Implementing evaluation framework for assessing the impact of the European green deal on the environment and climate

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Abstract. *Environmental policies represent a priority for the European Union. By implementing the European Green Deal, the E.U. aims to reach zero emissions of greenhouse gases by 2050. By implementing an evaluation framework we can better understand its particularities and monitor it's outcomes. This paper will highlight the previous environmental efforts and how the European Green Deal represents a leap forward for the European space.*

Keywords: *Evaluation, Public Policy, Environmental Policies.*

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1. Introduction

The present work aims to develop an evaluation design that takes into account the new strategy of the European Union regarding the fulfilment of the objectives regarding climate change management, environmental protection and sustainable development. Also, "Sustainability is a property of a system, whereby it is maintained in a particular state through time" (Berceanu, 2012). The synthesis of these policies was done through the elaboration of the European Green Deal. It considers the sustainable and most efficient use of resources by transitioning the economic system to models based on the circular economy and reducing pollution by improving the quality of biodiversity.

The assessment design is based on the following important aspects regarding: technological modernization of the ecological sector, industrial evolution at the level of the European Union, adaptation of means of transport to the new pollution norms to improve air quality and protect human health, reducing carbon emissions from the energy sector, the energy efficiency of buildings, global meetings regarding the solution of environmental problems. All these themes will be analysed and based on them, the essential problems will be identified from which the objectives that help to solve them will result.

The implementation of the European Green Deal raises the issue of climate change and environmental degradation as a priority factor both for Europe and for other international actors, and for its solution, the European Union's strategy considers the sustainable evolution towards a modern, efficient and competitive economy. Moreover, aspects of the circular economy are introduced for the efficient use of resources and the development of methods for their long-term reuse.

Also, the EGD objectives focus on the reduction and finally the elimination of greenhouse gas emissions by 2050, sustainable economic evolution achieved through circular economy methods and equal development both at the European Union and global level, with the aim of reducing the degree of poverty on the whole planet.

The sustainability offered by the European Green Deal comes from the degree of complexity of this initiative, integrating a wide diversity of the economic sectors involved. The funds will be invested in sustainable development, using the inclusive paradigm and thus improving the economic capacity of the European Union as part of the development of the circular economy.

Another important aspect is represented by the development and financing of programs aimed at reducing the amount of pollutant emissions generated by human sources and the reduction of those originating from elements that cannot be fully regulated by humans. The management of funds used in fields considered unfeasible can, and will be reused in other economic sectors, which require investments to make the working environment more efficient, a concrete example would be the withdrawal of funds used to subsidise fossil fuels and the use of funds to renovate buildings and work spaces, thus increasing their thermal efficiency, or by subsidising the purchase of electric machines and vehicles.

Organic farming is part of the policies related to the European Green Deal due to the fact that it focuses on the elimination of chemical fertilisers and pesticides from agricultural production and the use of non-polluting mechanised agricultural machinery. This approach aims to practice agriculture in the long term, taking into account methods to combat the effects of climate change and protect the environment. Having that in mind, we must focus our attention on the problem of intensification of production, so that there is a balance between production and environmental concerns "Due to the support of the EU policies and regulations the agriculture from Romania and from Central and Eastern countries is economically recovering, bringing along a host of environmental problems specific to the intensification of production" (Berceanu, 2016).

The importance of preparing this evaluation design is also given by the budget allocation from the Multiannual Financial Framework 2021-2027. More than 500 billion euros are allocated for the implementation of EGD measures for sustainable development and improvement of air quality. However, the budget allocation from the Multiannual Financial Framework 2021-2027 also considers the implementation of the green economy in areas drastically affected by pollution as an essential issue.

2. The evolution of European environmental policies

2.1. Brief history of environmental policies

The objective of the European Union since its early stages has been to unite states to achieve a goal far too complex to be achieved by a single state. With this in mind, we can understand the need for European states to work together after the Second World War, as a result of which there were deficiencies in all economic sectors, and

to remedy this, the European Coal and Steel Community was established (ECSC) in 1951. An element that was not integrated into the treaty establishing the ECSC is the protection of the environment and the efficient use of resources so that the impact on the environment is as low as possible. We can affirm the fact that during that period, the prevention of pollution and the protection of the environment were secondary, a fact that can also be deduced from the Convention for the Protection of Human Rights and Fundamental Freedoms from 1950, because this document does not mention either the need for a healthy environment or the issue of pollution.

The omissions made by the political leaders of that period were to affect the health of the citizens. An example can be found in London, 1952, where "coal burning released high amounts of sulfur oxides" (European Environment Agency, 2013), thus hospitals were full of patients with respiratory ailments. This aspect can be found in many European cities, because at that time fossil fuels, such as coal, were used both in the industrial sectors and in people's homes as a heating agent.

At the European level, the first measure aimed at combating pollution was the "Clean Air Act" of 1956 in Great Britain, which regulated the use of harmful fossil fuels and implemented subsidies for the transformation of households to use less harmful fuels (Clean Air Act, 1956).

The first event that laid the foundations for legislative concepts regarding pollution and the environment was the United Nations Conference in Stockholm in 1972 (United Nations, 1972). Thanks to this event, international government environmental agencies were formed, but more importantly, the UN Environment Program was created.

At the European level, the first step towards a better management of the environment, its resources and the implementation of legislation conducive to effective development was represented by the Declaration of the European Council in Paris in 1972. Thus, in the same year, the first Environmental Action Program of the European Community (PAM) developed between 1972 and 1976 was adopted, this having as its ideological basis the fact that "prevention is better than cure" and the implementation of the principle of "the polluter pays", principle based on the idea that the polluter should pay the compensation for the damages caused by his actions. Thus, at the European level, the first national ministries of the environment are established.

Starting from the premise that "economic prosperity and environmental protection are interdependent" (European Parliament, 2018), the European Community begins to develop its own environmental legislation by adopting directives and regulations. Among them we can find:

- Waste Framework Directive 1975 - this incorporates the 'polluter pays' principle and Member States must take the necessary measures to ensure that waste is recovered or disposed of without endangering human health and without processes or methods which could environmental damage, in particular without:
  - Risks to water, air, soil, plants and animals.
  - Causing nuisance through noise or smells.
  - Negatively affecting the rural environment or places of special interest (The Waste Framework Directive, 1975).
- The Bathing Water Directive - this has as its main object the protection of human health and the environment against pollution, defining bathing waters as "fresh or marine waters, in which bathing is explicitly authorised". This directive lists 19 physical, chemical and microbiological parameters, and Member States must set values for bathing waters, which are not lower than I values, while G values are seen as desirable targets. The directive contains minimum sampling frequencies as well as reference analysis methods (Bathing Water Directive, 1976).

The Montreal Agreement of 1987 regulated the production and use of about 100 chemicals that have the adverse effect of reducing the ozone layer. Considering the role of the ozone layer in protecting people and the environment from ultraviolet radiation, we can understand why this agreement was signed by all 197 member states. It is proven in this case that if the member states benefit from both the necessary support and the desire to bring to its citizens a climate conducive to harmonious development, the necessary changes can be implemented correctly and harmoniously.

More specifically, an example of a chemical substance with an adverse effect that was regulated in the Montreal Agreement is Hydrochlorofluorocarbons (HCFCs), gases that were used daily in refrigeration systems (e.g. air conditioning systems or refrigerators) or in care products personal (antiperspirants or hair fixative sprays). Developed countries have committed to phase them out completely by 2020, and developing countries have committed to phase them out by 2030, to be replaced by specially designed environmentally friendly alternatives. account at the same time

of all economic or health regulations. Thanks to this agreement, chemicals with targeted adverse effects have been reduced by 98% from 1990 to date, also protecting the global climate system because these substances also have a greenhouse effect. It is also estimated that, through the implementation of these measures, approximately 2 million human lives have been saved annually.

Efforts regarding the sustainable development of the planet also led to the conservation of natural habitats, wild fauna and flora, maintaining biodiversity, an aspect achieved through the "Natura 2000" initiative, adopted in May 1992. These efforts have as their main objective the long-term assurance of the most "valuable and threatened species and habitats in Europe" (European Commission, 2020), living things that are included in the Birds Directive of 1979 or the Habitats Directive of 1992.

2.2. The importance of implementing environmental policies in the context of climate change

The creation of an environment conducive to human development is a continuous process, thus, after the creation of the necessary measures to solve the problem of the ozone layer, the main objective of the member states of the United Nations, the reduction of greenhouse gases, an aspect achieved by the United Nations Framework Convention on Climate Change since 1992. Member States were aware of the fact that they cannot eliminate all sources of greenhouse gases, as both developed and developing countries depend on deposits and other materials from the processing of deposits, thus proposes a stabilization of the concentrations of greenhouse gases "at a level that would prevent dangerous anthropogenic interference with the climate system", "aspect carried out for an indefinite period but in good time to give the ecosystem the necessary period to adapt to climate change, moreover ensuring the fact that food production is not affected, allowing economic development to continue in a sustainable way" (United Nations, 1992).

Taking into account the balance between reducing greenhouse gases and maintaining a predictable course of economic development, an economy that is constantly influenced by the decisions of political decision-makers, the Kyoto Protocol is being built to operationalize the decisions made within the framework of the United Nations Framework Convention on climate change. In the case of the Kyoto Protocol, a differentiation is made between states, there is a group of states

that have to comply with a set of predetermined indicators (36 states, among which we also find Romania), but benefit from 3 important mechanisms, namely:

- International emissions trading. This mechanism gives states the opportunity to trade carbon like any other physical good and is used by states that sell their "positive results" to states that have not been able to meet their obligations, thus states that have not reached the indicators will not be sanctioned, but will have the possibility to purchase the necessary carbon limit from other states, ultimately reaching a positive overall result. Also, other indicators have been created that can be used in the international market, carbon-based indicators, more precisely, the indicators are equivalent to one ton of CO2.
- The clean development mechanism. This mechanism creates an incentive for states that have made a commitment to reduce costs, to be able to meet their indicators. More precisely, they can initiate projects in developing countries, and after a certification of emission reduction, they will receive credits that will go towards the achievement of the originally set objective.
- Common implementation. This mechanism allows a state that has made a commitment to reduce emissions to receive credit, equivalent to one ton of CO2, for carrying out environmental projects in other states with the same responsibilities. This mechanism can come into operation only when it meets the eligibility criteria recorded in the protocol.

2.3. The role of the European Green Deal in the European Union

At the present time, the European Green Deal represents one of the most ambitious projects designed around the needs of the environment. The main objective is to achieve Europe's transition by 2050 to a sustainable economy that will no longer use conventional and polluting resources, thus becoming climate neutral, taking into account the needs of citizens, creating inclusive policies and facilitating a just transition.

The initiative being a very ambitious one, important decisions are needed, for example the creation of a "European climate law" (European Climate Law) which entered into force on July 9, 2021 (European Commission, 2021).

In order to cover all the important sectors that contribute directly or indirectly to the emissions of harmful substances, the European Commission has established for the European Green Deal several areas of action, each of which has a well-defined

role and contributes to the final objective assumed by the European Union. Among them, we can list:

- From fark to fork. A significant aspect in creating an environment conducive to development is supporting local markets that do not benefit from the advantages of economies of scale, but compensate by paying attention to details and offering better quality products or services. This aspect, once achieved, will contribute to the consolidation of a circular economy and we will have a fair transition process, both for producers and consumers.
- Biodiversity. The ecosystem in which we live is a diverse one and requires a wide range of resources to develop harmoniously, therefore an important emphasis is placed on maintaining biodiversity, which has benefits for both health and the economy. To understand how important nature is and to understand the consequences of its bad management, it should be mentioned that "half of the world's gross domestic product (GDP) (40 000 billion EUR) depends on nature". Analyzing this statistic, we can understand why there are reasons for concern when, as a result of poor resource management, "The world population of wild species has decreased by 60% in the last 40 years" and "1 million species are at risk of extinction".
- Sustainable agriculture. In order to achieve efficient, effective and sustainable agriculture, a well-structured institutional intervention is needed. This objective is ensured by the Common Agricultural Policy, which fulfils 3 secondary objectives, given its complex nature, combining economic, social and environmental aspects. All these are interconnected and interdependent, being designed in this way to be able to make the whole process more efficient.
- Clean energy. Over time there have been several methods of creating and managing energy, each of which has both advantages and disadvantages. It is very important to properly select the type of energy used according to each individual situation, using the benefits properly while also taking into account the disadvantages. However, an advantage that is highly sought after at the moment is that of energy regenerability, an aspect that is necessary within the European Union's efforts to fulfil the objective assumed in the European Green Deal.

3. Definition and applicability of evaluative concepts

3.1. Applicable/relevant concepts and theories of evaluation

Evaluation is a tool used to objectively analyze, correlate and correct various components of public policies. These evaluations, which contain evaluation judgments formulated following the realization of the research process, have the role of improving the quality of a program or helping to correctly inform a decision-maker. We can use Mr. Adrian Miroiu's definition in the book "Introduction to the analysis of public policies", namely "Policy evaluation represents the objective and systematic empirical examination, with the help of social research methods, of public policies, in terms of the objectives proposed by them." (Miroiu, 2001).

Taking Mr. Miroiu's definition as an example, we can say that the evaluation process is very important in the case of the European Green Deal, because the objectives assumed by it are ambitious and require an appropriate structuring of the actions that must be carried out in order to achieve those objectives.

Depending on when the evaluative process occurs, there are 3 distinct categories, namely:

- Ex-ante evaluation (also called a priori). This type of assessment is carried out before the start of a program/project and has the role of analyzing a problem, exposing the advantages and disadvantages of existing options to solve the target problem, and establishing both direct and indirect costs that may occur in following the start of the project. All these aspects, presented in a specific form, have the role of informing the decision-maker regarding the relevance and coherence of the analysed option.
- Intermediate assessment. This type of evaluation is carried out during the implementation of a public policy, so deviations that may occur along the way can be monitored and avoided. It also has the role of intervening in case there were problems in the ex-ante evaluation, or other problems arose that were not initially reported.
- Ex-post evaluation (also called a posteriori). This type of evaluation is carried out after the completion of the program/project and is an approach that aims to appreciate the way in which the project activities were carried out and to make a synthesis of the information, also verifying the conformity of the activities in the field with those initially included in the project. All these aspects have the

role of providing feedback to the initiator and to observe problems that may become recurrent so that they are not implemented in future policies.

Given the diversity of programs and policies, there are a multitude of evaluation approaches with various advantages and disadvantages. It is the evaluator who must, after a thorough analysis, decide which model presents the most advantages and the fewest disadvantages in evaluating a particular program.

Within the specialized literature, several typologies of evaluation models have appeared, however, we will focus on the evaluation models approached by Scriven in 2003 and by Hansen in 2005, who proposed 6 evaluation models:

- Results-oriented models. I use a classic evaluation method, in which the results attributed to the evaluator are analysed strictly from the perspective of his predetermined objectives. From the purpose and objectives of the evaluator, the evaluation criteria are derived, having the same common question, namely "To what extent were the predetermined objectives achieved?". This typology includes the produced effects model, which analyzes all the advantages and disadvantages, direct or indirect, that can be attributed to a project or program, thus answering the question "what are the obvious effects of the program?". The problem discovered by the academic community for this model would be the lack of clear evaluation criteria.
- Explanatory models. These models use all 3 evaluation periods (ex-ante, intermediate and ex-post) to monitor the evolution of the evaluator, quantifying his performance based on indicators, this process being very process-oriented, based on formative evaluation. The questions that such an evaluation model must answer are "How satisfactory is the level of activities?" or "Are there implementation issues?".
- Systemic models. The approach is based on the analysis of structure, processes, inputs and outputs, these being viewed through the prism of results. In this case, the results obtained by the targeted project/programme are compared with other projects in the same field, carried out under similar conditions. Common questions found in evaluations of this type would be "Were the objectives assumed in the ex-ante evaluation properly achieved?" or "Are the results achieved within the project/program comparable to those recorded within a similar program?".
- Economic models. These are based on financial analysis, using methods such as cost-efficiency analysis, cost-effectiveness analysis or cost-benefit analysis. All

of these use much of the basis of the systems approach. The difference between economic models and systemic models is that, within the economic ones, they report from a financial point of view, analyzing the costs and benefits brought.

- Models centered on the actors involved. This type of evaluation is based on stakeholder feedback and creates the evaluation criteria according to the criteria argued by the project participants. The main question of an evaluation based on this model relates to the degree of satisfaction of the direct or indirect beneficiaries and would be a question of the type "Were the beneficiaries of this project satisfied with the results recorded?". Depending on the evaluated project/program, the intervention of an expert in the field may also be needed, he establishing the evaluation criteria.
- Theory-centered models. Program theory is relevant here because it looks at the reasoning behind interventions. Due to the complex nature of the programmes/projects at both national and European level, an in-depth approach is needed, using empirical data in the analysis and using mostly qualitative research methods. This method is an adaptable one, which tracks the elements of risk, social elements and builds the evaluative criteria following these factors in accordance with efficiency, effectiveness and economy.

In the case of the evaluation of the European Green Deal, the advantages of the program theory are accentuated by the complexity of the initiative, covering a wide spectrum of action and a wide target audience, from different nationalities using different approaches to the same issue. The theory of the program creates a logical matrix that takes into account all these aspects, thus, the implementation at the European level and the adaptation to the various fields of action, either the agricultural or the industrial sector, can be successfully achieved.

3.2. Identification and analysis of the target audience of the European Green Deal as well as the beneficiaries of the measures of the subsequent EGD policies

We can state that the target audience and beneficiaries targeted by the European Green Deal are made up of the entire population of the member states of the European Union. Depending on the geographical area, age or occupation, an EU citizen can be both a direct and indirect beneficiary depending on the implications of each field of action of the EEP.

Among the direct beneficiaries of the European Green Deal we can list:

- Citizens whose state of health requires a very good quality of air to be able to continue their life, predominantly found in the case of people over 50 years old and predominantly in urban areas due to the agglomeration found in these areas (Harbers, 2012).
- Farmers whose activity is carried out around ecological, sustainable and high-quality agriculture who will benefit from the funds allocated for regional development (ERDF). Also, the beneficiaries are the farmers who have the initiative to re-technologize the agricultural production.
- Tourism, due to the reduction of physical pollutants in areas of interest such as mountain or maritime ones.
- Urban areas will have a much easier process of storing and converting waste, thanks to the use of biodegradable and reusable products.
- Property owners who will benefit from renovations that will make the thermal capacity of the building more efficient, thus the cost of the energy used will be lower, helping both the owners and reducing the resources needed to create that energy (electrical or natural gas-based).
- Entities responsible for research and development of solutions necessary to combat climate change and greenhouse gases. In this case, monitoring and prompt action in case of non-conformity will require more competent personnel.
- Entities responsible for the creation, management, reuse or disposal of waste, their purpose being that of the sustainable use of resources.
- States whose development in this direction has not been significant until this moment, benefiting from much greater support.
- Actors involved in the production, maintenance and distribution of renewable energy technology, both regarding its storage and use.

Indirect beneficiaries:

- Manufacturing and maintenance industries for electric machinery and vehicles, or at least those concerned with machinery or vehicles that comply with the new pollution standards.
- The local/national and European public administration that will benefit from sustainable development programs, through the most efficient use of resources and their reuse. Among them we can count the digitization of services, and thus the amount of physical materials needed to carry out activities is reduced.
- The medical system that will no longer encounter so many cases of respiratory diseases caused by a defective ecosystem.

- The increase in the average age of the population due to the appropriate development of the new generations which, following the use of the new living standards, will exceed the current demographic standard.

The beneficiaries of this initiative are mostly direct due to its complex nature.

The circular economy has an important role within the European Green Deal, thanks to actions to combat climate change, protecting the environment by reducing carbon dioxide emissions (or other chemical elements later converted into carbon dioxide), developing the economic capacity of the European Union on global plan, optimal storage and reuse of waste, protection of biodiversity and natural landscapes.

Advanced technology has an essential role in the development necessary to achieve the objectives assumed by the European Green Deal because it helps to monitor climate effects or to develop sectors where technology would make a significant difference, such as the agricultural, industrial or medical sectors. A concrete example is the sector of personal vehicles and industrial machinery due to their adaptation to the new pollution standards, switching to propulsion systems not used on a large scale such as hybrids, those using natural gas (Liquefied Petroleum Gas-LPG or Compressed Natural Gas - CNG) or even electrical systems.

By storing and using renewable energy, a benefit is brought to the efficiency of the exploitation of resources. Ways to create renewable energy would be photovoltaic panels or wind turbines. Also, the benefit from the point of view of pollution is visible, these methods reduce the amount of polluting emissions, except for the process of creating the necessary tools. An alternative source of renewable energy creation can be the use of waste, thus through a multifunctional approach two objectives can be achieved at the same time.

For the most sustainable development of ecological agriculture and for the achievement of the most significant number of organic products, it is necessary to eliminate chemical fertilizers and pesticides from agricultural production and replace them with natural fertilizers, taking into account the differences in the actual amount produced as a result of the changes of this nature.

The state of health of citizens is closely related to the environment in which they work. Thus, through the European Green Deal, appropriate conditions are created in both rural and urban environments. Also, the medical system will contribute to improving the quality of life by using new technological resources and by

combating diseases resulting from exposure to polluting substances of any type, such as substances present in pesticides or insecticides.

Non-governmental organizations will have a significant impact due to the NGO concept, that is not to produce profit, but to bring added value within a field. They can monitor the evolution of the measures taken by local and national administrations regarding the progress of the implementation of the European Green Deal, publicly signaling the gaps or slippages of the actors involved when necessary.

4. Operationalization of evaluation elements

4.1. Analysis of the ideational paradigm regarding environmental and climate policies

In order to understand the current investment plan, the priorities from the recent history of projects financed or co-financed by the European Union must also be analysed. Previous projects that contributed to combating climate change and protecting the environment were ones that analysed and combated problems at the micro level, being implemented at the local level and their positive effects could only be felt by a limited number of people. Examples of such projects would be:

- Creation of the first national investment platform in the field of energy efficiency in Lithuania. Modernization projects are a pillar of the efficient use of resources, thus, they have been of interest to the European Union in the process of complying with regulations and directives in the environmental sector. In the case of Lithuania's financing, the emphasis was placed on the installation of solar panels, the renovation of buildings that can benefit from this approach, or the efficiency of the industrial sector through the transition to more efficient light sources. These steps balance the high initial costs with the benefits that will arise as a result of the changes made.
- Heating investment strategy for the Budapest city area. Terminal management solutions for buildings and other spaces where citizens work are part of the energy strategies that will eliminate practices not adapted to market requirements, and in this case, the results will come from the expansion, interconnection and modernization of already existing thermal networks to increase performance.

An important element of the policies of the European Union that complicates the process of protecting the environment is the subsidy of fossil fuels, subsidies that

accumulated between 39 and 200 billion EUR annually. The elimination of greenhouse gases is closely related to the reduction or even the complete elimination of fossil fuels, but this aspect presents difficulties that must be taken into account by decision-makers in order to make the best decision. The main difficulty lies in reducing the economic sectors that are based on fossil fuels and thus, the probability of social and economic consequences will be very high. An aspect that is not taken into account in subsidizing fossil fuels is the calculation of the cost of the harm they bring to the environment. The targeted damages refer to the pollution of the air and the environment, the congestion of public roads or the costs related to the degradation of public roads.

The paradigm used by the current political decision-makers is constantly changing, but the objectives enshrined in the public agenda must be fulfilled. A concrete example of the mistrust of the decision-makers regarding the environmental policies addressed by the European Union is the former president of Romania, Traian Băsescu, who publicly declared the probability of some states leaving the European space following the implementation of the policies of the European Green Deal. The argument presented by him is that the transition to a sustainable and fossil fuel-free economy cannot be made considering the budget allocations dedicated to this purpose. It also emphasizes the need to develop infrastructure, especially express highways, considering these elements to be more important at the expense of sustainable and efficient development using the tools designed by the European Union, such as the just transition mechanism.

The support of the decision-makers who occupy some of the most important positions in the European institutions is an essential factor in the optimal implementation of a program or project, thus, the support provided by the President of the European Commission, Ursula von der Leyen was essential to receive the resources necessary for optimal implementation EGD. This initiative, to be the promoter of such a project aimed at the environment and the climate, requires the use of an inclusive paradigm, which evaluates both the benefits and the disadvantages arising from the application of a program and builds the implementation strategy so that the results are as expected, more precisely sustainable, efficient and effective, using only calculated compromises (Tidey, 2020). Mrs. Ursula von der Leyen's position from this point of view is in antithesis with that of MEP Traian Băsescu.

4.2.1. Definition and conceptualization of program theory in accordance with the particularities of EGD

The vision of the European Green Deal, being a macro one, integrates the ideas of environmental policy in a multitude of economic sectors. The relevance of the use of program theory, considering the peculiarities of EGD, is based on the idea that it is used for the evaluation of large-scale programs, which also address social issues, and meet secondary objectives in a main objective.

Based on the theory of the program, the evaluation is carried out through the identification of problems and the schematization of the objectives regarding the socio-economic issue. These problems stem from the inefficient use of natural resources, the faulty practice of agriculture at European level, the inadequate management of the effects that led to global warming and the use of fossil fuels in excessive amounts, which cannot be fully absorbed by natural mechanisms (soil, forests or waters) (European Parliament, 2019). Within the strategy of the European Green Deal, it is considered to solve the problems mentioned above through the transition to a circular economy at the EU level, by increasing the practice of ecological agriculture and increasing the degree of awareness regarding the benefits brought by it, by modernizing the infrastructure and by improving the economic capacities of the EU to facilitate EEP interventions. According to a study carried out at the request of the European Parliament, the absorption capacity of CO2 emissions is impressive, approximately 9.5-11 gigatons of CO2 annually (European Parliament, 2018), but in 2017 there was an amount of 37.1 gigatons of CO2 emitted by to the polluting economic sectors (European Commission, 2017), thus the amount emitted is more than 300% compared to the amount absorbed during the same year.

According to the previously mentioned, the idea of using the program theory as an evaluation method for the realization of the evaluation design is supported. It aims to monitor the evolution of the EGD strategy, an aspect achieved thanks to its ability to operationalize a thorough assessment of an extensive number of constituent elements.

An important element of the evaluation based on the theory of the program is the predominant use of qualitative research, building a logical matrix that will encompass all the important aspects of the optimal development of the initiative, the vision being one of macro type, using a specialized work methodology to

eliminate the significant discrepancies between the member states from the point of view of the implementation of the policies targeted by the European Green Deal.

Due to the large number of beneficiaries, there are a multitude of issues that may arise during the evaluation. In this sense, the theory of the program is based on the thorough research of the impact of the policy on the stakeholders.

4.2.2. Macro-level EGD processes and structural elements

Part of the evaluative process based on the theory of the program are the identification and exemplification of the structural elements of the European Green Deal. The structural elements are a constitutive part of the evaluation and represent elements that will be taken into account in the evaluation process that will not change as a result of the processes carried out. They will influence the EGD policies, but will not be directly affected by these policies.

Ministries whose work is constitutive elements of the EGD are considered structural elements, because they will not change their internal structure. They will create special structures that will deal with the development of pollution reduction techniques through sustainable measures, which respect the criteria of efficiency, effectiveness and economy. Moreover, in most of the member states of the European Union, there are already departments that deal with environmental and climate issues. With the implementation of the EGD policies, these departments will gain more importance due to the prioritization of these issues.

Transport infrastructure is not a priority for changing the EGD. It is an element that has a good enough constitutive base to not be of interest to the structures of the European Union at this moment, being feasible in terms of the environment and the climate. Whether it is road, naval or air infrastructure, structural benefits cannot be brought to be included in the ecological concept targeted by EGD, but related issues of these infrastructures are targeted. Eastern European states will recover the infrastructure deficit using greener means, thanks to policies designed on a macro scale by the EEP.

Local administrations are considered structural elements, considering the fact that they only adapt to the needs of citizens and implement policies that are agreed by the ministries and the European Union, regardless of their nature. The organizational structure does not change in this case, the policy design departments remain identical. These usually attract funds for regional or even rural development,

and to continue the investments, ideological adaptation to the new European bases is impetuously necessary.

The European institutions represented the pillar of public policies on a large scale in the European territory and thus, they are considered structural elements by the evaluators. The European Parliament, the Council of the European Union, the European Commission and the European Council present a constant structure around which the policies are carried out, in this case speaking of the environmental and climate policies of the European Green Deal. In addition to the structure, there are also constitutive elements that are not covered by the EGD policies, among which we can find the staff, the administrative structure or the organizational chart.

These structural elements represent the bases of the policies related to the European Green Deal, which do not require changes throughout the implementation, but, with the help of the evaluators, in exceptional situations they can be intervened on, an operation that will help the proper implementation of the policies.

4.2.3. Process Map

This is a constitutive part of an evaluation based on the theory of the program and gives us the tools that will be necessary to be used to achieve the main objective, that of adapting the measures of the European Union regarding the reduction of pollution and climate change. The process map catalouging in the general mode differentiates according to the type of action into 3 distinct categories:

a. *Structural processes*

- The creation of specialized funds to support the economic sectors and regions most affected by the EGD policies.
- At the national level, the implementation of own policies to help the European ones to speed up the measures targeted by the EGD.
- Investments from national funds specifically dedicated to waste recycling and reuse infrastructure.
- The creation of departments whose objective is to evaluate the state of implementation of EGD policies and monitor the indicators established related to them.
- Creation of a working methodology in emergency situations that respects the environmental protection criteria of the PAC regulations
- Funding energy unfeasible regions to modernize workspaces and buildings to create an energy efficient system.

- Programs to finance professional reconversion with the aim of acquiring the tools specific to the ecological economy.
- Regional and local support for small and medium-sized enterprises that aim to produce organic food.

b. *Operational processes*

- Updating micro-level working methods to adapt new green techniques to current operational bases.
- The purchase at local level of new machines and vehicles that comply with the European norms in force regarding the quantities of pollutant emissions generated.
- Purchase of digital components that comply with European recycling rules
- The acquisition of digital work systems to facilitate the digitization of local, regional, regional, national and European public administrations.
- Refurbishment of spaces for management, reuse and recycling of all waste to achieve the secondary objectives of EGD at the regional level.
- Designing financing methodologies for SMEs, especially those in the agricultural sector that want to make the transition to ecological alternatives.
- The purchase of means of public transport that have hybrid or electric propulsion technologies.
- Specialization courses dedicated to employees from national institutions that will deal with the implementation of ecological policies.

c. *Support type processes*

- Board games dedicated to both the young and the elderly to raise awareness of the importance of protecting the environment and climate.
- Awareness materials on financing possibilities for entrepreneurs operating in economic sectors financed by EGD.
- Creating podcasts and other photo-video materials that address environmental and climate issues.
- Promotion of materials promoting the benefits of the European Green Deal in educational environments that address these issues.

4.2.4. The result elements brought by the EGD

These are a constitutive part of the evaluation based on the theory of the program and present two necessary elements, which are the outcome and the output. The outcome is the main objective of the policy, which is made up of a series of outputs.

To address the issue of the European Green Deal, we will define these two terms in the following way:
Outcome: Adaptation of the European Union's measures to reduce pollution and climate change
Output 1: Increasing the quality of sustainable development policies within the EU states
Output 2: Increasing the number of interventions to combat environmental pollution and climate change
Output 3: Facilitating the transition to a sustainable development based on the socio-economic environment
Output 4: Adapting current national legislation to new environmental challenges
Output 5: Supporting member states that do not have optimal development
Output 6: Efficiency of resource use
Output 7: Combating pollution caused by sources emitting CO2 (or equivalent substances)
Output 8: Establishing strategies to protect the environment
Output 9: Preventing and combating the negative effects of climate change

The complex nature of the European Green Deal implies a diversification of outputs so that the outcome is the desired one. The outcome being the main element, the outputs can be conceptualized as secondary objectives that lead to the fulfilment of the outcome.

5. Conclusion

For the correct conceptualization of a European program, the intervention of an evaluator is necessary. Depending on the type of program or project, the evaluator may approach different evaluation methods. In the current case, the European Ecological Pact, due to its complexity and the introduction of some socio-economic elements, requires an approach based on program theory, within which the methodological framework will be established, with the aim of identifying macro-level problems and developing methods of solution by schematizing the objectives. Considering the current state of evolution of the European Ecological Pact, it is difficult to identify a result that will bring a significant impact on reducing carbon emissions and combating climate change.

The initiative is a long-term one, with a term of 30 years, more precisely 2020-2050, during which the policies addressed by the PEE will gradually realize the secondary and tertiary objectives. However, given the public agenda of high-level decision-makers, we can speculate on the possibility of the continuation of the European Green Deal in the form in which it was conceptualized.

The value judgments made following the evaluation based on the theory of the program, bring real benefits in all 3 crucial moments of a program, in the case, in the ex-ante, in the intermediate stage and in the ex-post stage. Thanks to the ex-ante evaluation, the measures to be adopted and the stages to be completed are known from the conceptualization stage of the program, at which point the value judgments of the evaluator prove to be crucial. These value judgments are necessary for a decision-maker to take into account all the constituent elements of a program and make the best decision for citizens in the long run.

The evaluation starts from the main objective, which is the adaptation of the European Union's measures regarding the reduction of pollution and climate change, and builds the secondary objectives in correlation with the main one, creating a pyramidal system for solving individual problems, which are then divided into zones and areas of implementation. Awareness of the effects of the European Ecological Pact, both by the institutions responsible for carrying out the tasks necessary for its good implementation, and by citizens to properly benefit from the benefits and mitigate the disadvantages, is impetuously necessary to create a dynamic and efficient system.

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