CATALONIA 2026: A STUDY ABOUT THE INTERNALIZATION OF EXTERNALITIES

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Abstract - This paper presents a brief theoretical study on the theme internalization of externalities belonging to axis four of the Strategy for the Sustainable Development of Catalonia, horizon 2026. This paper is justified due to the relevance that thematic of sustainability gains day after day making the analysis of the Catalan initiative useful both as feedback to implementers and implementers of the action plan and to society at large. Some concepts related to the subject of study are approached and its conjuncture with the Catalan contemporaneity is commented.

Keywords - Sustainable development, Catalonia, Externalities, Economics.

I. INTRODUCTION

At 1987 the Brundtland Report defined sustainable development as one that is capable of provision the needs of the present generation without compromising the ability of provisioning the needs of the future generations. With it environmental issues become more relevant to the economic development of countries and international conferences mobilize nations on the need to develop action plans at many scales.

The sustainable development is a intrinsic part of the European construction process, constituting the Treaty of European Union, signed in 1992, as one of its governing principles. In its Art. 2°, the Treaty establishes that the European Community's mission is to promote the harmonious and balanced development of economic activities, sustainable and non inflationary growth that respects the environment.

Upon the need to attend internationals treatys demands the Catalonia's central government, the Generalitat, included in Art. 4° of the Catalan Autonomy Statue that public authorities should promote the values of freedom, democracy, equality, pluralism, peace, justice, solidarity, social cohesion, gender equality and sustainable development.

The Art. 45° of the same Statute define in its first paragraphe thah the governments must take the necessary actions to promote the economic and social progress of the region and its citizens, based on the principles of solidarity, cohesion, sustainable development and equal opportunities.

Aim at to achieve these goals, the Generalitat make out at 2010, through a participatory process involving many social and economic actors, the Strategy for Sustainable Development of Catalonia (SSDC) wich defines the main strategic lines of the region in a horizon until 2026.

The SSDC provides a development mechanism and an evaluation and monitoring system that shall guide decision making and is compound into seven axes, but this paper aims to discuss the efficiency of the Catalan Sustainability Strategy by studying the axis four, specifically the key theme: the internalization of externalities.

II. DETAILS AND MATERIALS

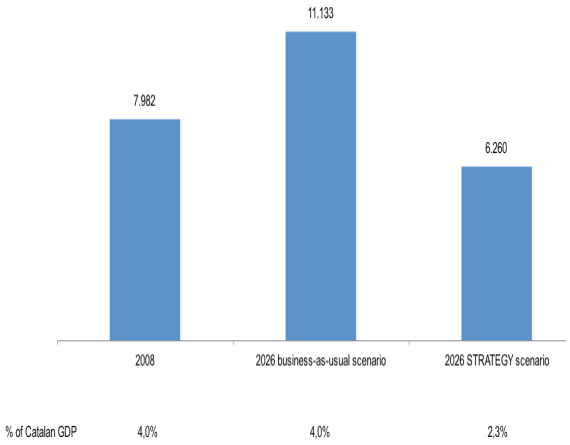
The expectation that the scarcity of natural resources should curb economic growth has been frustrated so many times that the natural resources factor is no longer a central element in macroeconomic studies. Nowadays, where it is almost impossible to imagine a economy without growth, we have come up against the issue of sustainability and with it come questions about how to mitigate the consequences of these activities.

Externalities are direct effects on agent's welfare, environmental quality or production processes. Arising from economic activities the externalities can be positives or negatives. The SSDC defines them as a concept derived from the finding that any productive activity or individual has, by definition, repercussions and impacts on resources use. Varian claims that main feature of externalities is the fact there are goods that people care about and that are not sold on the market so, upon their presence, there is no way to efficiently allocate resources in the Pareto sense.

Public goods are not rivals and not excluding, in other words, the consumption of one individual does not interfere with the consumption of other good and no agent can be excluded from consumption of this good. Environmental goods, or natural capital, fit in this definition. Due to the absence of property rights, intrinsic feature to this type of good, the monetary costs of depreciation of these resources are not absorbed by any agent voluntarily, however the loss of welfare is absorbed by everyone, especially those who lives in a greater situation of socioeconomic vulnerability.

Measuring the utility of these goods, and so valuing their costs, is not a simple accounting, however shows up as necessary under the contemporary socioeconomic and environmental scenario.

According research by Australian National University economist Robert Constanza, overexploitation of natural resources has already resulted in losses worth $20.2 trillion in the world between 1997 and 2011.
Aims at to achieve sustainable development, which governs both the Treaty of European Union and the Statute of Catalan Autonomy, the Generalitat has made a action plan to achieve the long term sustainability of this region and ensure that emerging sustainable Catalonia model shall be shared with society. Strategies for Horizon 2016 has, besides positive socioenvironmental implications, a significant economic impact and, in particular, a reduction in negative externalities. Also presents estimates in monetary values and percentages of Gross Domestic Product (GDP).
Socially internalizing these costs not only mitigates environmental issues, as it burdens the causative agent of damage, but also enables long term sustainable development can be kept by nations and, consequently, ensuring the maintenance of social welfare of their peoples.
The following table shows the estimation o negative externalities in Catalonia, in millions of Euros, for the base year 2008 and for two scenarios projected until 2026, one without the application of the Strategy actions and another one with the application of the actions, extracted from SSDC.



The theme Internalization of externalities is part of the axis Catalonia ecoeficient, competitive and innovative. It consists of four strategic objectives that will be analyzed individually in this paper.

2.1. Externalities Calculation

The methodology chosen for the Catalan action plan is based on approximations and the choice of microeconomic variables was made considering both the availability of data and their suitability to the theme. They are:
1. Induced costs;
2. Costs of production, prevention and control;
3. Costs of corrective measures;
4. Disclosed preferences;
5. Real preferences;
6. Stated preferences;
7. Contingent assessment;
8. Legal compensation.

By deepening the methodology for calculating externalities, it is possible to integrate environmental and economic costs, providing the definition of viable objectives to be achieved. Considering the life circle of goods and services produced and the value of biodiversity

2.2. Development of a Complementary Index

Developing ways to include the internalization of externalities in regional accounting by incorporating not only socioeconomic but also environmental aspects of measurement is not a recent theory. Supported by some experts such as El Serafy, the theory claims for the pricing of natural capital and its inclusion in GDP, where depreciation of natural resources shall be incorporated into national accounting in a manner similar to the way in which fixed capital depreciation is calculated.
In the Catalan case, the calculated externalities were made for those variables that have a reliable proven methodology that meets reality of the region, resulting in minimum estimated values for the valuation of this natural capital.

2.3 Reduction of Socio environmental Externatilies

When direct effects of externalities are excessive they become problematic and end up requiring government intervention in the economic sphere, generating deadweight in the economy. This intervention often ends up generating additional expenses, demanding from the public budget an amount that could be used in other social spheres to generate welfare for the population.

The Strategy's action plan aims to reduce by at least 18% the socioenvironmental externalities of the Catalan economy until 2026, based on 2008, and incorporate the externalities of the different productive sector through the most appropriate techniques, in order to minimize these costs. This strategy could lead to an estimated savings of almost five million Euros when comparing the scenario where the action plan was applied with the scenario where the action plan was overlooked.

2.4. Recognition of Environmental Goods and Services

Reducing expenses is not the only benefit. The incorporation of externalities refers to both negative and positive ones. Starting from the recognition of ecosystem environmental goods and services not only

costs can be incorporated but also revenues, creating the possibility of budget increases to the current tax system.
Through the pricing of natural services there is a collective effort to raise awareness of their relevance, reinforcing conservation efforts and sustaining the welfare of society.

III. RESULTS AND DISCUSSION

The internalization of externalities proposed by the Catalan Strategy's action plan affects the main sectors of economic activity in the region and may generate structural changes in these segments.

Although the Catalan primary sector has a very small share of regional GDP, it is traditionally linked to natural resources, so from a productive point of view, the links between this activity and the action plan of the Catalonia Sustainability Strategy are key to maintaining full activities of this sector in order to maintain food production capacity while integrating the valuation of social and environmental services with sector accounting.

Catalan industry is still quite representative in the economy, despite the impacts suffered as a result of the latest economic crises that hit the European bloc. The thematic axis studied in this paper presents a robust framework for the diversification of industrial activities in the region through processes of productive innovation, gains in industrial competitiveness and efficiency, not only in the context of the combination of traditional industry production factors, such as the theory. neoclassical microeconomics, but also considering the ecoefficiency from the incorporation of negative externalities from industrial processes, which are very significant worldwide, either by the emission of polluting gases, contamination of soils and water sources or even by the bad destination of waste.

Catalonia's most representative sector in terms of its share of GDP is tourism. The autonomous region is Spain's first tourist destination. As everyone else faces sustainability challenges as the expansion of equipment degrades areas, with the need to plan and promote the integrated management of the territory and the infrastructure of the services offered, conditions that can be met by valuing the externalities associated with the activity, as well as the internalization of these costs.

IV. CONCLUSION

The efficiency of the Catalan Sustainability Strategy 2026 through the study of the internalization of externalities was made and the main conclusions are as follows:

1. The action plan meets the demand of international treaties on sustainable development;
2. The action plan complies with the constitutional legal principles of both the European community and the autonomous region;
3. The action plan is in line with relevant economic and environmental terms in the contemporary scenario;
4. The methodology used is subject to applicability;
5. The goals set are attainable;
6. Both negative and positive externalities can be incorporated into the socioeconomic reality of the region;
7. The main sectors of the Catalan economy, by share of GDP, benefit from the action plan;
8. The plan allows modifications that may contribute to its improvement;
9. The Strategy is efficient, practical and appropriate to the current scenario.

ACKNOWLEDGMENTS

The Catalan sustainable model is feasible and can and its benefits can be realized both by reducing the negative externalities of the regional economic model and incorporating positive externalities, as it meets the demands of the main sector segments, obeys international treaties enabling support and cooperation, has constitutional relevance which confers greater institutional security both in the applicability of the plan and its maintenance.

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