The eco taxes for environmental protection in the light of sustainable development goals: evidence from Morocco

Lahcen Ettahiri, Lotfi Benazzou

Abstract. This research aims to explore how eco-taxes contribute to achieving sustainable development goals, such as protecting the environment from pollution. The environment faces the threat of pollution, prompting countries to seek ways of mitigating its negative effects through the application of preventive or control tools and methods, in this case eco-taxes. Morocco is one of the countries suffering from environmental problems, which is why our country has adopted the concept of sustainable development. Environmental protection is one of the necessary elements to achieve the sustainable development goals. As a result, it has worked to develop an arsenal of laws and legislation to protect the environment against deterioration and pollution. Achieving sustainable development in Morocco requires a number of legislative and control mechanisms, including eco-taxes, which contribute to sustainable development as a deterrent and incentive. In this context, our research is based on qualitative research using documentary analysis. The most important result of our study is that eco-taxes are a powerful incentive for innovation if they are better selected, that they also improve competitiveness by offering low-emission alternatives, and that the use of eco-taxes are preferable to the application of regulatory tools in terms of cost.

Keywords: environmental taxation, ecotax, environmental protection, sustainable development, polluter pays principle, Pigouvian taxation.

1 Introduction

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1 Introduction
This promotes a balance between environmental, economic and social dimensions, with the aim of improving citizens' well-being and preserving natural resources for future generations, in line with its international commitments. As a result, it has made efforts to develop an arsenal of laws and legislation relating to the protection of the environment against deterioration and pollution, starting with the Kingdom's 2011 constitution, which enshrined therein the right of all citizens to sustainable development and to live in a healthy environment. In 2014, framework law no. 9 was promulgated as the national environment and sustainable development charter, which stipulates the need to draw up a national sustainable development strategy.

Achieving sustainable development in Morocco requires a number of legislative and control mechanisms, including eco-taxes, which contribute to sustainable development as a deterrent and incentive. Ecotaxes are considered to be one of the economic tools for protecting the environment, which is why countries attach great importance to them. Today, it has become a force for correcting the behavior of economic agents, as well as an effective tool for any environmental policy. In this sense, the main question is as follows: how eco-taxes can be a tool protecting the environmental in line with sustainable development goals?

2 Literature review

2.1 Conceptual and theoretical foundations

At the international level and in our country, we have witnessed the emergence of a new form of taxation called “green taxes” or “ecological taxation”, which is closely linked to the green economy, sustainable development, and the problem of environmental protection. Environmental taxation was first introduced by the economist Pigou Cecil Arthur and in his book "Welfare Economics" published in 1917, in which he proposed the creation of a tax as an appropriate means of combating pollution. Environmental taxation is defined as a type of economic tool for solving environmental problems, designed to absorb environmental costs and provide economic incentives to people and companies to promote environmental protection. Environmental taxation is a set of tax measures that have an impact on the environment. It is also a type of levy specifically aimed at protecting the environment by reducing environmental degradation and overexploitation of natural resources. The first and second paragraphs of Article 30 of Royal Decree no. 1.14.09 issued on March 06, 2014 in execution of Framework Law no. 99.12 as the national charter for the environment and sustainable development, stipulated that "an eco-taxes system was created consisting of ecological fees and tariffs imposed on activities characterized by high levels of pollution and consumption of natural resources." Environmental pollution is seen in neoclassical theory as an example of market failure, and the field of environmental economics is largely devoted to finding ways to reduce pollution, and to correct or internalize these externalities. In addition, the literature on environmental economics has studied the Pigouvian tax approach to correcting externalities, implying an active role for the state, insofar as the environment is seen as a frontier of economic growth. From this theory, the OECD has taken up, with modifications, a new principle called "the polluter-pays principle", i.e. making the polluter pay for the pollution he has caused.
Consequently, according to economic theory, as developed in 1920 by Arthur C. Pigou, this dysfunction can be avoided by internalizing externalities (the theory of externalities) [10].

Fig. 1. Eco-taxes regulation in the Pigouvian framework

This Pigouvian tax minimizes the sum of depollution costs to achieve a given environmental result according to the principle of equimarginality [11, 12].

According to environmental economic theory, the use of economic instruments (such as taxes) in environmental policy will lead to more cost-effective pollution reduction than the use of administrative instruments. [13]

The rapid expansion of population, economic activity and road traffic has increased ambient concentrations of pollutants in urban centres. Air pollution-related heart disease and stroke, for example, cause around 700 premature deaths a year in Casablanca alone.

The following graph shows that premature deaths (mortality) account for the majority of air pollution costs, ahead of the increase in chronic and acute illnesses (morbidity) of around 2,200 deaths in 2014.

Fig. 2. Premature deaths due to air pollution in Moroccan cities in 2014

According to Croitoru and Sarraf (2017), air pollution costs Morocco around $1.14 billion a year in premature deaths and illnesses, equivalent to 1.05% of GDP in 2014. [14]

2.2 Effects eco-taxes on environmental protection related to sustainable development.
It contributes to the dissemination of information on polluting products and exerts a regulatory influence on consumer decisions to preserve environmental sustainability.

Create incentives for producers and consumers to refrain from environmentally damaging behavior, through the design of more efficient production methods, while rationalizing the use of energy.

Table 1: List of first international environmental agreements

<table>
<thead>
<tr>
<th>Year</th>
<th>Agreement Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1885</td>
<td>Berlin Convention on the Rhine Salmon</td>
</tr>
<tr>
<td>1895</td>
<td>Paris Conference on Bird Protection</td>
</tr>
<tr>
<td>1900</td>
<td>London Conference on Bird Protection</td>
</tr>
<tr>
<td>1902</td>
<td>Paris International Conference on Bird Protection</td>
</tr>
<tr>
<td>1910</td>
<td>8th International Congress of Zoology in Graz (Austria). Creation of a provisional committee to study the question of nature protection worldwide.</td>
</tr>
<tr>
<td>1923</td>
<td>First international non-governmental congress for the protection of nature (fauna, flora, natural monuments) in Paris</td>
</tr>
</tbody>
</table>

Over the years, the concept of sustainable development has come to cover a wide range of areas and is attracting the attention of countries around the world. [15].

Regarding sustainable development, in 1992, the World Bank considered sustainable development a development that continues [16]. It also replaces the previous framework set by the Millennium Development Goals adopted in September 2000.

In 2015, the United Nations set it to guide us on the path to a better, more sustainable future for all. The 17 Sustainable Development Goals include the challenges we all face today: poverty, inequality, climate disruption and environmental degradation, prosperity, peace, and justice.

In addition to the “polluter pays principle”, there’s the notion of a double dividend, which means that the introduction of an eco-taxes system can result in the reduction of pollution damage [17]. It derives directly from the incentive effect of the price signal on behavior, and is a collective gain derived from the environmental benefit through appropriate use of the budget revenues generated by the tax.

Fig 3. 

3 Research method

Methodology is “the study of methods for building up knowledge”, it means setting your research project within an epistemological framework [18]. Each researcher is thus called upon, in line with his or her epistemological positioning, to mobilize a certain number of research methods.
In this context, we’re going to look at the methodology used in this article. Consequently, the object of our research is part of a positivist epistemological vision whose aim is to analyze and explore an already existing reality.

To identify the role of environmental taxation in environmental protection, our problem and our objective are to explain and understand reality and to test hypotheses. There are several ways of collecting qualitative data. For our part, we proposed the investigative approach of documentary analysis. We felt that this technique was best suited to the requirements of our problem.

Our research methodology adopted is a descriptive exploratory methodology based on the technique of documentary analysis. This technique seemed to us to be the most appropriate for the requirements of our requirements. It is a form of qualitative research. Our problematic is in line with our objective, which is to explain and understand reality. What's more, as Wacheux (1996) states, interviews and documentation are "two indispensable sources when one is interested in actors, the organization and the behavior of actors in the organization".

Documentary analysis requires an exhaustive literature search. In the context of this research, we have opted for exploratory data analysis using data from reports and studies, which enables us to highlight relationships between ecotaxes and tax mobilization in the form of tables or graphical representations.

The data is taken from tax regulations issued by the General Tax Administration, law of local authorities and Customs and Excise Administration, as well as official legislation relating to environmental protection. For the purposes of exploration, we used NVIVO 10, then use the files imported from Excel, which correspond to our main sources of information mentioned above.

4 Results and discussions

4.1 Moroccan environmental taxation: current situation

Eco-taxes policy remains a priority instrument to be undertaken by public authorities on a national scale. As we have seen, Pigou and other economists had already proposed the use of fiscal instruments to internalize the externalities that cause market failure, notably environmental externalities. In this context, the use of fiscal instruments is an unavoidable option and a means of regulation. Among the regulatory instruments available, economists consider taxation to be the most economically efficient. However, the concept of environmental, green or ecological taxation has yet to appear in Morocco's general tax code.

As well as being a tool for achieving economic, social and even cultural objectives, the tax serves to reduce environmental pollution and the depletion of natural resources. Environmental taxation has many dimensions, including the economic, health and development dimensions.
Law n° 07-20 amending and supplementing law n° 47.06 on local authority taxation, namely:

- Tax on the extraction of quarry products.
- Parking fees.
- Tax on driving licenses.
- Taxi and coach license tax.
- Vehicle inspection tax on vehicles over 5 years old.
- Tax on motorcycles with a cubic capacity of 125 cm³ or more.

General Tax Code (CGI):

- Exemption from payment of the Special Annual Vehicle Tax (TSAV) for duly authorized mixed transport vehicles with a gross vehicle weight or maximum gross vehicle weight less than or equal to 3,000 kilos, and electric and hybrid vehicles.
- Sales of solar water heaters are subject to a reduced rate of 10% Value Added Tax (VAT).

Code de la Douane et des Impôts Indirect (CDII):

- Royalty on phosphate mining, abolished on January 1, 2008 (article 7 of the 2008 Finance law);
- Internal taxes on energy products;
- Ecological tax on plastics;
- Special tax on cement;
- Special tax on concrete reinforcing bars;
- Special tax on sand.

Import value added tax: Article 8 of the Finance law for the 2017 budget year provides for exemption from import VAT for goods, equipment and merchandise acquired by the Mohamed VI Foundation for the Protection of the Environment.

Domestic consumption tax: under article 5-III of the 2004 Finances law, heavy oil, coal and petroleum coke intended for the production of electrical energy with a power output of over 10 MW are exempt from domestic consumption tax.

Finance Laws:

- Ecological tax on plastics processing (2013 Finance Law);
- Special tax on concrete reinforcing bars (2013 Finance Law);
- Special tax on sand (2013 Finance Law);

Other legislation:

- Wastewater treatment charges;
- User fees for public services (water supply, sanitation, waste collection and treatment);
- Discharge fees.

At the same time, the Moroccan tax system provides for tax exemptions and reductions in favor of the environment:

- Reduced VAT on the rental of water and electricity meters.
- Reduced VAT on fuel-efficient cars.
- Suspension of import VAT on butane gas.
- Reduced VAT on solar water heaters.

While at the same time, the Moroccan tax system provides for tax exemptions and reductions in favor of the environment:
Total and permanent exemption of income from woodland plantations, not fruit plantations, designed to protect soils from erosion caused by wind and rain.

In the context of the tax reform announced by the government in 2021, Morocco decided to enact a carbon tax, which is intended to bring industrial production into line with the standards that will apply in the world, especially in the European Union [26].

There is no doubt that this tax will impose restrictions on industry and export, but it could also constitute an opportunity to enhance the competitiveness of Moroccan industry. Thus could help the emergence of a carbon-free Moroccan industry, in line with what is recommended in the New Development Model report, which is preparing to work on reaching 40 percent of renewable energies in relation to national energy consumption.

4.2 The role of the Moroccan tax system in environmental protection

Morocco is striving to improve its governance indicators through a number of reforms and amendments, harnessing the tax system and making it effective in protecting the environment and reducing pollution as part of an effective eco-taxes policy.

To this end, the Moroccan tax system provides for a number of taxes and levies dedicated to preserving the environment. By the way of example, we have tried to list these taxes according to the type of law and code that mentions them:

- Law n° 07-20 amending and supplementing law n° 47.06 on local authority taxation.
- General Tax Code (CGI).
- The Customs and Indirect Taxation Code (CDII).

As well as being a tool for achieving economic, social and even cultural objectives, the tax serves to reduce environmental pollution and the depletion of natural resources. Environmental taxation has several roles, including the economic, health and development dimensions. We try to deal with each dimension separately:

- The economic role

Taxes have an economic dimension represented in the prices of goods and services offered on the market, including environmental resources. The discharge of polluted waste into the air, water or soil is the type of use of these environmental resources within the factors of production, and the non-payment of the price for the use of these resources leads to their waste and non-production, a cause of environmental deterioration, and that the application of the polluter-pays principle reduces the causes of the costs of environmental pollution, then the prices of goods and services reflect the costs of their production, so that they become less competitive, providing an incentive for producers and consumers to choose more environmentally-friendly products.

- The health and development role

Environmental taxation has a health and development dimension, since the application of this type of tax on various activities that pollute the environment guarantees a healthy life free of disease, given that health is part of human capital. The polluter-pays has a developmental dimension, since economic development in various areas of life has been accompanied by significant technological progress in order to achieve economic development, including the exploitation of available resources in their various forms. In addition, facilitating the use of primary resource extraction techniques developed to meet industrial demand and achieve prosperity.

Environmental taxation is also characterized by the immediate response of economic agents who cause pollution, in an attempt to control the rate of pollution and bring it down to the desired level.
Environmental fiscal policy in Morocco remains a priority instrument to be undertaken by public authorities on a national scale. As we have seen, Pigou and other economists had already proposed the use of fiscal instruments to internalize the externalities that cause market failure, notably environmental externalities. In this context, the use of fiscal instruments is an unavoidable option and a means of regulation. Among the regulatory instruments available, economists consider taxation to be the most economically efficient.

5 Conclusion

Morocco is currently moving towards decarbonization of the economy, an objective pursued through reforms such as the national environment plan in light of the Sustainable Development Goals (SDGs) and in line with the guidelines of the National Sustainable Development Strategy, and the recommendations of the new development model, to ensure a comprehensive transition by 2030.

There can be no doubt that the adoption of environmental taxation will provide the various players involved with a set of guarantees that will help support protection capabilities, and define the responsibilities and rights of the parties involved, considering administrations as the main managers of efforts to develop and improve the environment, and control human behavior in relation to its environment, by monitoring, inspecting and controlling violations that constitute damage to the environment, and taking the necessary measures to preserve it: such as closing down the place of business, or treating waste harmful to it at the administration's expense, and setting standards and levels not to be exceeded for pollutants.

In this context, eco-taxes will be an asset that will accelerate the process of transition to a green economy. The introduction of eco-taxes for public financing is also very important to provide sufficient resources for investment in green projects and the fight against climate change, not only as a direct financial resource, but also as a lever for sustainable development.

To activate the place of eco-taxes in the Moroccan tax system, a number of recommendations have been unveiled on various occasions and researched, notably at COP 22.

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