

ENVIRONMENTAL ENFORCEMENT IN MALAYSIA: LOCAL GOVERNMENT APPROACHES TO CONCILIATION, CONFRONTATION AND SUSTAINABILITY

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Abstract. Environmental enforcement by Malaysian local authorities plays a vital role in achieving sustainable environmental governance under the Local Government Act 1976 (Act 171). However, inconsistent enforcement practices, limited institutional capacity, inadequate financial resources, and personnel shortages continue to weaken regulatory effectiveness. This study systematically synthesises existing literature on environmental enforcement under Act 171 by examining confrontation and conciliation approaches alongside the Prevention Principle, Polluter Pays Principle, and Precautionary Principle. A Systematic Literature Review (SLR) was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Relevant studies published between 1990 and 2024 were identified through Scopus, Web of Science, ScienceDirect, and Google Scholar. Peer-reviewed articles, legal documents, government reports, and selected grey literature were screened using predefined inclusion and exclusion criteria and analysed through qualitative thematic analysis. The findings indicate that although Act 171 provides a comprehensive legal framework, implementation is constrained by institutional weaknesses, inconsistent enforcement, and limited enforcement capacity. The review demonstrates that confrontation and conciliation strategies should be applied complementarily, while the Prevention, Polluter Pays, and Precautionary Principles collectively strengthen sustainable environmental governance. This review provides practical recommendations for improving environmental enforcement, institutional capacity, and policy implementation among Malaysian local authorities.

Keywords: *Local Government Act 1976 (Act 171), environmental enforcement, systematic literature review, conciliation approach, confrontation approach, sustainable environmental governance*

Introduction

Local government in Malaysia receives relatively limited scholarly attention despite playing a central role in environmental governance. As the third tier of government, local authorities (Pihak Berkuasa Tempatan, PBT) are responsible for waste management, drainage maintenance, pollution control, and environmental enforcement. Local government as the most important administrative institution at the local level, yet implementation gaps remains evident. Rasli et al. (2018) and Jahi (1993) consistently reported weaknesses in environmental enforcement, indicating a persistent gap between the legal powers granted under Act 171 and their practical implementation. Rapid urbanisation, industrialisation, and population growth have further increased environmental pressures, while the institutional capacity of local authorities has not expanded at the same pace. These institutional challenges have intensified the need to balance confrontation and conciliation enforcement strategies. Confrontation relies on legal sanctions and prosecution, whereas conciliation promotes negotiation, administrative discretion, and voluntary compliance. Potoski and Prakash (2004) argued

that effective environmental governance requires an appropriate combination of both approaches, supported by the Prevention Principle, the Polluter Pays Principle, and the Precautionary Principle established under the Rio Declaration (1992), and reflected in Act 171. Ariffin (2019) further reported declining environmental prosecutions in Malaysia, suggesting a greater reliance on conciliatory enforcement due to institutional constraints. Accordingly, this review addresses the existing research gap by examining how these enforcement approaches and environmental principles interact to strengthen sustainable environmental governance within Malaysian local authorities.

Literature review

Malaysia manages its environment through legal instruments, including statutes and by-laws, and non-legal mechanisms such as environmental education, public awareness, voluntary programmes, and institutional coordination. Sustainable environmental governance requires both approaches because legal enforcement alone is insufficient. However, Malaysia's governance framework remains fragmented, with local authorities (PBT) exercising responsibilities under Act 127, Act 171, Act 172, Act 133, and Act 672. Halim and Hassan (2016) and Razman et al. (2010) noted that these overlapping laws create jurisdictional uncertainty and weaken inter-agency coordination. Despite these legal powers, PBTs continue to face funding shortages, limited human resources, and political pressures that constrain enforcement (Rasli et al., 2018; Jahi, 1993). Consequently, many local authorities rely more on negotiated compliance than prosecution because conciliatory measures require fewer financial and administrative resources. Confrontation and conciliation represent the two principal enforcement approaches under Act 171. Confrontation relies on legal sanctions, including warnings, fines, compound notices, civil actions, and criminal prosecution under Sections 69, 70, and 147–151, and is supported by deterrence theory (Raff and Earnhart, 2018; Humphreys, 1994). In Malaysia, Ariffin (2019) reported declining environmental prosecutions, while Pidgorodynska (2022) argued that confrontation is most effective against deliberate violations. Conversely, conciliation emphasises administrative discretion and negotiated compliance under Sections 63 and 72 of Act 171. Vasudevan et al. (2024); Earnhart and Glicksman (2015); Brunne (2006); Potoski and Prakash (2004); Levy et al. (1996) concluded that cooperative enforcement, supported by continuous monitoring and stakeholder collaboration, generally achieves more sustainable compliance outcomes.

The implementation of Act 171 is guided by three internationally recognised environmental law principles: the Prevention Principle, the Polluter Pays Principle (PPP), and the Precautionary Principle. The Prevention Principle promotes preventive action before environmental harm occurs and is reflected in Sections 63, 72, 76, and 81 of Act 171 (Mahmud, 2021; Sioutis, 2010). The PPP is operationalised through Sections 69–71 by imposing fines and enabling the recovery of remediation costs from polluters (Tiwari, 2022; Sadeleer, 2020; Ramlogan, 2010). The Precautionary Principle, reflected in Section 102, empowers local authorities to regulate emerging environmental risks despite scientific uncertainty, allowing proactive intervention before irreversible harm occurs (Proelss, 2016). Since the adoption of Agenda 21 at the Rio Conference in 1992, local governments have been recognised as key actors in advancing sustainable development by integrating environmental, social, and economic priorities at the community level. Nevertheless, funding shortages, limited regulatory capacity, and political pressures continue to constrain local authorities in fulfilling this role (Patterson

and Theobald, 1999; Gibbs et al., 1996). Similar challenges exist in Malaysia, where Johar (2003) found that environmental objectives were not consistently incorporated into local planning, while Mishyna (2025) identified regulatory, financial, and administrative barriers to effective environmental governance. Therefore, Halimi and Rahman (2021) recommended aligning local environmental governance with SDG 11 (Sustainable Cities and Communities) and SDG 16 (Peace, Justice and Strong Institutions), highlighting the importance of balancing confrontation and conciliation under Act 171 to achieve sustainable environmental governance.

Materials and Methods

This study employed a Systematic Literature Review (SLR) guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework to ensure a transparent, systematic, and replicable synthesis of evidence on environmental enforcement approaches and legislative principles. Literature was retrieved from four databases: Scopus, Web of Science, ScienceDirect, and Google Scholar, covering peer-reviewed articles, theses, government documents, legal texts, and relevant grey literature. Studies were selected based on predefined inclusion and exclusion criteria encompassing literature type, publication period (1990–2024, with earlier seminal works included where conceptually relevant), language (English and Malay), and relevance to environmental enforcement approaches, Malaysian environmental legislation (particularly Act 171, Act 127, and Act 172), or the Prevention, Polluter Pays, and Precautionary Principles. Studies focusing exclusively on non-Malaysian contexts without transferable relevance, as well as conference abstracts, book series, and opinion-based publications lacking empirical or legal evidence, were excluded. The detailed inclusion and exclusion criteria are presented in *Table 1*, while the database search strings are summarised in *Table 2*. *Figure 1* illustrates the PRISMA 2020 flow diagram used to guide the systematic literature review process. Literature was identified through searches of Scopus, Web of Science, ScienceDirect, and Google Scholar, supplemented by relevant government documents, legal texts, and grey literature. Following the removal of duplicate records, the remaining studies were screened based on their titles and abstracts using the predefined inclusion and exclusion criteria. Full-text articles that met the screening criteria were subsequently assessed for eligibility, while studies lacking relevance to environmental enforcement, Malaysian local government legislation, or the Prevention, Polluter Pays, and Precautionary Principles were excluded. The review process resulted in the inclusion of 37 studies for qualitative thematic synthesis, ensuring a transparent, systematic, and reproducible selection process consistent with the PRISMA 2020 reporting guidelines.

Table 1. *The inclusion and exclusion criteria.*

Criteria	Inclusion	Exclusion
Literature type	Journal articles (research articles and review articles), theses, government documents, and legal texts	Book series, poster presentations, conference abstracts, and opinion pieces without empirical or legal basis
Publication timeline	1990–2024 (with exceptions for seminal pre-1990 foundational works on environmental law principles)	Before 1990 (except foundational/seminal works directly relevant to core environmental principles)
Language	English and Malay (Bahasa Malaysia)	Non-English and Non-Malay languages
Nature of the study	Focuses on environmental enforcement approaches (conciliation and/or confrontation) in local government administration, AND/OR focuses on environmental legislation in Malaysia (particularly Act 171, Act 127, Act	Does not focus on environmental enforcement, local government environmental management, or the three core environmental principles in the relevant governance context

Geographic scope	172), AND/OR discusses the Polluter Pays Principle, Prevention Principle, or Precautionary Principle in environmental governance contexts Malaysia (primary focus), with international comparative studies included where relevant to enforcement approach principles	Studies exclusively addressing non-Malaysian contexts with no transferable relevance to Malaysian local government
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Table 2. The search strings used for the systematic review process.

Database	Keywords Used
Scopus & Web of Science (Search String 1 Environmental Enforcement & Local Government)	TITLE-ABS-KEY (("environmental enforcement" OR "environmental law enforcement" OR "environmental compliance" OR "environmental regulation" OR "environmental governance") AND ("local government" OR "local authority" OR "pihak berkuasa tempatan" OR "PBT" OR "municipal council" OR "district council") AND ("Malaysia" OR "Malaysian"))
Scopus & Web of Science (Search String 2 Enforcement Approaches: Conciliation & Confrontation)	TITLE-ABS-KEY (("conciliation approach" OR "cooperative enforcement" OR "confrontation approach" OR "coercive enforcement" OR "deterrence enforcement" OR "negotiated compliance" OR "voluntary compliance") AND ("environmental" OR "pollution" OR "environmental law" OR "environmental management"))
Scopus & Web of Science (Search String 3 Environmental Principles)	TITLE-ABS-KEY (("polluter pays principle" OR "precautionary principle" OR "prevention principle" OR "PPP" OR "sustainable development principle") AND ("environmental enforcement" OR "environmental law" OR "local government" OR "environmental governance"))
Google Scholar (Search String 1 Local Government & Act 171)	allintitle: ("local government" OR "pihak berkuasa tempatan" OR "Act 171" OR "Local Government Act 1976") AND ("environmental enforcement" OR "environmental management" OR "environmental law" OR "sustainability")
Google Scholar (Search String 2 Enforcement Approaches)	allintitle: ("conciliation" OR "confrontation" OR "cooperative enforcement" OR "coercive enforcement" OR "polluter pays" OR "precautionary principle") AND ("environmental" OR "local authority" OR "Malaysia")

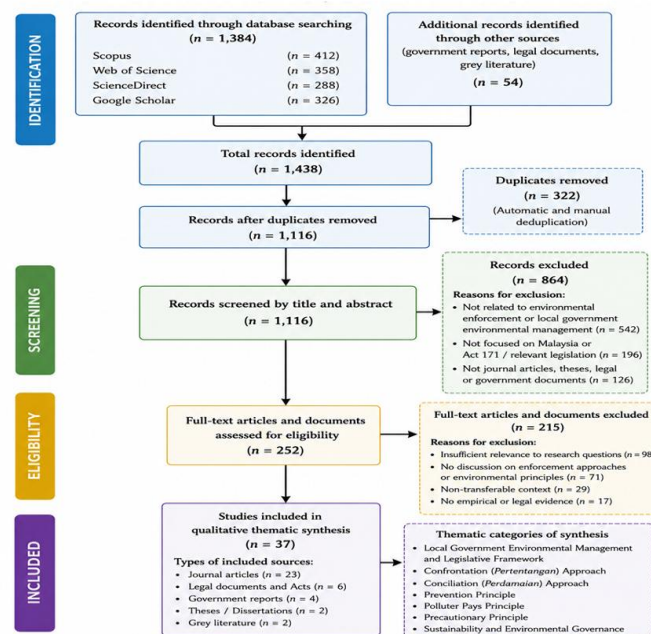


Figure 1. PRISMA flow diagram for systematic review process.

Results and Discussion

Local government environmental management and legislative framework

Act 171 gives local authorities powers across 16 parts: administration, finance, public health, licensing, planning, enforcement. It is, on paper, a comprehensive toolkit.

In practice, it is only as useful as the institutional capacity behind it. Jahi (1993) found local authorities in Peninsular Malaysia spending less than 10% of annual income on environmental functions. That was not enough then, and the structural picture has not dramatically improved. Rasli et al. (2018) confirmed that human resource and IT capacity deficits remain the most critical constraints on enforcement effectiveness in Malaysian local government. The practical consequence of this is important: when a local authority lacks the budget and staff to pursue prosecutions, it does not genuinely choose between conciliation and confrontation. It defaults to conciliation because that is what it can afford to do. The observed dominance of conciliation in Malaysian enforcement may therefore reflect resource constraint more than principled governance strategy.

The confrontation (pertentangan) approach

Document analysis of Act 171 organised confrontation enforcement around two primary themes authority and order with sub-themes including formal declarations, compound issuance, confiscation, sanctions, fines, punishment, and civil and criminal legal action. The legal framework is genuinely comprehensive: Part 9 (Sections 69 to 71) for stream pollution; Part 8 (Sections 63 to 82) for public health enforcement and nuisance abatement; Sections 147 to 151 for compound and civil action. The deterrence rationale is theoretically sound but empirically conditional. Raff and Earnhart (2018) showed that confrontation tools only retain their deterrent effect within a predominantly confrontational regulatory culture. Once the surrounding system becomes cooperative, the deterrent signal from individual enforcement actions weakens. In Malaysia, Ariffin (2019) documented declining prosecution rates and argued that Act 171's confrontation mechanisms are currently underutilised relative to what the law allows. Pidgorodynska (2022) added an important calibration point: confrontational compliance mechanisms produce the best results when directed at deliberate, knowing violations, not at parties whose non-compliance reflects incapacity rather than bad faith.

The conciliation (perdamaian) approach

Conciliation enforcement in Malaysian local government is organised around two main themes identified through document analysis: compromise (berkompromi) and collaborative relationships (hubungan berkolaborasi). The six practical sub-themes are discretion (budi bicara), consent (kebenaran), negotiation (rundingan), consideration (pertimbangan), openness (terbuka), and injunction (injunksi). Act 171's Sections 63 and 72, alongside broader discretionary authority provisions, provide the legal basis. Potoski and Prakash (2004) established the theoretical foundation: cooperative enforcement produces optimal outcomes when both regulator and regulated party engage honestly. Levy et al. (1996) showed empirically in a river basin context that negotiated compliance produces more durable environmental improvements than adversarial action. Vasudevan et al. (2024) confirmed this in Malaysia directly: enforcement paired with community awareness and NGO collaboration produced more sustained compliance improvements than enforcement alone. Earnhart and Glicksman (2015) added a necessary condition: the compliance benefits of cooperative enforcement depend on continued regulatory monitoring. Without it, cooperation eventually slides toward regulatory capture.

The prevention principle

Sections 63, 72, 76, and 81 of Act 171 collectively enable local authorities to take proactive enforcement action before environmental harm fully develops. The logic is to catch problems early through notices and negotiated compliance timelines rather than respond to damage after it has occurred. When preventive notices are ignored, Section 81 provides the escalation path to confrontation. Sioutis (2010) observed that the Prevention Principle requires intervention at an early stage: the best environmental policy prevents pollution rather than managing its consequences. Mahmud (2021) argued that Act 171's prevention-oriented provisions need stronger operational integration: tighter standards, more systematic inspection programmes, and clearer enforcement timelines. The Prevention Principle bridges the two enforcement approaches conciliation first, confrontation if necessary.

The polluter pays principle

Sections 69 to 71 of Act 171 operationalise the PPP: graduated fines for pollution, and the Section 71 mechanism allowing local authorities to certify remediation costs as an enforceable debt. The principle is structurally confrontational. It assigns financial liability after a violation, identifies the responsible party, and provides a recovery mechanism. The mechanism only works if it is actually used. Ramlogan (2010) argued that the PPP is essential for preventing the externalisation of environmental costs, but that it requires credible, consistent enforcement to function. Sadeleer (2020) made the interdependence explicit: the PPP financially underwrites prevention-oriented enforcement; without PPP cost recovery, preventive enforcement becomes financially unsustainable over time. Tiwari (2022) found in the Indian context that PPP implementation faces persistent practical difficulties in quantifying diffuse pollution damage and recovering costs from multiple sources a challenge directly applicable to the Malaysian local government context.

The precautionary principle

Section 102 of Act 171 is the legislative expression of the Precautionary Principle in Malaysian local government. It grants every local authority a general by-law making power to regulate whatever is necessary or desirable to preserve resident health, safety, and well-being. The deliberately broad framing lets councils act in advance of demonstrated harm, regulating on the basis of anticipated risk rather than confirmed violation. Proelss (2016) noted that in EU law the Precautionary Principle functions by granting institutions broad discretion when scientific certainty is incomplete, and Section 102 operates the same way. In operational terms, precautionary enforcement mostly looks like conciliation: advisory notices, environmental monitoring programmes, by-laws developed through consultative processes. When precautionary risk thresholds are clearly breached, the principle supports a shift to confrontation. The function of Section 102 is to make proactive governance legally defensible before a formal violation has occurred.

Sustainability and environmental governance

Enforcement approach selection has direct sustainability implications across three dimensions: environmental (ecological quality and pollution control), social

(community health, well-being, and trust in governance), and economic (prevention of environmental cost externalisation and fair allocation of compliance burdens). Malaysian local authorities sit at the intersection of all three simultaneously. Gibbs et al. (1996) identified local governments as key sustainability integration agents but found that capacity constraints and short-term economic pressures regularly prevented this integration in practice. Mishyna (2025) argued that both strong legal frameworks and genuine institutional enforcement capacity are necessary conditions for effective local environmental governance neither alone is sufficient. Halmi and Rahman (2021) recommended aligning Malaysia's environmental governance transformation explicitly with SDG 11 (Sustainable Cities and Communities) and SDG 16 (Peace, Justice and Strong Institutions), both directly implicated by how local authorities choose to enforce environmental rules. The findings indicate that although the Local Government Act 1976 (Act 171) provides a comprehensive legal framework for environmental enforcement, its implementation remains constrained by institutional limitations rather than legislative inadequacies. Malaysian local authorities continue to face shortages of trained personnel, limited financial resources, and insufficient political support, reducing their capacity to implement confrontation-based enforcement consistently. Consequently, conciliation has emerged as the dominant enforcement approach because it is more feasible under existing institutional conditions. This finding is consistent with Rasli et al. (2018) and Jahi (1993) who highlighted persistent resource and capacity constraints affecting local environmental enforcement. Although Section 71 empowers local authorities to recover remediation costs from polluters, smaller and underfunded local authorities may face financial and legal challenges in pursuing such actions. In practice, these councils can collaborate with state legal advisers, the Ministry of Housing and Local Government (KPKT), and relevant enforcement agencies to obtain legal and technical support, share enforcement resources, and reduce implementation costs.

The review further demonstrates that effective environmental governance requires a balanced integration of confrontation and conciliation approaches guided by the Prevention Principle, the Polluter Pays Principle, and the Precautionary Principle. A phased enforcement strategy, beginning with warning notices and negotiated compliance before escalating to cost recovery under Section 71 and prosecution for repeated or serious violations, offers a practical approach for resource-constrained local authorities. This interpretation is consistent with Vasudevan et al. (2024), and Ariffin (2019), Potoski and Prakash (2004), highlighting that stronger institutional capacity and better use of existing legal provisions would improve environmental enforcement without requiring legislative reform.

Conclusion

This review systematically examined the confrontation and conciliation enforcement approaches within the Local Government Act 1976 (Act 171) and their relationship with the Prevention Principle, the Polluter Pays Principle, and the Precautionary Principle in supporting sustainable environmental governance. Although Act 171 provides an adequate legal framework, implementation remains constrained by institutional factors, including limited enforcement capacity, resource constraints, and inconsistent enforcement practices. Strengthening enforcement officer training, providing clearer legislative guidance, and developing practical enforcement guidelines would enhance

the ability of Malaysian local authorities to determine when conciliation or confrontation is the most appropriate regulatory response.

This review contributes to the literature by providing a systematic synthesis of enforcement approaches, legislative principles, and their sustainability implications within the Malaysian local government context. Nevertheless, the review is limited by the relatively small body of Malaysian literature on environmental enforcement under Act 171, its reliance on English- and Malay-language publications, and the inclusion of studies retrieved from four electronic databases using predefined inclusion and exclusion criteria. Consequently, relevant studies published in other languages, indexed in other databases, or excluded by the search criteria may not have been captured. Future studies should expand database coverage, include multilingual literature, and incorporate empirical evidence through case studies of local authorities, interviews with enforcement officers, comparative analyses across local councils, and longitudinal assessments of enforcement outcomes to further validate the proposed framework. Nevertheless, this review is subject to several limitations. The literature search was restricted to publications indexed in Scopus, Web of Science, ScienceDirect, and Google Scholar, and only English- and Malay-language sources were included. Consequently, relevant studies published in other languages or indexed in other databases may not have been captured. Future research should expand database coverage, include multilingual literature, and incorporate empirical evidence through case studies, interviews with enforcement officers, comparative analyses across local authorities, and longitudinal assessments of enforcement outcomes.

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Conflict of interest

The authors confirm that there is no conflict of interest involve with any parties in this research study.

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