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Enforced Environmental Management in Local Public Administration

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Abstract – Environmental and climatic challenges across the world have led to increasing enforcement of regulations at any level, mostly at the local level, and especially in the EU. This study investigates how commune local authorities respond to enforced environmental management measures. By analyzing legal frameworks, local projects, and implementation barriers, the paper demonstrates both successes - such as projects in infrastructure, sewage, water, and separate waste collection - and constraints like administrative capacity and budget limitations. The findings highlight the need for combining enforcement with targeted support to ensure a sustainable local environmental governance.

Keywords: Environmental management, local administration, enforcement, sustainability, water systems, separate waste collection.

I. INTRODUCTION

Environmental management at the local government level has become increasingly important as municipalities face growing environmental challenges and regulatory requirements. This overview examines the concept of "enforced environmental management" in local public administration, synthesizing key themes and findings from academic literature and practical guidance. The focus is on how local governments implement, enforce, and maintain environmental management systems and regulatory compliance.

In the context of growing environmental pressures, all the world is looking for means of waste disposal, but most EU member states emphasize local compliance with directives such as the Water Framework Directive and Waste Framework Directive of the European Council, local administrations in all member states, thus becoming frontline actors responsible for translating these policies into practice.

This article examines how enforced environmental mandates influence administrative and operational practices in the communes of Romania without any refers to big cities in Romania. Environmental management represents a method to maximize well-being and to prevent and minimize possible environmental damage by organizing human activities that affect the environment.

II. ASPECTS RELATED TO THE LITERATURE REVIEW

a. Conceptual Framework

Defining Enforced Environmental Management is a complex approach that must consider the theoretical perspective of the concept and the practical implications [1; 2]. Enforced environmental management in local public administration refers to the systematic approach through which local governments ensure compliance with environmental regulations, standards, and policies through formal enforcement mechanisms. This includes:

1. **Regulatory Enforcement -** The application of legal and administrative tools to ensure compliance with environmental laws and regulations [1];
2. **Environmental Management Systems (EMS)** - Structured frameworks that help local governments systematically address environmental impacts [1; 2];
3. **Compliance-Focused Approaches -** Strategies specifically designed to achieve and maintain regulatory compliance [2];
4. **Accountability Mechanisms -** Systems that hold both the administration and regulated entities responsible for environmental outcomes [2].

Key Components of Enforced Environmental Management are presented in the following [12; 13].

First, and the most important component is the **Regulatory Framework and Governance -** The

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literature identifies effective governance as a critical foundation for environmental management enforcement [12; 13]:

- **Institutional Design -** Research suggests that the structure of local environmental agencies significantly impacts enforcement effectiveness;
- **Regulatory Authority** - Clear delineation of enforcement powers and responsibilities is essential for effective implementation;
- **Policy Integration -** Environmental considerations must be integrated across all policy domains, not isolated in environmental departments;
- **Vertical Coordination -** Alignment between national, regional, and local environmental regulations creates more coherent enforcement.

The second aspect to be considered as a key component is the **Compliance-Focused Environmental Management Systems (CFEMS).** A significant theme in the literature is the development of environmental management systems specifically focused on compliance [12; 13]:

- **Structured Approach -** CFEMS provides a systematic framework for identifying compliance requirements, assessing risks, and implementing controls;
- **Operational Controls -** These systems establish procedures to ensure operations conform with environmental requirements;
- **Documentation and Record-Keeping -** Formalized systems for maintaining evidence of compliance activities;
- **Performance Measurement -** Regular monitoring and reporting mechanisms to track compliance status.

For example, the United States Environmental Protection Agency has developed guidance on CFEMS models that have been used as the basis for EMS requirements in many enforcement settlements.

The third component is the **Enforcement Mechanisms and Tools.** The literature identifies several key enforcement mechanisms employed by local administrations [12; 13]:

- **Inspections and Monitoring** - Regular site visits and environmental monitoring to detect violations;
- **Administrative Orders -** Formal directives requiring specific actions to achieve compliance;
- **Penalties and Sanctions -** Financial and legal consequences for non-compliance;
- **Injunctive Relief** - Court-ordered actions to address environmental violations;
- **Supplemental Environmental Projects -** Environmentally beneficial projects undertaken as part of enforcement settlements.

Research indicates that a balanced approach combining these mechanisms is most effective, with penalties serving as deterrents while compliance assistance promotes positive change.

The fourth component is **Public Participation and Accountability.** A growing body of literature emphasizes the role of public participation in strengthening environmental enforcement [12; 13]:

- **Citizen Complaints -** Research demonstrates that public demands measured by environmental complaints significantly influence environmental governance;
- **Transparency Mechanisms -** Public access to environmental performance data increases accountability;
- **Stakeholder Engagement -** Involving community members in environmental decision-making improves compliance outcomes;
- **Public-Private Partnerships** - Collaborative approaches between government, industry, and civil society enhance enforcement capacity.

b. Challenges in Enforced Environmental Management

The literature identifies several persistent challenges facing local governments in environmental enforcement. In the following we shall describe them briefly, by pointing out key aspects to be considered from the practical implications.

First, the **Institutional and Structural Challenges** are discussed by key aspects as described in the following [12; 13]:

- **Overlapping Authorities** - Jurisdictional confusion between different levels of government and agencies hampers effective enforcement;
- **Resource Constraints** - Limited budgets, staffing, and technical capacity restrict enforcement activities;
- **Political Interference** - Local political pressures may undermine consistent enforcement efforts;
- **Regulatory Fragmentation** - Disconnected environmental regulations create compliance difficulties.

Second aspects to be described are related to the **Implementation Challenges** [12; 13]**:**

- **Lack of Effective Enforcement Tools -** Many local governments lack appropriate mechanisms to ensure compliance;
- **Technical Complexity** - Environmental issues often require specialized expertise that may be unavailable locally;
- **Data Management** - Difficulties in collecting, analyzing, and utilizing environmental compliance data;
- **Balancing Approaches -** Finding the right mix between punitive enforcement and compliance assistance.

The third aspect to be considered and characterized is related to **Best Practices and Effective**

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Approaches. The literature identifies several best practices for enforced environmental management in local public administration [12; 13]:

1. Systematic Management Approaches:

- **Integrated EMS Implementation**: Adopting comprehensive environmental management systems that align with local government operations and needs;
- **Risk-Based Prioritization**: Focusing enforcement resources on highest-risk activities and facilities;
- **Performance Measurement**: Establishing clear metrics to evaluate enforcement effectiveness;
- **Continuous Improvement**: Building feedback mechanisms to refine enforcement strategies based on outcomes;

2. Capacity Building and Resources:

- **Staff Training**: Investing in technical and legal training for enforcement personnel;
- **Technology Utilization**: Leveraging digital tools for monitoring, reporting, and data analysis;
- **Resource Sharing**: Pooling resources across jurisdictions to enhance enforcement capacity;
- **External Partnerships**: Collaborating with academic institutions and NGOs to access specialized expertise.

c. Emerging Trends and Future Directions

Recent literature points to several emerging trends in enforced environmental management [12; 13]:

- **Digital Transformation -** Increasing use of technology for remote monitoring, data analytics, and compliance reporting;
- **Climate Change Integration -** Growing focus on incorporating climate adaptation and mitigation into environmental enforcement frameworks;
- **Collaborative Governance -** Shift toward more participatory approaches involving multiple stakeholders;
- **Outcome-Based Enforcement -** Moving from process-focused to results-oriented enforcement strategies.

d. Preliminary Conclusions Related to the Literature Review

The literature on enforced environmental management in local public administration reveals a complex landscape requiring systematic approaches, clear authority, adequate resources, and public engagement. While challenges persist, evidence suggests that well-designed enforcement systems with appropriate tools and strategies can significantly improve environmental outcomes at the local level.

Effective enforced environmental management requires balancing regulatory enforcement with compliance assistance, leveraging public participation, and adopting systematic management approaches. As environmental challenges grow more complex, local governments will need to continue evolving their enforcement strategies to ensure environmental protection while addressing resource constraints and jurisdictional complexities.

III. LEGAL AND POLICY FRAMEWORK

a. Foundational Legal Frameworks

Effective environmental management at the local level is crucial for sustainable development and public well-being. This requires a robust legal and policy framework that defines responsibilities, sets standards, and provides mechanisms for enforcement. Local public administrations play a pivotal role in translating national and regional environmental objectives into actionable policies and ensuring their compliance within their jurisdictions. This document explores the key components of such a framework, drawing insights into various examples and general principles of environmental law and governance.

The legal and policy framework for environmental management at the local level typically originates from national legislation, which then delegates powers and responsibilities to subnational entities, including local public administrations. These frameworks are designed to provide a comprehensive approach to environmental protection, pollution control, and sustainable resource management. While specific laws vary by country, common elements include environmental protection acts, pollution control regulations, and provisions for environmental impact assessments. For instance, a robust framework, as exemplified by the Belize Environmental Protection Act, establishes a dedicated environmental authority (e.g., Department of the Environment, DOE) with broad regulatory and enforcement powers. This authority is typically tasked with monitoring implementation, enforcing provisions, and addressing environmental pollution. Their functions often extend to assessing water pollution, coordinating waste discharge activities, licensing environmentally impactful operations, and registering pollution sources. A critical aspect of such legislation is the empowerment of the environmental authority to approve Environmental Impact Assessments (EIAs), ensuring that proposed development activities consider and mitigate potential environmental harm [10]. Pollution control regulations are another cornerstone, addressing issues such as air, water, and soil contamination, including noise.

These regulations often set limits on emissions and discharge and define what constitutes harmful pollution to various environmental components like animals, wildlife, and vegetation. The enforcement of these regulations is usually vested in the same environmental authority responsible for the overarching environmental protection act [10]. Environmental Impact Assessment (EIA) regulations are crucial for proactive environmental management. They detail the processes for preparing and evaluating

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EIAs, often categorizing projects based on their potential environmental impact.

These regulations typically mandate projects, programs, or activities to be assessed to protect human health, preserve ecosystems, and maintain biodiversity. They also often require public consultation and may impose conditions on development approvals to ensure environmental sustainability [10].

Beyond these core environmental laws, other sectoral legislation also contributes to the overall framework. For example, acts related to mines and minerals often regulate the extraction of natural resources and prohibit pollution of water bodies. Public health acts may include provisions for controlling nuisances that contribute to air, soil, or water contamination. Furthermore, national land acts provide a framework for land management, which indirectly supports environmental protection by regulating land use and development [10].

In essence, the foundational legal framework provides the necessary mandate and tools for local public administrations to manage environmental issues. It outlines the scope of their authority, the standards they must uphold, and the procedures they must follow to ensure environmental compliance and protection within their jurisdictions.

b. Enforcement Mechanisms and Policies

Effective environmental management is not solely about having comprehensive laws; it also requires robust enforcement mechanisms and policies to ensure compliance and deter environmental degradation. These mechanisms can be broadly categorized into administrative measures, judicial proceedings, and legislative frameworks, each playing a vital role in the environmental regulatory cycle [11]. Administrative Measures form the frontline of environmental enforcement. These include [11]:

- Inspections: Regular and systematic inspections are conducted to monitor compliance with environmental regulations and identify potential hazards. These can be routine checks or triggered by specific incidents or public complaints, allowing authorities to proactively identify non-compliance;
- Permits and Licenses: These are regulatory instruments issued to control activities with potential environmental impacts. They often come with specific conditions and requirements that must be met by the regulated entities to prevent environmental harm. Non-compliance with permit conditions can lead to administrative penalties or revocation;
- Administrative Orders: Environmental agencies can issue administrative orders to comply with regulations or to address specific environmental issues. These orders can mandate corrective actions, cessation of polluting activities, or remediation of environmental damage.

Judicial Proceedings serve as a critical backstop when administrative measures are insufficient or when severe violations occur. These can be either civil or criminal in nature:

- Civil Enforcement Actions: These are typically taken against individuals or organizations that have violated environmental regulations. Outcomes can include significant fines, penalties, injunctions requiring specific actions, or other forms of relief aimed at rectifying the environmental damage and deterring future violations [11].
- Criminal Enforcement Actions: Reserved for serious environmental offenses, these actions can result in substantial fines, imprisonment for individuals, or other severe penalties. Criminal enforcement aims to punish egregious violations and send a strong message about the importance of environmental protection [11].

Legislative Frameworks underpin all enforcement efforts by providing the legal authority and structure. Environmental laws establish the fundamental principles and standards for environmental protection, while detailed regulations provide the specific rules and requirements for implementing these laws. This hierarchical structure ensures that enforcement actions are legally sound and consistently applied [11]. For enforcement mechanisms to be truly effective, several strategies and best practices are employed:

- Targeted Enforcement Actions: Focusing enforcement efforts on high-risk activities or areas, such as industrial operations, mining, or construction, can maximize the impact of limited resources. This involves identifying activities with the greatest potential for environmental harm and prioritizing enforcement efforts accordingly;
- Economic Incentives and Disincentives: Beyond punitive measures, economic tools can promote compliance. Incentives, such as tax breaks or subsidies, can encourage environmentally friendly practices, while disincentives, like fines or pollution taxes, can deter non-compliance;
- Collaboration with Other Stakeholders: Engaging with non-governmental organizations (NGOs) and local communities can significantly enhance enforcement. NGOs often provide valuable expertise, monitor compliance, and advocate for environmental protection. Community engagement is crucial for gathering local insights and information about environmental issues, fostering a shared responsibility for environmental stewardship.

c. Overview of the Egal and Policy Framework

The legal and policy framework for enforced environmental management in local public administration is a multifaceted construct, essential for translating environmental aspirations into tangible outcomes. It comprises foundational legal instruments that define the scope of environmental protection and the powers of regulatory bodies, alongside a diverse array of enforcement mechanisms. These mechanisms,

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ranging from administrative inspections and permits to civil and criminal judicial proceedings, are designed to ensure compliance and deter environmental degradation.

Effective implementation of this framework hinges on several critical factors: clear delegation of authority to local administrations, continuous capacity building for enforcement officials, transparent and accountable processes, and active engagement with all stakeholders, including the public and non-governmental organizations. Furthermore, the integration of economic incentives and disincentives can significantly enhance compliance rates, fostering a more proactive approach to environmental stewardship.

As environmental challenges continue to evolve, so too must the legal and policy frameworks. Continuous review, adaptation, and improvement of these frameworks are paramount to ensure they remain relevant, effective, and capable of addressing emerging environmental threats. By strengthening these pillars, local public administrations can play a more decisive role in safeguarding environmental quality and promoting sustainable development for their communities.

d. The case of the legal and policy framework in Romania

In the case of Romania, enforcement stems from multiple levels [3-9]:

- EU directives require proper wastewater treatment, stormwater management, and drinking water quality;
- Romanian legislation (Law 211/2011, 92/2021,2/2021,107/1996 195/2005 and their updates);
- Local council decisions approving technical documentation and financing for accessing and implementing environmental projects.

These instruments impose deadlines, bureaucracy, funding requirements, and compliance inspections, incentivizing administrative action to obtain national or European funds and avoid penalties, contrary to compliance the EU has other coercive measures like infringement for the states that do not comply in implementing the policies that were agreed upon [3-9].

IV. THE ROLE OF LOCAL ADMINISTRATION in ROMANIA – COMMUNE LEVEL

Most of the communes in Romania aligned to state policy and EU norms by implementing several projects under enforced mandates in several domains that affect environment like:

- Development of a potable water supply or expansion of potable water and centralized sewerage networks in Romania (Fig. 1), according to Environment Fund Administration the population covered by water supply areas in 2022 was estimated at 15.182.486 people, of whom 11.649.058 people live in settlements in large water supply areas an 3.533.428 people live in small water supply areas;
- Construction of stormwater infrastructure and rehabilitation of public lighting;
- Modernizing roads and public parks and green transport for bicycles (Table 1);
- Creating Voluntary drop-off centers, where inhabitants are allowed to bring some types of waste (Fig. 2);
- For local transportation and the community needs authorities have changed the old vehicles with combustion engines to electric cars and green transportation.

Local authorities secured technical and financial clarity for these actions with different partners both public and private (e.g., ADI intercommunity development associations AFIR, POIM, ADR, PNIAS and PNRR schemes) facilitating funding access, and by this time from the new European funding exercise, for sustainable development measures almost 14% is absorbed according to the Ministry of European Investments and Projects (Table 2).

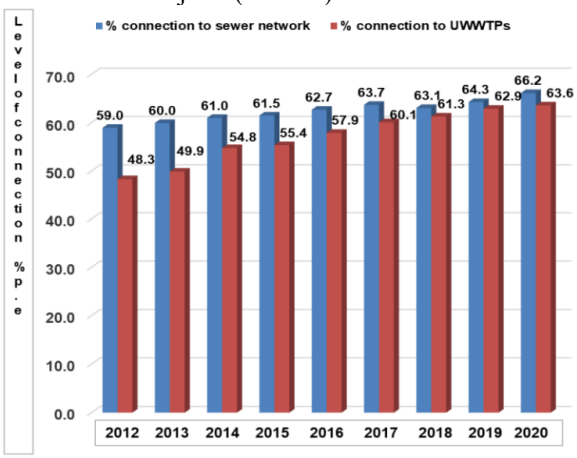


Fig. 1. Development of a potable water supply or expansion of potable water and centralized sewerage networks in Romania (according to the National Institute of Statistics in Romania)



Fig. 2. A voluntary drop-off center

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Table 1. Modernizing roads and public parks and green transport for bicycles.

(1) Balanced response	(2) RST	(3) Growth, jobs…	(4) DNSH	(5) Green target	(6) Digital Objectiv	(7) Lasting impact	(8) Milestones and targets	(9) Cost setting	(10) Control systems	(11) Coherence	(12) REPowerEU	(13) Cross-border dimension
A	A	A	A	A (44,1 %)	A (21,8 %)	A	A	B	A	A	A	A

Source: https://mfe.gov.ro/ - This table reveals, at the 5th column, the fact that using European funds, within PNRR measures, that the green target shall be implemented in most of the projects.

Table 2. Absorption of European funds in different areas in the case of the Cohesion Fund (2021-2027).

Programe 2021-2027	ficiari	Prefinanțări primite de la CE		Sume solicitate CE în limita alocării UE a PO (rata de absorbție curentă)		Rambursări de la CE (rata de absorbție efectivă)		Total sumă primită de la CE	
	%	Valoare	%	Valoare	%	Valoare	%	Valoare	%
	3=(2/1)*100	4	5=(4/1)*100	6	7=(6/1)*100	8	9=(8/1)*100	10=4+8	11=(10/1)*100
P Transport	22,32%	116.262.884	2,50%	1.008.246.447	21,68%	468.257.841	10,07%	584.520.725	12,57%
P Dezvoltare Durabilă	40,46%	101.101.841	2,50%	915.562.255	22,64%	560.492.320	13,86%	661.594.161	16,36%
P Educație și Ocupare	5,55%	241.474.049	6,93%	47.512.973	1,36%	12.944.190	0,37%	254.418.239	7,30%
P Incluziune si Demnitate Sociala	17,07%	69.173.955	2,06%	513.390.223	15,25%	0	0,00%	69.173.955	2,06%
P Sănătate	2,39%	193.466.499	8,51%	0	0,00%	0	0,00%	193.466.499	8,51%
P Tranziție Justă	2,46%	674.010.393	31,50%	0	0,00%	0	0,00%	674.010.393	31,50%

Source: https://mfe.gov.ro/ (situation as of June 2, 2025)

Analyzing several cases of project implementation, and based on the informal discussions with different project managers and responsible people, some key obstacles have been identified, as follows [3-9]:

- Budget constraints: reliance on external grants (AFIR ADR, PNRR, county budgets). Internal budgets are insufficient, risking delays and infringement.
- Administrative capacity: small staff and poorly paid, needed external technical assistance for feasibility studies and compliance documentation.
- Community engagement: infrastructure works triggered temporary disruption (road closures, noise). Mitigation through public meetings and online petitions.
- Superficial compliance risk: Without monitoring, projects may tick the "compliance" box yet fail to long-term sustainability (e.g. operating costs and maintenance).
- Bureaucracy: slowing down decision-making and implementations of the project on all levels, from the local authorities to the funding organism
- Lack or very poor sustainability and ecological education in public schools.

V. CONCLUSIONS AND FINAL REMARKS

The synthesized set of conclusions of our study are presented in teh following:

1. **Enforcement Drives Local Change** Regulatory mandates - both from the EU and national legislation - have catalyzed significant environmental infrastructure improvements at the local level in Romania, especially in communes. These include water and sewage systems, stormwater management, waste collection, and green transport initiatives.
2. **Complexity Demands Capacity** Despite legal clarity and policy alignment, local authorities face systemic limitations: understaffing, financial dependency on external grants, and slow bureaucratic processes all hinder timely and effective implementation.
3. **Compliance ≠ Sustainability** While enforced compliance results in observable project initiation, long-term impact is not guaranteed. Risks include superficial adherence, lack of post-project monitoring, and insufficient maintenance budgets.
4. **Community Engagement is Critical** Projects that affect public space - like road modernizations and waste centers - require active involvement of residents. Public consultations and communication strategies help mitigate disruption and foster support.
5. **Balanced Governance is Essential** A mix of top-down enforcement with bottom-up support mechanisms (e.g., training, technical assistance, public participation) proves more effective than punitive compliance alone.
6. **Need for Continuous Evolution** Given the dynamic nature of environmental challenges, local enforcement frameworks must remain adaptive - integrating digital tools, transparent accountability systems, and climate resilience into their core strategies.

Enforced environmental management has triggered tangible infrastructure upgrades, whether is about sustainable sewage system, water pipes, public roads, waste services and many more, in the communes of Romania, still a lot of work to be done to comply to all

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the norms. However, to bridge the gap between mandate and impact, the following are needed [3-9]:

1. Capacity building: Training and administrative grants for technical documentation;
2. Financial sustainability: Developing local environment funds and maintenance budgets;
3. Community involvement: Structured consultations and feedback loops;
4. Monitoring and evaluation: Regular impact assessments to ensure real environmental benefits.

The large volume of regulations and norms adopted at a very rapid pace in the EU and national laws of the member states, the small number of concrete and effective environmental management and of course enforcement measures have led to a poor implementation performance by the authorities. Local mandates drive- most of the time - change, but sustainable results require balanced support mechanisms integrating funding, expertise, and local participation.

VI. LIMITS OF THE RESEARCH

The presented study offers valuable insights, but like any research, it has its limitations. Here are the key ones:

1. **Scope Restriction to Romanian Communes** The research focuses exclusively on *commune-level administrations* in Romania, omitting large cities and urban municipalities. This narrows the generalizability of its findings.
2. **Descriptive, Not Evaluative** While it documents the existence of projects and challenges, the study stops short of conducting **quantitative evaluations** of environmental impact, efficiency, or long-term performance of enforcement strategies.
3. **Limited Empirical Grounding** Much of the evidence is based on policy analysis, secondary data, and anecdotal observations (such as informal discussions with project managers), rather than systematic surveys or field measurements.
4. **Absence of Community Perspective** Although it acknowledges community engagement as a factor, the study doesn't incorporate **direct voices from local residents**, which could offer insight into acceptance, resistance, or unintended consequences.
5. **Static Policy Snapshot** The legal and funding frameworks analyzed pertain primarily to **the 2021–2025 period**. Given the evolving nature of EU environmental policy, this temporal focus may miss emerging priorities like climate neutrality or nature-based solutions.
6. **Operational Metrics Are Missing** There's no assessment of **monitoring systems**, enforcement outcomes, or indicators tracking compliance beyond initial implementation stages.
7. **Limited Comparative Context** The study could benefit from **cross-country comparisons** or even cross-sectoral analysis (e.g. comparing environmental with health enforcement) to identify transferable best practices.

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