ground.

b. Exclusion of the Informal Waste Sector

In Delhi and Mumbai, the informal plastic waste collectors play a pivotal role in the collection and recycling of plastic waste. Despite their importance, the existing legal framework does not adequately incorporate the informal sector into the waste

¹⁹ *Plastic Waste Management Rules 2016*, rr 6, 9 and 13.

²⁰ *Almitra H Patel v Union of India*, OA No 199 of 2014 (NGT).

²¹ *Plastic Waste Management Rules 2016*, r 6.

²² *Environment (Protection) Act 1986*, s 5; *Water (Prevention and Control of Pollution) Act 1974*, s 33A.

²³ *Environment (Protection) Act 1986*, s 5.

²⁴ *Almitra H Patel v Union of India*, OA No 199 of 2014 (NGT, 22 December 2016).

management framework of the concerned municipalities.²⁵ Authorisation, reporting, and compliance mechanisms are primarily structured around formal entities, leaving informal actors marginalised within the regulatory framework.

This creates a situation with both legal and practical implications. The concerned municipal authorities largely rely on the informal sector without providing them with legal recognition and support, while the pollution control boards are largely focused on formal organisations.²⁶ As a result, a large part of plastic waste management remains outside the regulatory framework, thus contributing to a lack of overall compliance with the Plastic Waste Management Rules.

c. Inconsistent Implementation of Plastic Waste Management Rules

Inconsistencies in the enforcement of the Plastic Waste Management Rules are an additional enforcement gap in both, Delhi and Mumbai. While the legislative requirements for segregations, collection, and processing are well defined, the enforcement of these requirements has shown inconsistencies in terms of the municipal areas and time periods. In Delhi, the lack of consistency in the enforcement of the rules by the different municipal divisions has led to inconsistent levels of enforcement and monitoring. In Mumbai, the level of enforcement has varied depending on the changing policy agendas and judicial orders rather than any consistent regulatory monitoring.

This situation is directly related to the fragmentation of the institutional framework. While the municipal bodies have shown a tendency to treat the regulatory requirements as advisory rather than mandatory, the Pollution Control Boards have relied on inspection and reporting systems that are not continuously monitored. This gave rise to partial enforcement, selective enforcement, delayed action.

Combination of inefficient penalties, lack of informal sector, gaps in implementation of rules has resulted in a regulatory environment wherein plastic waste management rules are not followed in Delhi and Mumbai. These gaps in enforcement support argument that disaggregation of statutory duties and regulatory loopholes have also

²⁵ *Plastic Waste Management Rules 2016*, r 6(3).

²⁶ Central Pollution Control Board, *Annual Report on Implementation of Plastic Waste Management Rules 2021–22* (CPCB 2023).

played a major role in the breakdown of the plastic waste management system.

Judicial Intervention and Administrative Inaction

In Delhi and Mumbai, judicial intervention has become a defining aspect of plastic waste management regulation, which is mainly response to administrative indifference and insubordination.²⁷ Courts and tribunals have taken a more continuous supervisory role, issuing compliance directions, making periodic reporting to municipal and regulatory authorities.²⁸ This reflects power of environmental jurisprudence and also powerlessness of administrative enforcement mechanisms.

National Green Tribunal, Supreme Court of India, Bombay and Delhi High Courts have constantly interfered in matters of plastic waste management. The court orders have spanned issues of source segregation, plastic ban implementation, approval of waste processing plants, city authority responsibility. In many cases, the judiciary has issued time-bound directives, formed monitoring committees, and asked for periodic compliance reports from multiple authorities.²⁹

This trend of judicial engagement has placed the judiciary in the role of de facto regulators. Rather than being limited to dispute resolution, judicial bodies have taken a role in monitoring the implementation of policies and administrative performance. This has been crucial in forcing the authorities to take action when statutory obligations were defaulted on. The directives of the National Green Tribunal on plastic waste in Delhi and Mumbai have often highlighted the lack of coordination between municipal corporations and pollution control boards.

However, the over-reliance on judicial intervention is also a pointer to a governance deficit. The judiciary has repeatedly noted that the directions issued in earlier cases had not been followed or had been followed only partially.

The judiciary does not have the capability to monitor waste management systems or design administrative solutions. The judicial response is necessarily reactive, focusing on individual cases of noncompliance rather than systemic problems. Moreover, the efficacy of judicial

²⁷ *Almitra H Patel v Union of India*, OA No 199 of 2014 (NGT).

²⁸ *MC Mehta v Union of India* (1987) 1 SCC 395 (SC).

²⁹ *Almitra H Patel v Union of India* (NGT 2016); *Municipal Council, Ratlam v Vardhichand* (1980) 4 SCC 162 (SC).

intervention is necessarily dependent on the administrative will to implement judicial directives.

The excessive reliance on judicial intervention is also cause of concern regarding separation of powers and democratic accountability. Courts can't substitute good municipal government or administration; they can only interpret and enforce the law. In Delhi and Mumbai, judicial intrusions have tended to underscore the failures of statutory institutions, but have not caused long-term institutional re-inventive or a decisive redistribution of roles.

The example of plastic waste governance in cities of Delhi and Mumbai shows that judicial control, though it can achieve intermittent compliance, fails to address structural fragmentation of statutory enforcement frameworks.

Comparative Analysis of Plastic Waste Management in Delhi and Mumbai

When comparing management of plastic waste in Delhi and Mumbai, it is evident that although both areas share similar legal framework, variation in governance agreements and patterns of implementation leads to different regulatory outcomes. The comparative evidence indicates that institutional design, as opposed to statutory content, is determinant of outcome of implementation.

a. Governance Model

Delhi is governed in decentralised municipal system that entails various corporations and administrative departments at state level. This decentralised system has undermined operational accountability and organisational liaison with relevant regulatory bodies.

In contrast, Mumbai displays relatively centralised model, of municipal governance, in which Brihanmumbai Municipal Corporation has assimilated control of plastic waste management infrastructure and activities. Although centralisation has facilitated continuity in operations in Mumbai, it has not eliminated accountability gaps since operational and regulatory roles are not functionally related.

This demonstrates that neither decentralised nor centralised form of governance can ensure effective management of plastic waste without statutorily articulated

accountability. The governance structures lack strong integration of regulations.

b. Enforcement Mechanisms

The implementation effort in Delhi is usually characterised by delays due to lack of understanding between the municipal government and the enforcement agencies.

Mumbai has procedurally designed implementation with selective application, particularly within topics related to municipal infrastructure or big business issues.

This indicates that capacity is not as limiting to the effectiveness of enforcement as the absence of a desire to exercise coercive powers.

c. Role of State Pollution Control Boards

Delhi Pollution Control Committee and Maharashtra Pollution Control Board are formally similar in their enforcement but they can be contrasted in their operational methods.

In Delhi, pollution control authority plays a more or less supervisory role and has a slight capacity to enforce municipal procedures.

Pollution control board in Mumbai undertakes more frequent checks on compliance, but has limited enforcement powers, especially against the municipal corporation.

In both cities, enforcement agencies are weakened by institutional weakness of Municipal Corporation, thereby undermining performance of pollution control boards as independent enforcement agencies.

d. Judicial Intervention Frequency

There is increased non-compliance and fragmentation of governance in Delhi, which is shown by more frequent and continuous judicial intervention. NGT and Delhi High court proceedings indicate that judiciary was seen to be recycling such cases and that it is not learning its lessons administratively.

Judicial interventions in city have been rather intermittent in Mumbai, typically

occasioned by particular policy interventions such as banning plastic bags or infrastructure projects.

Nevertheless, decrease in litigation rate has not invariably resulted in improved levels of compliance, while administrative enforcement remains inconsistent.

e. Plastic Ban Enforcement Outcomes

Delhi has moderate level of enforcement in terms of municipal jurisdictions, monitoring inconsistency, use of deterrent punishments.

The initial phases of enforcement in Mumbai were more transparent and did not have effective monitoring, which resulted in deterioration of enforcement over years.

The findings suggest that plastic ban without proper enforcement and accountability are rather symbolic regulation rather than specific mechanism of environmental regulation.

Findings of comparative analysis are that distinction between Delhi and Mumbai governance structure has not resulted in such distinct results in terms of enforcement. Inability to coordinate disparate nature of statutory powers and absence of effective regulation of plastic waste handling in both cities have been hindrance to proper implementation of plastic waste handling regulation. This observation supports main hypothesis that regulatory effectiveness depends on institutional accountability structures, but not statutory sufficiency.

Hypothesis

The fragmentation of statutory responsibilities between municipal corporations and pollution control authorities appears to undermine the effective implementation of plastic waste management laws in Delhi and Mumbai by creating overlapping jurisdiction, enforcement ambiguity, and weakened regulatory accountability.

Findings

Statutory analysis, judicial ruling, official compliance documentation show that there is one general argument that agrees with the central hypothesis.

Judicial proceedings in Delhi and Mumbai consistently identify coordination failures between municipal corporations and pollution control authorities. Orders passed by the National Green

Tribunal on plastic waste management have regularly recorded noncompliance with legal requirements and directed different authorities to coordinate their actions.³⁰ The regular issuance of such orders over a period of time indicates that the judiciary's earlier efforts had not resulted in administrative compliance on a long-term basis, thus indicating systemic weaknesses in enforcement.

Judgements of the Delhi High Court and the Bombay High Court further indicate that municipal authorities have regularly pleaded that the failure to implement was due to the regulatory authority, while the latter has cited operational constraints and a lack of direct control over municipal activities.

Official reports and compliance audits from municipal corporations and Pollution Control Boards reflect uneven enforcement of the Plastic Waste Management Rules. In Delhi, compliance reports show variability in the segregation process and enforcement in the municipal divisions. In Mumbai, observations in the audit reports highlight the mismatch between policy guidelines and actual enforcement, especially with respect to monitoring and penalty imposition. Collectively, these reports provide evidence for the argument that the statutory obligations are not enforced in a uniform manner because of the lack of clarity in accountability.

Monitoring reports filed with the National Green Tribunal show that there is a continued reliance on judicial intervention to ensure even minimal compliance with plastic waste management regulations. The necessity to submit periodic status reports and to adhere to court-ordered timelines is a sign of insufficiency of administrative capacity to implement legal requirements on its own.

The joint set of findings suggests that disjointed statutory requirements have led to overlapping jurisdiction, stunted enforcement and reduced accountability in Delhi and Mumbai. The results indicate that effectiveness of plastic waste management laws has not been compromised by absence of regulations but by institutional and regulatory fragmentation.

Conclusion

This paper has discussed whether statutory division of duty between the municipal corporations

³⁰ *Almitra H Patel v Union of India*, OA No 199 of 2014 (NGT).

and pollution control boards undermines enforcement of plastic waste management laws in Delhi and Mumbai. Based on statutory analysis, court rulings, official administrative reports, research assumption is proved.

The assignment of municipal corporations, pollution control boards and state governments has resulted in overlapping roles and vague enforcement priorities in 2 cities. This institution contributes to weakening of regulatory responsibility, inhibits perfection of enforcement system according to Plastic Waste Management Rules. Although there is elaborate regulatory framework, enforcement has been inconsistent and has generally relied on judicial adjudication.

The judicial rulings of Supreme Court, National Green Tribunal, High Courts of Delhi and Bombay have continuously cited administrative laziness, inadequacy in coordination and continued lack of obedience by statutory authorities. Irregularities in enforcement and deterrent absence are also found in official reports and compliance audits, hence, hypothesis that legal framework inadequacies are not the key cause of regulatory failure is supported. Rather, it is indicated that fragmentation of statutory responsibility and institutional coordination are major factors that hinder successful management of plastic waste in two cities.

Compliance is not likely to be proactive and administratively entrenched, and until statutory accountability and enforcement authority are intelligible and coherent in current legal system, it is probably to be reactive and judicial in character. Accountability mechanisms can thus be reformed structurally to promote sustained and independent enforcement of regulations in two cities.

Recommendations

1. Statutory Clarification of Accountability Allocation

Plastic Waste Management Rules and various other related municipal legislation must be adjusted to clearly define the operational and enforcement roles between municipal corporations and pollution control authorities. Rules must spell out enforcement mechanism, monitoring, liability against noncompliance at municipal level. Sharing of responsibilities would do away with confusion and tendency to shift the buck to non-enforcement.

2. Strengthening Enforcement Powers of Pollution Control Boards

Stronger and explicit enforcement powers should be given to pollution control authorities of Delhi and Mumbai in regard to municipal compliance. This would eliminate institutional reliance on judicial intervention and further reestablish position of pollution control boards as distinct enforcement agencies and not advisory bodies. Proportional penalties and enforceable compliance directives that are provided by law would reinforce deterrence.

3. Mandatory Inter-Agency Coordination Mechanisms

Mandatory coordination systems among municipal corporations, pollution control boards, concerned state ministries should be established to curb problem of fragmented governance. Regulatory or mandatory requirements must be crafted in such a way as to assure joint reviews, information sharing, joint enforcement plans. This would assist in maintaining uniformity in implementation and prevent duplication of regulatory functions. With Delhi and Mumbai, coordination mechanisms would make sure that there is no division between the working and operational bodies and regulatory bodies, instead of different entities.

4. Institutionalisation of Compliance Monitoring and Reporting

The institutionalisation of compliance monitoring activities must be achieved by enforcing reporting requirements. The pollution control board should also force municipal corporations to provide compliance reports to pollution control board, which must provide performance indicators on plastic waste management. Review of reports must be done separately and action must be taken on result of the review. Monitoring activities would be institutionalised so that administrative enforcement would change to litigation.