

The use of an environmental management system as a starting point for achieving organizational excellence: case study of the cement industrial organization in Ain El Kebira -Setif- (SCAEK)

استخدام نظام الإدارة البيئية كمدخل لتحقيق التميز المؤسسي: دراسة حالة المؤسسة الصناعية للأسمنت بعين الكبيرة - سطيف - (SCAEK)

Kremia Mohamed Imad Eddine*, Laboratory of development policies and prospective studies, Akli Mohand Oulhadj Bouira University (Algeria), m.kremia@univ-bouira.dz

Chellali Abdelkader, Laboratory of development policies and prospective studies, Akli Mohand Oulhadj Bouira University (Algeria), a.chellali@univ-bouira.dz

Received: 27/02/2023; **Revised:** 12/06/2023; **Accepted:** 20/06/2023

Abstract:

The purpose of this paper is to use a descriptive approach to investigate the content of the environmental management system and institutional excellence, and then to investigate the reality of this system in Algerian industrial enterprises and its role in achieving institutional excellence. In this article, we chose companies active in Algeria's cement sector because it ranks second in terms of danger and pollution after the electrical industries. This study arose from the problem of determining the extent to which the environmental management system contributes to institutional excellence. The institution's documents, which are available on the company's website or classified in previous studies, were used to study the relationship between the two variables. The study revealed that the environmental management system is being used in the organization under study, as well as the existence of a link between the environmental management system and institutional excellence, as evidenced by the institution's ability to control costs and environmental performance through its reliance on the environmental management system. In addition to achieving representative excellence in terms of legal compliance and achieving very positive sales and turnover results. Finally, the study made a number of recommendations, such as improving Algeria's environmental legal system.

Keywords: Environmental Management; Environmental Management System; organization Excellence; SCAEK; ISO 14001.

Jel Classification Codes: J53; Q50.

* Corresponding author m.kremia@univ-bouira.dz

I- Introduction :

Due to societies' fear of wasteful exploitation and heinous behavior toward the environment and its resources, and global pollution, the world's ecosystem may be destroyed. As a result, many attempts to raise environmental awareness in developed industrial countries have appeared, accompanied by a high and expanded interest from international and local bodies and organizations, with the goal of highlighting the danger the world is facing due to pollution-induced environmental deterioration. The first UN-sponsored Stockholm Conference on the Environment and Human was held in 1972. It discussed many important environmental issues, listened to proposals from industrialized countries to solve environmental problems and pollution, and outlined environmental standards and expulsion laws.

After the Stockholm conference, many scientific conferences and symposiums called for environmental preservation and sought ways to manage environmental issues in projects to reduce industry's impact. Environmental management is a new administrative and economic strategy for preserving and optimizing environmental resources. Environmental awareness and global technology transformed this idea into the ISO 14000 environmental management system. Subsequently, it branched into sub-specifications, the most important of which is ISO 14001, which clarifies the requirements for applying the environmental management system in institutions, linking institutions to the environment, and striking a balance between the environment and the institution's work, so that their relationship of influence and vulnerability changes from mere exploitation and resource depletion to a relationship of in

I.1.Study problem:

The problem of this study can be formulated in the following main question:

What is the extent to which the ISO 14001 Environmental Management System contributes to organizational excellence?

The following sub-questions fall under this problem:

- What do environmental management system and institutional excellence mean, and how can their relationship be conceptualized?
- What are the basic requirements for environmental management system activation in industrial facilities?
- What is the status of the environmental management system and institutional excellence at Ain El Kebira Cement Company in Setif?

I.2.Study Hypothesis:

This study proceeds from the following hypotheses:

- **First hypothesis:** The environmental management system ISO14001 is adopted by the Ain El Kebira Cement Industrial Organization in Setif.
- **Second hypothesis:** The environmental management system at Ain El Kebira Cement Industrial Organization in Setif enabled the company to achieve institutional excellence.

Study importance:

The study is important because it addresses a very important topic, which is the environmental management system and its role in achieving institutional excellence,

The use of an environmental management system as a starting point for achieving organizational excellence: case study of the cement industrial organization in Ain El Kebira -Setif- (SCAEK)

especially with the globalization of industries and the expansion of pollution. This is why, on the one hand, this topic is regarded as one that requires ongoing research and evaluation. On the other hand, the study attempts to emphasize the significance of the environmental management system and its positive effects on industrial establishments that implement it.

I.3.Study objectives:

This study seeks to accomplish a number of goals, the most important of which are listed below.

- Conceptual understanding of both environmental management system and institutional excellence;
- A study of the reality of the Ain El Kebira Cement Industrial Organization 's adoption of the Environmental Management System in Setif;
- Clarify how the environmental management system contributes to the achievement of institutional excellence.

I.4.Study Approach:

In order to become familiar with the various theoretical aspects pertaining to the subject of the study, a descriptive approach was utilized, highlighting the fundamental elements of the environmental management system and institutional excellence, to comprehend and describe the phenomenon. The case study method was used to investigate the reality of the environmental management system at the Ain El Kebira Cement Industrial Organization in Setif and the extent to which it achieved institutional excellence in the organization, utilizing a group of classified information in the form of theoretical data or quantitative tables available on the company's website or in previous studies.

I.5.Literary review:

This topic has been addressed from several angles by a group of researchers, including the following:

- ❖ An article titled *The Effects of Implementing the Environmental Management System (ISO14001) in Industrial Institutions "Case Study of Ain El Kebira Cement Company"* was published in the Afaq Journal for Research and Studies by Muhammad Al-Hadi Khanous and Al-Sheikh Al-Dawi (SCAEK). This study showed how industrial companies benefit from environmental management systems (ISO14001). The study used descriptive analytical and case study methods to gather data from company budgets, reports, and interviews. The study found that ISO14001 improved productivity, financial savings, pollutant gas emissions, working conditions, and the company's reputation. The study advised Algerian institutions, especially industrial ones, to learn about environmental management.
- ❖ Chtouh Walid's study, *"The Status of the Environmental Management System ISO 14001 in the Management of Algerian Institutions,"* was published in Al-Wahat Journal for Research and Studies 2014, under the title "The Status of the Environmental Management System ISO 14001 in the Management of Algerian Institutions." This study examined the impact of environmental management systems on economic and commercial excellence in Algerian, Moroccan, and Tunisian institutions. He also looked for the biggest differences in the three countries' environmental management system interest. The researcher found

that most Algerian institutions are uninterested in environmental management systems, which has cost them many economic and commercial gains.

II– Theoretical framework of the ISO 14001 Environmental Management System

Environmental management systems seek to integrate the environmental dimension into all aspects of the organization's production and management processes, by requiring each element to bear its own responsibilities to the environment and society, and by providing an appropriate framework within which environmental goals can be made one of the primary inputs in decision-making (Dahimi, 2017, p. 32). ISO14001 standard is one of the most popular and widely used environmental systems on a global scale, as an integrated system with other management systems that seek to reach the applied organization's recognition of its environmental responsibility by providing a coherent and global environmental program ready for implementation (Mazouz & Allab, 2016, p. 203).

II.1.Definition of ISO 14001 Environmental Management System:

Researchers and various international institutions deal with a set of definitions in the environmental management system (Miqdadi, 2016, p. 43). However, these definitions generally agree that an environmental management system is a framework that includes a set of policies, concepts, procedures, commitments, and action plans that assist an organization in defining and implementing its environmental policy (Yahyaoui & Mehdi, 2019, p. 136). In addition to achieving its environmental objectives through systematic and continuous control of its operations, and reducing the incidence of all types of environmental pollution elements. This system not only meets a specific organizational level, but it is detailed for all of the organization's work and objectives (Najwi & Batayneh, 2005, p. 143).

II.2.The establishment of the ISO 14001 environmental management system:

The ISO 14000 series of standards can be traced back to the United Nations Human Environment Conference in Stockholm in 1972, which established an international dialogue on environmental issues and the need to find practical solutions that reduce environmental risks (Khanous & Al-Dawi, 2018, p. 22)After the success of the International Organization for Standardization (ISO) in quality management systems (ISO 9000) and calls from the UN and other organizations to launch an environmental management specification. The ISO/TC207 Technical Committee of the International Organization for Standardization announced the ISO14001 standards for environmental management systems in 1996 thanks to the Ocean Advisory Group (S.A.G.E), which was formed in 1991 and includes more than 100 ocean experts chosen by the National Standards Institutes of the ISO/TC207 Technical Committee's 66 member countries. This team tried to create global standards for the organization's environmental management and issues. As a result, ISO 14001 environmental management system standards were created for all types and sizes of organizations. The most widely used standards were ISO14001 and ISO 14004, which have more than doubled in recent years despite a slow start. At the end of 2013, approximately 301,647 organizations from over 170 countries had obtained the ISO 14001 Certificate of Conformity. (Mazouz & Allab, 2016, p. 204).

II.3.ISO 14001 Environmental Management System Requirements:

According to Committee 207 of the International Organization for Standardization, and in accordance with the restrictions in ISO 14001. The environmental management system has five main components that represent the continuous improvement loop on which the model is based. It can be used for a variety of project types and sizes to establish and maintain an

The use of an environmental management system as a starting point for achieving organizational excellence: case study of the cement industrial organization in Ain El Kebira -Setif- (SCAEK)

environmental management system by conducting continuous and periodic reviews to identify potential areas for improvement to improve environmental performance ([Quidri, 2016, p. 44](#)).

Table (1): ISO 14001 environmental management system requirements

T	specification requirement number	Requirements	Summary description
1	4.2	Environmental policy	A statement prepared and endorsed by senior management declaring the organization's commitment to the environment used as a framework for planning and implementation.
2	4.3.1	Environmental aspects	Identify the environmental components of activities, products and services and identify those that have a significant impact on the environment.
3	4.3.2	Legal and other	Determine and ensure access to laws and other regulations.
4	4.3.3	Goals and objectives	Setting environmental goals for the organization that are in line with its environmental policy and aspects, stakeholders' points of view, and other factors.
5	4.3.4	Environmental management programme	Planning actions in order to achieve goals and objectives
6	4.4.1	Structure and responsibility	Define roles and responsibilities and provide resources.
7	4.4.2	Training, awareness and capacity	Ensure that employees are trained and able to take environmental responsibility.
8	4.4.3	Connection	Laying the organization s for internal and external communication on environmental issues.
9	4.4.4	Environmental management system documentation	Preserving and maintaining ems information and associated documents.
10	4.4.5	Document control	Ensure effective management of document control systems and procedures.
11	4.4.6	Process settings	Defining, planning and managing operations and activities in compliance with environmental policy, goals and objectives.
12	4.4.7	Emergency preparedness and response	Identify potential emergencies and develop preventative measures.
13	4.5.1	Monitoring and measurement	Monitor key activities and track performance.
14	4.5.2	Non-conformity and corrective and preventive actions	Identifying and correcting problems and ensuring that they do not recur.
15	4.5.3	Records	Keeping appropriate records of ems performance.
16	4.5.4	Environmental management system audit	Periodic audits to ensure that the system is operating as planned.
17	4.6	Management review	Periodic review of the system with a focus on continuous improvement.

The source: Prepared by the researcher based on (Al-Saffar, 2011, p. 12)

III- The conceptual framework of institutional excellence:

Following William Edwards Deming (1900-1993), who promoted quality as a key criterion for institutional excellence. Japan established the "Deming Prize" model in December 1950. Twenty years after adopting the model, Japan succeeded. Japanese industrial renaissance and its differences from American industry influenced management philosophy research. Management scholars have defined the concepts and standards of outstanding performance to reach the optimal model, which uses a continuous improvement approach to satisfy all relevant parties. Many Western institutions have recognized that quality is a strategic choice for excellence. In 1987, the US government created the "Howard Malcolm Baldrige" model to improve US organization performance, similar to the Japanese (Deming) model. After seeing American management advances, the European Organization for Quality Management developed the European Model of Excellence (E.F.Q.M), which shifted the focus from quality to total quality management to performance excellence and service quality to service excellence. (Chalali, 2015, p. 403).

III.1. Institutional excellence definition:

Institutional excellence can be defined as a state of administrative creativity and institutional excellence that achieves unusually high levels of performance and implementation of the institution's production, marketing, financial, and other operations. This results in results and achievements that outperform competitors and satisfy the target group as well as all stakeholders in the organization (Amam, 2018, p. 531).

III.2. Principles of Institutional Excellence:

In general, excellence management for organizations is based on a set of principles such as a focus on targeted results, customer focus, leadership and consistency of goals, management by processes and facts, development and involvement of individuals working in the organization, continuous education, innovation and renewal, and social responsibility (Bileid, Arab, & Sadiqi, 2022, p. 287).

III.3. Dimensions of institutional excellence in light of the environmental management system iso14001:

The implementation of the ISO 14001 environmental management system in institutions would contribute to increased competitiveness by achieving excellence in several areas, the most important of which are:

- **Raising productivity:** The organization can increase its productivity while reducing its inputs, allowing it to compete and control the price while still leaving a profit margin. The achievement of indicators represented in the environmental management system reinforces this (rationalizing the use of resources and reducing energy waste, increasing the productivity of workers by taking into account environmental considerations, increasing the efficiency of employee performance thanks to training programs and talent selection).
- **Reducing costs:** Cost-cutting procedures and activities are encouraged by the environmental management system's requirements. This is accomplished by (reducing energy and other resource consumption, reducing, recycling and reusing waste and thus reducing disposal costs, savings from selling by-products and waste, reducing

transportation and storage burdens as a result of reducing raw material and energy inputs).

- **Saving money:** These savings can be seen in a variety of ways, including investments in fixed capital: The use of raw materials with the least environmental impact reduces the amount of capital required to prevent these effects. Investing in working capital: The procedures used to achieve optimal energy utilization and waste treatment would reduce working capital investment, benefit from tax breaks due to reduced environmental risks, and lower the costs of complying with environmental legislative requirements.
- **Obtaining marketing advantages:** Using the ISO 14001 environmental management system during the organization's work gives its products and services a marketing advantage and makes it preferred in several areas, including (the application of the environmental management system ISO 14001 improves the image and reputation of the organization in the eyes of the customer and the consumer, which improves the relationship between them, increasing the effectiveness of buying and selling operations, reducing marketing costs, increasing efficiency in the media and promoting it).
- **Increasing environmental efficiency:** Environmental efficiency can be increased by focusing on a variety of factors, including (focusing on customer service, focusing on quality, and giving more considerations to environmental energy limits).

IV- The reality of the ISO 14001 environmental management system in the (SCAEK) institution

In this section, we will attempt to present a practical model that depicts the method used by some industrial enterprises in Algeria to implement an environmental management system. Ain El Kebira Organization in Setif was chosen as a study sample because it is one of the institutions involved in the cement industry. This sector, which is considered one of the sensitive sectors and has a direct relationship with the environment, is classified as the second cause of pollution risks after the electrical industries, as it takes inputs from the environment and provides outputs in various forms (liquid, solid, gaseous) that affect environmental safety.

IV.1. Introducing the organisation:

The GICA-ERCE industrial and commercial complex includes the Ain El Kebira Cement Organization, which is a shareholding organization (Meshan, 2012, p. 102). It was founded in May 1998 as the Ain El Kebira Cement Company S.C.A.F.K. The factory was completed in 1974 by the German company KHD, and it began operations in November 1978. The factory occupies a total of 60 hectares and is situated 20 kilometers north of the headquarters of the state of Setif and 07 kilometers south of the district of Ain el-Kebira. The general administration's headquarters are located in the city of Setif. The company's maximum annual production capacity is estimated to be 1,000,000 tons, but it surpassed this figure for the first time in 2000, and its social capital is estimated to be 2,200,000,000 DZD. The Ain El Kebira Cement Organization's activity is represented by the production of two types of cement: ordinary Portland cement (CPG 42.5) according to NA442/2000 standard and Portland cement sulfur resistant (CRS 400) according to NA443/1990 standard (Dahimi, 2011, p. 165).

IV.2. Implementation of an environmental management system in Ain El Kebira Cement Organization (Setif):

The use of an environmental management system as a starting point for achieving organizational excellence: case study of the cement industrial organization in Ain El Kebira -Setif- (SCAEK)

The Ain El Kebira Cement Organization has taken a series of steps to implement an environmental management system in the company, which are detailed in the table below:

The use of an environmental management system as a starting point for achieving organizational excellence: case study of the cement industrial organization in Ain El Kebira -Setif- (SCAEK)

Table (2): Implementation of an environmental management system in Ain El Kebira Cement Organization (Setif)

Requirements		Reality in institution
	Environmental policy	The Ain El Kebira cement organization has posted an environmental policy in Arabic and French at all relevant locations and points of interest in accordance with the iso14001 standard.
Environmental planning	Define environmental aspects	The company has assessed each environmental factor's importance and impact. For instance, air-only raw material extractions. This aspect causes air pollution. Table no (03).
	Legal requirements	The factory cannot exceed the dust emission rate specified in executive decree no. 06-138 of April 15, 2006, which is 50mg/nm3, and cement must be produced in accordance with Algerian law na442.
	Goals and objectives	Quality and environmental management goals are being set across the company. Programs help the company meet its environmental goals. For instance, there is a program to reduce gas emissions from the company's workshops' ventilation system using cloth filters, as well as a waste management program that classifies, recycles, and sells waste.
	Environmental management programmes	Since 2006, 23% of the company's revenue has been earmarked for environmental preservation.
Implementation and operation	Structure and responsibilities	The newly formed quality and environment cell appointed a quality and environment management official to audit and ensure compliance with the environmental management system.
	Training and awareness	The organization hosts forums and provides ISO 14001 training for its employees. The organization sent the quality and environment officer to France for two years of training. Two days a week, it educated officials and department heads in English and workers and raw material transporters in waste treatment posters and workplace safety.
	Connection	The organization relied on its internal communication system by holding periodic special meetings with those concerned with the environmental policy's implementation, and it expanded its external communication system by creating a website (http://www.scaek.dz/) with company developments. The public will be able to see the company's major directions through a directional sign at the institution's entrance, television and radio interventions, and open doors in May 2006.
	Documentation	Regarding the documentation system, the organization registered its documents according to the texts (version doc) and excel files in the institution's internal network, in addition to approving them.

The use of an environmental management system as a starting point for achieving organizational excellence: case study of the cement industrial organization in Ain El Kebira -Setif- (SCAEK)

Control documents and processes	The organization maintains control over its documents by continuously reviewing them to ensure that they are up-to-date and properly registered in accordance with its internal network system. Additionally, it modifies its operations by defining the procedures that must be followed for each environmental factor. In 2005, for instance, electric O2 filters were replaced with arm filters that reduce emissions to less than 10 mg/nm3.	
Emergency preparedness and response	The company monitors all activities to prepare for emergencies and unexpected situations. The company also promotes industrial health and safety awareness and health prevention at work stations. To eliminate workplace accidents. The company received the industrial health and safety quality certificate OHSAS 18001 version 2007 in 2018.	
Follow-up and measurement	The environmental quality officer monitors all internal processes and procedures related to the development of the environmental management system, and he compares what was planned and what was accomplished to identify errors. The organization has established a committee comprised of the heads of the technical, administrative, and financial divisions, which holds periodic meetings to monitor the system's components, assess the level of deviation from the company's goals, and amend the system to ensure continuous improvement.	
Examination and correction procedures	Conformity assessment	The organization evaluates its environmental management system to determine if it meets the requirements of ISO 14001. As a result, it was able to obtain the ISO 14001 certificate, version 2004, in 2008 and the ISO 14001 certificate, version 2015, in 2018.
	Non-conformance corrective action and preventive action	As mentioned previously, the organization constantly monitors its operations and devices in the environmental field in order to evaluate its objectives and determine whether or not any deviations exist in order to make the necessary adjustments. As for preventative work, it adheres to industrial safety standards, and its monitoring operations are regarded as a preventative measure against sudden disruptions.
	Adjust records	The organization has an efficient documentation system in which all documents are recorded as word and excel files and are subject to ongoing review and modification.
Administration review	Twice a year, the organization holds periodic meetings. The purpose of these meetings, which include the heads of the technical, administrative, and financial committees, is to determine the proper functioning of the environmental management system and to ensure that the environmental policy objectives are being implemented as intended. And setting corrective measures in the event of a deviation from what is underlined, resulting in the ongoing enhancement of this ecosystem.	

The source: Prepared by the researcher based on ([Ain El Kabira Institution, 2023](#)) ([Meshan, 2012, pp. 111-114](#)) ([Daghfel, 2017, p. 190](#)) ([Dahimi, 2011, pp. 170-186](#))

The use of an environmental management system as a starting point for achieving organizational excellence: case study of the cement industrial organization in Ain El Kebira -Setif- (SCAEK)

The application of the environmental management system in the (SCAEK) organization clearly respects the conditions and requirements stipulated in the international standard, which enabled the organization to obtain the ISO 14001 certificate, version 2004 since 2008, followed by the ISO 14001 certificate, version 2015 in 2018.

IV.3. Identifying and assessing environmental aspects at Ain El Kebira Cement Organization (Setif):

The Organization is constantly identifying important environmental aspects that have an impact on various environmental fields such as water, air, soil, and noise in order to identify the positive and negative aspects and to determine ways to treat these effects. These operations are carried out in accordance with periodic updates via a list prepared by the organization that includes the type of activity, the status of the risk, the type of risk, the values of the probability distribution, severity, frequency, and percentage of risk control, preventive measures, and any observations.

As for the type of risk, the organization relies on its classification according to three types of risk that may result from the activity, which are normal risk with the symbol N, an unusual risk with the symbol A, and the accidental risk with the symbol T. As for the values of the distribution of probability, intensity, frequency and risk control ratio, the organization relies on the following equation: $C = F * G * P * M$

Where the symbols in the equation refer to the following: G: (severity), P: (probability of occurrence), F: (frequency), M: (risk control ratio), C: (expressing the outcome). The frequency of danger, risk and probability take the values shown in Table No. (03).

Table (3): Values of probability distribution, severity, frequency and control ratio of environmental hazards of the cement company (SCAEK)

Statement	Very Weak	Weak	Average	Strong	Very strong
The probability of happening (P)	1	2	3	4	5
Severity (G)	1	2	3	4	5
risk control ratio (M)	1	2	3	4	5
Frequency (F)	1	2	3	4	5

The source: Prepared by the researcher based on (Brahimi, 2021, p. 247)

Based on the Institute's March 2019 update, which shows a model for identifying, presenting, and evaluating environmental aspects, we can provide a summary of the various operations affected by this update as follows:

- **Process of extracting raw materials:** This process includes four types of activities represented in (drilling, crushing materials, opening galleys, and line polar park) (02). With the exception of the activity of opening hoppers, which was classified as an unusual risk (A) with a total value of (32) (24) (24) by the Corporation, these activities were classified as normal risks (N) with total distribution values of (32) (24) (24) respectively (24). The result of these activities is a low risk of pollution through inhalation, hearing fatigue, or deafness, and the organization has taken a number of precautions, such as wearing a dust mask or a noise mask, wearing noise-isolating headphones, and maintaining personal protective equipment.

The use of an environmental management system as a starting point for achieving organizational excellence: case study of the cement industrial organization in Ain El Kebira -Setif- (SCAEK)

- **Process (PCS210) Raw materials:** This procedure includes three types of activities, which are depicted in (dusting, equipment maintenance, oil change and lubrication). SAMA classified these activities as unusual risks (A), with total distribution values of (24) (18) (12). Inhalation of dust (risk of occupational disease), accidental spillage of waste oil (contamination of the floor with oil and grease), falling, and the possibility of fracture are all consequences of these activities. In this regard, the Corporation implemented a number of measures, including preventive maintenance of the PPE filter, wearing a dust mask, instructions related to various accidental events, awareness of wearing personal protective equipment (a helmet and safety shoes), instructions on accidental lubricating oil changes, and display.
- **PCS500 Cement Manufacturing:** There are only two activities in this process (raw and cement mills, material storage). The organization categorizes these activities as normal risk (N) for the first and unusual risk (A) for the second, with total distribution values of (36) and (24), respectively. The impact of these activities on deafness, fatigue, and dust inhalation, and the Foundation took a series of measures in this regard, including the use of noise-isolating headphones, displaying and educating, and the mandatory use of personal protective equipment, particularly a dust mask.
- **Cement 220 production process:** This process includes four types of activities, which are depicted in (crushing, mechanical works, compressor rooms and transformers). These activities were classified as unusual risks (A) by the institution, with total distribution values of (24) (09) (04) (02). These activities have an impact on pneumonia, skin diseases, and pollution. In this regard, the Foundation has implemented a number of measures, such as dust mask use, ventilation, periodic maintenance and detection of potential events, and inspection and maintenance programs.
- **Purchasing pcs400:** This process only includes the removal of parts and equipment from stock. This activity has been classified as an unusual risk (A) by the institution, with a total distribution value of (08). As a result of the skin irritation and burns caused by this activity, the organization implemented a series of measures, including identifying the product, creating data sheets, raising awareness about the dangers of chemicals, and displaying them.
- **Process and energy quality control:** This process includes laboratory chemical and physical analysis using hazardous products and X-ray spectrometry. The organization has classified this activity as a normal risk (N), with total distribution values of (24) (12) for the two means on which it is based. This activity caused skin irritation, burns, and X-ray contamination. In this regard, the Corporation implemented a set of measures that included risk reporting, product identification, data sheet preparation, chemical sensitization, and presentation.

We can see the extent of the institution's accuracy in tracking a group of aspects that have a negative impact on the environment, whether on the health of the institution's employees or outside of individuals and societies, from the presentation. As shown above, it works to determine the environmental impact, measure the degree of severity and recurrence, and try to develop corrective measures that would eliminate or reduce the environmental risk, and all of these procedures are carried out on a regular basis to support the correct application of the requirements of the ISO 14001 environmental management system in the organization. As a result of these efforts, the corporation was able to obtain the industrial health and safety quality certificate 18001 OHSAS, version 2007, in 2018.

V- Dimensions of institutional excellence in (SCAEK) in light of the use of the ISO14001 environmental management system

The institution's adoption of the ISO 14001 environmental management system yielded multiple benefits, allowing it to achieve a level of institutional excellence in several areas, some of which we summarize in the following proposition:

V.1. Excellence in terms of cost:

The ISO14001 environmental management system enabled the organization to reduce the volume of costs resulting from resource consumption in production processes or from the purchase of raw materials as inputs to the manufacturing process to low rates. It even allowed it to convert the cost difference before and after implementing the ISO14001 environmental management system into financial savings for the organization.

Table (4): Evolution of the organization's exploitation of environmental resources and reduction of exploitation costs

Statement		2018	2019	2020
Electricity	Consumption per ton (kw)	117	147	147
	Consumption per ton (DZD)	276	349	337
	Total production cost rate (kw)	4.89%	25.55%	-0.49%
	Gross production cost rate (DZD)	4.78%	26.58%	-3.60%
Gas	Gas consumption per ton (nm3)	76	91	102
	Gas consumption per ton (DZD)	146	169	191
	Gross consumption cost rate (NM3)	19.50%	19%	12%
	Gross consumption cost rate (DZD)	17%	16%	13%
Water	Water consumption per ton M ³	0.055	0.069	0.06
	Water consumption per ton (DZD)	1.683	2.013	0.152
	Total cost rate M ³	-44%	-25%	-91%
	Total cost rate (DZD)	-45%	-20%	-92%

The source: Prepared by the researcher based on (Mahamadi, 2022, p. 269-267)

We can see from Table No. (05) that the Organization's electricity levels have increased over the last three years, reaching 117 kilowatts per ton in 2018, and rising to 147 kilowatts per ton in 2020. This is due to a variety of factors, including the first production line in the establishment's reliance on outdated technology and a lack of productivity efficiency. This increase can also be attributed to clinker sales intended for export. Despite the defects discovered during the electrical station preparations during the first quarter of 2019, the unit cost achieved in 2019 corresponds to an estimated cost of 357.75 DZD/ton.

In terms of gas consumption, the company has achieved very significant levels, with the volume of consumption decreasing by 16% in 2018 to 13% in 2020. This enabled the Organization to save money on the cost of gas per ton of clinker, which came to 3.22 DZD/ton.

In terms of water consumption, we discover that the Organization has succeeded in reducing each of its unit consumption to the lowest level (0.06 M³) since the factory's construction in the year 2020. This is due to the institution's use of air-cooling technology and a cloth filter rather than the traditional systems (filter and water-cooling), which required a lot of water.

The use of an environmental management system as a starting point for achieving organizational excellence: case study of the cement industrial organization in Ain El Kebira -Setif- (SCAEK)

V.2. Environmental performance excellence:

Table (5): The amount of dust generated by the establishment’s activity (SCAEK) for the period 2018/2020

Statement	Allowable amount of dust (MG/N)	01 production line		
		2018	2019	2020
AFF strainer	50	4.94	6.07	3.68
Refrigeration strainer L45	50	14.83	5.36	1.4
Refrigeration strainer L46	50	8.7	10.54	1.54
Cement Zone Refinery N204	50	15.65	11.39	3.09
Cement Zone Refinery N304	50	26.02	14.43	6.4
line emission average 01	50	13.83	9.54	3.22
		02 production line		
Furnace strainer for line 02	30	4.24	5.17	3.89
Cooling filter for line 02	30	1.67	2.8	2.59
Cement Zone Refinery BK1	30	1.41	2.27	2.18
Cement Zone Refinery BK2	30	4.08	2.13	4.5
BK3 Cement Zone Refinery	30	2.9	4.93	1.7
Line average emission 02	30	2.86	3.46	2.97
average total emission		16.69	13	6.19
Dust emission development rate %		33%	-22%	-52%

The source: Prepared by the researcher based on (Mahamadi, 2022, p. 270) (Brahimi, 2021, p. 232) (Garawi, 2020, p. 81)

We can see from Table No. (06) That the organization adheres to the dust levels that are regulated and specified as (50MG / NM³ and 30). The general rate of development of dust emission in the organization moved from 33% in 2018 to -52% in 2020, indicating the institution's effort to improve its environmental performance by attempting to control the proportions of dust emissions.

Table (6): Evolution of the waste disposal rate of the SCAEK Cement Organization for the period 2018/2020

N	code	Statement	KG	Unit	2018	2019	2020
1	18.1.1 D	healthcare waste	1000	tons	0.023	0.024	0.078
2	16.6.1 S	Collected waste (batteries...)	10	piece	36	38	60
3	16.1.4	Refineries (wind filter, oil, diesel)	5	piece	413	720	512
4	15.2.1 D	cleaning towels	1000	tons	0.44	0.73	0.115
5	13.2.3	Used oils	1	Liter	78684	127800	141800
6	13.2.3	Used grease	1000	tons	0	0.1	0.1
7	20.1.6	tubes	0.5	piece	600	1111	1275
Average evolution of hazardous special waste %					40%	63%	10%

8	16.11.15		brick and crushed concrete	1000	tons	1884	1535	1216
9	10.13.99	D	Cement waste	1000	tons	1520	6354	5300
10	10.13.99	S	damaged cement bags	1000	tons	67928	117172	135664
11	10.13.8		Invalid cement	1000	tons	857	6584	14448
12	10.13.01		flour waste	1000	tons	6932	36229	26779
13	8.3.8		Ink cartridges and print residue	1000	tons	1511	165	164
14	15.2.99		Fabric bags and filters	0.5	piece	9460	2566	74
15	17.4.7		Grinding balls used	1000	tons	8	72	60
Average evolution of hazardous special waste %						27%	108%	9%
16	20.1.99		electric cables	1000	tons	0.35	0.85	4.765
17	17.4.99		Damaged electrical appliances and parts	1000	tons	0.8	1.35	0.375
18	20.1.1	D	Paper and cardboard	1000	tons	17.22	15.434	12.653
19	20.1.7	M	Uncontaminated plastic covers	1000	tons	0.3	0.841	0.616
20	20.1.13	A	Kitchen waste	1000	tons	23	0	0.84
21	16.1.1		rubber	5	meter	1511	5242	2502
22	20.1.21		hardware	1000	tons	178.37	102.3	245.123
23	20.1.3		wooden remains	1000	tons	74.52	30.75	44.66
24	17.4.99		iron residue	1000	tons	14.45	392	192
Evolution of average household waste						30%	80%	-10%
25	1.3.2	D	Sterilization residue		tons	16350	40340	33414
26	14.1.4	I	Construction and demolition waste		tons	0	519	362.11
Evolution of average dead waste						82%	150%	17%
Evolution of the total waste disposal rate						4%	100%	2%

The source: Prepared by the researcher based on (Mahamadi, 2022, p. 272)

Through Table No. (07), we notice a general decrease in the rate of waste disposal in the institution, which is due to the institution's recycling policy, which determines the waste in terms of the degree of danger and the possibility of recycling. Then it recycles the waste designated for recycling and develops new technologies for disposing of waste that cannot be recycled, such as medical waste, in an environmentally friendly manner.

V.3. Legal Compliance:

Table (7): SCAEK's compliance with environmental laws

year	indicator	Objectives	applicable laws number	applied laws number	Compliance rate
2017	environmental Compliance	100%	28	25	89%
2018	environmental Compliance	100%	28	25	89%
2019	environmental	100%	28	25	89%

The use of an environmental management system as a starting point for achieving organizational excellence: case study of the cement industrial organization in Ain El Kebira -Setif- (SCAEK)

Compliance

The source: Prepared by the researcher based on (Brahimi, 2021, p. 242)

Table No. (08) Shows that the organization has improved its performance in terms of environmental law compliance. The Organization 's procedures, such as the establishment of a wastewater treatment plant, the development and allocation of a new waste area for the temporary storage of plant waste, which is surrounded by a fence, and the preparation of boards with the names of the various workshops, all contributed to this level of compliance.

V.4. Achieving an increase in the sales volume and turnover of the establishment:

Table (8): The development of the company's turnover since the beginning of the implementation of the environmental management system

Years	Sales volume	Turnover	Years	Sales volume	Turnover
2008	1,141,675	4,364,036	2013	1,979,125	7,457,639
2009	1,175,790	4,776,899	2014	1,300,491	8,194,056
2010	1,027,855	5,929,217	2015	1,335,470	8,416,704
2011	1,228,895	6,135,834	2016	1,370,275	8,813,488
2012	1,263,145	6,897,429			

The source: Prepared by the researcher based on (Khanous & Al-Dawi, 2018, p. 30)

The data in the table show that the company's turnover increased between 2008 and 2016, with the turnover reaching 8,813,488 DZD in 2016, with an estimated sales volume of 1,370,275 tons. This leads us to believe that the organization's environmental policy has had a positive impact on the growth of cement production, resulting in high turnover rates. This is in addition to the company's efforts to gain a large market share and thus strengthen its competitive position since obtaining the ISO14001 standard, version 2008, which has already allowed it to enter new markets.

VI- Conclusion

The growing trend of countries toward environmental protection and achieving a sustainable environmental system has prompted them to adopt practices aimed at finding the most effective ways to protect the environment and reduce the risk of pollution in general, and pollution caused by industrial establishments in particular. The environmental management system is currently regarded as one of the most effective administrative, economic, and environmental tools that have achieved success in reducing the pollution rates caused by these institutions and converting the cost of the damages caused by the waste it throws into the environment into economic returns that are invested in achieving institutional advantages that would enhance the competitive position of institutions in v As a result, the following outcomes were obtained as a result of this research:

- The ISO14001 Environmental Management System is a versatile management tool that assists organizations in comprehending, evaluating, and enhancing environmental aspects of their activities, operations, and products;
- This study confirms that the ISO 14001 environmental management system is considered an entry point for the organization to achieve institutional excellence.

- The adoption of an environmental management system by industrial enterprises is not required solely to reduce the effects of their activities on the environment and society; rather, this system expands to provide enterprises with cost savings and a boost to their image and reputation.
- The application of the environmental management system at Ain El Kebira Cement Industrial Organization contributed to the organization's improved image in the eyes of legal bodies and institutions, as the organization's rate of compliance with environmental laws reached 89%.
- The study details the measures taken by the Cement Industrial Organization in Ain El Kebira (Setif) to enhance its environmental performance and safeguard the environment. This demonstrates that the organization recognizes the significance of environmental management systems in achieving the general trend toward protecting the environment, reducing pollution risks, working to reduce various costs, and bolstering the competitive position.
- The adoption of the Environmental Management System by the Ain El Kebira Cement Industrial Organization (Setif) enabled it to control environmental aspects in terms of rationalizing the exploitation of resources and decreasing the volume of waste of all types, according to this study.

Answering hypotheses:

The first hypothesis is that the Ain El Kebira Cement Industrial Organization has implemented the ISO 14001 Environmental Management System (Setif). This hypothesis is correct because the study established that the organization (SCAEK) used the ISO14001 environmental management system, as shown in Table No (02). As a result, it was able to obtain the ISO 14001 certificate, version 2004, in 2008, and the ISO 14001 certificate, version 2015, in 2018. As illustrated in Table No.

The second hypothesis is that the ISO 14001 environmental management system helped Ain El Kebira Cement Industrial Organization achieve institutional excellence (Setif). This is the correct hypothesis. The study discovered that the organization (SCAEK) was able to distinguish itself in several dimensions, including:

- First, the cost is reduced through the rationalization of the resource utilization process, as it appears that the unit cost achieved in 2019 corresponds to an estimated cost of 357.75 DZD / ton in relation to the institution's electricity exploitation. In terms of water consumption, the Organization has succeeded in reducing each of its unit consumption to the lowest level (0.06 M³) since the factory's construction in the year 2020. Finally, the Organization 's gas consumption decreased by 16% in 2018 to 13% in 2020, allowing the Organization to achieve a gain in terms of gas cost per ton of clinker, which amounted to 3.22 DZD/tons.
- Second, consider environmental performance. This dimension appeared in our study through several indicators, including the evolution of the cement organization SCAEK's waste disposal rate for the period 2018/2020, which decreased from 4% in 2018 to 2% in 2020. This is because of the institution's policies. Within the framework of waste treatment, such as recycling and reusing these wastes and reintroducing them into the production process, and thus rationalizing the institution's purchasing of primary resources.
- Third, there is the issue of legal compliance. The Organization has achieved a good level of legal compliance with Algerian environmental laws, amounting to 89% out of 100%, thanks to its adoption of the ISO 14001 Environmental Management System.

The use of an environmental management system as a starting point for achieving organizational excellence: case study of the cement industrial organization in Ain El Kebira -Setif- (SCAEK)

This allowed it to reduce environmental collection rates imposed on it as a result of high levels of pollution caused by the institution's waste, establish strong relationships with legal institutions, improve its image in society, and cut costs.

- Fourth, increasing the volume of sales and the organization's turnover: The Organization has achieved high productivity rates as a result of the development of training costs and the training programs implemented in the organization as a result of its implementation of the ISO14001 environmental management system. As well as its sweeping of new market shares, especially since its products are now distinguished by standards that respect and work to protect the environment, which reflected positively on turnover.

Recommendations:

- Adopting stringent legal regulations that require industrial enterprises to implement an environmental management system, and imposing severe penalties on polluting and environmentally irresponsible businesses;
- Modification of the internal trade policy by imposing new regulations on economic dealers. Institutions must possess an environmental quality certificate to engage in transactions;
- Prior to granting approval for the establishment of classified institutions, prepare an evaluation program to determine the level of awareness of those wishing to establish them in various fields, the most important of which is the environmental field;
- State support for institutions employing environmental management and its systems and the granting of enticing privileges would encourage institutions to compete for these privileges.
- Linking classified institutions with university offices and research laboratories would contribute to the discovery of numerous solutions that would enhance the environmental performance of these institutions.
- Orientation toward industrial business incubators as a type of research center within industrial establishments that would assist these establishments with environmental problem resolution.
- Developing training and training programs aimed at fostering the development of green skills among industrial workers;
- Establishing banks or financing institutions (green or environmentally friendly) for the purpose of lending to institutions in order to implement an environmental management system and attain sustainable development. This is due to numerous advantages, such as the application of the environmental management system by institutions and the facilitation of financial support, which is one of the most significant obstacles, as well as the provision of an additional type of banking services represented by environmental lending services.

Bibliography

- Ain El Kabira Institution. (2023). *Environmental management at Ain El Kabira Institution*. Retrieved 02 01, 2023, from SCAEK: <http://www.scaek.dz/>
- Al-Saffar, A. K. (2011). A proposed model for evaluating the environmental management system in accordance with the requirements of international standard ISO 14001: a study in the Kufa Cement Factory. *Babylon University Journal of Human Sciences*, pp. 01-25.
- Amam, R. (2018). The impact of the practice of human resources management in achieving institutional excellence, (a case study of some banks in the state of Laghouat). *Al-Bashaer Economic Journal*, pp. 545-529.
- Bileid, H., Arab, F. A., & Sadiqi, K. (2022). Human resource management practices and their impact on achieving institutional excellence, a case study of Algeria Telecom, Bashar Unit. *Journal of the New Economy*, pp. 281-300.
- Brahimi, L. (2021, 12 15). The role of environmental internal auditing in improving the environmental performance of industrial enterprises - a case study of the cement company in Ain El Kebira -. *Faculty of Economic, Commercial and Management Sciences*. Setif, Algeria: Farhat Abbas University.
- Chalali, A. (2015). The role of moral factors in achieving institutional excellence. *Maarif Journal of Economic Sciences Department*, pp. 402-418.
- Daghfel, F. (2017). The application of environmental management systems in the Algerian cement enterprises - reality and prospects -. *Department of Management Sciences, Faculty of Economic, Commercial and Management Sciences*. M'sila , Algeria: Mohamed Boudiaf University.
- Dahimi, J. (2011). The role of the environmental management system in improving the sustainable performance of the economic enterprise (a comparative study between the Algerian Cement Company of Ain El Kebira and Orascom). *Faculty of Economic, Commercial and Management Sciences*. Setif, Algeria: Farhat Abbas University.
- Dahimi, J. (2017). The impact of implementing the ISO 14001 standard on improving the environmental performance of enterprises: a case study of the cement company SCAEK. *Journal of Finance, Investment and Sustainable Development*, pp. 31-49.
- Garawi, A. (2020). Environmental responsibility as an entry point for the organization 's contribution to achieving sustainable development: a case study of the Ain El Kebira Cement Organization - Setif. *Journal of Economic Growth and Entrepreneurship JEGE*, pp. 71-84.
- Khanous, M. A.-H., & Al-Dawi, S. (2018). The Impact of Implementing the Environmental Management System (ISO 14001) in Industrial Institutions "A Case Study of Ain El Kebira Cement Company (SCAEK)". *Horizons Journal for Research and Studies*, pp. 20-38.
- Mahamadi, W. (2022). The role of environmental accounting in achieving a balanced and sustainable environmental performance in industrial enterprises - a case study of the Cement Industry Organization , Ain El Kebira, Setif Province, SCAEK. *Faculty of*

The use of an environmental management system as a starting point for achieving organizational excellence: case study of the cement industrial organization in Ain El Kebira -Setif- (SCAEK)

Economic, Commercial and Management Sciences. Setif, Algeria: Farhat Abbas University.

- Mazouz, M., & Allab, R. (2016). Determinants of the adoption of environmental management systems ISO 14001 in economic institutions in Algeria. *Economic Issue Studies Journal*, pp. 201-219.
- Meshan, A. K. (2012). The role of the environmental management system in achieving the competitive advantage of the economic enterprise. *Faculty of Economic, Commercial and Management Sciences*. Setif, Algeria: Farhat Abbas University.
- Miqdadi, K. (2016). *Marine environment protection*. Amman (Jordan): Academic Book Center.
- Najwi, A.-S., & Batayneh, T. M. (2005). Environmental management of the industrial facility as a modern approach to competitive excellence. *The first international scientific conference on the outstanding performance of organizations and governments*.
- Quiidri, M. (2016). The use of environmental management as an input to rationalize the consumption of economic resources in industrial projects - with reference to the case of the Cement and Derivatives Organization in Chlef (ECDE) during the period (2000-2013). *The Academy of Social and Human Studies*.
- Yahyaoui, N., & Mehdi, M. (2019). Corporate social responsibility mechanism to strengthen environmental management systems. *Journal of Social Sciences*.