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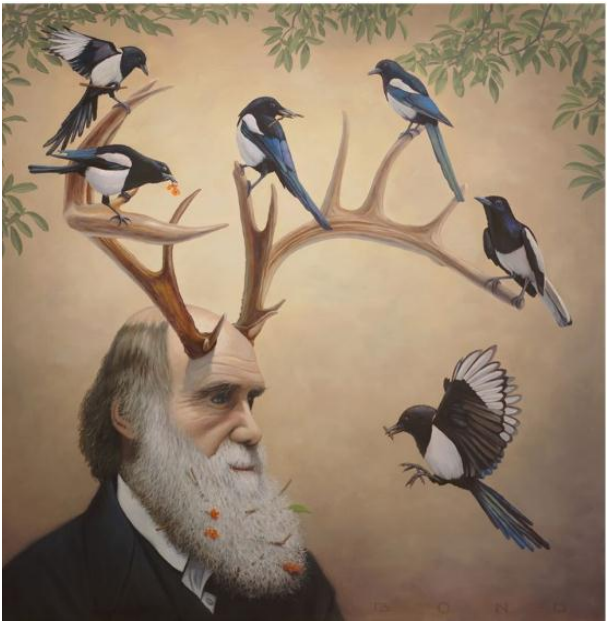

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The extent of the environmental tax contribution to achieving sustainable development

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Abstract
Environmental tax is one of the important tools in achieving sustainable development. This type of tax appeared in the early twentieth century, and these taxes aim to reduce the percentage of pollutants by imposing them on polluter. It has motivational effects for modifying behavior in proportion to the requirements of preserving the environment. The researcher has used the analytical method according to the data issued by the Central Agency for Statistics on the volume of waste in Diyala Governorate, the most important conclusions reached by the researcher is that the environmental tax can reduce pollution when imposing financial sums on individuals causing pollutants, and thus we will achieve sustainable development.

Keywords: Environmental tax, environmental pollution, sustainable development

El alcance de la contribución fiscal ambiental para lograr el desarrollo sostenible

Resumen
El impuesto ambiental es una de las herramientas importantes para lograr el desarrollo sostenible. Este tipo de impuesto apareció a principios del siglo XX, y estos impuestos tienen como objetivo reducir el porcentaje de contaminantes al imponerlos al contaminador. Tiene efectos motivadores para modificar el comportamiento en proporción a los requisitos de preservación del medio ambiente. El investigador ha utilizado el método analítico de acuerdo con los datos emitidos por la Agencia Central de Estadística sobre el volumen de residuos en la gobernación de Diyala, las conclusiones más importantes a las que llegó el investigador es que el impuesto ambiental puede reducir la contaminación al imponer sumas financieras a las personas que causan contaminantes, y así lograremos un desarrollo sostenible.

Palabras clave: impuesto ambiental, contaminación ambiental, desarrollo sostenible

Introduction

Most people have treated their environment until recently as an absolute commodity, considering that it is normal, air, sun, water and waste disposal. But now the environment no longer meets civilization with these needs without economic cost, or environmental degradation, despite this, the environment still provides us with these resources, but it is now limited and is no longer free, and that the developed countries have imposed on the modern industrial societies two choices: Either to limit their demand or to pay the environment in order to keep it clean and relatively preserved, and that is through the principle of driving polluter, which is one of the important pillars in the economics of the environment and here comes the concept of environmental tax, which requires charging costs pollution caused by, since this phenomenon has become worsening in our country, it must be studied and appropriate solutions found for it. For this reason, variables related to pollution were searched for Diyala governorate to limit, identify and study the problem as it is one of the governorates of Iraq and a residential place at the same time and provide solutions that may be successful

to eliminate the problem of pollution represented by the accumulation of waste, debris and scrap in this province.

First: Research methodology and previous studies

Research Methodology

1- Research problem

The deterioration of the environment conditions in Iraq came as a result of the non-imposition of penalties and fines for everyone who carries out pollution activities with the absence of tax awareness and tax culture for every member of society, so the research problem is concentrated in the following: (The imposition of environmental taxes, whether motivational or punitive, on those who cause pollution from individuals, achieves a sustainable development of the environmental dimension in the province of Diyala).

2- The importance of the research

The research derives its importance from the fact that it deals with an important aspect of borrowed development, which is the environment, the possibility of imposing a tax on the causes of pollution and the way to eliminate the phenomenon of waste accumulation spread in Iraq and in the area designated for research (Diyala Governorate) to achieve sustainable development.

3- Research objective

- The research seeks to present the scientific aspects of sustainable development and exposure to environmental problems and provide data on the environment for Diyala Governorate.
- Activating the environmental tax as it is a deterrent and incentive for environmental pollution to achieve sustainable development.

4- The research hypothesis

From the above mentioned in the research problem, the research hypothesis can be formulated with the following: -

1. The analysis and measurement of environmental indicators shows before us the volume of environmental pollutants and the share of each of them.
2. The imposition of a tax on individuals responsible for pollution in Iraq achieves sustainable development.

5- Research methodology

The descriptive approach was used in collecting scientific material, which is the most appropriate to present aspects that serve research when dealing with the concept of tax and sustainable development. An analytical approach has also been used to deal with figures and statistics mentioned in

the search for the environment.
6- Research limits
Time limits: The data used for the period 2014-2018
Spatial limits: Diyala Governorate

Previous studies
1- Study (Shi'a, 2011): Using the environmental tax to reduce pollutants resulting from car exhaust
Research published in the Journal of Financial and Accounting Studies Issue 17 of 2011 The aim of the study is to activate the role of taxes in treating pollutants resulting from car exhaust and to conserve natural resources and build a proposed model and a work mechanism for imposing environmental taxes on polluted cars. Among the recommendations that came in the research are improving fuel specifications and the use of technology Clean for transportation.
2- Study (Nasrallah, 2016): The reality of environmental pollution and the use of environmental tax to reduce it
Research published in the Journal of Financial and Accounting Studies Volume: 11 Issue: 34 The research aims to identify the gases emitted from the combustion of fuel for generators operating in Baghdad and then measure the amount of environmental pollution and the most important recommendations is the necessity of developing environmental legislation and enacting deterrent laws to limit the behavior of violators.
3- Study (Al-Lami, 2018): The effect of environmental taxes on controlling the levels of environmental pollution resulting from the activities of foreign oil companies contracting to work in Iraq. Applied research at the General Tax Authority
Research published in the Journal of Financial and Accounting Studies 2018 Volume: 13 Issue 44: - The research seeks to highlight the importance of applying environmental tax as an effective economic tool to reduce environmental pollution resulting from the activities of oil companies and the most important conclusions are that imposing environmental taxes motivates these companies to adopt less production methods Polluting the environment and the trend towards improving its performance relatively by adopting projects aimed at preserving the environment.
4- Study (Al-Rahimi, 2019): the effect of the legal regulation of green taxes in reducing environmental pollution rates in Iraq
Research published in the Journal of the College of Administration and Economics for Economic, Administrative and Financial Studies for the

year: 2019 Volume: 11 Issue: 4 The research aims to highlight the importance of legal regulation that enables the optimal decision-maker and help him to implement in order to stop environmental degradation The research has made several recommendations, including subjecting industrial development and expansion For the country to package the appropriate environmental legislation.

Second: Theoretical side

Environmental Tax

The environmental tax is called several labels, including green tax or ecological taxes (ecological means the study of environment and environment) are those taxes and fees imposed by the state for the purpose of compensation for the damage caused by pollution, given that the right to the environment is the right of all individuals.

Some of the objectives of the environmental tax are (1):

1. Contributing to the removal of pollution by means of punitive measures that include environmental fines, whether they are financial fines, criminal or incentive penalties.
2. Ensuring a healthy environment for every person in the community.
3. Instilling a culture of preserving the ocean in society.
4. Achieving rapid development with common benefits.

As these taxes are imposed on pollutants, such as chemicals, pesticides, ..etc.

So, they are money that is compulsory deducted by the state and directed to finance environmental policies, which is a fee to provide public authorities with a license to conduct polluting activity or extract or consume renewable or non-renewable natural resources, this is to push producers and consumers to change their behavior for the good and the benefit of the environment. The role of the tax system at the present time is no longer limited to financing and providing the state with financial resources only, but it has also become a social reform role as a means to exercise power and to redistribute the state's wealth.

Sustainable development

The environment in which we live with its various resources is an essential component of sustainable development, as the environment provides the conditions appropriate for human living and supplies it with the necessities of life: air, water, food, housing and clothing. At the same time, develop-

ment in various directions depends mainly on environmental resources to meet the needs of the population and improve and develop the quality of their lives and expand their choices, and this has often led to changes in the environment that have negatively affected the social and economic development of the natural environment resources due to exceeding the ability of the environment to give.

The most famous definition of sustainable development is what came in the United Nations Conference on Environment and Development in 1987 (2), which defines it as development that meets the needs of the current generation without harming the ability of future generations to meet their own needs.

The foundations of sustainable development

- The human being: He is the first responsible and the bearer of trustworthiness from God Almighty.
- Nature: And what it contains of resources that God harnessed to serve man and the necessity of making optimal use of it.
- Technology: And what it means from using scientific knowledge in investing environmental resources, solving its problems and confronting the dangers it faces.

In order to make progress in achieving sustainable development, we should refer to some aspects of the excessive consumption of the world's resources and the destruction of the environment surrounding our planet, where we can define these aspects by the following:

Manifestations of resource consumption that affect sustainable development

First: The world population has increased

Statistics indicate that in the 1950's the population of the world did not exceed (2.5 billion) people, while the population at the present time is (6.5 billion) people as the United Nations expects in its report that the population will jump to (9.2 billion) People in 2050 and (11 billion) people in 2100. In fact, everyone agrees that with a very large number of people within a certain social organization dealing with productive capacity, technical methods, infrastructure and the environment, this will be followed by a decrease in the value of living life, under these conditions we find insufficient outputs and very excessive pollution.

Second: Degradation of the environment

The environment in the broadest sense means all the factors that have a role in determining human existence. The environment is divided into:

1. A social environment that includes the social sphere of the individ-

ual, family, and society.

2. A geographical (spatial) environment, which includes the geographical surroundings of people in the neighborhood, village, city, or country.

3. A vital environment, which includes the environmental status of people, animals and plants, and the conditions necessary for their common life, and includes the effects resulting from technical, economic and population developments.

With this understanding of the environment, two main problems can be contained:

1) The problem of damaging and polluting the biosphere through toxic emissions and waste, and disturbing the environmental balance.

2) The problem of the depletion of renewable and non-renewable natural resources, as industrial companies seek to exploit the broadest resources and to maximize profit to the maximum extent possible, external costs borne by society as a whole arise, which take the form of environmental sabotage, which is reflected in desertification and the decline of vegetation, salinization of the soil and lack of fertility, deforestation of the forests, deforestation of forests. , Global warming, toxic waste.

The problem of all kinds of waste (domestic, industrial, and health) is one of the biggest problems that the developing or developing countries suffer from, as they represent the biggest source of pollution and a threat to human life and environmental safety because of the toxic and dangerous components they carry. Disposal has become an issue of concern for those responsible for managing them within a proper environmental framework. Numbeo (3) has published a website that provides information on living conditions including housing, health care, traffic, crime and pollution in the countries and cities of the world for the year 2019. The site classified 99 countries according to the opinion of people on the percentage of pollution in each country in addition to that it used information from the World Health Organization and other official organizations to classify countries according to what is shown in the following table: -

Table 1: A new international report related to environmental pollution in the world of 2019 (https://yallafeed.com/aldwl-alakthr-tlwthaan-fy-alaalm-4867)

Rank	Country	Pollution Index	Exp Pollution Index
1	Mongolia	93.06	170.75
2	Myanmar	92.25	168.03
3	Afghanistan	91.91	165.57
4	Bangladesh	88.30	158.96
5	Lebanon	87.39	155.98
6	Nigeria	87.37	156.50
7	Vietnam	87.13	156.20
8	Egypt	86.48	154.43
9	Nepal	84.98	151.46
10	Monaco	84.74	156.08
11	Peru	83.80	149.76
12	China	81.91	148.92
13	Macedonia	80.85	147.31
14	Ethiopia	80.44	142.03
15	Jordan	80.39	142.27
16	Cambodia	80.03	141.86
17	Iran	79.35	145.47
18	Iraq	79.32	140.01
19	Azerbaijan	78.32	137.95

This report pointed to the increase in pollution around the world in varying proportions, especially in industrialized and developing countries that suffer from weak environmental protection policies. The report released on the numbeo website revealed the most polluted countries in the world and occurred on the continent of Asia. The list was topped by a Mongolian country, followed by Myanmar, and Afghanistan came third, followed by Bangladesh.

As for the big surprise, it was with Lebanon getting the fifth rank in terms of pollution rate globally, and it scored about 87.39%, and it advanced to major countries such as Nigeria, Egypt, China and other countries that have a larger population. As for the Arab countries that came after Lebanon, Egypt was ranked eighth, Jordan ranked 15th, Iraq 18th, Kuwait 28th, and Saudi Arabia ranked 37th globally. As for Russia, it ranked 51st globally, and Finland recorded the lowest global pollution rate, followed by Iceland, Estonia and Sweden (3).

This international pollution report for 2019 shows that Iraq is ranked 18th in terms of global pollution, which means that increased pollution must be taken into account and appropriate solutions to avoid exacerbating pollution.

Third / practical aspect

The research included a set of variables that were obtained from the (Central Statistical Organization), which represents statistical data on the various elements of the environment for the Diyala Governorate from regular waste, rubble, scrap, the rate of waste raised for each individual, random throwing sites for the period from 2015 to a year 2018 AD, as shown in the following table 2:

Table 3: statistical data received from (Ministry of Planning / Central Statistical Organization)

Year	Regular waste	Rubble	Scrap	The rate of waste collected for each individual	Random throwing sites
2015	322550	26243.5	5511.5	1.4	0
2016	315474	85128	9326	1.2	7
2017	335029	74223.2	30906	1.3	7
2018	345757	115974.4	39029	1.2	9

Where random throwing sites can be defined: They are squares or plots of land outside the municipal boundaries and are not controlled for waste collection.

As for waste: it is all the materials that result from human activity and are dispensed with to end the benefit or increase it from the need and may result in harm to human or the environment directly or indirectly if it is not disposed of in a proper way.

Rubble: It is a group of materials in excess of need that are not useful for use and is usually collected from construction, and it consists of several classes of building materials, whether from bricks, wood, sand, concrete security, flooring (Kashi), decorative security, or ceramics and other of materials that related to construction are the result of demolishing, removal, construction and restoration work in residential and commercial areas, as well as road works that require expansion and other road requirements.

For the purpose of exploring data and knowing its own recipe statistics in order to know its behavior, a SPSS program was used to analyze the data as follows (table 3):

Table 3: Descriptive statistics

Metrics	Regular waste	Rubble	Scrap	The rate of waste collected for each individual	Random throwing sites
Mean	329702.50	75392.2750	21193.1250	1.2750	5.75
Std. Error of Mean	6706.508	18615.99230	8160.88433	0.04787	1.974
Median	328789.50	79675.6000	20116.0000	1.2500	7.00
Mode	315474[a]	26243.50[a]	5511.50[a]	1.20	7
Std. Deviation	13413.017	37231.98460	16321.76866	0.09574	3.948
Variance	179909013.667	1386220677.049	266400132.063	0.009	15.583

Table 3 illustrates the most important descriptive statistics that describe the variables of the study, where we note that the mean for ordinary waste during the four years is equal to (329702.50), where the mean represents the value that gives us a rough estimate of the group values, and which concentrates the values of the regular waste variable, as for the standard error of this variable, its value was (6706.508), which represents the extent of the change that can occur in the value of the average (average) in the case of drawing another sample from the same community. 328789.50) where this value divides the dataset into two equal parts, we also note the value of the mode (315474).

From the foregoing, we notice that the median value is greater than the mode and the arithmetic mean as well, that the mode is greater than the mean. This indicates the twisting of data with a negative twist, that is, twisted to the left, which indicates that the values of the normal waste variable are centered to the left, meaning that the data is centered to the left, which indicates that there are large and many values in recent years, which indicates a significant increase in recent years from the previous ones, as well as the value of the variance is equal to (179909013.667), which represents the dispersion or spacing of the values of the regular waste variable from its mean, and the value of the standard deviation of this variable was equal to (13413 .017).

As for the rubble variable, the mean of the mean is equal to (75392.2750) during the same period mentioned above with a standard error equal to (18615.99230). As for the value that mediates the values of the variable

that represents the median equal to (79675.6000), we notice that the median value is greater than the mean and the mean it indicates that the data are crooked to the left, i.e. that the data is centered to the left, which indicates that there are large and many values in recent years, which indicates a significant increase in recent years from the previous, as for the value of the variance, it was equal to (1386220677.049), which corresponds to the value of the standard deviation equal to (37231.98460). We note that the value of the variance and the standard deviation are large, which indicates that the values of this variable are somewhat far from their arithmetic mean.

As for the scrap variable, its mean is equal to (21193.1250) with a standard error (8160.88433), as for the median is equal to (20116.0000), as for the mode, its value was (5511.50). it is clearly noted that the value of the arithmetic mean is greater than the median and greater than the mode, which indicates that the distribution is moderate and not quirky, that is, the centralization of data is in the middle of the period. As for the value of variance (266400132.063) and the value of the standard deviation (16321.76866) we notice the dispersion of the variable values. As for the variable rate of waste collected for each individual, the value of the mean is equal to (1.2750) with a standard deviation (0.04787), the median value is equal to (1.2500), and the value of the method is equal to (1.20).

From the foregoing, we notice that the value of the mean is greater than the median and mode. This indicates that the data have a symmetrical (non-twisted) distribution. As for the value of the variance, it is equal to (0.009), corresponding to a value of a standard deviation equal to (0.09574), and that the variable of random throwing sites, the average for the four years under study is equal to (5.75) with a standard error equal to (1.974) by an equal means to (7) and a pattern equal to (7)

From the foregoing, the value of the arithmetic mean, median and mode is very close, which indicates that these data have a moderate, non-quirky distribution, meaning that they are somewhat constant. The following figure (figure 1) shows the variables of the study for the period from 2015 to 2018.

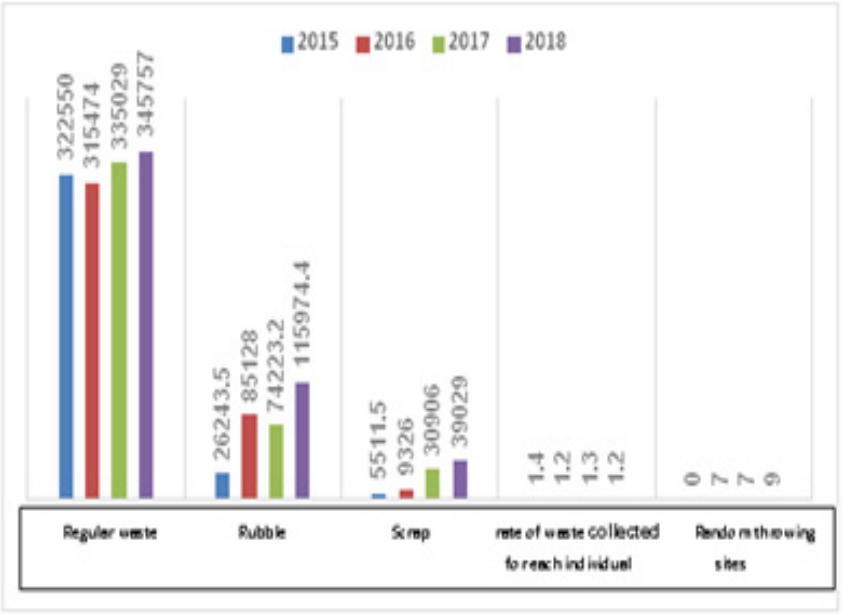

Figure 1: the variables of the study for the period from 2015 to 2018 (prepared by the researcher)

From the foregoing, we note that the variables (regular waste, rubble, scrap) that express environmental pollution in Diyala are constantly increasing, and that the regular waste variable takes the largest share in terms of the increase, then the rubble variable then scrap, as for the variables (the rate of the collected waste for each individual, the random throwing sites) maintain their level in being somewhat close to that, and this explains the lack of awareness of the seriousness of the pollution and the absence of a deterrent that prevents individuals from throwing the waste at random, so the responsible administration must take the necessary measures to reduce environmental pollution in Diyala Governorate.

Fourth: The role of environmental tax in achieving sustainable development

One of the most important tools of the tax system that can be relied upon in combating the problem of environmental pollution and reducing its negative effects in the eventual response to the requirements of sustainable development are:

Impose taxation of waste that resulting from the practice of some activities.

Another set of (incentive) tools to encourage individuals to carry out practices and activities that reduce environmental pollution.

In order to impose the environmental tax on the environmental pollution that is the subject of the study, several things must be taken into consideration through which we may be able to achieve sustainable development, namely:

First: Determining the environmental tax base

It is to determine the part on which the tax is imposed from the subject matter of the tax and we mean the part that exceeds the optimal level of pollution, that is, socially permissible. The variables obtained from the waste and the trash, rubble and scrap it contains for Diyala Governorate are the tax base for the environmental tax on the waste.

Second: Estimating the tax base

Many tax systems resort to translating and estimating waste in the form of equations or tables for each type of these pollutants, provided that the tax amount allocated to each specific unit of measurement is indicated according to the type and nature of these pollutants, so the waste is classified into several types (waste, Rubble, scrap) until each type is dealt with separately and the possibility of treatment and the development of appropriate solutions.

Third: Determining the tax rate

We mean the amount of money that the taxpayer must pay for each unit of the tax issue, or it is the percentage by which the amount of the tax is determined. It is a statement between the amount of the tax and its value relative to its pot or its location, each person's share has been extracted from the collected waste, thus making it easier for us to impose an appropriate price for each unit of the subject matter of the tax, whether the price is fixed or ascending.

Fourth: The proposed solutions

1- With regard to waste, which constitutes the largest percentage of waste and is constantly increasing, we suggest that environmental taxes take the incentive form, for example, allocating a financial reward for every kilogram of waste for each individual who delivers waste to landfill sites that have an environmental approval and equivalent other If the waste is separated according to its types (plastic, glass, food leftovers) instead

of the state spending the amounts to remove this waste, individuals will be encouraged in cooperation with the municipality, and through this approach we will recycle the materials and achieve sustainable development in the region.

2- As for the rubble, the environmental tax can take a deterrent form in not granting a building certificate if the rubble is not disposed of properly and bringing in receipts that support the delivery of the rubble to the designated places.

3- As for the scrap, these materials can be collected and sent to the private iron and steel companies located in Iraq under the supervision of the executing or municipal companies or associations specializing in the environment or individuals to reduce pollution and re-enter these materials as a raw material for the production of iron and steel, including material and development benefits that achieve this.

4- Cooperating with the audio and visual media to educate citizens about the danger of environmental pollution and to define sustainable development goals as development depends in its various directions mainly on environmental resources to meet the needs of the population and improve and develop their quality of life and expand their choices.

Sixth: Recommendations

I. The statistical analysis showed an increase in the variables of the usual waste, debris and scrap with the increase of random throwing sites in the last year of Diyala governorate. This explains the absence of a deterrent that prevents individuals from throwing the waste randomly and here begin the duty of the province to limit these cases and identify them.

II. Determine the base for the environmental tax so that the appropriate tool can be used for each of the variables that harm the environment from waste, rubble and scrap and define a container for each of them separately so that we can address the problem as mentioned in the previous solutions.

III. Raising awareness through the media and sending awareness committees to schools and colleges to eliminate this phenomenon, and granting all powers to the authority responsible for environmental protection to ensure the proper application and implementation of matters related to environmental protection.

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