

## Environmental management of economic enterprise functions as a mechanism to improving sustainable performance: analytical study

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Received: 17/12/2022

Accepted: 01/03/2023

### Abstract:

This paper aims to analyze the impact of environmental management of economic enterprise functions on improving its sustainable performance. By studying the economic, social and environmental performance.

The study concluded that adopting the concepts of cleaner production and green marketing, as well as integrating the environmental dimension into the research and development functions of the enterprise, leads to improving sustainable performance, and raises the efficiency and effectiveness of the enterprise.

**Keywords:** Environmental management, sustainable performance, enterprise functions, cleaner production, green marketing, green accounting.

**Jel Classification Codes:** Q50, Q56, Q59

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## **Introduction**

In recent years, environmental problems have received increasing global attention from many actors. Although these problems began since the industrial revolution, and the resulting environmental pollution, the real interest came late after the United Nations raised the alarm and alerted The dangers to which the planet is exposed as a result of the accelerating pollution rates, which have reached a level that requires serious intervention on a global and local scale, as well as at the level of economic institutions.

The various conferences, especially the Earth Summits, organized by the United Nations, have contributed to increasing international awareness of environmental problems and putting all countries and institutions of the world before their responsibilities, especially the industrialized countries and the big companies.

Hence, the importance of searching for effective solutions to these problems becomes the responsibility of many parties, especially on economic institutions, so that they make the issue of preserving the environment from pollution at the core of their concerns, and an integrated element within their strategies and policies. If we look at the economic institution in terms of its functions and activities, we notice that it contributes significantly to increasing pollution rates, especially during production and marketing activity. This means that the institution adopts and establishes an environmental department that is interested in including the environmental component in all its functions and activities, so that it is specialized and integrated within the management of the institution as a whole to try to improve its performance.

From this point of view, we will try through this research paper to answer the following main question:

- What is the role played by the environmental management of the organization's functions in improving its environmental performance?

## **Objectives**

Through this intervention, we aim to highlight the importance of environmental management for the functions of the economic enterprise and its role in improving its overall performance, especially in light of the challenges of achieving sustainable development at the local and international levels.

## **Hypotheses**

This research is based on the following two hypotheses:

- Environmental management is generally considered as a tool for improving the economic and environmental performance of the economic enterprise.

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- Integration of environmental management in the various functions and activities of the institution would contribute to reducing its negative impacts on the fragile environmental systems surrounding it.

## **Methodology**

In this research, we relied on the descriptive approach to understand the concepts and try to analyze them.

To cover the topic, we divided the research into the following main axes:

First: The theoretical and conceptual framework of environmental management;

Second: The importance of environmental management in the economic enterprise and its tasks.

Third: Environmental management of the functions of the economic enterprise and its role in improving sustainable performance

## **I- Theoretical and conceptual framework of environmental management**

### **1. Historical view of environmental management**

Administrative thought has evolved over time in several different and integrated stages in terms of intellectual construction. Productive thought prevailed during the period from the 19th century to the middle of the 20th century. It was believed in this thought that the environment surrounding the institution is static, that is, it does not change and is not affected by factors. Production, and therefore all institutions under the rule of this thought did not pay much attention to the environmental aspect, and environmental concerns were not included in their strategies. (Barrow, 2004, p. 36)

Beginning in the second half of the twentieth century, administrative thinking based on consumer orientation prevailed, and therefore institutions began to pay great attention to the social aspect, and there was also interest in some environmental aspects in some institutions, but they are almost limited.

In light of the emergence of the concept of sustainable development in an institutional manner in 1987 through the “Our Common Future” report, governments began to take an intense interest in the environmental aspect, and this was reflected in institutions through legislation and laws issued by the state that the institution must observe, and thus the concept of environmental management appeared and applied At the level of European, Japanese and American institutions, where this department aims to transform the environmental goals into objectives consistent with the strategic objectives of the institution, and thus the environmental component has become an element of great importance at the level of management in most institutions. (Barrow, 2004, p. 65)

## 2. The concept of environmental management

Despite the passage of more than ten years of development and use of environmental management, and the success achieved by many institutions as a result of its application, there are still problems with regard to finding a unified and internationally accepted definition of the term environmental management.

We find the term environmental management used in the framework of "ISO 14031" related to measuring the results of environmental performance, when addressing the definition of environmental performance and its measurement indicators. (Agarwal B. , 1998, p. 64)

In general, there are many definitions of environmental management that we can summarize as follows:

\* "Environmental management is a branch of the organization's management, which is concerned with the requirements of environmental protection, and seeks to ensure the continuous environmental suitability of products and processes on the one hand, and the behavior of workers and stakeholders on the other hand." (Morelli, 2011, p. 82)

\* "Environmental management: an organization within the framework of the institution through which all individuals are committed to achieving the objectives of the institution to protect the environment." (Fischer, 2021 , p. 41)

\* As for the International Chamber of Commerce, it indicates that the function of environmental management lies in: "finding and designing a kind of comprehensive mechanism that ensures that there are no harmful environmental effects for the company's products, through all stages, starting with planning and design, and ending with the finished product." (Mitchell, 2018, p. 39)

From it we can say that environmental management is:

"Management that seeks to manage all functional areas and all levels in the organization in a manner consistent with the requirements of preserving the environment without prejudice to the objectives of traditional management."

## 3. The concept of environmental management system

The concept of environmental management is linked to the concept of environmental management system. Hence, this system should be recognized, as the US Agency for Environmental Conservation defines it as follows: (José Tarí, & José F., 2010, p. 694)

An Environmental Management System (EMS) is a set of processes and activities that enable an organization to reduce environmental impacts and increase its operational efficiency.

A. Drews defines an environmental management system as:

"Part of the organization's administrative system (institution, government agency...etc) through which responsibilities, behaviors, and standards are defined

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and structured to achieve the organization's environmental policy." (Fischer, 2021 , p. 88)

It is defined as: "a sub-system of the overall management system comprising the organizational structure, planning activities, responsibilities, methods, techniques, processes and resources aimed at developing, implementing and evaluating an organization's environmental policies". (Mitchell, 2018, p. 59)

The Environmental Encyclopedia defines environmental management systems as: "a tool for the management of the institution and a group of people, as it enables it to achieve the organization that allows it to control its activities and reduce its impact on the environment." (Zorpas, 2010, p. 1549)

#### **4. The main objectives of environmental management systems**

The purpose of developing the Environmental Management System (SME) and preparing the international standard (ISO 14001) is to prepare institutions and companies to deal with environmental issues and manage them within a clear policy, through which management takes into account the prevailing environmental laws and procedures, which enhances the achievement of the following objectives: (Pinet, 2013, p. 112)

- Enable the organization to deal with environmental requirements;
- Respect laws and regulations and control risks;
- Control waste costs by saving energy and raw materials.
- Improving the efficiency of the management system by introducing a new critical view of the institution's behavior.
- Excellence in competitiveness and valuing the image of the institution.
- Transparent communication with users, the surrounding environment, customers, insurance institutions...etc.

Accordingly, environmental management systems represent a specific internal organization method that allows structuring the process of continuous improvement of the results of the organization's forming units towards the environment. As institutions are committed to the environment, gradually through the stages of developing an environmental management system, beginning with a preliminary examination (environmental analysis), which enables it to inventory the manifestations of its effects on the environment, the most important of which are: (Vaillancourt & Gendron, 2013, p. 163)

- Production of normal and hazardous waste.
- Air pollution by the spread of toxic gases.
- Water Pollution.
- Noise pollution resulting from disturbing sounds.
- Visual pollution as a result of polluted landscapes.

- Energy consumption.
- Consumption of raw materials.
- Extent of respect for the environment, plant and animal wealth.

This inventory is prepared and applied to each production or administrative activity site, then the environmental manifestations are classified and priority is determined according to the importance or severity of the environmental manifestation, and then a program of intervention and follow-up is prepared.

## 5. The expected benefits of EMS

It can be summarized as follows:

- Increasing the competitiveness of the organization by adopting the correct environmental behavior, especially in the market that is highly aware of the environment.

- Rationalization of energy consumption and natural resources.

Minimizing negative impacts on the environment and reducing pollution.

Compliance with laws and legislation.

- Continuous improvement in the levels of internal efficiency of operations.

Interest attached to the company's products and services.

- Improving communication channels between the Corporation and specialized government agencies;

- The institution's acquisition of a good reputation and its recognition by international bodies, which contributes to increasing the pace of its activity and its promotion.

- Improving the working conditions of employees by ensuring a clean, safe and pollutant-free environment;

- Avoid material and environmental losses, especially those resulting from accidents with environmental impacts or those related to insurance costs;

- Raise awareness of the importance of the environment among all employees of the organization and thus contribute to preserving it;

- Increasing the profits resulting from the previous benefits, as striving by all means to reduce the negative effects on the environment is less expensive than preparing and implementing reform programs later. (Agarwal & Mittal, 2022, p. 152)

**6. Basic elements of Environmental policy:** which is usually published in the form of a written statement expressing the institution's commitment to a series of environmental objectives, as it reflects its intentions and the extent of its concern for the environment;

- Environmental action plan or program: It translates the specific environmental objectives in detail, as well as identifying ways and means to achieve them.

Determine the organizational structures: which combine authority, tasks and responsibility for various actions.

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- Procedures to strengthen environmental management: with the aim of developing specific environmental procedures such as: raising awareness of the importance of the environment, controlling documents and assessing risks ...

- Supervision, measurement and report keeping procedures: to verify the quality of the application and its compliance with plans.

Corrective action: is a reaction to inconsistency with policy, action plan, or environmental procedures.

- Audit: To check the efficiency of the application and functionality.

Review: Review what has been achieved and what has been planned, if necessary.

- Information and internal training: related to informing the objectives of the environmental management function and training in this field.

- External communication and community relations: in order to convey the objectives and performance of the institution in the environmental field.

## **II- the importance of environmental management in the economic enterprise and its functions**

### **1. The importance of environmental management in the economic enterprise**

The strategic work at the enterprise level has expanded to include environmental aspects, which in turn affect the administrative decision-making process. Environmental management in a large number of European institutions has achieved economic benefits mainly represented in reducing direct costs, such as energy and raw materials costs, in addition to obtaining non-material benefits related to improving the institution's image and reputation.

The US Agency for Environmental Conservation has summarized the importance of environmental management and the benefits accruing to institutions through the introduction of an environmental management system in the following points: (Detlef , 2016, p. 204)

#### **• Improves environmental performance:**

The use of planning avoids the institution many unpleasant surprises and helps to predict the expected environmental problems and stimulates the seizing of available opportunities and finding solutions in advance.

#### **• Supports and raises the competitiveness:**

Reducing the cost of energy or dispensing with some unnecessary chemicals leads to an actual increase in profits, which can be used in expansion operations, in distribution to shareholders, or to motivate workers. It can also assist the organization in entering certain markets. There are many car manufacturers that require their suppliers of spare parts to adhere to international environmental standards and to obtain ISO 14001.

Hence, it is clear that the institutions that adopt a clear strategy about their environmental performance are the ones who will obtain competitive advantages in the global markets.

- **Saves money:**

The environmental management system can provide the organization with many alternatives to improve performance. It helps them get rid of waste, prevent pollution, conserve resources and save money. For example, switching to clean technologies improves performance and reduces operating costs at the same time. The environmental management system helps the organization to identify and implement environmental improvements within the overall strategic work. It also helps in evaluating the costs and profits associated with improvements and thus aiding in making appropriate decisions.

- **Improves the corporate image:**

Improving the environmental performance of the organization has not only internal repercussions, but its repercussions extend outside the organization. Thanks to the technology of the Internet, any citizen can learn directly about the rates of pollution emitted from institutions and their conformity with the permitted standards. Hence, the environment management system contains indicators that help judge the progress and follow-up of program implementation compared to the set goals.

- **Maintains existing personnel and encourages further recruitment:**

Topics such as the environment, health and safety are among the topics that occupy the interests of individual workers. Environmental management can lead to improved performance in these areas, thus raising morale and increasing satisfaction and pride in work, which leads to preserving them and hiring more when needed.

- **Ensures the best management of environmental legal obligations:**

The environmental management helps the organization to take all procedures and measures to ensure the implementation of legal environmental obligations, which guarantees it in the short term not to fall into abuses and the resulting complications. As for the long term, it helps the organization to make appropriate decisions related to the timing and volume of investments that respond to future measures. (Detlef , 2016, p. 209)

## **2. Environmental management functions**

After getting acquainted with the most important concepts related to environmental management, as well as its importance in the economic enterprise, we will review the tasks of this management, the effective implementation of which will lead to an improvement in environmental performance, which is inevitably reflected in the economic performance of the enterprise, which are tasks that are no different from traditional tasks and functions. management in general, although it is distinguished from it by some specificities related to environmental aspects. (Fischer, 2021 , p. 165)



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In general, environmental management includes tasks referred to under the so-called Plan-Do-Check-Act (PDCA), where:

**2.1. Environmental Planning (Plan):** In this context, it means defining the goals and processes that enable the organization to implement environmental policies, and in this context, the starting point is based on international reference standards or specifications approved by international organizations such as the International Organization for Standardization ISO and the American Organization for Testing and Materials ASTM... Environmental planning should be inclusive of all the activities of the catering, production and marketing establishment, and this is what we will discuss in detail in the second chapter of this research.

**2.2 Implementation (Do):** It is the task that is carried out in implementing environmental policies and processes as planned, as it includes all activities and functions of the organization.

**2.3. Environmental Control (Check):** It is represented in monitoring and following up operations with regard to legal procedures, operational requirements, and environmental policy objectives, while working on evaluating environmental performance, i.e. evaluating the extent of success achieved by environmental procedures and measures by the institution. In this context, control takes place through the so-called Eco-Controlling as a sub-system of the comprehensive control system in the institution.

**2.4. Development and Improvement (Act):** This task requires correcting and correcting the processes related to environmental planning, implementation and monitoring, as the ISO-14001 standard includes continuous improvement of these processes, i.e. permanent work to ensure their effectiveness. (E. Beinat , 2013, p. 115)

### **III- Environmental management of the economic functions of the enterprise and its role in improving sustainable performance**

All economic and environmental studies have proven that the basic activities and functions that directly cause pollution are: (Fischer, 2021 , p. 213)

- \* productive activity;
- \* Marketing activity.

As for the research and development function, it has an indirect relationship with the environmental component and bears the responsibility for pollution, if it does not conduct research that reduces the phenomenon of the organization's pollution of the environment. That is, taking into account the environmental dimension in future research programs.

And in a study by Hoyes and Abermathy in 1980, it was noted that most American institutions neglected and neglected the relationship between the functions of production, marketing, research and development, and the environmental component, meaning that these institutions did not care about investing in the environmental aspect, as did the Japanese and European institutions that were able to reconcile between the environmental goals of the previous three jobs and between Economic objectives, thus transforming environmental objectives into coherent ones. Thus, Japanese and European institutions generated more returns than American institutions at that time.

So, and in this sense: How can the institution embody and apply the environmental dimension in its various functions? And thus increase its effectiveness and improve its overall performance. (Kodden, 2020, p. 77)

### **1. Environmental management of the production function and its role in improving sustainable performance**

The increasing awareness of the organization has led to consider the costs of dealing with pollution as, in fact, investments that achieve material and moral gains in the medium and long term. In the old days, it was considered an extra and external cost that was dealt with outside the institution. Therefore, today in developed countries, we find many industries based on the principle of energy conservation.

Institutions realized that the environment is not a constraint to achieving its goals, but rather an opportunity for profitable work. Especially in view of the increase in pressures and the rise in society's awareness of the dangers posed by enterprises, especially industrial ones. Therefore, organizations today must realize that their responsibility extends beyond the shelf life of their products, according to the principle of the product life cycle. Rather, it adopts this new approach, from product design to its disposal, the "cradle to grave" policy or the new product life cycle policy, which was invented since 2000 at the American University in Cairo, and which adopts the principle of "from cradle to grave" and which It is based on the idea of not disposing of the product, but the total utilization of waste and emissions. Any industries that depend on waste as raw materials.

Today, international financial institutions, such as the World Bank, are calling on countries to adhere to environmental practices as one of the most important conditions for providing loans to these countries. Whereas, insurance companies refuse to insure activities that pose a threat to the environment.

The idea of environmental management of the production function depends on the application of strict procedures in production by introducing the environmental element as a basic variable in the production process, and thus moving from the concept of traditional production to the concept of

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environmentally responsible production and thus reaching what is called clean production (cleaner).

### **1.1. What is cleaner production?**

cleaner production is based on the continuous application of an integrated preventive strategy to achieve economic, social and environmental benefits, as the main motive for adopting this type of production is the economic-environmental return. Where we find that some institutions have achieved environmental and economic reputation by adopting the philosophy of cleaner production.

The cleaner production program is based on two important bases:

- Environmental and consumer protection.
- Improving the operational efficiency of the industry or production within the enterprise.

Where the concept of clean production or reducing pollution and reducing waste appeared in the countries of the developed world about thirty years ago when these countries began to develop environmental laws and legislation to protect the environment. (Schaltegger & Bennett, 2008, p. 115)

Cleaner production was defined in 1990 by the United Nations Environmental Program (PNUE) as “the continuous development of industrial processes, products and services with the aim of reducing the consumption of natural resources, and preventing pollution of air, water and soil at the source, in order to reduce the risks to humanity and the environment.” (Schaltegger & Bennett, 2008, p. 120.)

In other words, clean production is an integrated strategy aimed at reducing the negative effects of production, raising productivity and improving environmental performance.

At the macro level, previously, the location of the project was determined in relation to the proximity to the sources of raw materials and energy, its proximity to markets and consumers in order to reduce the costs of transporting materials as well as the costs of distribution and marketing.

Clean production is also defined as: “the continuous application of a preventive environmental strategy integrated into production processes, products and services, with the aim of improving their ecological effectiveness and reducing risks to humans and nature.” (Francisco, 2019, p. 88)

### **1.2. The most important benefits of cleaner production**

- \* Recovering natural resources instead of destroying or wasting them;
- \* Rational use of raw materials, especially energy and water;
- \* Increase production capacity and improve product quality;
- \* Compliance with environmental laws. (Francisco, 2019, p. 95)

### 1.3. Comparison between CP and traditional methods of pollution reduction: (End of pipe method)

The end-of-pipe approach is a set of well-known techniques for treating waste and pollution resulting from production processes (at the end), such as converting gases to liquids, waste to other energies, or waste recovery and disposal.

Whereas, the cleaner production method reduces and eliminates waste from the beginning of the production process (beginning with inputs) to the end of the production process (product and waste), including the stage of product formation.

Table No. 1: Comparison between traditional production and cleaner production

comparison criteria	End-of-tube contamination treatment methods	Pollution treatment by clean production method
methodology	Waste treatment after its production (reactive)	Reducing waste pollution (Proactive)
the range	partial	overall
method	traditional	Modern - use of technology
Economic dimension	Additional cost	Cost savings

Source: (Francisco, 2019, p. 111)

### 1.3. Production technology

The main goal of cleaner production is to save money through new production methods as well as reduce environmental damage at a low cost. This is done by reducing pollution, reducing industrial waste, and recycling used materials. Which sometimes leads to a total change in the old methods of operation and the technology used.

CP technology is divided into 3 groups:

First: modify the product. Any changes to the product in line with environmental protection requirements.

Second: recycling. It is done in two levels:

- The first one is internal: so that the products in question are rotated. For example, in plastic containers, so that they are recovered in the production line at a certain percentage so that they do not affect the quality and properties of the product.

- The second is external: where these containers are used by the consumer and he disposed of them in the form of solid household waste, and here they may have been contaminated by friction with other materials, and therefore in the case of recycling, it is stipulated that they are not used in consumer food packaging products, Rather, it is used in things that have indirect uses. (Tsai & Yongian , 2017, p. 129)

- Third: Reduction at the source. This is done by:

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- Improving administrative procedures in the institution, such as monitoring pipes and leaks. Sorting solid waste, dealing with caution and vigilance with toxic and flammable materials;
  - changing industrial procedures and processes;
  - Reducing or, if possible, eliminating hazardous raw materials and replacing them with less hazardous materials;
  - Changing technology with more efficient and less energy consuming technology;
- Controlling industrial processes in order to reduce waste of raw materials;

#### **1.4. Integration of clean production with the environmental management system**

Environmental management is the basic basis for the dissemination of FCL technology for cleaner production. He researched that the good application of this strategy depends mainly on an environmental management system, in order to achieve economic and environmental goals for the institution and society. In accordance with the laws and regulations governing the environment.

Cleaner production technology can be considered the effective performance of the success of the environmental management system, and the complementarity between them is shown through the objectives that each one aspires to:

Ensuring sustainable development and continuous improvement.

Economic benefits.

Comply with environmental laws and regulations.

Developing environmental management.

Technological alternatives, innovations and creations.

The role of environmental management is to support the strategy of cleaner production technology from the early stages so that the top management pushes the organization to implement this strategy. And then it passes to the introduction of this strategy in the planning stage so that it defines all legal requirements and how to allocate resources in order to serve the implementation of the strategy in all production processes. (Tsai & Yongian , 2017, p. 143)

#### **2. Environmental management of the marketing function and its role in improving sustainable performance**

Within the framework of social, ethical and environmental responsibility, many institutions have begun to reconsider their marketing practices and give the environmental dimension a prominent importance in their marketing strategies. Hence, interest in a new style of marketing began, which is green marketing, which is considered as a marketing approach that provides solutions to those negative social and environmental effects. It revolves around a strong

commitment to environmental responsibility in the conduct of marketing activities.

Based on the foregoing, green marketing can be seen as a translation of the requirements of social and ethical responsibility for marketing, which came to light as a response to the growing environmental challenges of our time.

This marketing approach coincides with the increasing global interest in protecting consumer rights and the emergence of organized movements with an environmental orientation, aiming to achieve people's rights to live in a clean and safe environment. These movements paved the way for the emergence of the concept of green marketing in the last half of the eighties of the last century.

## 2.1. Green marketing concept

There are several definitions of green marketing that can be mentioned as follows:

\* Green marketing is any marketing activity of a particular organization that aims to create a positive impact or eliminate the negative impact of a product on the environment.

\* Green marketing is an integrated process aimed at influencing customers' preferences in a way that pushes them towards ordering products that are not harmful to the environment, adjusting their consumption habits in line with that, and working to provide products that satisfy this trend so that the end result is preserving the environment and protecting the consumer. (Mogaji & Adeola, 2022, p. 76)

As a summary of these definitions, we see that they are consistent with each other in their focus on carrying out marketing activities within a strong environmental commitment, and the orientation towards providing environmentally friendly goods and influencing consumer behavior and consumption habits in line with this orientation, and in a manner that does not contradict also with the profit goals of the organization.

In this general framework of green marketing, some important related sub-concepts emerged:

**a. Green consumer:** It is clear that the target market for green marketing activities includes consumers who believe in the principles and values of green marketing, environmental, and not only the non-consumption of environmentally harmful goods.

**B. Green product:** It can be defined as that product that uses environmentally friendly materials, with the need to follow it through the stages of its life cycle to ensure that it remains within environmental obligations, and this includes not using toxic preservatives, using minimal energy, and using returnable packages. For example, the organization may market various green products such as: healthy fat-free foods, electronic devices powered by renewable energy, rechargeable batteries that last for a very long period of time.

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**c. Green advertising:** It is the advertisement adopted by the organization to convey its environmental philosophy through its advertising message to its target audience. (Vannie & Rahul, 2019, p. 114)

## **2.2. Reasons for the organization's orientation towards green marketing**

What confirms the feasibility of the organization's orientation towards green marketing is the increasing awareness of the threats in the marketing environment, represented in:

- \* Decrease in raw materials in nature, especially non-renewable.
- \* The continuous rise in energy costs and the near end of life for current energy sources, with the need to search for alternative sources.
- \* Increasing rates of pollution, which constitutes a destruction of the natural environment, as studies have shown that 42% of consumers in the UAE are willing to pay higher prices to obtain green products.
- \* Changing the role of governments and increasing their environmental awareness, represented by enacting legislation to protect the environment and increasing voices calling for preserving the environment to make it a safe place to live for us and future generations. (Vannie & Rahul, 2019, p. 128)

## **2.3. Consequences of adopting green marketing**

It is clear that adopting the concept of green marketing brings the economic enterprise great benefits and gains, and it can place the enterprise at the top of the competitive pyramid, and it may enable it to lead in the market. Adopting a green marketing philosophy makes the organization close to its customers, especially those who have a strong environmental orientation, as well as preserving the environment and rationalizing the use of natural resources.

In this context, we refer to the number of advantages resulting from the organization's practice of green marketing as follows: (Hinson & Adeola, 2021, p. 130)

- \* Satisfying the needs of the owners;
- Achieving security in delivering products and managing operations;
- \* Achieving social acceptance of the institution;
- \* Achieving sustainability and continuity of activity.

## **2.4. The green marketing mix: It consists of 04 elements:**

**a. Product:** It is providing green products to customers with the need to follow up on these products during the stages of their life cycle to ensure that they are used within the environmental orientation.

**B. Pricing:** includes pricing products in line with consumers with a strong environmental orientation, but these prices may carry some additions due to the cost of continuous research and development to ensure the use of environmentally friendly materials and new energy sources.

**c. Distribution:** It is represented in the use of distribution outlets that deal with green products and are suitable for consumers in terms of ease of access, while ensuring that they carry out recycling procedures within environmental requirements and obligations.

**D. Promotion:** It includes all promotional activities within the environmental orientation, with a focus on the guiding aspect for consumers through environmental advertisements, posters, and guiding information regarding the safe use of green products - green advertising – (Hinson & Adeola, 2021, p. 145)

### **3. Environmental management of the research and development function and its role in improving sustainable performance**

The primary role played by the Research and Development Department at the level of the institution in light of its adoption of the concept of environmental responsibility lies in conducting research that reduces the phenomenon of pollution, that is, taking into account the environmental dimension in future research programs.

#### **3.1. Environmental research and development at the level of the economic enterprise**

Environmental research and development means the creative activity that takes place on the basis of scientific principles with the aim of increasing the stock of environmental knowledge in the institution, and using it in new applications in productive activity and achieving a rewarding return.

Environmental research and development is an in-depth examination aimed at discovering new environmental knowledge with the hope that this knowledge will be useful in the development of a new green product or clean process or in discovering a substantial improvement to an existing one.

Different studies distinguish between 3 different types of environmental research:

- Basic or theoretical research: It is concerned with the theoretical study of the environment surrounding the institution and the various factors affecting it from the inputs of the production process of the institution to the final product.
- Applied research: interested in researching and experimenting with final products in order to determine their environmental impact, and thus try to reduce the percentage of their pollution to the environment.
- Environmental development: we mean the process of making improvements and modifications to old products that have been proven to have a negative impact on the environment. (Byrne, 2018, p. 102)

It is also the conversion of research findings or other knowledge into a plan or design for a green new product, service, or technology, or the substantial improvement of a known product, service, or technology, whether for sale or use.

#### **3.2. Environmental research and development process procedures**

The process of research and development begins mainly with collecting information about the external and internal environment of the institution, and after the process of collecting information comes the stage of presenting and sifting ideas, which translates into a group of research that revolves in its entirety on:

Research aimed at reducing air pollution

- Research aimed at reusing liquid waste



- Research aimed at recycling solid waste
- Research aimed at discovering new sources of clean energy
- Research aimed at discovering good environmentally friendly products.
- Research aimed at discovering new methods in the initial and final design of the product, or the so-called green design.

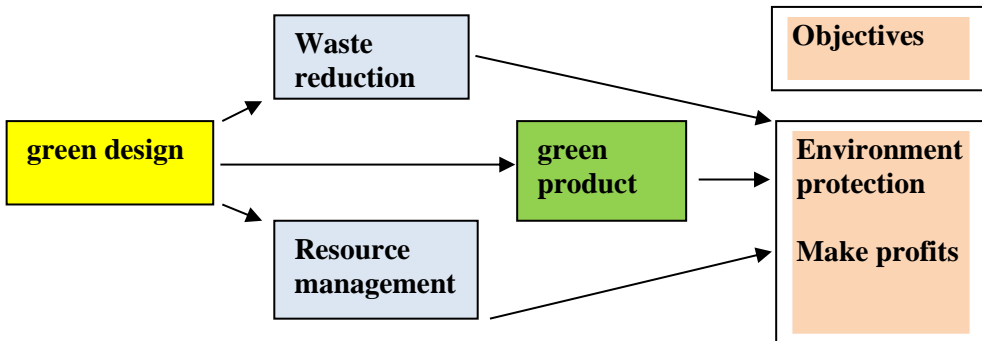
Trying to develop and improve the existing products and production methods prevailing in the institution in line with the environmental dimension.

One of the main objectives of the environmental management of the research and development function is to achieve the so-called green design of the product. What do we mean by green design. (Maximilian & Oliver, 2008 , p. 298)

- Green design: the product is the process of installation, mixing and synthesis, in which the product acquires distinctive characteristics, where the environmental dimension, cost, performance, manufacturability, safety, and consumer expectations must be taken into account.

So, the main point in green design is to link, with the least loss, between environmental goals and both product performance and its usability and functionality.

**Figure 1: Strategic objectives of green design**



Source: (Byrne, 2018, p. 159)

#### **4. Environmental management of the accounting function and its role in improving sustainable performance**

Environmental management of the accounting function in the organization means the inclusion of the environmental dimension within the accounting concerns of the organization. We will address this element through the following:

##### **4.1. Genesis of environmental accounting (green accounting)**

The concept of Environmental Accounting first appeared in the seventies of the last century, and the research interest in it continued slowly, until it experienced a new birth during the nineties of the last century, when the scientific interest in both social and environmental accounting returned in the

mid-nineties. With the entry into the third millennium, both environmental and social accounting began to integrate together to gain the attention of management and accounting sciences, so that the naming of social responsibility accounting became the alternative to them, and thus the concept of green accounting appeared.

#### **4.2. Green accounting concept**

Green accounting is defined as the process of communicating the social and environmental impacts associated with the economic practices of the organization to specific groups of society interested in the affairs of the organization. Thus, it requires expanding the scope of responsibility of the institution to go beyond the traditional role of accounting represented in merely providing financial information to the owners, and this expansion of the scope of accounting is based on the fact that institutions have more responsibilities than just generating funds. (Bartelmus & Seifert, 2019, p. 199)

It is also known as covering all accounting aspects that may be affected by the organization's response to the environmental component, which may include what is called accounting for nature and resources.

It appears from the foregoing that green accounting means expanding the scope of traditional accounting and disclosure to include some non-traditional aspects such as disclosing information about social products and services, as well as information about reducing or stopping environmental pollution, in addition to taking into account the external effects of the organization.

#### **4.3. The strategic advantages of applying the green accounting system at the level of the economic enterprise**

##### **a. In terms of commitment: Compliance**

- Green accounting supports environmental protection and compliance with cost efficiency with environmental laws and permanent instructions applied in environmental policies.
- Planning and implementing pollution control investments.
- Studying the purchase of cost-effective alternatives as alternatives to toxic substances.
- Reporting environmental waste and emissions to the responsible legal authorities.

##### **B. In terms of economic efficiency: Eco-Efficiency**

- Reducing costs and environmental impacts simultaneously through efficient use of energy, water and materials in internal processes and final products.
- Accurate follow-up of energy, water, materials and waste flows.
- Planning and implementing projects to increase the efficiency of energy, water and materials.
- Evaluating the total annual return on investments in economic efficiency activities. (Bartelmus & Seifert, 2019, p. 209)

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### **c. In terms of strategic position: Strategic Position**

- Evaluate and implement environmentally sensitive programs and cost efficiency to ensure the organization's strategic position in the long term.
- Work with suppliers to design products that cover the environmentally oriented market.
- Estimating the internal cost of various future laws related to the environment.
- Gaining a strategic reputation through reports submitted to stakeholders such as customers, investors and the local community.

In a survey conducted by Rowwel & Gannon in 1995, which included the opinions of 40 managers from the public and private sectors in the United Kingdom about the most important issue facing their organizations, the overwhelming answer was the issue of the environment, and this group of managers expected that accounting would deal with issues of measurement and disclosure Environmental performance as part of their usual work, and that accountants at the organization level interact positively with the challenges of environmental issues.

In light of the local and global competition between companies, especially those whose shares are traded in the stock market, the need to disclose such information has emerged because of its effective impact on the decisions taken by the users of these lists.

The World Bank has studied the reaction of financial markets in Argentina, Chile, the Philippines and Mexico, and the impact of environmental performance on them. The bank's report showed that the share price in these countries increased by 20% when the good environmental performance of the companies issuing shares was recognized, and it decreased by 15% in response to complaints from citizens affected by pollution. (Fischer, 2021 , p. 198)

The World Bank report concluded that the disclosure of information related to environmental performance can directly affect the performance of companies and their ability to achieve profits and their reputation through financial markets.

### **5. Environmental management of the human resource function and its role in improving sustainable performance**

The Human Resources Department is the basic department in the organization, which is responsible for bringing qualified manpower, training it, forming it, promoting it and motivating it. Thus, it takes care of the affairs of all workers within the institution and at the level of all functions, including production and marketing, as well as research, development and accounting.

But the question that remains open is: (Paillé, 2022, p. 156)

\* What is the role of human resource management in light of the environmental responsibility of the economic enterprise?

How can the environmental component be included in the concerns of the human resources function at the level of the economic enterprise?

### **5.1. The role of human resources management in light of the environmental responsibility of the economic enterprise**

Human resources management within the organization has great responsibilities with regard to preserving the environment and active participation in reducing and overcoming environmental problems. This responsibility comes especially since the human resources function is closely related to all functions and activities of the organization that have a direct negative environmental impact, such as production and marketing.

Thus, it is necessary for the Human Resources Department to adopt an integrated system for attracting, forming and preparing the various environmental cadres within the institution, where a clear vision is formulated for the functional structure according to which these cadres are promoted, and job incentives must be created for workers in various activities with a strong environmental orientation.

It also requires providing a comfortable work environment for the environmental cadres within the organization in order to ensure their mobility and freedom, as the responsible environmental cadres submit to the senior management the results of the environmental audit that would increase the organization's awareness of adopting environmental responsibility in its various activities that cause pollution. (Paillé, 2022, p. 161)

### **5.2. The environmental component is included in the concerns of the human resources function through its work to achieve the following points**

Attracting, selecting and appointing workers with a strong environmental orientation to sensitive positions at the enterprise level.

- Preparing a long-term plan aimed at training senior executives in the organization and making them aware of the importance of taking into account the environmental aspect when developing the general strategy of the organization.
- Formation and training of workers at the production and marketing levels, and sensitizing them to the importance of adopting a cleaner production system and green marketing and their positive impact on the institution's reputation in the long term.
- Spreading the environmental culture and emphasizing it within the general culture of the institution. (Paillé, 2022, p. 181)

### **Conclusion**

In the end, it can be said that the concept of environmental management reflects in its essence the extent to which the organization assumes its environmental responsibility towards the environment in general and individuals in particular. Improving its mental image to the final consumer. Likewise, the

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inclusion of the environmental dimension in the various functions and activities of the institution is necessary for its continuity and sustainability of its activity, through the adoption of a cleaner production policy, the application of the concept and philosophy of green marketing, and the inclusion of the environmental component in both the functions of accounting and research and development, and this is only done through an effective policy of qualification environmental management of individuals by adopting a strong environmental management of the human resources function, which would improve the overall performance of the economic enterprise.

So, through these results and through what we came across in our research, we conclude the following recommendations:

Economic institutions must adopt effective environmental management in order to contribute to reducing pollution.

- The environmental management in the institution must be of maximum effectiveness to ensure the improvement of its environmental performance and thus the improvement of economic performance, and this leads to an increase in its effectiveness.

- The organization must adopt strong environmental policies at the level of jobs and activities that are the most infringing and polluting the environment, especially the productive activity and marketing activity, through environmental management of the production function by applying the concept of cleaner production, and environmental management of the marketing function by applying the green marketing philosophy, which is considered as the best tool to improve performance and increase effectiveness.

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