

TOOLS FOR THE ADEQUATE APPLICATION OF THE ENVIRONMENTAL LEGISLATION FOR THE WASTE MANAGEMENT

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ABSTRACT

The growing number of normative acts regarding waste management determines the difficulty of the process of internalization and compliance with environmental obligations. From this point of view, those involved in waste management, no matter they are legal persons or individuals, especially in rural area, might have a passive failure to comply with the legislation. Starting from the inventory of the normative acts regarding waste management, a minimum of them was identified, needed to be known and applied. Therefore, it is necessary to develop new tools for easier and adequate understanding of the legislation, especially of the waste management obligations. Four schemes were developed aiming the obligations systematization: two schemes for local administration, one legal person and one for individuals. These four schemes are included in one of the six teaching modules (TM4 – Waste Management in Rural Communities) developed in the frame of the Environmental Education – OERs for Rural Citizens (EnvEdu - OERs) project, and will be available on the project learning platform.

KEYWORDS: *environmental legislation, normative acts, open education resources, rural communities, waste management.*

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1. INTRODUCTION

Environmental protection, from the waste management perspective, continues to be a current issue of interest. The lack of expected effects resulted from the adoption of waste legislation at the European Union level as well as at the member states one is visible in different and combined aspects.

A first aspect is related to the increasing number of normative acts that have direct applicability or need to be transposed. In 2009 it was stated that: (i) until 2008 more than 200 directives, regulations, other forms of legislation and amendments in the domain of environmental policy with direct repercussions for regional development were adopted; (ii) problematic implementation and enforcement of EU environmental policies remain present, no matter how many positive results in environmental policy were registered (Beunen et al., 2009). In this moment, the even greater number of normative acts does not seem to facilitate the process of internalization and compliance with the environmental obligations, including those related to the waste management.

Failure to comply with the rules is not only caused by deliberate and active non-compliance, but also by a passive one, determined by the lack of the knowledge of the implemented legislation,

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identified as being: (i) a major factor behind enforcement and compliance failures and (ii) a passive failure in enforcing the norms (Mateo-Tomás et al., 2022).

A second aspect is related to the different ways of presenting and accessing the information, environmental law being present all over the web (Robertson, 2021, p 71). The issuing authorities always present the legislation by publishing them in official documents that are also accessible on-line on specialized websites:

- <https://eur-lex.europa.eu/> for the European Union Official Journal,
- www.cdep.ro for the Official Journal of Romania.

Understanding the legislation is, most of the time cumbersome, due to the complexity of the normative acts and of the numerous references to other normative acts. Since 1998, environmental legislation was already agreed to be "epic in its size and scope and Talmudic in its complexity" Robertson (1998, p. 240).

On the other hand, the information transmission methods and the used tools have evolved from classic courses to courses in on-line format. The specialized literature presents that the development and use of Massive Open On-line Courses (MOOCs) is an inevitable requirement for ecological education (Wei, 2020, p. 634). Although MOOCs and Open Educational Resources (OERs) are more and more developed and available in European educational systems, there is a lack of such electronic facilities available in the field of environmental education (Perniu et al., 2020).

In order to facilitate the environmental education, especially the transmission of the environmental legislation to the interested stakeholders, the aim of this paper is to present the development of innovative tools for the adequate application of the environmental legislation for waste management, taking into account the abundant European and Romanian legislation in this domain. Two objectives are proposed:

1. to present an inventory of the normative acts needed to be known and applied, to demonstrate how vast is the waste management related legislation;
2. to develop a novel systematization (schemes) of the normative acts being of interest and applied at different levels: local administration, legal persons, or individuals; the schemes will further be used as tools for the adequate application of the environmental legislation for the waste management.

The new produced schemes will be included in the teaching module no. 4 (TM4) on environmental legislation for waste management, developed as open education resource (OER): video presentations and text related documents. TMs will be uploaded and available for a large audience (local administration, legal persons, or individuals) on the electronic educational platform organized in the frame of the project Environmental Education – OERs for Rural Citizens (EnvEdu – OERs).

2. ENVIRONMENTAL LEGISLATION FOR THE WASTE MANAGEMENT

2.1 RESEARCH METHODOLOGY

For the first objective, two hypothesis were formulated:

- first hypothesis – *the number of the normative acts at the European Union is high enough to make it difficult to effectively know the environmental obligations regarding waste management;*
- second hypothesis – *there is a minimum of normative acts needed to be known by all applicants for waste management obligations, together with the obligations stipulated by these normative acts.*

Considering the specifics of rural communities, for the identified normative acts, the obligations extraction criterion was applied to three categories (local administration, legal persons, and individuals), resulting in a minimum of obligations to be known, understood, and applied.

2.2 BINDING NORMATIVE ACTS RELATED TO WASTE MANAGEMENT ISSUED BY THE EUROPEAN UNION

In order to validate the first hypothesis, to identify the actual large number of emitted normative acts related to waste management at EU level, the following steps were followed:

- step 1: the official website for the European Union legislation was consulted (www.eur-lex.europa.eu), using the *advanced search* tool available on the platform, as well as the general *Theme* criterion, within which the *EUROVOC Thesaurus* selection was applied;
- step 2: available filters were applied in order to identify the three categories of normative acts (regulations, decisions and directives), that are mandatory for all the EU member states; to be noticed that apart of EU member states, Iceland is also following the EU legislation;
- step 3: refining filters were also used (*52 – environment, deterioration of the environment, waste*), integrating all type of selection sub-filters: *used oil, agricultural waste, industrial waste, non-recoverable waste, radioactive waste, domestic waste, metal waste, export of waste, hazardous waste, wastewater, sewage sludge, unauthorised dumping, chemical waste, electronic waste, hospital waste, plastic waste, municipal waste, food waste*.

The research result (steps 1-3) is presented in Figure 1.

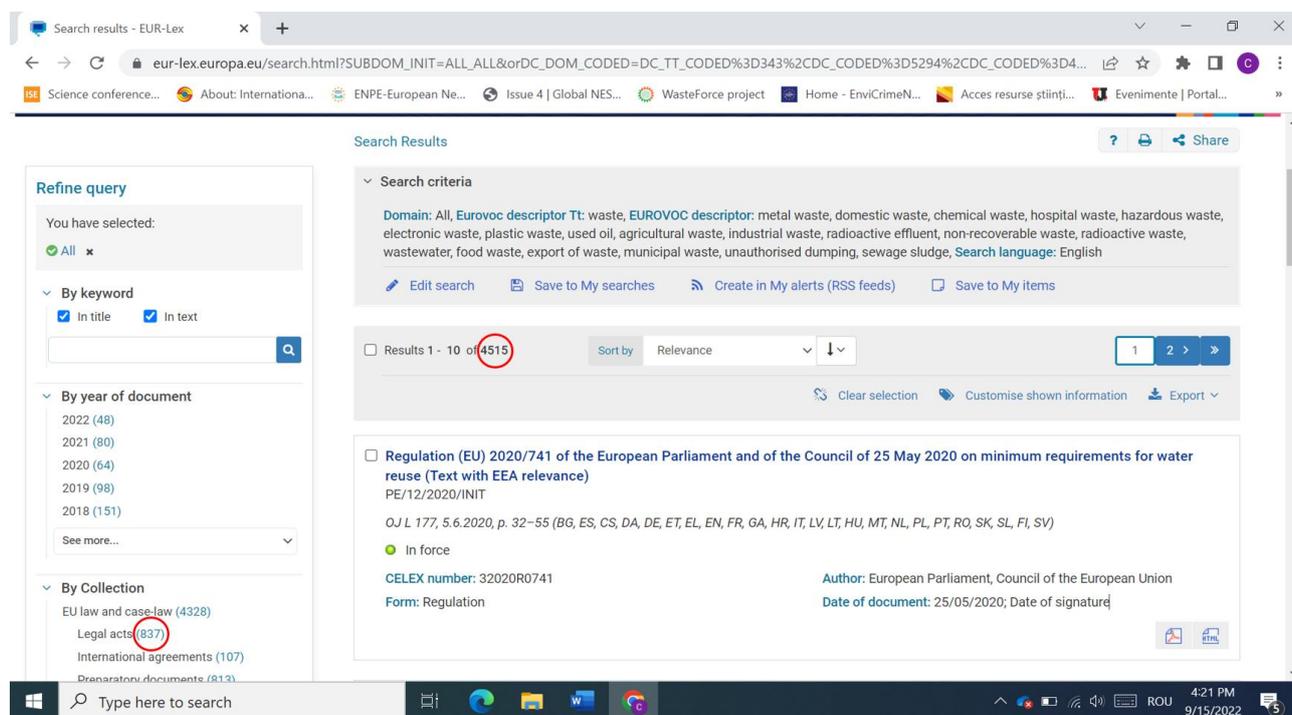


Figure 1. European Union legislation – normative acts emitted for waste management

Source: www.eur-lex.europa.eu

4515 documents were found, and the research was directly refined by the platform, on different categories. Of interest for our study is the filter *By Collection*, where 837 acts were found with the *Legal acts* filter (Figure 1).

Applying refining filters, we obtained the normative acts grouped by category, of which, 485 acts are mandatory to be known and applied: 229 regulations, 163 decisions and 93 directives (Figure 2). This means that for any representative of a community, for any member of a community it is difficult to know, understand and apply all the requirements related to the waste management. Moreover, the directives require their transposition in all EU country members, so that the national normative acts are also mandatory to be known.

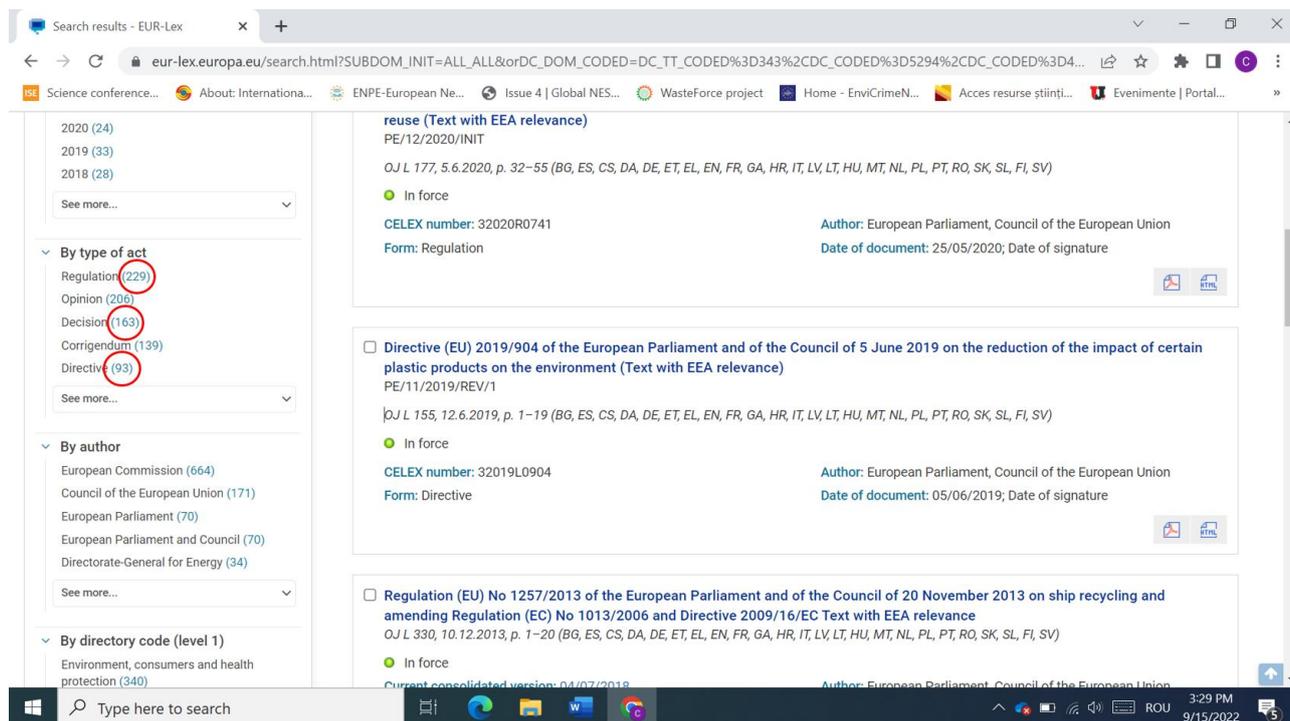


Figure 2. Selected mandatory acts to be known and applied for waste management
Source: www.eur-lex.europa.eu

2.3 Minimum of normative acts needed to be known by all applicants for waste management obligations

In order to validate the second hypothesis, to identify this minimum of normative acts, the following two steps were followed:

- step 1: the EU strategies regarding the waste management, together with the environmental action programs were chronologically extracted, and the basic normative act on waste management at EU level was identified (one directive), as well as the one that transposed it in the Romanian legislation;
- step 2: the provisions of the directive were researched, and of the act of transposition, respectively, as well as the normative acts that specifically regulate the obligations regarding waste management were identified.

2.3.1 The basic EU normative act on waste management

In order to identify the EU basic normative act on waste management, the following EU waste strategies and Environment Action Programmes (EPA) were taken into consideration:

- Community strategy for waste management, from 1997 (Council, 1997);
- Thematic strategy on the recycling of waste, from 2007 (Parliament, 2007);
- EAP 6, established by Decision no. 1600/2002/CE of the European Parliament and of the Council of 22 July 2002 laying down the Sixth Community Environment Action Programme (Decision, 2002);
- EAP 7, established by Decision no 1386/2013/EU of the European Parliament and of the Council of 20 November 2013 on a General Union Environment Action Programme to 2020 ‘Living well, within the limits of our planet’, text with EEA relevance; (Decision, 2013);
- EAP 8, established by Decision no. 2022/591 of the European Parliament and of the Council of 6 April 2022 on a General Union Environment Action Programme to 2030 (Decision, 2022).

The basic EU normative act on waste management, common to all the documents, is the waste framework directive, Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives (Directive, 2008), normative act with EEA relevance.

Being a binding normative act, Directive 2008/98/EC needs transposition in all the national norms of the UE member states. The Government Emergency Ordinance (GEO) no. 92/2021 is the document of transposition into the Romanian legislation, the normative act that establishes the general obligations regarding waste management (Ordinance, 2021).

2.3.2 Normative acts regulating the waste management obligations

Directive 2008/98/EC and, GEO no. 92/2021, respectively, are complex normative acts, both due to the connection to other normative acts, and due to their effects. Searching the provisions of the Directive 2008/98/EC, under the aspect of legislative references, we noticed that all 3 categories of binding EU normative acts are concerned (8 regulations, 2 decisions and 12 directives), as follows.

A. EU Regulations – applied in Romania, but also in Iceland:

- Regulation no 178/2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety to establish the legal definition of food waste (Regulation, 2002a);
- Regulation no. 166/ 2006, concerning the establishment of a European Pollutant Release and Transfer Register (Regulation, 2006a)
- Regulation no. 1013/2006 on shipments of waste regarding reporting obligations (Regulation, 2006b);
- Regulation no. 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing the European Chemicals Agency, (Regulation, 2006c),
- Regulation no. 440/2008 laying down test methods pursuant to Regulation no 1907/2006 on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (Regulation, 2008a);
- Regulation no. 1272/2008 on classification, labelling and packaging of substances and mixtures (Regulation, 2008b); all three documents (Regulation 2006c, Regulation 2008a and Regulation 2008b) are aiming at the correct identification of hazardous waste, its properties and coding;
- Regulation no. 767/2009 on the placing on the market and use of feed (Regulation, 2009a)
- Regulation no. 1774/2002 laying down health rules concerning animal by-products not intended for human consumption (Regulation, 2002b) but which was repealed by Regulation no. 1069/2009 laying down health rules as regards animal by-products and derived products not intended for human consumption (Regulation, 2009b); both Regulation 2009a and Regulation 2009b are referring to exclusions from the application of Directive 98 of 2008 and, implicitly, of GEO 92/2021;

B. Decisions – applied in Romania, but also in Iceland:

- Commission Decision 2000/532/EC establishing a list of waste (Decision, 2000);
- Commission Implementing Decision 2384/2012 establishing a questionnaire for Member States' reports on the implementation of Directive 2008/98/EC on waste, repealed by Implementing Decision (EU) 2019/1004 establishing rules for the calculation, verification and reporting of waste data in accordance with Directive 2008/98/EC (Decision, 2019).

C. Because EU Directives are normative acts that need to be transposed in the legislation of the EU member states, Table 1 presents, in parallel both the EU Directives indicated in Directive 98/2008 and the corresponding ones in the Romanian legislation. Where the repeal of the act indicated by Directive 2008/98/EC has been found, it is also shown which is the normative act in force, the

identification of the transposition being carried out relative to the last emitted act (e.g. line 2 in Table 1).

Table 1. The EU Directives indicated in Directive 98/2008 and the Romanian normative acts transposing them

	EU Directives indicated in the text of Directive 98/2008	The Romanian normative acts transposing the EU Directives indicated in the text of Directive 98/2008
1	Directive 94/62/EC on packaging and packaging waste	Law no. 249/2015 regarding the management of packaging and packaging waste.
2	Directive 96/61/EC concerning integrated pollution prevention and control (repealed), Directive 2010/75/EU on industrial emissions (IPPC)	Law no. 278/2013 on industrial emissions
3	Directive 1999/31/EC on the landfill of waste	Government Ordinance no. 2/2021 on waste storage
4	Directive 2000/53/EC on end-of-life vehicles	Law no. 212/2015 regarding the way of managing vehicles and end-of-life vehicles.
5	Directive 2000/60/EC establishing a framework for Community action in the field of water policy	Water Law no. 107/1996
6	Directive 2001/42/EC on the assessment of the effects of certain plans and programs on the environment	Government Decision no. 1076/2004 on establishing the procedure for carrying out the environmental assessment for plans and programs
7	Directive 2003/35/EC providing for public participation in respect of the drawing up of certain plans and programmes relating to the environment	Government Decision no. 564/2006 regarding the framework for public participation in the development of certain plans and programs related to the environment and Government Decision no. 1213/2006 on establishing the framework procedure for environmental impact assessment for certain public and private projects
8	Directive 2006/21/EC on the management of waste from extractive industries	Government Decision no. 856/2008 on waste management from extractive industries
9	Directive 2006/66/EC on batteries and accumulators and waste batteries and accumulators	Government Decision no. 1132/2008 regarding the regime of batteries and accumulators and waste batteries and accumulators.
10	Directive 2008/56/EC establishing a framework for Community action in the field of marine environmental policy	Government emergency ordinance no. 71/2010 regarding the establishment of the strategy for the marine environment
11	Directive 2012/19/ on waste electrical and electronic equipment (WEEE)	Government emergency ordinance no. 5/2015 on electrical and electronic equipment waste
12	Directive 2015/1535 laying down a procedure for the provision of information in the field of technical regulations and of rules on Information Society services	Government Decision no. 1016/2004 regarding the measures for the organization and implementation of the exchange of information in the field of technical standards and regulations, as well as the rules related to information society services between Romania and the member states of the European Union, as well as the European Commission

Source: authors

In addition to the previously identified documents, that transpose Directive 98/2008, the complete transposition of its provisions imposed the elaboration of other normative acts.

Taking into account GEO 92/2021, eight such normative acts, with direct involvement in the waste management were also identified:

- Law no. 50/1991 regarding the authorization of the execution of construction works;
- Law no. 51/2006 on community services of public utilities;
- Law no. 101/2006 on the local sanitation service;
- Law no. 181/2020 on the management of compostable non-hazardous waste;
- Government emergency ordinance no. 195/2005 on environmental protection;
- Government emergency ordinance no. 196/2005 regarding the environmental fund;
- Order 1226/2012 of the Minister of Health for the approval of the Technical Norms regarding the management of waste resulting from medical activities and the Data Collection Methodology for the national database regarding waste resulting from medical activities;
- Government Decision no. 856/2002 on the record of waste management and for the approval of the list containing waste, including hazardous waste.

The balance of the minimum legal provisions that manage waste management, to complete GEO 92/2021, and from the perspective of the 3 categories targeted by the EnvEdu-OERs project (local administration, legal persons, or individuals) is 30 normative acts, including:

- 10 at European Union level (8 regulations, 2 decision);
- 20 at national level (8 laws, 5 Government Ordinance, 7 Government decisions and 1 minister order).

Considering the specific objective of the project and applying the national specifics, regarding local public authorities, these normative acts were also connected with the obligations provided by the Administrative Code (Ordinance, 2019) and by the public procurement legislation (Law, 2016).

3. OPEN EDUCATION RESOURCES – TOOLS FOR THE ADEQUATE APPLICATION OF THE WASTE MANAGEMENT LEGISLATION

The development of some tools for the adequate application of the environmental legislation for the waste management is needed. For this, the authors took into consideration the large number of the EU normative acts for the waste management, those emitted as transpositions in the Romanian legislation, as well as the diversity of their application at different level (local administration, legal persons or individuals). Schemes, defined as „domain or context specific knowledge structures that organize knowledge and help the learner categorize various problem types to determine the most appropriate actions needed to solve the problem” (Marshall, 1995; Jitendra et al., p. 252), were selected as most appropriate tools for this aim.

Four schemes were developed, for which the Romanian Constitution and the Romanian Administrative Code were also taken into account and are organised as follows:

- normative acts and obligations addressed to the local administration – were organised on two subdivisions: (i) general obligations for the local administration regarding the waste management (Figure 3); (ii) obligations for the local administration related to their specific activity (from their position of issuing local normative acts) (Figure 4);
- normative acts and obligations addressed to the legal persons (Figure 5);
- normative acts and obligations addressed to the individuals (Figure 6).

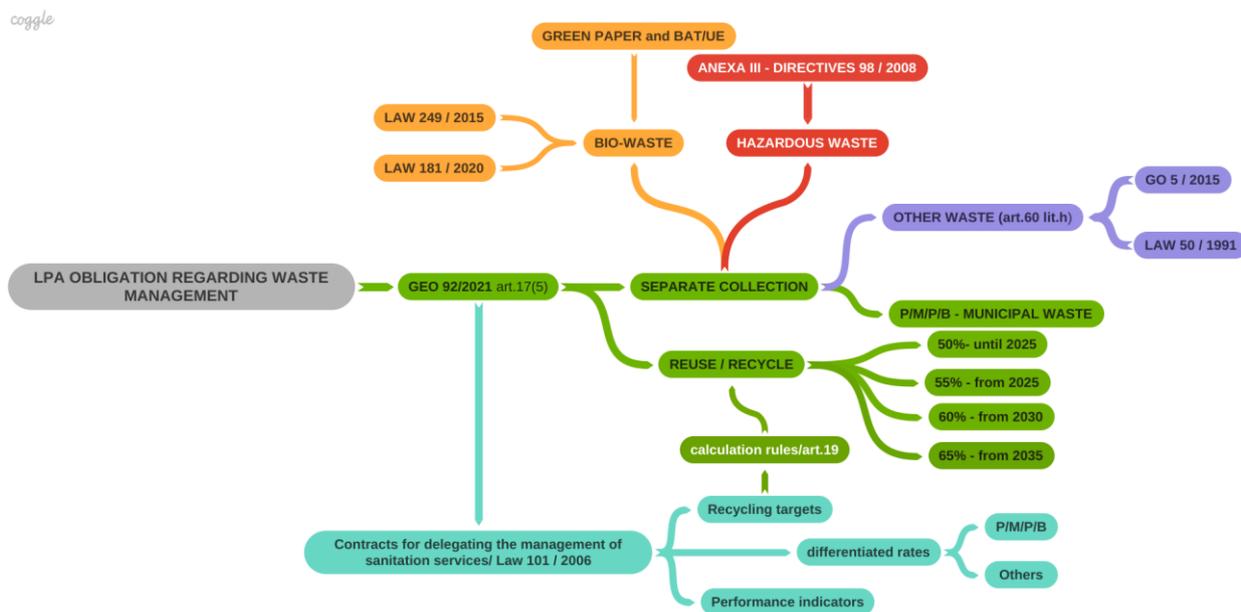


Figure 3. General obligations for the local administration regarding the waste management
 Source: made by the authors

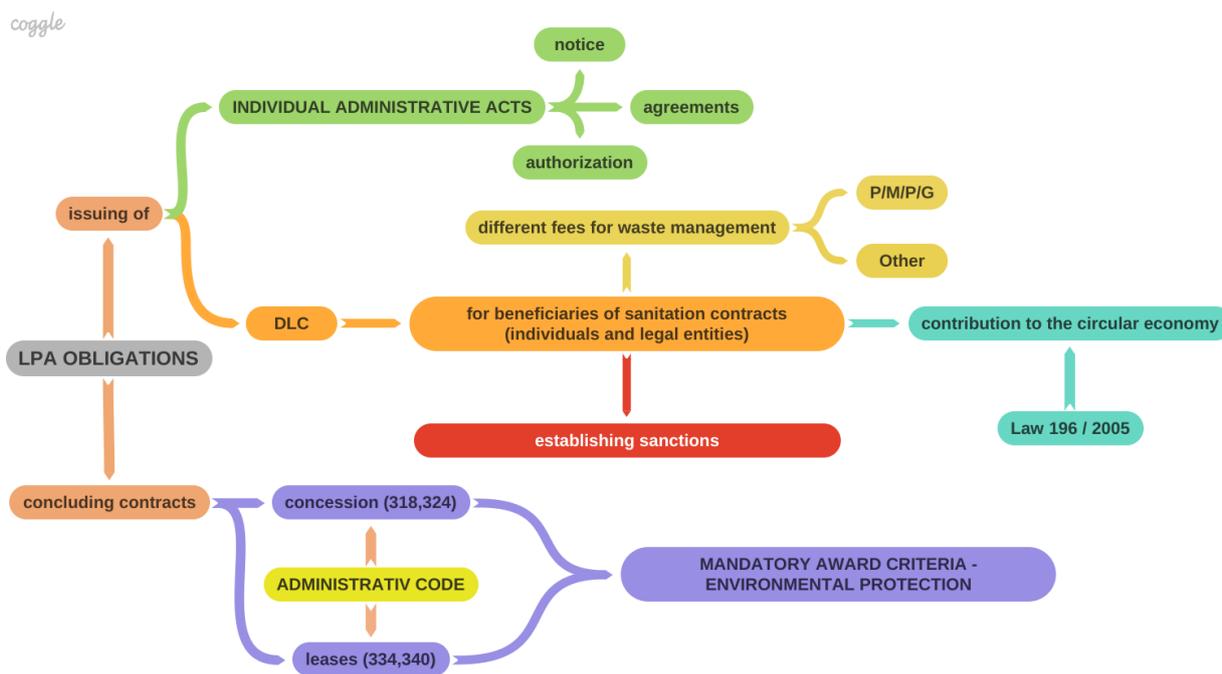


Figure 4. Obligations for the local administration related to their specific activity
 Source: made by the authors

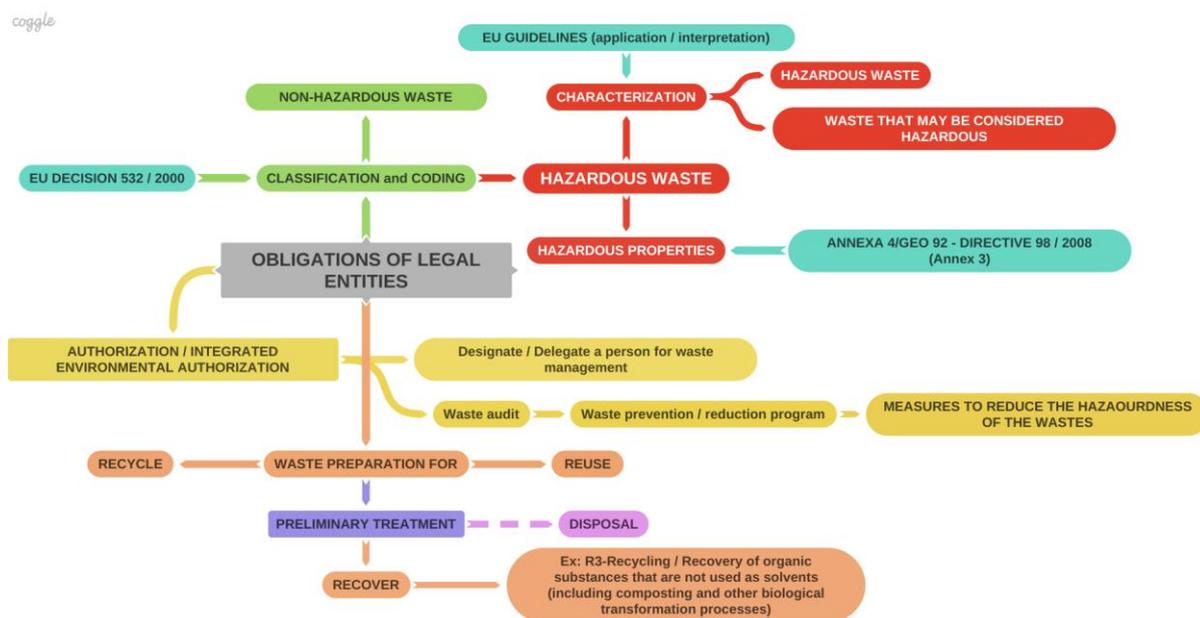


Figure 5. Regulations and obligations addressed to the legal persons
 Source: made by the authors

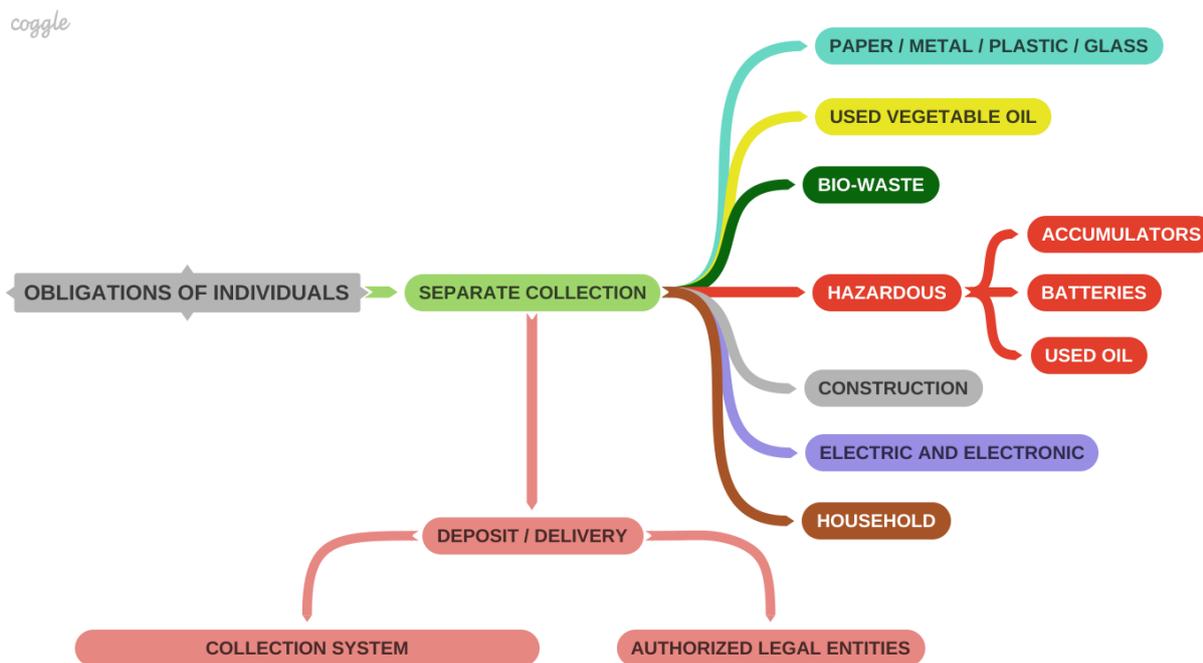


Figure 6. Regulations and obligations addressed to individuals
 Source: made by the authors

The schemes given in Figures 3 to 6 are establishing the relationship between the most relevant elements of waste management activity and will be used as novel tools for facilitating the correct understanding and application of the environmental legislation for waste management in Romania. The broad coverage of the obligations for legal persons or individuals was considered for the development of the schemes. GEO 92/2021 was the starting point for the schemes presented in

Figures 3, 5 and 6, being identified as the main normative act for the waste management. In addition to this, where necessary, links to obligations given by other normative acts are identified.

Because it presents the obligations for the local administration, related to their specific activity, the starting point for the scheme presented in Figure 4, was the Administrative Code, and the consecutive links are to GEO 92/2021 or to the obligations given by other normative acts.

The four new schemes are the basis of developing part of the open education resources, available on electronic platform (MOODLE type) for a large audience, as the target group of the EnvEdu-OERs project is.

One of the objectives of the EnvEdu-OERs project is to develop six teaching modules (TM) (Finger et al., 2021), as open education resources (OERs), consisting in video presentations, text based documents and evaluation tests:

TM1: Sustainable communities and social communication

TM2: Environmental Quality

TM3: Environmental Management, Impact and Risk Assessment

TM4: Waste Management in Rural Communities

TM5: Water Resources and Water Balance for Sustainable Community

TM6 Environmental Projects Management

One teaching unit of TM4 is about environmental legislation for waste management. This teaching unit, which will also be developed as video presentations, text-based documents and evaluation tests, will provide an easy presentation of the environmental legislation, starting from the important characteristics of each analysed normative act, presenting only those details that precisely establish the obligations and which constitute important elements of connections with the other normative acts. The teaching unit developed within the project for waste management legislation will:

- take into account only the provisions identified by the previously presented methods;
- have a general part, presenting the importance of European Union and international legislation and their effects on the national legislation;
- present the minimum obligations to be known and respected at different levels, by the local public administration, legal persons, or individuals.

Both in the video and in the text documents the novel systematization (schemes) of the normative acts being of interest and applied at different levels will be presented and discussed (Figures 3 to 6). All the OERs will be available on the project website (https://envedu.unitbv.ro/en_US/) and learning platform, in Romanian and English languages.

4. CONCLUSIONS

An inventory of the normative acts emitted at the European Union level gives the image of the abundancy of the waste management related legislation. In this context, this paper presents the development of open education resources, aiming to facilitate the environmental education, especially a better and easier understanding of the environmental legislation by different interested stakeholders, local administration, legal persons, or individuals from rural areas.

Innovative tools (schemes) for the adequate understanding and application of the environmental legislation for waste management were developed and will further be included in the teaching modules, as OERs, produced in the frame of the Environmental Education – OERs for Rural Citizens (EnvEdu – OERs) project. The OERs, including the waste management legislation schemes, will be uploaded on the MOODLE type learning platform, available from the project website (https://envedu.unitbv.ro/en_US/), in Romanian and English languages.

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