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Balancing the need to protect the environment and achieve economic development through the application of ISO 14001 environmental management systems in industrial enterprises

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Abstract:

The study aims to highlight the role of the application of ISO 14001 environmental management systems in industrial institutions in balancing their desire to increase their profits and achieve economic development and the need to protect the environment. As preserving the environment, was a burden on institutions seeking to achieve economic development due to the growing environmental awareness among customers and the increasing environmental costs imposed on institutions from taxes and the like as a result of polluting the elements of the environment and depleting their resources on the other hand.

The study showed that what was included in the ISO 14001 specification contributes to protecting the environment by reducing pollution and achieving economic development for institutions, according to a sample study of institutions applying the standard. The research paper clarified the economic and environmental gains achieved by industrial institutions by adopting the international standard ISO 14001 as a system for managing their internal environment. For this the recommendation came to urge institutions that do not apply this standard to adopt it to improve their environmental performance.

Keywords: ISO 14001, environmental gains, economic gains, environmental protection.
JELClassificationCodes: Q56, Q58.

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الموازنة بين ضرورة حماية البيئة وتحقيق التنمية الاقتصادية من خلال تطبيق أنظمة الإدارة البيئية ISO 14001 في المؤسسات الصناعية

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ملخص:

تهدف الدراسة إلى إبراز دور تطبيق أنظمة الإدارة البيئية ISO 14001 بالمؤسسات الصناعية في الموازنة بين رغباتها في زيادة أرباحها وتحقيق التنمية الاقتصادية وضرورة حماية البيئة، حيث شكل الحفاظ على البيئة عبئا على المؤسسات الساعية إلى تحقيق التنمية الاقتصادية بسبب تنامي الوعي البيئي لدى الزبائن من جهة وتزايد التكاليف البيئية المفروضة على المؤسسات من ضرائب ونحوها نتيجة تلويثها لعناصر البيئة واستنزافها لمواردها من جهة أخرى.

بينت الدراسة أن ما تضمنته مواصفة الـ ISO 14001 يسهم في حماية البيئة بالحد من التلوث، وتحقيق التنمية الاقتصادية للمؤسسات، وفقا لدراسة عينة من المؤسسات المطبقة للمواصفة، وقد أوضحت الورقة البحثية المكاسب الاقتصادية والبيئية التي حققتها المؤسسات الصناعية بتبنيها للمواصفة الدولية ISO 14001 كنظام لإدارة بيئتها الداخلية، ولهذا جاءت التوصية في حث المؤسسات الغير مطبقة لهذا المعيار بضرورة اعتماده لتحسين أدائها البيئي.

الكلمات المفتاحية: الـ ISO 14001؛ المكاسب البيئية؛ المكاسب الاقتصادية؛ حماية البيئة.

تصنيف JEL: Q56, Q58.

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11. INTRODUCTION

It has been difficult for for-profit institutions to achieve a balance between their desire for economic development and the preservation of the environment and its protection from pollution on the other hand. As the latter constituted a burden on institutions in terms of environmental costs and taxes imposed on them. As a result, the pollution of the environment and negative behaviors appeared by companies that are often caused by a lack of awareness and environmental culture among leaders, managers and cadres of companies. In this regard, those interested in the environment and economists tried to find mechanisms that make Preserving the environment and its resources is a gain for companies. Among those mechanisms is the ISO 14001 specification which was first established in 1996 and updated in 2004, and then the latest one in 2015, which is based in Geneva, Switzerland. And we have tried through our research to clarify the economic and environmental gains that can be reaped by institutions applying the standards of this standard by answering the following problem:

- What are the contributions of the application of ISO 14001 to reducing pollution and achieving the economic development of enterprises?

To answer this problem, we have proposed the following hypotheses:

- The application of ISO 14001 standards enables organizations to reduce the effects of pollution caused by their production processes.
- Saving energy and resource use in accordance with the requirements of ISO 14001 contribute to achieving sustainable economic development of enterprises.
- Improving the environmental performance of enterprises in accordance with ISO 14001 increases their market share and sales volume.

The study's importance:

The importance of this study lies in showing the economic and environmental gains achieved by institutions through their application of the international standard ISO 14001 and how the latter enables the organizations applying it to achieve a balance between their aspirations of sustainability in the growth of their economy and an increase in the number of their business and the environmental commitments that stakeholders hope from them from customers, suppliers and government agencies.

The study's objectives:

The study aims to highlight the benefits of adopting the application of the ISO 14001 specification as an environmental management system in institutions that aim to achieve sustainable economic development in a society whose environmental awareness has grown significantly in the modern era. In which government laws and legislation binding to preserve the environment have increased. So, that this standard is a guide for institutions and a solution that makes preserving the environment a gain for

them to aspire to not a burden on them to escape from it.

To reach the goals referred to, we touched in our study the main three following titles:

1. Economic development and its effects on the environment.
2. Pollution and the economic tools used to reduce it.
3. Contributions of ISO 14001 to reducing pollution and achieving economic development.

2. Economic development and its effects on the environment:

2.1 The concept of economic development:

Economic development was defined by several definitions, so some economists considered it a process that leads to an increase in national income and thus an increase in per capita income and growth in various economic sectors to progress and prosperity. Others considered it as the increase in national product during a certain period of time as a result of the presence of technological and technical progress in the existing or to be established production units. Also some believe that it is a set of measures directed to modify the structure of the national economy of a country in order to increase per capita income during One of the most famous definitions of economic development is the definition of the United Nations which considered it as: a set of means used in concert with the efforts of individuals and governments to improve the standard of life of these individuals economically, socially and culturally(Namita Kumari & Suman Bhanoo, 2022).

It is clear from a review of these definitions that economic development means that States and Governments seek to raise their production and national income through working individuals and using a set of means and procedures with the aim of improving the standard of living in social and cultural of individuals.

2.2 Economic development criteria:

Economic development has several criteria that determine the progress of countries in achieving them compared to others. These criteria fall under three general groups including those related to income, social and structural. This can be addressed as follows(بن قانة, 2012, pp. 246–253):

2.2.1 Income criteria:

Income is used, whether in its nominal or real form, to measure the degree of economic growth and progress in any country. It has several criteria, including them:

a) Total national income criterion: The actual national income achieved in each economic cycle is measured and relied upon to compare the progress of countries over each other. But some economists did not accept this criterion for comparison as it measures the increase in the size of the national income of the country regardless of its population.

b) The expected gross national income criterion: This criterion differs from its predecessor in that it takes into account the potential resources and capabilities of the state. Therefore, some economists recommend adopting it instead of the first criterion.

c) Average income criterion: This criterion takes into account the size of income and the number of inhabitants than, the average per capita income is calculated according to the following equality**:**

$$\text{Average per capita income} = \frac{\text{National income}}{\text{Population}}$$

However, this criterion has a number of gaps that prevent it from being an accurate criterion for measuring economic development, such as the weakness of statistical systems in developing countries, and the difference in economists in the number of populations.

2.2.2 Social standards: These indicators refer to the quality of services that affect the daily lives of individuals and the changes in them. This related to three types of criteria:

a) Health standards:

These measure the extent of health progress of a country in terms of the number of deaths per thousand of the population, the rate of life expectancy or death at birth, as well as the number of individuals per doctor and the number of individuals per hospital. Then, a use of a threshold taken from an international body such as the World Health Organization (WHO) to be compared through.

b) Educational standards:

These has a great importance cause they are concerned with measuring the degree of progress and backwardness of a country through human capital by determining the percentage of literate members of society and the percentage of those enrolled in various educational stages, as well as measuring state spending on education at all levels to GDP or to total government spending. The comparison is also through a specific threshold determined by an international organization such as UNESCO.

c) Nutrition standards:

These standards determine the average daily per capita or actual calorie intake and measure the degree of malnutrition and self-sufficiency of one country compared to other countries by setting a certain threshold by an international body such as the Food and Agriculture Organization of the World (FAQ).

These criteria are interconnected in a direct way, the more the nutrition is good for individuals, the better is their health conditions and the better the nutrition and health of individuals is good the greater their ability to learn and advance is good. Thus, forming a human capital on which the state depends to achieve economic development.

2.2.3 Structural criteria:

When developing countries gained their political independence after the second world war they followed strategies based on industry such as, import substitution and

manufacturing for export and more attention to the services sector which brought about structural changes in the developing and even advanced economic structures, as well as changes in the structure of their exports, imports and various employment opportunities. These variables were taken as criteria to measure the degree of growth of a country compared to other countries and for this purpose the following ratios were used:

- Ratio of exports of industrial goods to total exports.
- Ratio of employment in the industrial sector to total employment.
- The ratio of industrial production to local production.

The higher these ratios are in a country compared to others, the more it indicates its progress and economic development.

2.3 Sustainable economic development:

The concept of sustainable economic development combines two basic dimensions:

- development as a process of change.
- sustainability as a time dimension.

In October 1986, the Norwegian Prime Minister, Gro Harlem Brundtland, pointed out in a lecture that sustainable development has four dimensions (Hoyos et al., 2010):

- ✓ Fight against poverty.
- ✓ Maintain and improve the resource base.
- ✓ Expanding the concept of development to include economic growth, social and cultural development.
- ✓ Include environmental and economic considerations in the decision-making process at all levels.

The term sustainable economic development optimally expresses the overlap between the three systems: environmental, economic and social through a dynamic adaptation process of alternatives by replacing natural capital with industrial capital provided that future generations inherit the same amount of capital(*Sustainable Economic Development*, 2014).

2.4 Effects of economic development on the environment:

Economic growth can affect the environment through the following points:

• The abundance and quality of environmental resources, as the accelerated growth of the economy is due to the unreasonable depletion of environmental resources, which negatively affects their abundance and quality so, this leads to environmental degradation.

• Increasing pollution rates in the environment, because of economic growth is linked to productive and consumer economic activities that result in waste for which environmental resources such as water, air and soil are stored. So, the rates of these polluting wastes increase with the increase in productive activity and economic growth.

• Conversion of agricultural land, economic growth often dependent on industrial processes that transforms large areas of arable agricultural land into industrial zones which disrupts the balance of the environment.

• Degradation of ecosystems, the failure of most of the economic units adopted to allocate modern technological methods and preventive means to protect the environment.

• Accumulation of toxic waste and uncontrolled dump points(Jia et al., 2022).

It is clear that the economic activity is the main source of pollution and the economic growth has produced many negatives that have led to environmental imbalance.

3. Economic tools used to reduce pollution:

3.1 The concept of pollution and its constituent elements:

Pollution is defined as the change that occurs in the natural features of the elements that make up the environment from water, air and soil. This change is according to the elements that constitute its concept qualitatively, quantitatively or spatially. We can define each element as follows**:**

3.1.1 Qualitative change:

Qualitative change is by adding synthetic compounds that are alien to natural ecosystems that have never been in their cycles as they accumulate in water, air or soil. The most prominent examples of these substances are pesticides used to eliminate agricultural pests.

3.1.2 Quantitative change:

It is the increase in the proportion of some components of the environment such as more carbon dioxide than usual as a result of wildfires, an increase in temperature or an oil spill in the seas and oceans.

3.1.3 Spatial change:

The change in the location of materials in nature leads to pollution and damage to the environment as the transfer of radioactive and hazardous materials from one place to another may result in damage to the environment(*Pollution*, n.d.).

3.2 Types of pollution:

Pollution has six types:

3.2.1 Air pollution:

Air pollution is considered polluted when it contains substances that harm human health and the environment in which he lives. and one of the advantages of air pollution is its speed in spreading and the difficulty of controlling and treating it after it is in the atmosphere and it is not seen with the naked eye with the multiplicity of its sources. So, this what makes air pollution the major environmental issue.

3.2.2 Water Pollution:

Water of all kinds (waters of rivers, seas and oceans, rainwater and wells.....) is polluted if it turns from usable water to unusable water for many reasons such as the dumping of waste, chemicals and factory waste in it.

3.2.3 Soil Pollution:

Soil pollution represents that fracture in the state of equilibrium between its components which affects some or all of its fertility properties, quality and quantity of production and weakens its ability to digest and analyze the remnants of vital activity for a defect of a physical or chemical nature(Barwant, 2023, pp. 187–197).

3.2.4 Food and drug pollution:

It means the process of transforming a food or pharmaceutical substance from a beneficial state to a state harmful to humans or animals which means the loss of food and pharmaceutical materials for some or all of their nutritional or therapeutic values with the possibility of harming the organism due to the spread of viruses and microbes or the addition of some contaminated substances such as pesticides or the change in the composition of some medicines by increasing their dose or method of use(Lertxundi et al., 2020).

3.2.5 Noise pollution:

Noise pollution represents the increase in noise from the normal rates to which humans are accustomed especially, if they occur at intermittent or irregular intervals. The reason for this is that the mechanism of interaction and the relationship between the ear and the brain easily adapts itself to the level of ambient noise. This type of pollution has negative effects represented in: hearing loss, nervous tension, malaise, lack of productivity and work, headaches..... (Barwant, 2023, p. 166).

3.2.6 Radioactive pollution:

It is the change that occurs in one of the components of the environment from water, air and soil due to the leakage of radioactive materials which are divided into two types:

- ✓ Radiation of a positive nature (electromagnetic): such as gamma rays and X-rays, which have a high ability to penetrate body tissues or other materials over long distances.
- ✓ Radiation of a negative nature: such as alpha rays and beta rays, which have less ability to penetrate the human body compared to the first type but they affect negatively human health and the environment(Hazra, 2018).

3.3 Economic Effects of Environmental Pollution:

Environmental pollution has several negative economic impacts that can be summarized in:

3.3.1 Shrinking agricultural land and reduced food production:

Air pollution results in a rise in temperature due to the gases rising from production activity such as carbon monoxide and methane gas work as a cover around the globe, as this cover allows sunlight to enter the globe while not allowing it to exit from it again. So, this disturbs the balance between the rays entering and leaving the globe. For this reason, the new rising gases cannot penetrate the barrier keeping them close to the surface of the Earth resulting in a significant rise in global temperature. This rise in global temperature causes a change in the places of rainfall which leads to

a change in agricultural areas worldwide that affects the global production of major agricultural crops and food. Then, the rise in temperature causes a collapse in the icy parts of the Arctic which results in water floods that cause erosion and erosion of arable land areas of the globe reducing them and affecting their fertility. So, to face these dangers huge financial resources must be allocated that exhaust the economy of many countries, especially developing countries.

3.3.2 Destruction of water resources and agricultural crops:

The sustainability of fossil energy in industrial activity results in an increase in the concentration of carbon dioxide and nitrogen oxide gases in the atmosphere so, these gases turn due to some reactions into acid gases which return to the earth again when rain and snow fall in the form of acid rain destroying fish wealth when it falls on rivers, oceans and lakes, as happened in Canada and the United States and destroying forests and agricultural crops as happened in Europe and the United States. This negatively affects the economies of countries.

3.3.3 Leakage of ultraviolet rays and reduction of agricultural crop productivity:

The escalation of gases resulting from industrial activity in general and fuel combustion in particular leads to the destruction of the ozone layer surrounding the Earth's atmosphere and responsible for protecting it from harmful sunlight. The destruction of this layer results in the leakage of harmful ultraviolet rays to the ground, causing an increase in the incidence of individuals with cancerous skin diseases, eye diseases and reducing immunity. These rays lead to a decrease in the productivity of many agricultural crops.

3.3.4 Deteriorating health status of individuals:

Individuals are considered human and intellectual capital on which countries depend to develop their economy. The air pollution due to gases resulting from productive activity which sometimes contain atoms of heavy metals such as lead. So, this leads to the emergence of diseases in the chest, kidneys and nervous system that cause a weakness in the ability of individuals to focus, learn and produce which carries countries large financial costs as a result of the low productivity of workers and the accompanying treatment expenses that eliminates the main engine of development Economic represented by human capital(Ajibade et al., 2020, pp. 332–335).

3.4 Economic policy tools for environmental protection:

The state has the full right to regulate environmental ownership as public property through the development of standards, tools and policies to mitigate pollution and protect the environment. These policies may be direct or indirect as follow:

- **Direct economic instruments:** In 1972, the OECD adopted the polluter-pays principle according to which public authorities force the polluter to pay for the removal of the external effects of economic activities.

  a**) Environmental collection (green taxation):** It is a tax imposed on those who

cause pollution, for example: green pollution taxes, stacking fees, reprocessing costs, mining fees and forest logging.... .

The economist Peugeot proposed taxing polluting enterprises and some economists set the following equality for them:

Price of the produced good = social marginal cost = special marginal cost + tax

The tax imposed according to this equation is equal to the difference between the private and social cost this is what drives the institutions either to continue their activities while paying the value of environmental damage or to remove pollution by stopping the activity altogether or by reducing its external effects.

b) Subsidies: Governments provide subsidies to producers to encourage them to work with the principles of environmental conservation through dialogue and negotiation of monitorable and implementable environmental programs which encourages the industrial sector to improve its environmental performance in various value chains.

c) Credits: They are loans for environmentally friendly projects such as financial allocations for renewable energy (wind and solar) and the establishment of green banks to finance sustainable development such as the German Environmental Bank, and stimulate investments in preserving the environment by providing customs advantages for the import of equipment that works to remove pollution**.**

d) Pollution rights markets: These markets are considered a direct and effective tool to protect the environment from pollution as the environmental trading system depends on the purchase and sale of environmental emission rights which contributes to encouraging companies to improve their environmental performance and achieve a balance between their economic and environmental goals (DEVELOPMENT, 1992).

- **Indirect economic instruments:** The state uses indirect economic tools to protect the environment from pollution among which we mention the following criteria:

a) Environmental quality standards: They are rules and standards that determine the level of environmental quality and acceptable pollution in a particular area and are used to assess the impact of economic activities on the environment which guide policies and control practices to preserve the environment and achieve economic development.

b) Emission standards: which determine the limits and amount of emissions allowed from specific sources in order to reduce pollution and achieve sustainable development.

c) Product Standards: These standards illustrate the characteristics that must be available in the product, such as the percentage of lead in gasoline, for example, in order to help organisations produce clean and environmentally friendly products.

d) Method-specific standards: These standards specify the technical methods and devices to preserve the environment to be installed and sufficient during production to reduce pollution and preserve the environment(*Chapter 3, Economic Instruments*

in Environmental Protection in Denmark, n.d.).

4.Contributions of ISO 14001 to reducing pollution and achieving economic development:

4.1 Definition of ISO 14001 and requirements for its application in economic institutions:

ISO 14001 is defined as: "a set of specifications for how organizations can work to eliminate pollution through a formal system and data-base in order to monitor environmental performance". It aims to provide institutions with the elements of an effective environmental management system that enables them to deal with other administrative requirements of the organization and also contributes to enabling organizations to achieve a balance between their environmental and economic objectives. The ISO organization, through its technical committee has identified requirements related to the application of the ISO 14001 environmental management system which are shown in the following table(Črv, 2021):

Table 01: ISO 14000 Environmental Management System Requirements

Environmental Policy	Environmental Plan	Implementation and operation	Screening and corrective action	Management Review
Which means commitment and work to comply with environmental laws and legislation and pollution prevention, by providing a framework for setting environmental goals and reviewing them continuously.	Which means paying attention to diagnosing environmental issues in the institution, finding appropriate solutions to them, and developing programs capable of taking care of these issues within a specific time frame.	The implementation of the environmental plan requires the provision of qualified and trained personnel, accurate documentation of the overall procedures, clear and flexible lines of communication.	This examination includes monitoring and measuring environmental activities identifying corrective and preventive actions maintaining environmental records related to environmental performance and conducting regular system audits.	The ISO 14000 specification emphasized the periodic review of the system by the management, and the need to document audits.

Source: Prepared by the researcher based on (Dodrajka, n.d.)

4.2 Benefits of applying ISO 14001 in economic institutions:

The application of ISO 14001 standards in institutions that seek to achieve development and preserve the environment and its resources at the same time has several advantages and benefits. The most important of which can be addressed through Figure 01:

Figure 01: Benefits of ISO application in economic and industrial enterprises

Regulatory Compliance	**Improving the environmental performance of enterprises**	**Improving financial performance**
ISO 14001 ensures minimum regulatory compliance. Relations with those responsible for inspecting classified facilities become easy. Then, the organization can avoid penalties for non-compliance (fines, site closure...). In addition, the adoption of an environmental management system promotes the anticipation of legislation which allows for sudden mismatches.	The implementation of the requirements of ISO 14001 plays an important role in improving the environmental performance of enterprises through the actions taken to address the increase in regulatory requirements and waste disposal costs while taking these opportunities to enter into technical projects that facilitate the integration of environmental constraints into operations thus, succeeding in reducing costs and improving its environmental performance on the other hand.	Proponents of a causal relationship between the environment and financial performance argue that reducing pollution saves future costs by increasing efficiency reducing compliance costs and reducing future commitments, meaning that pollution reduction opportunities are profitable, and governments can use environmental management to increase the effectiveness and efficiency of institutions' environmental policies..

Improve the organization's relationship with stakeholders	**Improving the image of the organization and giving it a competitive advantage**
Obtaining the ISO 14001 certification is an introduction to the environmental efforts of the organization which results in improving relations between it and its stakeholders in particular confirming the trust of its financial customers (banks and insurance) as well as local officials, residents, site workers, and customers.	Environmental management literature suggests that organizations can improve their competitive position by developing internal manufacturing procedures and increasing the number of customers at the same time reducing the negative impacts of their activities on the natural environment by implementing/adopting some environmental management best practices.

Source: Prepared by the researcher based on (*PUB100372.Pdf*, n.d.)

4.3 Objectives of environmental rehabilitation according to ISO 14001 for economic institutions:

Environmental rehabilitation in economic institutions aims to improve their productivity and direct them towards sustainable materials in important sectors such as food industries and cleaning materials. This qualification also achieves healthy environmental standards that reduce and enhance the preference of products in consumer markets. Therefore, environmental and health factors are key factors in consumer choices and encourage producers to provide clean products. This improvement encourages changing consumption models towards sustainability in a positive way. This aims to qualify institutions from the environmental side to achieve several goals including:

- Promote environmental industrial production and promote sustainable waste transport for economic enterprises.
- Improving the environment of industrial enterprises through environmental auditing and effective control of resource consumption.
- Provide technical guidance for the development of production methods and control the use of resources and raw materials in enterprises.
- Develop national capabilities in planning and implementing environmental management strategies.
- Focusing the environmental management system according to international standards for the benefit of economic institutions.
- Encourage employees to be creative to reduce environmental costs and increase their awareness of occupational safety through effective training.
- The institution achieves environmental excellence and competitive superiority thanks to customer satisfaction and the quality of its services and products.
- Encouraging institutions to obtain a certificate of conformity from competent authorities in environmental safety such as the ISO 14001 certificate to improve their environmental performance and preserve the environment(*Environment Essentials - ISO 14001*, n.d.).

4.4 Environmental and economic gains from the application of ISO 14001:

There was an inverse relationship and conflict between economic development and environmental protection among economists in the past but the experiences in industrialized countries in Europe and some developing countries proved that the relationship between economic development and the environment is a positive relationship and not an inverse especially, in the framework of sustainable development where natural resources are a source of balance of economic development globally. Japan, for example, has achieved very advanced results when it is interested in protecting the environment from pollution including Improved air quality and reduced chemicals by 60% and lead oxide by 50% with economic growth of 70% in the same period. The strength of the link between economic development

and environmental protection was demonstrated by the results and the declarations emanating from the United Nations Educational, Scientific and Cultural Organization (UNESCO) and from the United Nations Conference on the Humanitarian Environment in 1972 as well as the Rio Declaration on Environment and Development in 1992, which affirmed that the protection of the environment from pollution and economic development are two things related and inseparable(*Declaration of the United Nations Conference on the Human Environment - Main Page*, n.d.).

The most important mechanisms that enable organizations to achieve sustainable economic development while improving their environmental performance and protecting the environment from pollution is the application of the standards of the ISO 14001 specification. We have rejistered the economic and environmental gains of some companies that have adopted the management of their ecosystem in accordance with the standards of this specification in the following table:

Table 02: Economic and environmental gains of ISO 14001 certified companies.

Institution	**Date of obtaining ISO certification**	**Economic and environmental gains after obtaining the ISO 14001 certificate**
National Sanitation Office – Algeria-	2007	- Low power consumption by 4448645 kw. - Financial gains estimated at 14073977 Algerian dinars. - Processing 5155 kg of paper, 1117 kg of plastic and 836 units of ink cartridge. - Treatment and reuse of 15671594 cubic meters of wastewater. - Reuse of 4677622 kg of slurry resulting from the processing activity of the Bureau in agriculture.
Condor Electronics Company	2015/07/07	-A significant increase in turnover in 2018 to 92417056.6567 Algerian dinars. -The development of television production (reaching 798975 units in 2018). -The development of the market share of the institution which reached 40.9% in 2018. -The number of defective units decreased which reaching 1009 units in 2018.
APS Group (Publications Department)	2006	- The company's annual sales in 2008 increased by 30%. - Avoid the equivalent of at least 70 tons of carbon dioxide emissions in 2009. - Cost savings resulting from reduced energy use.
A company First Transforming Travel (Transport Company) UK.	/	- Reduction in energy use by 31%. - £140 saved with energy awareness campaigns. - £70,000 saved due to reduced waste.
Ain Touta Cement Company,	2005/10/10	- A decrease in the amount of water consumed from 240,000 cubic meters per year and then estimated at 22,900 cubic meters: i.e. saving about 11,000 cubic meters.

Batna Governorate - Algeria -		- The company does not exceed the specified percentage of air pollution estimated at 50 mg per cubic meter of air. - The company's financial situation improved as in 2011 it achieved a turnover estimated at five billion Algerian dinars of which about one billion Algerian dinars was a net profit. - The increase in workers' wages, where the mass of their wages is estimated at about 800 million Algerian dinars. In addition to annual profits estimated between 120 and 130 thousand Algerian dinars per worker. - Eliminate the tax fees imposed on polluting companies estimated at 40 million centimes a year. - Thanks to financial savings, the company was able to establish a gravel and sand unit in 2009 in the municipality of Tillato with a financial envelope estimated at 600 million Algerian dinars and a production capacity of 600 thousand tons of gravel and sand annually.
Fertil Foundation, Annaba Province Unit - Algeria -	2010	- No emissions and dust emissions do not exceed the limit value. - Full compliance with the standards sets for the DBO5 Biochemical Oxygen Demand Index and the Chemical Oxygen Demand Index (DCO) with greater control of Fertil effluents. - Decrease in the amount of water consumed annually. - The annual growth rate of the turnover has evolved, as it represented 41% in the years before obtaining the ISO 14001 certificate and it represented 59% the after obtaining the certificate for each period. - Reduction in turnover by 35% after obtaining the certificate. - Reduced absenteeism rate by 4%. - Increase in market share with an engineering growth rate of 16.5% annually at the international level, and 0.7% annually at the national level during the period (2007-2012).
Almarai Company in Saudi Arabia Kingdom	2017	- Reducing shipments of wastewater containers by 50%. - Sending sewage tankers by 30%. - Reduce pollution of land and groundwater by selling used batteries and oil for recycling. - The company achieved success in recycling water and using it in its operations, and providing drinking water to livestock as it was estimated in 2014 at 1363893 cubic meters rising in 2019 to 1665798 cubic meters with an increase rate of 22.13%. - Reduce the consumption of water used in washing vehicles by 65%. - Increase clean power generation capacity to 17 MW with more than 30,000 MWh of clean energy produced. - The company avoided emissions of more than 6,250 tons of carbon dioxide equivalent in 2019. - Reduce the demand for energy required for lighting by more than 10 million kWh. - Achieve a 9% increase in energy efficiency through biofuels. - Reducing the total consumption of vehicle fuel as it decreased by 12.9%

		between the years (2018-2019). - An increase in the volume of food waste sold by 23.8% as well as an increase in the percentage of recycled food waste by 33.14% in 2019.
Toyota Company	1996	- Carbon dioxide emissions from logistics decreased from 0.290 million tons in 2014 to 0.286 million tons in 2018 and emissions of this gas per ton per kilometer decreased from 106.6 tons per kilometer in 2014 to 104.2 tons per kilometer in 2018. - Reduced volume of VOC (Volatil Organic Compounds) per painted area in TOYOTA Automotive Corporation's body painting process from 18.8 g per square meter in 2014 to 14.4 g per square meter in 2018 in Japan. - The development of sales of environmentally friendly cars reaching 4 million cars sold in the world in 2014. - The company obtains several certificates of success and honors as the US Environmental Protection Agency awarded it the Energy Star Medal in 2007 and won the Green Car Maker Medal in 2008. - Rid the world of nearly 15 million tons of carbon dioxide emissions which increased the proportion of its exports.

Source: Prepared by the researcher based on (شنوح, 2014), (فقاير, 2022), (شتراوي et al., 2020), (& عمر 2015 ,يخلف), (بوبريحة & قاشي, 2021), (بوصبيع صالح et al., 2021), (رامي & سارة, 2017), (فاطمة & ناصر, 2017).

Through the table, we can determine the role and contributions of the application of ISO 14001 in achieving economic development and reducing pollution in the following points:

a) The role of the application of ISO 14001 in reducing pollution:

- Recycling waste resulting from the production process instead of being thrown into the environment.
- Reducing emissions of polluting gases such as carbon dioxide.
- Not to exceed the specified levels of air pollution.
- Reduce land and groundwater pollution.
- Increase the capabilities of companies in generating clean energy.
- Development of environmentally friendly products.

b) The role of the application of ISO 14001 in achieving economic development:

- Reduce energy consumption and achieve financial savings.
- Increasing the turnover of companies due to investment in the sale and recycling of waste.
- Increased sales as a result of the good reputation gained by the company from preserving the environement and its resources.
- Evolution of the market share of companies applying the ISO 14001 standard.
- Reduce losses and defective units when production.
- Improving the financial situation and increasing the wages of workers.
- Elimination of tax fees related to environmental pollution.
- Reduce turnover.
- Achieving significant profits from the production and sale of environmentally

friendly products.

• Strengthening the relationship with stakeholders and obtaining certificates and medals that value the efforts of companies in their commitment to preserving the environment which reflect their best image, good reputation and achieve development.

5. Conclusion:

This study shows us the positive relationship between economic development and environmental preservation as protecting the environment by rationalizing the use of its resources used in the production process of water and similar of replacing it with clean energy recycling and treating it. Then reducing gas emissions polluting the atmosphere and waste resulting from production dumped in the environment by cycling and selling or using it what returns with direct profits to institutions represented in the abundance of costs due to low environmental taxes and saving energy use and revenues from Selling waste then, obtained indirect profits from its reputation and a good image such as increasing its market share and the strength of its relationship with stakeholders in return for its friendliness to the environment. One of the best mechanisms that facilitate its desired economic and environmental gains is the ISO 14001 environmental management system which enabled the institutions that relied on it to achieve multiple environmental gains of which the most important is reducing the severity of air and water pollution then, significant economic gains in exchange for saving energy reducing losses and producing environmentally friendly products. So, Organizations that have obtained the ISO 14001 certificate should continue their commitment to applying its standards while following up on the updates that occur in it. Other institutions should accelerate the adoption of this standard as a system to manage their internal environment to achieve the aforementioned budget to obtain economic and environmental gains that enable them to achieve leadership in the business world.

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