

## Towards Sustainable Living: Enhancing Environmental Control for Human Settlement Protection in Moldova

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**Abstract:** This paper examines the role of environmental control mechanisms in protecting sustainable human settlements. The aim is to: analyze the current state of environmental control mechanisms, identify the challenges & barriers, and propose solutions. Methodology proposed is a mixed-methods approach, combining literature review, documents, reports & data analysis. Material used is settlements and social issues, including poverty, crime, and health disparities and the necessity for an integrated approach to address urban and rural areas. Conclusions are given with some practical solutions to enhance environmental control and protection.

**Key words:** environmental control, human settlements, legal responsibility

### 1. INTRODUCTION

The paper emphasises the necessity of allocating priority attention to human settlements programmes and policies that reduce urban pollution, improve and expand urban services and infrastructure, and promote environmentally friendly urban transport and energy-efficient housing. Furthermore, we intend to highlight the crucial importance of action at the local level and the participation of people, including major group representatives, to facilitate effective local action and efficient management of human settlements.

By doing so, we need to give some considerations on the legal regime of protection of localities. International documents usually divide the human environment into:

- ◀ Natural environment
- ◀ built or artificial environment
- ◀ social environment

In environmental law the first two are of interest, which are subject to complex legal protection both domestically and internationally. The natural environment together with the man-made environment constitute the environment in which humanity lives and carries out activities.

The artificial environment or the "civilized" environment is the environment created by the humans and consists of 2 elements: human settlements and all that is man-made outside human settlements, according to Durac (2009), man-made constructions and works beyond the perimeter of towns and cities: roads, highways and railways, viaducts, dams, bridges.

### 2. MATERIAL AND METHODS

Considering that possible influences on environmental factors can be exerted, in the first place, from within populated territories as a result of industrial, production and domestic activities, we will refer directly to the legal regime of protection of human settlements.

Thus, increasing the comfort claimed by the individual, from the beginning of its existence, and until now, would not have been possible to achieve without the diversification of social coexistence relationships, which generated the phenomenon of association and living within communities called "human settlements". These, as social ecosystems, are to be studied under a different aspect, taking into account more parameters than those used in the case of social ecosystems. Human settlements, according to Marinescu (2008), can be considered complex ecological systems (ecosystems) created by human populations, anthropic formations in which most of the transformations of matter, energy and information are carried out by humans. Compared to the other fields of ecology, the ecology of human settlements, according to some experts (Godeanu S. & Godeanu M, 1992) has a special complexity, putting the habitat and the conditions of existence of the human being at the centre of attention.

The notion of human settlement can be viewed under 2 aspects: in a broad sense and in a narrow sense. In a broad sense, a human settlement means a region where a stable group of people has been placed, which consists of their living space, their economic and cultural activity spaces, and the rest spaces that ensure their vital activity. And in the narrow sense, the notion of human settlement includes residential, public and industrial buildings, recreation parks, markets, streets, public, cultural,

private institutions, in other words, everything that can be found in a location.

Throughout the history of mankind, 2 large groups of human settlements have been highlighted, these being:

1. urban settlements (cities, towns, municipalities)
2. rural settlements (hamlets, villages)

Despite the fact that there are many distinct characteristics between urban and rural localities, they are specific to both:

- living area
- industrial area
- the rest space
- green areas
- streets and communication ways
- the central area of the locality
- protected areas
- the area outside the village

Prior to the description of the legal framework for the regulation of locations, we will give a brief characteristics of the evolution of the regulations in the field of the development of human settlements, as well as the current situation in the Republic of Moldova in this regard.

### **2.1 The History of The Development of Locations in Moldova**

Over several centuries, two major factors have operated in the current space of the Republic of Moldova. On the one hand, the favourable natural conditions and the high agricultural capacity of the land have encouraged the population of the territory. On the other hand, the vulnerable geopolitical position has discouraged long-term investments and stopped the urbanisation processes. In the post-war years, the Republic of Moldova experienced a period of slow urbanisation. This process, which was generally positive, occurred within the context of a political system that was rigidly centralized and based on principles of extensive development, which were characteristic of the USSR. However, this approach was inadmissible for a region with limited resources, as was the case with the Republic of Moldova. The development of localities was contingent upon the location of industrial enterprises and the concentration of labour forces in urban areas, facilitated by the influx of rural populations from within the republic and from other former Soviet republics. The urban population increased fivefold,

with the number of urban settlements rising from 16 to 64. Of these, 12 were newly constructed, while the expansion of industrial enterprises also contributed to this growth. Approximately one-quarter of the population of cities currently resides in blocks constructed using industrial methods approximately 20 to 30 years ago. However, the exploitation term of these blocks is approaching its limit. A plan to address the issues related to the deterioration of these blocks and the modernisation of the surrounding neighbourhoods within the next 10-20 years has yet to be developed. Following the year 1995, the Republic of Moldova presented a territory with a high degree of anthropogenic exploitation of the natural environment. Approximately 10% of the national territory is occupied by localities, which are defined as human settlements. According to some data, the density of this network is greater than that of neighbouring states, with 5 localities per 100 km<sup>2</sup>. The population of the country is distributed across four municipalities, 60 cities (urban area), 1,600 villages, and 925 communes and separate villages (rural area).

### **2.2 Current Policies Regarding The Development of Human Settlements.**

The prevention of the demographic decline, determined by the researches and programs, (Matei et al., 2009) whose object of study was to anticipate the implications of the demographic evolution on the perspective development of the society as a whole, generally require the implementation of strict measures with the opposite effect that would bring advantages to the economic development of the state. The policies of recent years, which aimed to achieve the goals of extensive development, have resulted in hasty transformations of the planning structures of the localities. These transformations have been undertaken without taking into account the natural factors that determined the evolution of these structures in previous periods. Consequently, the surrounding environment of the localities has been affected, with the occurrence of landslides and soil erosion. Furthermore, the hydrological regime of lands built by mudslides has been altered in an unwanted manner. Despite these circumstances, the current economic situation, the low standard of living of the population, and the phenomenon of migration have led to a continuous and tendentious decrease in the population. The population of the Republic of Moldova, according to the data of the last census carried out in 2024, has decreased from 4 million to 2,700. In light of these circumstances, it is imperative to conduct a thorough investigation into

the newly established settlements within the territories designated for allotment. This is particularly crucial given that the initial assumption was that these settlements would be permanently populated. The emergence of these settlements, in the form of villages, has led to a multitude of challenges, both social and environmental. Consequently, the population has experienced a significant decline, resulting in a slow development of these settlements.

In this context, the limited autonomy of local public administration, the traditions and bureaucratic relations with the population, the lack of a mechanism of relations appropriate to the democratic society and market relations, and the inability to solve even simple problems such as greening the territory and maintaining sanitation, represent significant obstacles to the resolution of the described problems.

In order to overcome these obstacles, it is essential to adjust the legislative framework as a priority. The objects and subjects of law in the field of urban and territorial planning must be clearly defined and delineated. It is essential to establish the necessary mechanisms for the participation of the population as a subject of law in the supervision of the rational exploitation of environmental factors within human settlements. Zoning, easements, and prohibitions imposed on individuals and even authorities have been gradually accepted in the name of the higher requirements of collective well-being, including from the perspective of the natural environment. (Dutu,2010) However, in the present era, there is a pressing need for the enactment of legislation and the implementation of effective mechanisms to ensure the sustainable development of localities. It is of paramount importance to ensure the effective supervision of urban planning and territorial development documentation, with the assistance of mechanisms established by special laws.

### 2.3 The Legal Framework for The Protection of Human Settlements

The legal framework for the protection of human settlements constitutes the totality of regulations aimed at the activities regarding the coordination of social, economic, cultural and ecological needs in accordance with the fundamental values of society taken as a whole. The objective, according to Trofimov & Zamfir (1998), is to achieve a natural and harmoniously built framework, which favours social life and the culture of the population. Indeed, for the first time, the general principles, framework of action and objectives for the protection of human settlements were established in the context of the

Vancouver Conference of 1976. In the adopted declaration, it was demonstrated that in the circumstances in which a significant proportion of the population, particularly in underdeveloped countries, lives in inadequate settlements, the absence of positive and concrete measures at the national level will result in a deterioration of these conditions. (Marinescu,2008) Consequently, in order to prevent the potential deterioration of living conditions in human settlements, it is necessary to adjust the legal framework in this field to align with the new standards. At the present time, a significant portion of the legal regime for the protection of localities is occupied by territorial planning, which has its legal seat in Law no. 835/1996 on the principles of urban planning and territorial planning.

The legal regime for territorial development encompasses the following elements:

- a) Tasks set within the planning and urban planning activity
- b) Documentation regarding activities within the territory
- c) Planning: management of the territory of the locality
- d) Control in the field of urban planning and territorial development of the locality
- e) Legal responsibility for the violation of the legislation regarding the development of the territory

### 2.4 The Tasks Set for The Urban Planning Activity

In accordance with the legislation in the field, the tasks set before the authorities responsible for the development and implementation of urban planning and territorial planning policies are considered separately as tasks of the territorial planning and urban planning activities.

Consequently, the territorial planning authority endeavours to:

1. Promote balanced economic and social development in accordance with the specific conditions of each area.
2. Improve the quality of life of people and human communities.
3. Adhere to responsible management of natural resources and environmental protection.
4. Rationalise the use of the territory.

In accordance with the provisions of article 5, paragraph 1 of Law no. 835/1996, the urban

planning activity aims to achieve the following objectives:

- a. Rationalise and balance the use of land necessary for the functioning of localities
- b. The determination of the functional structure of localities
- c. The provision of housing that meets the requirements and level of development of society
- d. The compositional aesthetics in the realisation of the built frame and the arrangement of the natural frame in the localities
- e. The protection of the population, the natural and built environment against pollution, foreseeable natural and technological risks
- f. The protection, conservation and granting of the corresponding status to monuments of cultural and natural value

In accordance with the aforementioned objectives, the authorities of the local public administration are responsible for preparing, within the limits of their established competence, programmes for the organisation and urban development of the localities. The direct technical management of the urban planning activity in the localities is carried out by the architecture and urban planning services of the local public administration, in accordance with the legislation and technical regulations.

The documentation pertaining to the activities undertaken in the development of the territory of the locality is defined in accordance with Article 1 of the Law on Ecological Expertise as the set of documents, prepared and approved in the established manner, pertaining to a specific territory. These documents analyse the existing situation and establish objectives, actions, and measures in the field of urban planning and territorial development. In accordance with Article 6, Paragraph 1 of Law no. 835/1996, territorial development and urban planning activities are carried out on the basis of territorial development plans, urban plans and related regulations. These documents set out the goals, means and phasing of the territorial planning and urban planning actions, as well as solutions for a balanced development of the territories and localities. They also offer solutions for the prevention and elimination of dysfunctions. In other words, the quality of urban planning and land development documentation affects the general condition of the territory. The success of construction projects in localities depends on it. Through urban planning and land development documentation of a regulatory nature, the destination of lands and the

rules for their use are established. Based on this, urban planning certificates and construction authorisations are issued. The way of land use for any type of construction must be regulated by urban plans and land development plans. Therefore, the legislation in the field regulates 3 categories of territorial development plans and 3 categories of urban planning. The land development plans are as follows:

1. The development plan of the national territory
2. Regional land use plans
3. The local land development plan

The urban plans are as follows:

1. General urban plans are drawn up for the entire territory of the locality, including all the territories necessary for its operation and development
2. Zonal urban plans These are drawn up for part of the territory of a locality or for a territory that has been designated for the operation and development of the locality.

Detailed urban plans are the documentation that establishes the conditions for the location and execution of one or more constructions with a specified destination in a certain land.

The aforementioned plans are designed to establish the level of exploitation of natural resources, and in some cases, their regeneration. They also establish the conditions for the inner and outer areas of the localities, as well as the areas where the major land development measures are expected to take place. With regard to the detailed plans for a concrete construction, it is necessary to mention that in order to obtain constructions of appropriate quality, the following requirements must be met and maintained for the entire duration of the construction's existence:

1. Resistance to stability
2. Safety and exploitation
3. Fire safety
4. Hygiene, people's health, restoration and protection of the environment
5. Thermal insulation
6. Noise protection

In addition, the obligation to conduct ecological expertise on new projects, programmes, plans and schemes aimed at economic and social development of Moldova, the reconstruction of municipalities, cities and villages, the supply of heat, water, gas and electricity, the construction of

sewage systems and urbanism and territorial planning in urban and rural localities, arises in response to the demands of quality in construction and therefore the quality of life.

The management of municipal territories encompasses all actions aimed at their organisation, conservation and development. These actions are oriented towards achieving a physical and functional state of the natural and built environment that corresponds to human needs, in accordance with the public interest and the legislation in force. (Popescu, 1995)

The territory of the locality is intended to serve human needs. This territory is used for the allocation of people's dwellings, for the development of economic-industrial objectives, peasant households, and socio-cultural objects.

Although the local council is responsible for managing the territory of the locality, this does not imply that it is also the beneficiary of the territories it manages. Rather, the beneficiary is the society itself, which is comprised of natural and legal persons.

## 2.5 Environmental Control in Urban and Spatial Planning

The efficiency of any activity is usually ensured through the control and supervision by state bodies of the way in which the policies elaborated by them are implemented. The urban and spatial planning activity is carried out in accordance with the legislation, under the coordination of the central public authority for urban and spatial planning, respecting the principles of democratisation and local autonomy.

Although this is not explicitly stated, environmental control in the field of urban planning and territorial planning can be achieved through state policy and strategy in the relevant field. Furthermore, the urban planning and territorial planning services of the local public authority contribute to the achievement of this control. Environmental control over the activity of town and country planning is exercised by the staff of the specialist department of the central public administration authority for town and country planning or by the decentralised specialist departments of this authority in the districts or municipalities. In the context of administrative-territorial jurisdictions, according to Popescu (1995) the responsibility for regulating the activities of urban planning and spatial planning is delegated to the local public administration authorities.

## 3. RESULTS AND DISCUSSIONS

### 3.1. The Legal Responsibility for The Violation of Legislation on The Development of Territories

In the event of a violation of the legislation on the development of the territory, the following forms of liability are applicable: criminal, contraventional, civil and disciplinary.

In the event of contravention, the following circumstances may give rise to liability:

a) the approval of urban planning and land development documentation without compliance with the established procedure.

b) the use of new constructions or those whose functional destination has been changed without the requisite authorisation for operation or change of destination.

c) the failure to provide data from the data bank. Furthermore, the aforementioned legislation stipulates that those responsible for urban planning and territorial development must comply with the relevant informational systems, which are necessary for the aforementioned activities. Additionally, the legislation states that those responsible must not provide erroneous information.

Finally, the legislation states that those responsible must comply with the terms and conditions set out in the relevant legislation regarding the execution of construction works.

The aforementioned norms establish certain rules regarding the protection of localities through their adequate development from an urban point of view. The violation of these rules attracts responsibility in accordance with Law no. 1515 of 16 June 1993, which concerns the protection of the environment. It is incumbent upon the citizens of the Republic of Moldova to respect the aforementioned rules, which are as follows:

a) to comply with the legislation on environmental protection and to protect the environment, to use natural resources rationally, not to harm the rights and interests of other beneficiaries of natural resources, to alert the environmental authorities promptly or ecological organisations about the damage caused to nature by natural and legal persons. (Trofimov, 1998)

b) to contribute to the landscaping of the territories, It is the duty of all citizens to ensure the protection of trees and green spaces, to refrain from their destruction, and to refrain from polluting the

territory where they work or live. Furthermore, it is the responsibility of all citizens to recover losses and repair damage caused to the environment and the population. (Trofimov et al., 2015)

In accordance with the legislation of other states, it is clearly stipulated that in the process of social-economic development, urban planning, and the planning of territories and localities, it is mandatory to respect ecological principles in order to ensure a healthy living environment. In this regard, local councils, (Lupan, 1996) as well as natural and legal persons, are responsible for ensuring that:

- 1) The arrangement and maintenance of springs and water bodies inside localities and in their neighbouring areas is intended to improve the urban microclimate. In addition, the landscape is to be beautified and protected, and street cleanliness is to be maintained.
- 2) The location of industrial facilities, roads and means of transport, sewage networks, treatment plants, household, street and industrial waste depots, and other facilities and activities is to be determined without prejudice to sanitation, the environment, the spaces of rest, treatment and recreation, health and comfort of the population.
- 3) Compliance with the special protection regime of balneo-climatic resorts, areas of tourist and leisure interest, historical monuments, protected areas and natural monuments. It is forbidden to place objectives and carry out activities with harmful effects in the perimeter and in the areas of their protection.
- 4) The adoption of appropriate architectural elements, the optimisation of housing density, simultaneously with the maintenance, upkeep and development of green spaces, parks, street and landscape arrangements with an ecological, aesthetic and creative function.
- 5) The regulation of access to certain areas of localities with a predominance of living spaces, areas intended for treatment, rest, recreation and leisure, including the temporary or permanent prohibition of certain types of vehicles and the development of activities that generate discomfort for the population.
- 6) The adoption of mandatory measures for all natural and legal persons regarding the maintenance and beautification of buildings, yards and their surroundings, green spaces in yards and between buildings, trees and decorative shrubs.
- 7) The initiation of local projects for the establishment of hygienic-sanitary groups and for

the maintenance and development of street sewerage

#### 4. CONCLUSIONS AND RECOMMENDATIONS:

This paper provides a holistic and in-depth analysis of the complex relationship between environmental control and human settlements, drawing on a diverse range of sources and perspectives. Besides, there are some challenges in implementation: The study identified several key barriers to the effective implementation of environmental control measures, including limited financial resources, weak institutional capacity, lack of community engagement, and competing development priorities.

The key recommendations for sustainable development in human settlements, as derived from our research paper, are as follows:

It is recommended that municipal governments be strengthened and that social participation in decision-making and activities related to urban development and social housing be increased. (Dutu, 2010). The current institutional structures are characterised by a high degree of centralisation, which has proven to be a significant obstacle to progress. Consequently, there is a clear need to empower local governments and communities. It is of the utmost importance to conduct a meticulous evaluation of the environmental impact of human settlements development during the implementation of environmental protection policies. It is imperative to gain a deeper understanding of the relationship between human settlements and the surrounding environment.

It is recommended that investment be made in the development of human capital, including knowledge, skills, and habits, in order to achieve sustainable goals such as affordable and clean energy, emissions regulation, and responsible consumption. It is imperative to promote sustainable urbanisation through rational resource use, meeting basic needs, and enhancing economic and social sustainability. It is also crucial to provide access to safe, affordable, accessible, and sustainable transport systems for all, with a particular focus on the needs of vulnerable groups.

We propose innovative and practical solutions to enhance environmental control and protection in human settlements, going beyond the traditional approaches and offering new frameworks for policymakers and practitioners. The study employs an interdisciplinary approach, integrating insights from various fields, including urban planning, environmental science, social policy, and

governance, to provide a more nuanced understanding of the issue.

The findings and recommendations of this paper have direct and tangible implications for policymakers, urban planners, and community stakeholders, providing them with evidence-based guidance to improve environmental control and protection in human settlements. This paper contributes to the growing body of research on the nexus between environmental management and sustainable human settlements, addressing a critical gap in the literature and advancing the scholarly discourse in this important area.

There is a problem of inadequate environmental control mechanisms identified as a key issue. The study revealed that numerous human settlements, particularly in developing countries, are deficient in effective environmental control measures to address pressing concerns such as air pollution, water contamination, waste management, and land degradation.

The interconnectivity between environmental conditions and social issues is another issue. There is a robust correlation between suboptimal environmental conditions in human settlements and elevated social issues, including poverty, crime, and health disparities.

The necessity for a comprehensive, integrated approach to human settlements development that addresses both urban and rural areas, and integrates environmental, social, and economic considerations, with a holistic approach is a must.

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